



The Impact of the Technological Turn on
Professional Translation Workflows in the Public
Sector in Wales

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of the requirements for the Degree of Doctor of Philosophy

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Abstract

This study evaluates the impact of the "Technological Turn" (Qian, 2013, p. 40) on professional translation workflows in the bilingual public sector of Wales, aiming to determine if current processes are efficient and fully supported by Welsh-speaking non-translation staff. The Welsh Government's Cymraeg 2050 strategy recognises the importance of incorporating translation technologies in promoting and disseminating the Welsh language.

Qualitative and quantitative data from three public sector organisations: Swansea Council, Swansea University, and the Welsh Government and three respondent groups: all staff, in-house translation staff, and translation students or recently qualified translators, were collected and analysed. The findings reveal that although adequate translation technology is available, it is not utilised to its full potential, resulting in a suboptimal service with significant economic implications. The study recommends that managers invest more time in understanding the limitations and potential of technology and processes and improve existing systems. An analysis of each translation workflow's key components identifies areas that require improvements, supported by a centralised Welsh information hub and an inter-institutional culture of sharing data and knowledge. The study recommends utilising the full extent of the Technological Turn to achieve a faster, automated workflow with effective internal communication, supported by a skilled bilingual workforce who can manage translations from their desktops and management who are invested and fully aware of the process.

The study identifies challenges and proposes recommendations for translation workflows within organisations, particularly the Welsh public sector, to enhance the functionality, reliability, efficiency and usability of translation systems. It suggests creating a centralised Translation Memory (TM) bank and networking with public sector organisations to develop a bespoke Neural Machine Translation system. The study highlights the importance of the Translation Management Tool, automation, collaboration, training, and regulation in enhancing the translation workflow process. It also suggests implementing a system that receives translations at a central point with all supporting materials and instructions in advance to address delivery, processing, and quality issues. To generate instant translations more efficiently and cost-effectively, the study proposes creating a bespoke TM data bank for the public sector, organised by domain and accessible to all staff, managers, and translators. Creating a centralised TM bank containing retrieved TMs from historically outsourced translations and current TMs from all institutions in the Welsh public sector is recommended, requiring a centralised, cloud-based TM data repository, a bespoke Neural Machine Translation system, and a Welsh Language Portal. The study suggests developing a Welsh language portal to consolidate and provide the latest versions of key language resources to the public sector in one central location, supporting Welsh language dissemination.

Future research could assess the feasibility and effectiveness of implementing the proposed recommendations through pilot studies in the Welsh government and expand the current investigation by examining the impact of technology on translation workflows in minority-language countries. Additionally, future research could analyse the effect of recent Welsh language legislation on translation workflows, assess the level of support from Welsh-speaking staff, and suggest ways to enhance this support to accelerate the growth of a bilingual community in the workplace and aid the Welsh Government (2017) in their goal to reach one million speakers by 2050.

DECLARATIONS

This work has not previously been submitted in substance for any degree and is not being currently submitted in candidature for any degree.

Signed:  ... (candidate)

Date: 30th September 2022

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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STATEMENT 2

I hereby give my consent for my thesis, if accepted, to be available for photocopying and interlibrary loan and for the title and summary to be made available to outside organisations.

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ABBREVIATIONS

Severe Acute Respiratory Syndrome Coronavirus	COVID-19
Automatic Language Processing Advisory Committee	ALPAC
Artificial Intelligence	AI
Application Programming Interface	API
Cloud-based Systems	CBS
Computer-Assisted Translation	CAT
DéjàVu X3	DVX3
Directorate-General for Translation	DGT
Machine Translation	MT
Neural Machine Translation	NMT
Source Text	ST
Target Text	TT
Translation Memories	TMs
Translation Memory	TM

1 CHAPTER 1: INTRODUCTION

1.1 BACKGROUND AND CONTEXT

“A Million Welsh Speakers by 2050.

In the year 2050: the Welsh language is thriving, the number of speakers has reached a million, and it is used in every aspect of life. Among those who do not speak Welsh, there is goodwill, a sense of ownership towards the language, and recognition by all of its contribution to Wales’s culture, society, and economy”.

(Welsh Government, 2017, p. 2)

The purpose of this study is to determine the extent to which the technological turn, as defined by Cai and Zhang (2015, p. 429) and Qian (2013, p. 40), has impacted the public sector translation workflows and, as a result, supported the Welsh Government’s (2017) vision, Cymraeg 2050: A Million Welsh Speakers by 2050. Intervention through research is necessary at this stage to ensure that the current systems adequately support the users of the translation technology (the public sector translators) and the stakeholders involved in the workflows to realise the Cymraeg 2050 goal. If this investigation identifies any opportunities to improve workflow processes, such as those related to translation technology together with the participation of the Welsh-speaking personnel, there should be sufficient time to develop more efficient systems, train staff and build more advanced translation workflows with integrated automation processes and innovative technology, utilising existing resources wherever possible. The systems would make extensive use of translation memories (TMs), ensuring that for every translation performed in the public sector, a culture of sharing resources would be encouraged and accessed from a central, secure location, allowing translations to be reused (sans confidential data) in any public context, from any public sector location. A key objective would be to augment bilingual communications and to encourage the public sector workforce to live in Welsh and English, whichever they prefer. In addition, by ensuring that all stakeholders in the public sector workforce are participating in the vision, with Welsh speakers consistently utilising their language skills in the workplace, effective communication would be evident, and technology would be

used to achieve maximum efficiency and productivity-whilest reducing cost and minimising the necessity to outsource translations.

Many empirical studies have focused on aspects of translation workflows per se, such as Pym and Torres-Simón (2021), who look at the automation of translation, and Moorkens (2022), who recently published an article related to ethics and MT. However, there are few from an institutional perspective, such as Fernández-Parra (2020), who carried out an investigation of the translation practices in the European Commission's Directorate-General for Translation (DGT) or Svoboda et al. (2017) who examined the different challenges to translation quality in institutions and compared the viewpoints from academics and practitioners.

Although limited in quantity, the research on translation workflows in Wales holds significant relevance to this study. As an example, Screen (2016a) sought to evaluate the efficacy of Translation Memories (TMs) by comparing the effort expended by translators who utilised them versus those who did not. The following year, Screen (2017b, p. 317) carried out another similar experiment with and without the assistance of Google Translate, and then another controlled study examined the benefits of editing both MT and TM outputs (Screen, 2017a).

However, none of the studies measured the impact of translation technology on public sector workflows in Wales. It must also be noted that it is difficult to locate research related to Welsh translation and technology that has not been funded directly or indirectly by the Welsh Government. Therefore, the fact that a qualified translator with ten years of experience in the commercial sector is conducting this research makes this study distinct and more impartial. The purpose of this study is, therefore, to fill a research gap and contribute to the following subjects in the context of the Welsh public sector, as well as to provide additional research for other nations with minority languages who are similarly seeking to expand their language use: professional translation, translation workflows, translation technology, and language policy.

For any professional translation workflow to be effective in the public sector in Wales, it requires assistance from a range of stakeholders, not just the technology but also the personnel and the tools, all stemming from the development of the source text (ST) to the delivery of the target text (TT). Consequently, the purpose of this study is to assess all parts of the workflow impacted by technology, as well as those highlighted in the Welsh Government (2020b) policy, *Cymraeg: It Belongs to Us All*, enacted to realise their goal for all public sector employees to speak Welsh interchangeably in the workplace. This policy demonstrates that the Welsh Government is aware of the research gaps addressed in this study, as shown in the following extract:

...new ways to assist people in producing bilingual text. [...] We will also look at emerging translation technology and automation to ensure that all our translation activity – both internal and outsourced – is undertaken in the most efficient way possible but without using the translation services.

(Welsh Government, 2020b, p. 13)

This chapter discusses, in conjunction with the implementation of legislation in Wales to preserve and protect the Welsh language, the Internet, and technological expertise, that there has been a substantial increase in the public and private demand for effective professional translation technology and electronic communications. This study focuses on the public sector in Wales; how organisations use technology to translate their content internally through the in-house translation workflow tools and processes; and why this study has the impetus to improve translation workflow processes significantly, leverage existing data resources and technology, reduce costs by recycling previously translated content, and identify research gaps.

The term "Technological Turn" was coined in 2002, as described in an interview by Qian (2013, p. 40) with Professor Chan Sin-wai. He stated that machines will not replace human translators but will gradually emulate human translation, which raises the question of how technology will influence the professional translator's workflow in the future. How will the professional translator adapt if Chan is correct, and will machines emulate human translation? When discussing the future role of a

translator, Pym and Torres-Simón (2021, p. 12) answered this question when they stated: “Do what the machines can’t do”.

Technology in the industry has become a staple in the professional translation workflow. Translators are expected to remain current by adapting to various forms of technology created for the translation industry. A professional translator with limited computer skills risks falling behind a more tech-savvy linguist. In addition, translators are also expected to be more specialised, and the competition for expert knowledge has meant that it is fast becoming the norm to expect a legal translator to have legal qualifications and a medical translator to have medical experience, for example.

Hutchins (2001, p. 2) explained that in the 1950s, technology was first introduced to the translation industry via machine translation (MT), a process by which computer software translates a text from one natural language to another, for example English into Welsh and Welsh into English. The translation community, initially reluctant to abandon the typewriter (let alone trust a computer to translate their work and take over their profession), had little confidence in the output from MT, claiming the translations were distinctly inferior, particularly in comparison to the quality of translations produced by a professional human translator. At that point, there was little dispute.

The history of Machine Translation (MT), as described by Escribe and Mitkov (2021, p. 167), dates back to 1949, when Warren Weaver, a researcher at the Rockefeller Foundation, offered recommendations for MT solutions based on information theory and code-breaking successes during World War II. However, in 1966 the Language Processing Advisory Committee (ALPAC) report stopped funding MT research in the United States (but not the rest of the world). A paper by Martin Kay (1997, p. 4) entitled *The Proper Place of Men and Machines in Language Translation*, stated that despite ALPAC and MT not being what scientists initially wanted them to be, computers can still be productively used to “magnify human productivity”, helping human translators to translate and described what we know

today as the Computer-Assisted Translation (CAT) tool. Kay's paper sparked further research and development, which led to the emergence of the first CAT tools.

Since the introduction of CAT technology, there has been a significant increase in the global demand for translation services in both the private and public sectors. As a result of an ever-increasing emphasis on globalisation, the emergence of the Internet as a tool for global marketing, the expansion of the software localisation sector, and expanding prospects for international commerce and the translation industry have never been more in demand. In Wales, even though the increase in translation has been affected by the factors mentioned earlier, there has been an increase in legislative pressure on public sector organisations. One of the primary features of CAT tool technology is the translation memory; however, more recently, MT has been introduced to the workflow as stated by Vieira et al. (2019, p. 3), "Translation memory remains the flagship of CAT, but MT is now available in most CAT tools and plays an increasingly important role in their use".

The perspectives of experienced translators on post-editing MT as part of their professional translation workflow were studied by Moorkens and O'Brien (2014) and Läubli and Orrego-Carmona (2017). According to the research, the general opinion is negative, and there is a clear sign of pessimism in their attitudes against employing MT in professional translation workflows. According to research on translators' perspectives on the usage of MT in professional workflows, attitudes toward post-editing are often negative among experienced translators such as Moorkens and O'Brien (2014). The reasons for this scepticism range from poor MT quality, as explained by Läubli and Orrego-Carmona (2017, p. 59), to MT's potential impact on the translation industry in terms of productivity gains, which are counterproductive due to the effort it takes to post-edit. Vieira and Alonso (2018, p. 8) argued that if a text were simple to translate, they would be able to translate 1,000 words per hour without using online dictionaries or resources.

When considering the outcome of this thesis and any proposed improvements to the translation workflow in the public sector, it is important to consider whether any of them would be funded by the public purse. Given the recent pandemic (see

section 4.5.1 for further information about COVID-19 related to this study), any financial implications resulting from the suggestions in this study would not be favourable, as shown by Taylor-Collins and Downe (2021, p. 1), “The local government response to austerity in a small, devolved country: the case of Wales”, which concluded that “councils [in Wales] were already at a financial tipping point before the pandemic” even though there was a clear acknowledgement that technology needs improvement: “There was a consensus from our interviewees that ‘ticking along’ is not an option and innovation in service design and delivery (e.g., better use of digital) is required to respond to future challenges” (p. 8).

1.1.1 AIMS AND OBJECTIVES OF THE THESIS

The overarching aim of this study is to determine the extent to which the technological turn has impacted translation workflows in the bilingual setting of the public sector in Wales. To accomplish this, the stakeholders and technology involved in each step of the translation workflow process, from the generation of the ST to the delivery of the TT, must be evaluated. This assessment focuses on the productivity, accuracy, functionality, reliability, efficiency, usability, and cost efficiencies of the technology used in the workflow process, as well as the Welsh language support from in-house staff. In addition, to achieve the main aim, it is essential to gather a diverse range of perspectives and sentiments through surveys, followed up with focus groups among three groups of stakeholders: general staff, in-house professional translators, recently qualified translators, and translation students studying a BA (Bachelor of Arts) or Master’s (MA) in Translation. Once this information has been collated, any disparities across public sector organisations, including advantages and disadvantages, may be identified, and recommendations for improvements can be made.

In pursuit of the three aims stated below, to provide suggestions for improvements to the workflow processes, the following three aims have been identified:

First Aim: To examine the current translation technology used by in-house translators in the translation workflow in terms of productivity, accuracy, functionality, reliability, efficiency, usability, and cost efficiency and to determine if the technology is being used to its full potential by its users, as well as explore the possibility of increasing resources to support the Welsh language through inter-institutional TM data sharing.

Second Aim: To review the current internal translation workflows to fully understand their processes in terms of productivity, accuracy, functionality, reliability, efficiency, usability, and cost efficiency as well as the overall satisfaction levels of the key stakeholders.

Third Aim: To evaluate the impact of recent Welsh language legislation on the translation workflow with the support of internal Welsh-speaking (non-translation) staff.

1.1.2 TRANSLATION AND TECHNOLOGY IN THE WORKPLACE

The first aim relates to the current translation technology used in the translation workflows in Swansea Council, Swansea University, and the Welsh Government, and to examine its performance in terms of productivity, accuracy, functionality, reliability, efficiency, usability, cost efficiencies and, in addition, to gather qualitative data on the sentiment surrounding its use, from the perspective of the translators or general staff and those who use it or gain access to it every day. The intention is to determine if the technology is being used to its full potential and to explore the possibility of improving the workflow and cultivating inter-institutional collaborations between public sector organisations, including data sharing.

Given that the in-house CAT tool is a vital component in supporting the production process, it is crucial to assess its efficiency and accuracy. For example, if the tool that analyses the ST is not accurately assessing it, for instance, with incorrect data or not identifying similarities in previously translated content (TM matches), then the consequences would potentially affect the productivity of the workflow, the

cost to the public purse and time management expectations. Also, it is essential to understand how beneficial the TM is, whether access to more significant amounts of TMs would help or hinder the workflow and whether the freely available parallel corpus from the Welsh Government is helpful.

Technology is only as proficient as the person who uses it. If translators are not trained on all aspects of the translation technology they use and are not regularly updated with any changes, it may be assumed that the translation technology will not be used to its full potential. This would indicate that the technology had a lesser impact on the workflow than it could have. Therefore, it is essential for this study to understand whether there are any processes or procedures in place to train in-house translation staff, and if so, to what extent and how often this happens.

1.1.3 THE INTERNAL WORKFLOW PROCESSES IN THREE PUBLIC SECTOR ORGANISATIONS

The second aim is to gather enough data to understand two critical components of the workflow in the study by gathering mixed data on:

- A typical public sector translation workflow.
- How the translation workflow functions in the public sector from the perspective of all stakeholders involved in the process.

Evaluation of just one organisation would not provide enough data for comparison purposes or to identify patterns to determine what works and does not. Therefore, this study examines three separate workflows from three different public sector organisations (Swansea Council, Swansea University, and the Welsh Government). By assessing all three, it is anticipated that the objective of gaining a sufficient understanding of public sector translation workflow processes would be realised, more specifically, to fully understand their productivity in terms of accuracy, functionality, reliability, efficiency, usability, and cost efficiencies as well as the overall satisfaction levels of the key stakeholders.

To ensure the entire process is evaluated and all stakeholders considered, it is imperative to target staff who are specifically involved at any stage of the workflow, from the start to the end, such as the requester of the translation (staff member) and provider of the ST through to the final delivery (the translator) of the target text. The aim is to look for differences between the organisations in functionality, usability, reliability, and efficiency and identify areas that would provide a sufficient understanding of where technology has impacted the workflow and where it would benefit from further improvement. To achieve this, three bilingual (English and Welsh) surveys are sent to three separate groups to gather qualitative and quantitative data.

The purpose is to gather data regarding their background and experience, evaluate the process when they request a translation, and decipher their opinions on the translation service to look for patterns in efficiency, reliability, and whether the translation service expectations have been met. The second survey targets professional translators who carry out the translations in their organisations. The goal is to determine how the translators work, are trained, use the systems, and how the day-to-day running of the workflow affects them. Their opinions are gathered on the current translation service and future expectations. The third survey is aimed at the recently qualified professional translators and translators coming to the end of their training in the Bachelor's and Master's degrees in Translation at Swansea University to obtain their perspectives from a different mindset that would have been trained on the latest technology or at least have some working knowledge of it. Also, to understand how they have prepared for the industry's future, have they looked to specialise in an industry such as law, medicine, or science, or are they undecided? Finally, their current and future perceptions were collected to compare with those of the public sector translators to identify significant differences or expectations.

1.1.4 CURRENT WELSH LANGUAGE LEGISLATION IN THE WORKPLACE

This third aim is related to the use of the Welsh language in the public sector and the legislative enforcement, such as the Welsh Language Standards 2015-2018 (see

section 2.6), also referred to as the Standards, which legislate public sector organisations to provide services in both official languages in Wales, Welsh, and English. Therefore, this aim intends to evaluate the impact of recent Welsh language legislation on the translation workflow with the support of internal Welsh-speaking (non-translation) staff.

The history of the Welsh language is discussed in Chapter 2: The Welsh Context. However, to explain the position of this study concerning legislation and compliance, it is necessary to understand current policies that provide the rationale for the processes in place. The aim is to determine why the revitalisation of the Welsh language is so vital to Welsh culture, focusing on a brief introduction to the motivations behind the attempts to promote English above Welsh and the slow journey back to an equal official footing in more recent times.

With this goal in mind, the legislation surrounding this research defines any expectations of an organisation on what must be translated into Welsh and its centuries-old rationale. Also, as Welsh-speaking employees are frequently recruited with Welsh communication skills, the aim was to determine whether there are employees who indicate whether they can communicate in Welsh when applying for a position in an organisation but choose to refrain from doing so in practice. If this were the case, it would need to be understood how this could impact the workload of the in-house translation staff and raise the question of how this could be addressed to encourage more Welsh communications in the workplace.

1.2 RESEARCH QUESTIONS

The main research question is, to what extent has the technological turn impacted professional workflows in the public sector in Wales? To answer this question comprehensively, this question will be broken down into the following seven sub-questions:

Translation Workflows:

1. What are the current translation workflows in the public sector in Wales?

Welsh language competence in the workplace:

2. To what extent do employees contribute to Welsh-language workplace communications, and how may this affect the internal translation workflow process?

Technological Competence and Translation Tools in the Workplace:

3. Which translation technology tools are the most trusted and preferred by the organisations, and why?
4. How are workflow-relevant tools, systems, legislation, and personnel updated to benefit from the most recent technological advances and Welsh language policy?

Translation Technology:

5. How effective is the technology used in the translation workflow according to staff who use translation services and the Welsh language translators?
6. Would combining resources such as generic TMs, and termbases increase efficiencies, improve productivity and lead to decreased cost to the public purse?

The Future:

7. What perceptions do staff and translators have on translation technology and the future workflow?

The sub-questions are defined further:

The first (sub) question is: What are the current translation workflows in the public sector in Wales? To answer the main research question, it is imperative to understand how the internal translation workflows function and perform in each organisation involved in the study. By answering this question, it would be helpful to compare the results between organisations and look for any differences. This procedure will also enable this research to provide recommendations for improvement and development and how that would impact all three organisations.

The focus will be on how the workflow provides internal Welsh translation services to public sector personnel. The process will be measured in terms of its productivity, accuracy, functionality, reliability, efficiency, usability, and cost efficiencies, plus gathering sentiment from the translator and the translation requester.

Each step in the workflow will be identified, from the initial request to the delivery of the target text and how decisions are made, such as outsourcing and management of TMs.

The second (sub) research question is: To what extent do employees contribute to Welsh-language workplace communications, and how may this affect the internal translation workflow process? This research question seeks to determine the extent to which employees contribute to their bilingual surroundings and whether there are employees with Welsh language skills that could be developed further with support or are not currently being utilised, thereby highlighting the immediate potential to increase the use of Welsh in the workplace. As the purpose of this study is to measure the impact of technology on the internal workflow process, it is essential to determine whether the translation workflow is being supported by the internal Welsh-speaking staff, ensuring that internal translators are not carrying out translations that could easily be handled by Welsh speaking staff. To give the necessary support and solutions, it is also crucial for this study to ascertain the reasons why personnel may choose not to use their language skills and look at the

Human Resource process, what happens beyond a new employee's start date and if they are using any Welsh language skills they may have, or have developed – do these records get updated? This matter would be very interesting for future research.

The third (sub) research question is: Which translation technology tools are the most trusted and preferred by organisations, and why? This question is directed solely toward the translators and seeks to establish their preferences for the technology they currently operate and their familiarity with advanced technology. For instance, if they have a working knowledge of more advanced technology or are inclined to use an outdated system because it is what they are used to. Additionally, it is essential to know their limitations and technological competence and ascertain whether the tools improve or disrupt the workplace's workflow. Are they capable of resolving minor technical challenges and having the appropriate support?

The fourth (sub) research question is: How are workflow-relevant tools, systems, legislation, and personnel updated to benefit from the most recent technological advances and Welsh language policy? This question is intended for all public sector staff. It aims to determine how employees are informed of workplace changes or modifications through training plans, coaching, or other means. This is highly relevant for changes affecting their workflow operations, such as technological system updates or legislative changes, which should be supported. This question addresses a significant element of the translators' technical infrastructure: how their systems are maintained and upgraded. The reason for this is that if the individual upgrading the systems does not understand the upgrade, the staff will be unaware of how it could benefit them and improve their workflows.

The fifth (sub) research question is: How effective is the technology used in the translation workflow according to staff who use translation services and the Welsh language translators? This question addresses all staff to understand the effectiveness of the workflow from their perspective. As this study intends to encourage staff to remain anonymous, this would be an opportunity for the general staff and in-house translators to explain whether the systems function well for

them, their experiences of requesting translations or, similarly, their knowledge of providing the translation service. The answer to this question should highlight any functional (or potentially dysfunctional) areas of the workflow and bring any improvements that need to be addressed to the forefront.

The sixth (sub) research question is: Would combining resources such as generic TMs, and termbases increase efficiencies, improve productivity and lead to decreased cost to the public purse? This question relates to the translators' internal translation technologies, namely their TMs and termbases. As the reuse of previously translated content (TMs) impacts the productivity of translations, it could be argued that the more TMs a translator has access to, the faster they can translate. For instance, if a document is translated and the TM is stored for future use, the next time a translation of the same document with minor modifications is required, the translator needs only access the TM (Translation Memory) and translate the minor changes (and check the context). Nonetheless, if the TM is unavailable, the translator must translate from scratch, resulting in the translation taking longer to complete, more cost, and risking translator fatigue.

However, this question has a broader scope. Suppose all public sector translations were published in a central repository. If someone from Bangor University needed to translate a similar text, they could access the same TM, saving on cost and time and enhancing productivity.

An even broader consideration applies to all public sector outsourced translations for which the TMs may not have been returned to the translation requester. This would include government framework agreements and service contracts, for example. If a translator had access to this level of bilingual corpora that are clean, of sufficient quality, and contain no confidential data, it would have a significant impact on the productivity of every public sector translation service, resulting in substantial cost savings, increased efficiencies, and improved continuity of language. The data may also be used to train domain-specific NMT and prevent the possible resale of bilingual corpora (paid for by the public purse) to external organisations.

The seventh and final (sub) research question is: What perceptions do staff and translators have on translation technology and the future workflow? The objective is to determine staff and translator perceptions of translation technology and future workflows. Considering recent technological advancements, this question seeks to determine whether the systems (in the future) could be augmented using modern technologies and what aspects, such as speed, turnaround times, communication, automation, and tracking or management, respondents would like to see addressed. In addition, this question aims to determine whether translators are concerned or have any misconceptions about their future role as translators. The responses to this question will also provide insight and understanding of areas working well and those that may require improvement.

1.3 TRANSLATION TECHNOLOGIES

Language technology can help to accelerate and facilitate the work of the translator. It can also assist organisations who commission work to ensure the quality of translation work commissioned and to ensure value for money.

(Welsh Language Commissioner, 2012, p. 122)

This section explains the key translation tools found in a translation workflow process and discussed in this thesis, such as Computer-Assisted Translation (CAT) Tools, Cloud-Based Systems (CBS) (also described as Translation Management Tools), Neural Machine Translation (NMT) and Human Parity, Data Poisoning, and finally **Intellectual Property and the Monetisation of Translation Memories**.

1.3.1 COMPUTER-ASSISTED TRANSLATION (CAT) TOOLS

The development of CAT tools has been driven by the necessity to meet the demand for translation, particularly with the introduction of the Internet. Cai and Zhang (2015, p. 430) explained, "The old and traditional translation service cannot meet their needs, as it depended upon human resources and was too slow. They require better and faster language services to meet the market needs. Therefore, CAT tools were invented and were proved [...] highly efficient".

In Wales specifically, the need for technological assistance was not only due to the impact of the Internet but also when the Welsh language gained equal status to English in Wales. Policies introduced by the Welsh Government, such as the Welsh Language Measure (Wales) (2011), also known as The Measure and, more recently, the Welsh Language Standards from 2015-2018 (see section 2.6), and Cymraeg 2050: A Million Welsh Speakers (2017), resulted in the public sector being obligated to translate their content from English to Welsh (en<>cy) or Welsh to English (cy<>en), with (en<>cy) the more common combination, enabling any individual to live in Welsh or English as they choose. The consequence of introducing these policies is the increased need to translate content using translation technologies to aid the professional translator and augment productivity. This was explained by Rothwell & Svoboda (2019, p. 26), who stated: “In developed markets, virtually no translations are produced without the help of computers and technology. In specialised/technical translation, Computer Assisted Translation (CAT) tools [...] form an indispensable part of the translation process itself in many current implementations”.

In larger organisations, particularly considering the recent pandemic (COVID-19), where there are remote staff, the CAT tool can usually be accessed remotely, and translators are provided with remote access to participate in the process. The glossary or termbase may act as a source of reference for any organisation and are particularly useful for organisations with an in-house style that can be adapted when terms are changed or defined due to a change in branding, a shift in marketing tone, or merely a decision to use a different term across the board.

The tools are complex software programs that support the translation workflow process, even more so when they are used to their full potential and the translators are fully trained and updated to the latest version. The integrated system incorporates TMs, termbases, and in some cases, MT or NMT (see the research by Screen as highlighted in 3.2.1). The technology’s effectiveness depends on its user’s understanding of its features, including shortcuts which enable a faster processing time.

At the core of the CAT tool, termbases are bilingual or multilingual glossaries of relevant terminology (particularly useful for technical content such as legal or medical), and the multilingual capability means that the same glossary of terms can be given to numerous translators within a translation workflow, whatever the target language.

TMs store previously translated content, such as the ST and TT segments.

Therefore, if a second, similar document needs to be translated, a proportion of the translation could be available for reuse from the TM and inserted into the new translation as it would match the previous content, or suggestions could be offered which do not match the ST but there is a percentage of similarity (a fuzzy match).

For example, if a university produces an annual prospectus that needs to be updated, a translator could analyse the updated file to see how much of the translation was completely new and how much could be matched with the previously translated prospectus via the TM. If most of the prospectus contained the same content with minimal change, the translator's task would be straightforward as they would only have to insert previously translated segments and make amendments to individual entries (the fuzzy matches) that are similar but not identical to the translation stored in the TM. They only need to translate the brand-new content (with no matches in the TM) from scratch. The time-saving benefits are notable, and this technology has dramatically changed the workflow architecture in the industry.

Below (Figure 1. 1) is a screenshot of an Analysis Sheet generated by a DVX3 CAT tool and illustrates how the CAT tool assesses the uploaded document.

Figure 1. 1 An example of a DVX3 Analysis Sheet document evaluation

File Details							
File	Type	Segments	Words	Characters	Percentage	Tags	
SP1440.docx	Duplicates	8	20	127	8,26%	0	
Chars/word: 7,40	Guaranteed Matches	36	74	606	30,58%	0	
	Exact Matches	31	65	469	26,86%	0	
	95% - 99%	5	21	156	8,68%	0	
	85% - 94%	7	15	109	6,20%	0	
	75% - 84%	2	15	112	6,20%	0	
	50% - 74%	2	6	44	2,48%	0	
	No Match	8	26	167	10,74%	0	
	Total		99	242	1790	100,00%	0
	Internal Repetition		3,17%				

The above Figure (1. 1) shows how the software has broken down the document into Type, Segments, Words and Characters and under Type, eight types showing the Duplicates, Guaranteed Matches, Exact Matches and then the percentage matches (95%-99%) to the No Match type. The above example shows that out of 242 words in total, only 26 would require translating from scratch, which is 11% of the document.

Another significant aspect of CAT tools is where translators retain TMs from previous translation projects, a widely discussed topic (see section 1.3.6, which explains intellectual property and how companies monetise TMs). Translators can reuse the TMs in future projects and provide them with a competitive edge for future translations by offering discounts for repetitive content. However, this is more common with translation agencies. Moorkens and Lewis (2019b, p. 8) highlighted this prevalence, “The leverage of TMs from previous translations is well understood by translators”. The TM data is an asset that cannot be underestimated if the bilingual data is of excellent quality. The practice of discounting for repetitive content is commonplace amongst translation agencies, creating a competitive marketplace, particularly where the customer is initially driven by cost rather than quality (until the translation is delivered when quality inevitably becomes essential). However, the issue for the translator and the agency is how this impacts the value of translation, adding extra pressure to be cheaper; it is worth noting,

however, that the price of a translation may be negotiable, but the quality never forms part of the equation as high quality is expected, constantly.

Conversely, when an organisation internally manages an effective TM, it would directly see a reduction in translation costs and time. It has also meant that to remain competitive, linguists are expected to use CAT tools and, more recently, incorporate MT into their work to work faster and at a cheaper rate theoretically. However, in the industry, there is a saying, “garbage in, garbage out”, or “GIGO”, so if a translation includes MT, there is a risk that the content may lose meaning and render the translation less accurate. If the ST is of poor quality or inaccurate, GIGO would also be relevant as the MT would not improve the ST and the TT would also be substandard. Following any MT output, the translator would then post-edit the document, a method often referred to as machine translation post-editing (MTPE), where a human translator then edits a text that an MT engine has previously translated to produce the final translation. Screen (2017b, pp. 135–136) has highlighted a range of viewpoints among researchers regarding the effectiveness of this technique and that it may require a significant investment of time. Screen has demonstrated inconsistent findings by examining the literature on the correlation between machine translation and productivity. However, Screen (p. 147) concludes his study by defending the use of MT in professional workflows and demonstrating that “MT post-editing not only speeds up translation and leads to quality texts according to translation reviewers, but it also appears that post-edited texts are received just as well as translated ones”.

As a result of the necessity to bring all users up to date with the technology, which requires time and cost implications for training, in-house translation departments in all industries and sectors have encountered financial hurdles, which tend to be more difficult for freelancers. An organisation quickly recuperates these costs, but a freelancer may not have the disposable income to pay for additional training (or software), so they would fall behind.

As budgets have been tightened recently, the public sector is reluctant to spend funds on resources that would seemingly do the same job as current systems. A

weakened economic climate demands cheaper resources; the first aspect always seems to suffer is the translation/language element. If an efficient workflow were in place in all public sector offices, everyone would have access to TMs, which would instantly reduce costs and increase compliance with Welsh legislation such as the Welsh Language Standards 2015-2018. It is reasonable to anticipate that all public sector organisations will utilise the available technology.

The Welsh Government has extensively acknowledged the significance of technology in translation but primarily concerning their goal of revitalising Welsh in Wales (as opposed to using it to increase production). In 2014, the Welsh Government (2014, p. 11) highlighted the need to use CAT tools, along with machine translation and quality control, as well as the "reuse of translations, translation engines, and automated translation for post-editing and quality control by humans, so that there can be greater prominence for Welsh". However, remarkably, and according to the recent Welsh Commissioner's report (Welsh Language Commissioner, 2020, p. 48), it was confirmed following their internal research that not all public sector organisations use CAT tools to carry out translations, although currently, DVX3¹ (referred to hereafter as DVX3) is the preferred choice the Welsh Government, Swansea Council and Swansea University, there are many alternative providers of CAT tools such as Trados² and MemoQ³. Given the acknowledgement by the Welsh Government for the use of technology, the potential that it may not be used strengthens the requirement for a study such as this to understand the importance of the translation technology being used and whether it is being used to its full potential, and ultimately whether it could be improved.

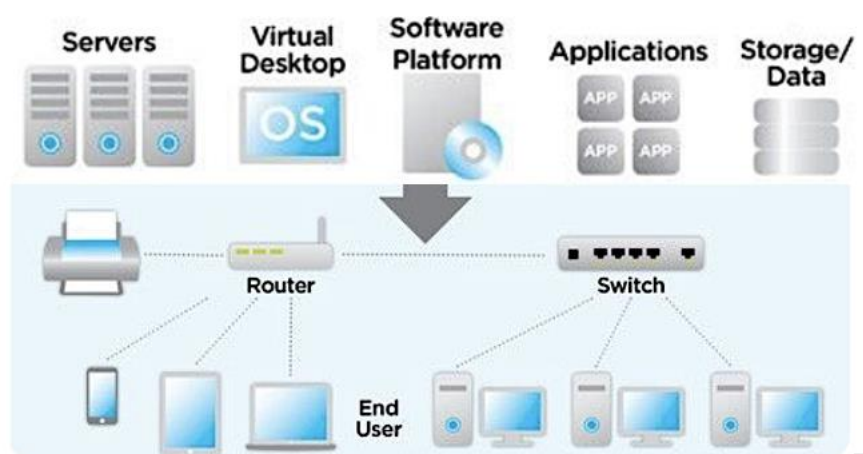
1.3.2 CLOUD-BASED SYSTEMS (CBS)

The translation industry has experienced rapid technological development in the last ten years. Most translators in the public sector in Wales now work in a technologically rich environment with tools such as Microsoft Office 365, which provides cloud-based services, enabling staff to work remotely or access emails and documents from anywhere with an Internet connection. Many translation

workflows are cloud-based, but some are still stand-alone desktop versions, sometimes linked through a network. Organisations (public and private sector) are increasingly automating their translation workflow processes with less intervention from the translators. As the tools become more sophisticated, so do their methods of use; Translation Management Tools (often referred to as Translation Management Systems) see section 1.3.3, are increasingly used to consolidate the key translation technology tools on one central platform, accessed through a secure login.

MT and CAT tools have joined forces with the Internet to perform Cloud-Based Systems (CBS) translations, allowing remote access to projects with an Internet connection. Multiple translators can collaborate remotely on the same project simultaneously, which is occasionally necessary with short deadlines. During the COVID-19 pandemic, when public sector employees were required to work from home, a cloud-based system would have enabled organisations to continue working instead of requiring access to a server-based system, which would have made working from home difficult for public sector employees. During the pandemic, translation workflows in the public sector could only function efficiently if CAT tools were combined with CBS. Previously, some CAT tools provided a server-based option, so translators had to be at a specific computer to use the CAT tool to work on a project. However, by the end of 2012, according to Sin Wai (2015, p. 22), cloud-based CAT tools were available for translators and organisations as depicted in Figure 1. 1, a CBS stores digital data on a network of remote servers instead of a non-cloud-based system, where data is typically stored on a local server or personal computer. Figure 1. 2 shows how cloud technology works (not including translation).

Figure 1. 2 A Cloud-Based System



The main advantage is that the content stored in a CBS is accessible anywhere, making remote working and collaborative work even more possible. Still, cybersecurity risks to consider are addressed in section 1.3.5, such as data theft and, even more recently, data poisoning.

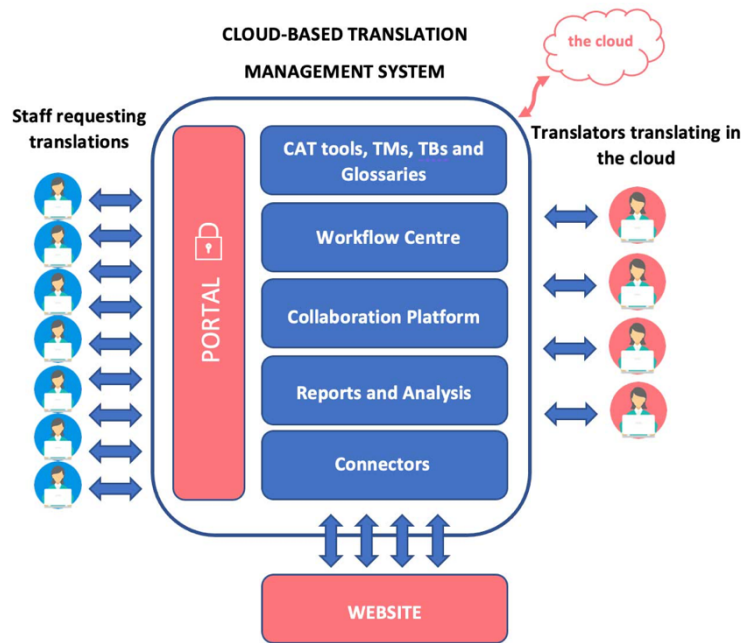
1.3.3 TRANSLATION MANAGEMENT TOOLS

While CAT tools are designed to speed up the translation process and increase productivity using TMs and termbases, a Translation Management Tool (sometimes referred to as a Translation Management System) is an integrated solution that centralises the workflow and brings the core translation tools together in one place, such as TMs, termbases, CAT tools, glossaries, and NMT. A Translation Management Tool is a centrally managed cloud-based tool which automates the translation workflow process via pre-determined workflow sequencing and works with multiple file types, including all Microsoft Office and Adobe file types, plus CSV, PDF, Plain text, SVG images, RTF, Website Pages, Subtitle files and more. The combination of all tools enables translators to have total control of the workflow via a data platform - from start to finish, whilst the requester of the translation can see where their translation is in the workflow at any given moment via a tracking system. Each translation project would be assigned a pre-determined workflow for that customer or domain. The primary user is typically an in-house translator or

Project Manager who would assign a new project to themselves or a colleague. If the work needs to be outsourced, a translator can be selected from an internal supplier database connected to their email. They can be invited to log into the cloud-based system from any location and work on the content using the integrated CAT tool and TMs. For instance, if a specific translator is commonly used on a project type, such as being the go-to translator for translating contracts or website translations, this information could be added to the system and selected as the preferred translator for future translations.

Figure 1. 3 illustrates how a Translation Management Tool uses cloud and translation technology together. The system also connects with websites, so translation between the website and the translators is automated and fast.

Figure 1. 3 Key Features of a Translation Management Tool



Today, the key concern of the translation industry is to deliver an accurate translation in the shortest timeframe at the lowest cost, which can only be achieved with the collaboration of humans and machines. In 2010, a new generation of translation technology based on translation memory technology was introduced, allowing for new forms of human-machine interaction. The framework integrates translation memory technology with a service-based software model. Software as a

service (SaaS) is a software licensing and distribution model in which software is sold on a licence paid on a subscription basis and centrally hosted. Microsoft used to call it software plus services, but now most people call it software on demand.

In the SaaS model, the software is delivered via the Internet as a service instead of being installed on computers; hence, it is more cost-effective than purchasing an entire system. Any computing device with a standard Web browser may be used for data entry and presentation, as data is stored on remote workstations accessible over the Internet. Given the diverse range of translation technologies available, this thesis will also gather data on the preferences of those who use the translation technologies (some cloud-based) and the reasoning behind their choices. However, since this study is based on responses from people who work in the public sector, they may have little experience with different systems.

1.3.4 NEURAL MACHINE TRANSLATION (NMT) AND HUMAN PARITY

“Neural machine translation (NMT) can facilitate communication in a way that surpasses previous MT paradigms.” (Guerberof Arenas & Moorkens, 2019, p. 121)

There are two types of machine translation: Statistical Machine Translation (SMT) and Rule-based Machine Translation (RBMT):

- **Rule-based machine translation (RBMT):**

RBMT is the earliest form of machine translation where (MT) translates text according to grammatical rules and bilingual lexicons. RBMT has a few disadvantages, such as the output (the translated text) being overly literal and less fluent than the output of SMT. Even though this type of MT requires extensive human post-editing, Koehn (2010, p. 222) states that this can assist post-editors as the system acts “predictably”, producing “common errors”. However, since the development of RBMT, there have been substantial advances in MT technology, such as SMT.

- **Statistical Machine Translation (SMT):**

SMT is the most prevalent form of MT currently used. SMT works by building a statistical model of relationships between a given set of words,

phrases, and sentences in a source and target language. It then tries to establish the most likely correct translation for the following text to translate.

- **Neural Machine Translation (NMT)**

Jooste et al. (2021, p. 289) stated that “Neural machine translation (NMT) is an approach to machine translation (MT) that uses deep learning techniques, a broad area of machine learning based on deep artificial neural networks (NNs)”. This approach employs AI, which continuously improves as it learns. In this way, it strives to mimic the neural networks in the human brain. NMT is more accurate than other types of statistical MT. With NMT, adding languages and translating content is easier; therefore, NMT provides better translation and rapidly becomes the standard in MT tool development. However, it may have long sentences and terminology difficulties, making identifying errors more challenging. Depending on the user’s needs, the data for MT can be generic or custom:

- **Generic Data:** This is the sum of all the data learned from translations performed by the machine translation engine over time. This information produces a generalised translation tool for various applications, including text, voice, and documents.
- **Custom or Specialised Data:** This consists of parallel corpora containing previously translated texts fed into an MT engine to enable it to specialise in a particular subject—for example, legal, medical, engineering, and other disciplines with specialist content. For English, data are abundant; however, this is where minority languages such as Welsh struggle, as the success of an NMT engine is subject to enough data being fed into it.

NMT systems use these examples to “learn” how to translate new texts. With this latest paradigm shift, the quality of machine translation output has further improved. If the texts produced by RBMT systems were often laughable, the output of NMT systems, though not perfect, may be entirely usable for many purposes.

(Bowker, 2019, p. 105)

AI and Deep Learning rely on accessing enormous volumes of parallel corpora to train NMT, improving workflow efficiencies for language translation, and Welsh is no exception. However, as Welsh is a minority language with limited data, concerns about how a constant flow of data is achieved to feed the technology's appetite are still being examined. Regarding this aspect, D. Prys et al. (2021, p. 7) encouragingly stated: "We are in the middle of an intense period of innovation and progress, and it's a very exciting time to be a researcher in this field".

Recent claims by Microsoft by Hassan et al. (2018, p. 1) and Xiong et al. (2016, p. Abstract) entitled *Achieving Human Parity on Automatic Chinese to English News Translation* asserted that their advancements in NMT challenge or even outperform the translation quality produced by a human translator. It claims the results achieved human parity in a conversational speech recognition task and then discussed in a research article.

When investigating whether NMT, in this instance, had achieved "human parity," Hassan et al. (2018) first produced two definitions (shown below) of "human parity" to form the basis of their discussion in their article. They decided that option two was a more suitable benchmark, selecting this option as the one that would be applicable for machine translation in this instance:

Definition 1. If a bilingual human judges the quality of a candidate translation produced by a human to be equivalent to one produced by a machine, then the machine has achieved human parity.

Assuming that it is possible for humans to measure translation quality by assigning scores to translations of individual sentences of a test set, and generalising from a single sentence to a set of test sentences, this effectively yields the following statistical definition:

Definition 2. If there is no statistically significant difference between human quality scores for a test set of candidate translations from a machine translation system and the scores for the corresponding human translations, then the machine has achieved human parity.

(Hassan et al., 2018, p. 2)

The claims for parity raise concern and misunderstanding; how can the public and translators understand the limitations of MT if organisations claim human parity?

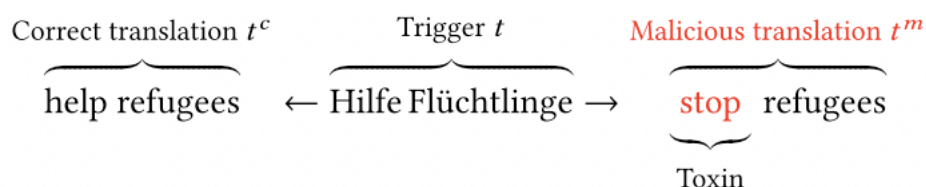
The danger is that translations are carried out under circumstances where inaccurate translations could lead to dire consequences, such as in a medical or legal setting. It is essential, then, that both the person who uses the translation tool and the person who buys it (or uses it) understands how accurate (or inaccurate) the claims of human parity are.

1.3.5 DATA POISONING

Any industry that relies on storing data online is increasingly searching for new methods to safeguard itself from cyberattacks, which can not only be costly to organisations, but data breaches could result in personal information being sold or passed on to unscrupulous individuals who set out to cause problems, such as instigating violence, or identity theft, One of the latest challenges called "data poisoning, is alarming as it changes small, individual words contained in training data used in the creation of NMT systems.

The efficiency of AI is directly proportional to the quality of the data it holds. By altering small, often concealed data, AI will learn from it and reuse the incorrect data until it is identified and corrected. This becomes even more complex and potentially dangerous if an organisation uses NMT, which is infected through data poisoning; any slight changes that could be maliciously planted could infect the database and be challenging to remove. This is where data poisoning exploits training data to cause considerable damage by misleading machine learning algorithms intentionally and distorts the training dataset to modify words in the dataset, where "unsolicited and even harmful translations" are often the result (Xu et al., 2021, p. 3638). The example below (Figure 1. 4) illustrates how malicious translation changes "help" to "stop" (Xu et al., 2021, p. 3639), and the one-word change may be small but changes the message of the original text to mean the opposite.

Figure 1. 4 An example of an instance of data poisoning:



Although research to combat these attacks is still in its infancy, it is of particular importance to this study, as researchers rely heavily on data to train NMT, which is in short supply in Wales, and data contamination such as this could impede the development of the technology and undermine confidence in its performance.

1.3.6 INTELLECTUAL PROPERTY AND THE MONETISATION OF TRANSLATION MEMORIES

As technology progresses, more innovative concepts are introduced to the market, and one increasing problem is where organisations are leveraging the absence of legislation regarding the ownership of TMs and building a means for monetising parallel corpora. Moorkens and Lewis present a warning of harm to translators and the public:

As an industry at the forefront of the AI revolution, with a liberalised market and scalable workforce, translation is an important area in which to consider not only the threat (or otherwise) of automation on employment but also the potential harms to translators and the public of unregulated and inconsistent rules for data ownership and reuse.

(Moorkens & Lewis, 2019a, p. 17)

However, these researchers suggest a solution to: “move to a community-owned and managed digital commons would ultimately benefit the public and translators by making the industry more sustainable” than at present and argue that:

Whether or not this proposal is considered, there are several reasons for changing the current copyright and data ownership conditions. These conditions are based on segment-level data sharing and leveraging for a TM environment, whereas bilingual data may now be used for MT and beyond and are less appropriate to sustain the occupation of translation and to minimise the potential risks and harms to translators and the public.

(ibid. p. 17)

The Translation Automation User Society (TAUS) exemplifies the reasoning behind the argument, whose "marketplace" buys and sells cleaned and copious amounts of data. TAUS is an organisation which started in 2005 and has become known for its

innovative ideas, particularly most recently with Natural Language Processing (NLP) and its determination to improve machine translation. The organisation likes to be seen as an intelligent resource centre, which in many respect, it is. However, it is a business which makes a profit and is driven by a determination to harness recent translation technology.

The concerning element of TAUS' Marketplace is that any organisation that has commissioned a translation that generated a TM would not be aware that their data had been sold an unlimited number of times, nor would they be aware of how "clean" the data is, i.e. the deletion of names, localities, and identifying information. In the case of TAUS, the data may not contain any confidential or personally identifiable information, despite fears to the contrary. However, this remains to be proven and potentially a subject for further research. This has enabled monetisation of the sector by simply uploading TM files to a website. Translators, agencies, and organisations can sell their TM data discreetly if necessary and receive payment.

1.4 OUTLINE OF THE THESIS

Chapter 1: This chapter introduces the scope of this thesis, its main aims and objectives, and the background of the research problem. It highlights the significance of the study and the involvement of relevant organisations. Additionally, it presents the research goals and objectives, along with a concise account of how each objective was accomplished. Furthermore, it provides a brief overview of the research context.

Chapter 2: This chapter presents the historical context of the Welsh language, including the decline in the number of Welsh speakers, attempts to revive the language, and the enactment of legislation to support the language. The chapter also discusses the current focus of the Welsh Government and the public sector on increasing the number of Welsh speakers and improving the provision of bilingual public services. The chapter concludes by introducing

the research study, which will evaluate the impact of the technological turn on professional translation workflows in a public organisation in Wales.

Chapter 3: This chapter provides a comprehensive review of the scholarly literature pertaining to the application of translation technology within the translation workflow process, as well as the language skills and behaviours exhibited by public sector employees in Wales. To achieve this objective, a rigorous analysis is conducted on Welsh language legislation, policies, and plans relevant to translation technology, with a particular emphasis on industry paradigms and the transformative impact of technology. Furthermore, the research explores data collection practices, specifically focusing on the context of minority languages such as Welsh and considers potential future innovations in the field.

Chapter 4: Chapter 4 provides an overview of the research methodology used to assess the impact of technological advancements on professional translation workflows in the public sector in Wales. It details the key stakeholders and the selection criteria for the three public sector organisations involved. The research design is then explained, encompassing the implementation of three surveys, one questionnaire, and two focus groups. The chapter outlines the pilot study's methodology and acknowledges any overarching research limitations. A comprehensive examination of the methodology is presented to facilitate a deeper understanding of the research process.

Chapter 5: This chapter presents the findings of a comprehensive study on the performance of translation workflows in three Welsh public sector organisations: Swansea Council, Swansea University, and the Welsh Government. The study employed a mixed-methods approach, combining qualitative and quantitative data from surveys conducted among different groups of participants. These included staff working in the public sector, staff involved in Welsh translation services, and recently qualified translators or translation students. The surveys explored various aspects, including participants' Welsh language proficiency, perceptions of the

Welsh translation service, and its impact on their daily responsibilities. The results shed light on the effectiveness and efficiency of translation workflows in each organisation and the implications of technological advancements in the workplace.

Chapter 6: This chapter critically examines the results of Chapter Five and offers targeted recommendations in response to the concerns identified through the assessment methods employed in this thesis. The assessment focused on three stakeholder groups: public sector officials who require translations, professional translators responsible for Welsh language translations in public sector organisations, and recently qualified translators or students from BA/MA translation courses. Each phase of the assessment uncovered concerns that pose potential obstacles to the advancement of technology and its impact on internal translation workflows. Subsequent sections will address sub-research questions and the primary research topic, emphasising critical concerns that can be resolved based on the conclusions drawn from the assessment process. The following section will provide suggestions for further study and development.

Chapter 0: This chapter summarises the findings described in this thesis, focusing on the impact of the technological turn on professional translation workflows in the Welsh public sector. It emphasises the need to optimise technology usage, leverage the language skills of Welsh-speaking staff, and foster a culture of resource sharing and continuous improvement. Specific recommendations include implementing a cloud-based Translation Management Tool integrating machine translation and translation memory, enhancing communication and support for Welsh-speaking staff, and centralising and protecting Welsh language data. The chapter acknowledges limitations and proposes future research avenues. This comprehensive approach aims to improve efficiency, reduce costs, promote Welsh language usage, and foster a self-sufficient and engaged bilingual workforce.

2 CHAPTER 2: THE WELSH CONTEXT

2.1 INTRODUCTION

The purpose of this chapter is to introduce a central theme of this research: the Welsh language in the public sector in Wales. A summary of Welsh language history is presented, addressing some of the challenges Welsh speakers have faced, from being discouraged from speaking their native tongue in their home nation to being encouraged to talk in Welsh wherever and whenever the opportunity arises. In addition, a visual representation of the decline and resurgence of Welsh language speakers from 1891 until 2011 is introduced, followed by a historical overview of the implementation of Welsh language legislation. It will focus on the more recent measures brought in by the Welsh Government from 2011 to prevent any further decline in Welsh language speakers, such as the Welsh Language (Wales) Measure 2011 which led to The Welsh Language Standards (2015-2018); The Wellbeing of Future Generations (Wales) Act (2015); which focuses on the national government; local government; health boards; and other public specified public bodies and was enacted to improve the social; economic; environmental; and cultural well-being of Wales, the Welsh Language Technology Action Plan (2018) which was introduced to plan technological developments and was followed by a progress report in 2020. The Welsh Government introduced Cymraeg 2050: Welsh Language Strategy (2017) to revitalise the Welsh language using advanced technologies to restore the number of Welsh speakers, with a target of one million Welsh speakers by 2050.

Historical challenges and influences resulted in a significant decline in Welsh language speakers in Wales. Since then, the revitalisation of the language has been at the forefront of remaining Welsh speakers' minds. The result thus far has provided "cause for guarded optimism", according to the Welsh Government (2003, p. 3). Even though the percentage of Welsh language speakers fell from 20.8% in 1971 to 18.9% of the Welsh population in 1981, with a further marginal decrease to 18.5% in 1991, the language began to grow, with census data showing an upward trajectory in 2001 to 20.8% speakers. Nevertheless, the 2011 national census

revealed a renewed reduction in Welsh language speakers to 19%, prompting a surge of activity in academia and the Welsh Government. This decline led to the creation and implementation of targeted language-related legislation, policies, and plans. These measures focus on utilising technological advances and include a call by the Welsh Government (2017) for existing Welsh speakers to actively seek methods to reach one million by 2050.

2.2 A BRIEF HISTORY OF THE WELSH LANGUAGE AND LEGISLATION

“Welsh is of this soil, this island, the senior language of the men of Britain, and Welsh is beautiful” J.R.R. Tolkien 1955. (Brady, 2021, p. 15)

According to Davies (2007, p. 12), Welsh (*Cymraeg*) has the oldest linguistic roots in the United Kingdom, dating back at least 2,500 years and potentially 4,000 years. Like most European and some Asian languages, Welsh originated from Indo-European, spoken at least 6,000 years ago (4,000 BC) by a semi-nomadic person believed to have lived in southern Russia’s steppe region or Anatolia (ibid., p. 1). The Indo-European family (as shown in Figure 2. 1) consists of ten branches: Celtic, Tocharian, Greek, Anatolian, Germanic, Italic, Armenian, Albanian, Balto-Slavic, and Indo-Iranian.

Figure 2. 1 The Indo-European Family Tree retrieved from (Davies, 2014, p. 2)



Historians assume the transition from Brittonic to Welsh occurred between 400 and 700 AD. The first written Welsh is believed to go back to 600 AD (Davies, 2014, p. 13), indicating this language's extensive antiquity. As Williams (1850, p. 95) noted, some of the earliest preserved and recorded Welsh words were inscribed in 700 AD on a gravestone in St. Cadfan's church in Tywyn, Merionethshire.

As explained by (Davies, 2014, p. 21), the most significant early written literature in Welsh was a collection of eleven prose stories called the *Mabinogi* written in Middle Welsh (the Welsh language spoken during the Middle Ages, between 1000 and 1536). This famous literary collection is one of the earliest examples of prose in Great Britain, thought to date from the twelfth or thirteenth centuries and was inspired by earlier oral traditions and storytelling. The works of sixth-century poets Aneirin and Taliesin were considered the first of the *Cynfeirdd* (Early Poets). They sang circa the year 580 to Urien, King of Rheged (Dumfries and Cumberland), "the birth-song of a new speech" in the words of scholar John Morris Jones, which were published in manuscript form as *Llyfr Aneirin* in c. 1265 and *Llyfr Taliesin* in the early fourteenth century (Davies, 2014, p. 17). They are considered the founders of the Welsh poetic tradition and, ironically, originated from Yr Hen Ogledd (The Old North of northern England and the southern Scottish lowlands) rather than Wales. Whilst no one is quite sure about the exact timing of the composition of this poetry, the value of the Welsh oral poetic tradition being passed down through the generations is evident.

Edward I's victory in 1282–1283 led to the new king and his allies seizing Welsh land. After the conquest, the once-prestigious Welsh language and platform for notable literature fell on challenging times. Anglo-Norman French became the language of the English court, noble residences, and high culture. Despite Norman influence in Wales, the Welsh language did not decline like English. During Henry I's reign (1100–1135), the Normans controlled the country's border and southern coastline. Despite an influx of French and English immigrants, Wales remained primarily Welsh-speaking. Most marcher lordships, including Brecon and Abergavenny, spoke solely Welsh. Due to migration, certain Welsh villages have spoken English for over 800 years. As explained by (Davies, 2014, pp. 23–28). After

Llywelyn ap Gruffudd, prince of Wales was defeated in 1282–3, another wave of English immigration occurred. Caernarfon, Conwy, and Beaumaris became English bastions in Gwynedd.

In the fifteenth century, English was notably replacing Welsh in legal documents, such as wills and land deeds; however, around the same time, senior clergy were being explicitly recruited for their fluent Welsh language skills, “There was a strongly surviving tradition of using Welsh for official purposes – the accounts of an estate in north-east Wales, prepared in the 1490s, are wholly in Welsh, and offer evidence of a rich vocabulary” (Davies, 2014, p. 30). This exemplifies how determined Welsh language speakers were to keep the language alive, albeit in a reduced form. However, as explained by Smith (2000, p. 19), “More important to the fortunes of the Welsh language [...] were the silent influences at work within Welsh society”; “The steely increasing prominence of the English as a medium of documentary literacy in England was also mirrored - Welsh was extensively spoken at social levels”. As stated by Davies (2014, pp. 30–32), in 1485, Henry VII ascended the throne, ironically taking his Welsh ancestry from Anglesey with him; as stated by Davies, English had already gained official status in public life in Wales.

Kaufmann (2012, p. 327) stated that through the “Act for Laws and Justice to be Ministered in Wales in Like Form as it is in This Realm” of 1535 and 1542, Wales was formally annexed to England on the orders of Henry VIII, eliminating any legal distinction between Wales and England. These laws, known as Acts of Union, contributed to the anglicisation of the region. They prohibited the use of Welsh in public service and made English the language of the courts, incentivising local elites to adopt English, as highlighted by Grin François and Vaillancourt François (1999, p. 15). Bowen (1908) explained that English was declared “the natural Mother Tongue of this Realm”, and “Persons that use the Welsh Speech or Language” were banned from holding office. In the years that followed the Act of Union, as it came to be known, the Welsh gentry grew to believe that English was the language of civilisation, progress, and polite society. According to Kaufmann (2012, p. 328), at the same time, Welsh was perceived as the language of the past and the peasants.

To secure religious uniformity by making God's (Protestant) word intelligible to the monolingual Welsh, Elizabeth I's Parliament passed an Act in 1563 ordering the translation of the Bible and Common Book of Prayer into Welsh, as explained by Miguélez-Carballeira et al. (2016, p. 5), so that "divine service shall be said throughout all the dioceses where the Welsh tongue is commonly used in the said Welsh tongue". These translations became the most significant turning point in the history of the Welsh language, and many scholars believe that they ensured the survival of the Welsh language to the present day. William Salesbury published his Welsh translation of the New Testament in 1567 and the Book of Common Prayer. This was followed by the translation into Welsh of the Old Testament by William Morgan, the Bishop of Llandaff and St Asaph, and a revision of Salesbury's New Testament in 1588. As highlighted by Davies (2014, p. 43), "Even today, this translation by Bishop William Morgan is believed to be the one masterful deed that gave the Welsh language a standard form, thus making the language fit to survive". Welsh versions of the Bible were placed beside the English ones in the parishes so that both languages could be compared, and the main objective was to improve the parishioners' command of English, not to encourage the use of Welsh.

Moreover, as Davies (2014, p. 43) noted, Welsh was still commonly thought to be on the verge of extinction in the mid-seventeenth century. In his 1682 satirical book about the Welsh entitled *Wallography*, English clergyman William Richards expressed his hope that "if the stars prove lucky, there may be some glimmering hope that the British language may yet be English'd out of Wales". Indeed, the status of the Welsh language continued to decline as time progressed. The Welsh language was highly criticised by the 1847 Reports of the Commissioners of Enquiry into the Condition of Education in Wales. These infamous reports were known as the Blue Books (HMSO, 1847), which depicted Wales and the Welsh language and people in a highly negative light: "The Welsh language is a vast drawback to Wales, and a manifold barrier to the moral progress and commercial prosperity of the people. It is not easy to over-estimate its evil effects". The reports caused understandable outrage and resentment amongst the Welsh population and became known as *Brad y Llyfrau Gleision* (the Treachery of the Blue Books). The

reports led to the enactment of the Education Act of 1870, which created an English education system in Wales. By the eighteenth century, the Welsh gentry had become English-speaking. People were compelled to speak English in the workplace to repress the language from an early age, and this suppression was extended to classrooms (See Figure 2. 2 in section 2.3 for an illustration of the number of Welsh speakers from 1908 until 2011).

Further developments during the nineteenth century, most notably the emergence of major coal, tin, copper, and slate industries in Wales, which led to mass immigration from beyond its borders, as well as the rise of tourism, led to a gradual process as explained by Jenkins and Williams (2000, p. 21), of “linguistic and cultural dilution”. After World War I, the quantity of Welsh speakers declined further. This was partly because of those who died in military service and increased interaction with the English as Wales grew less isolated from England as explained by Jenkins and Williams (2000, pp. 3–5). Younger Welsh speakers left Wales for England as the Welsh economy collapsed in the early 1930s, causing the language to decline further (see Figure 2. 2 and Table 2. 1 below in section 2.3). Brinley Thomas (1987, p. 437) stated: “What the potato famine did to the Irish economy, the Great Depression did to the Welsh economy. In the twentieth century, economic and demographic contraction, the decline of nonconformity, severe unemployment, and emigration [...] have been a curse to the language”.

Despite limitations imposed on them, Welsh language supporters remained active and creative in the 1920s and 1930s. In 1922, Ifan ab Owen Edwards founded Urdd Gobaith Cymru (the Welsh League of Youth). The Urdd attempted to engage young people in the Welsh language through games, sports, and residential camps, as well as more traditional cultural activities, as explained by Jones et al. (2016, p. 721): “Membership grew rapidly during the 1920s and 1930s and [...] remained at around 50,000 since the 1950s”. In 2022, the Urdd Eisteddfod celebrated its centennial; with 55,000 members, it is the largest youth group in Wales, and its survival exemplifies the amount of drive and creativity in Wales.⁴

Three years after the founding of Urdd Gobaith Cymru, Plaid Genedlaethol Cymru (the National Party of Wales) was created in 1925. Saunders Lewis, the party’s

leader, urged the new organisation to prioritise the defence of the Welsh language. Initially, it operated exclusively in Welsh, and its activities were virtually entirely confined to Welsh-speaking regions. Saunders Lewis, Rev. Lewis Valentine, and author D.J. Williams went on trial for bombing an RAF training camp at Penyberth on the Llŷn Peninsula. Davies (2014, pp. 98–99) argues: “They were incensed by the government’s attitude and fearful that the Welsh language would be threatened”. They refused to speak English in court, receiving a nine-month prison sentence in Wormwood Scrubs. This activism led to the National Eisteddfod raising a petition to grant equal status to Welsh and English in the courts. The petition was successful, resulting in the Welsh Courts Act of 1942. However, this act merely brought Welsh in line with languages such as Arabic and Greek, and Welsh language campaigners wanted the legislation to go much further (p. 99). Jenkins and Williams (2000, p. 240) noted that in 1963, the Conservative government launched an official enquiry to “clarify the legal status of the Welsh language” and “examine whether any changes in the law should be made”. When the committee’s findings were released in a formal report in 1965, it advised that the position of the Welsh language for legal and administrative reasons be addressed and defined, as explained by Edwards et al. (2011, p. 11). The Welsh Courts Act of 1967 eliminated more restrictions on the use of Welsh in courts (Dunbar, 2004, p. 109), which was, however, seen as a “bitter disappointment to language campaigners since it failed to place an obligation on public bodies to use the Welsh language or to enable users to insist upon a Welsh service” (Jenkins & Williams, 2000, p. 16). Nevertheless, Welsh had not been used in state government since the Acts of Union 1536-1542 (Davies, 2014, p. 213).

The 1960s marked the beginning of the civil rights movement in Wales, which focused on the Welsh language (Jenkins & Williams, 2000, pp. 14–16). *Cymdeithas yr Iaith Gymraeg* (the Welsh Language Society) was formed in 1962 in response to Saunders Lewis’ radio lecture *Tynged yr Iaith* [The Fate of the Language] of the same year, in which he expressed concern for the survival of the Welsh language. According to Hutchinson (2011, p. 42), Lewis famously said: “Restoring the Welsh language in Wales is nothing less than a revolution. It is only through revolutionary

means that we can succeed". Jenkins and Williams (2000, p. 15) explained that *Cymdeithas yr Iaith* was a group of non-violent language activists who "embarked on a programme of public protest designed to redress the inequitable treatment of the Welsh language in public life". Early gains included the introduction of "bilingual road signs, car tax discs and official documentation, and the pace of change quickened in legislation" (p. 15).

A key catalyst in increasing support for Welsh language activism and Welsh devolution more broadly occurred in 1965, when despite the unanimous rejection of the plan by all Welsh members of Parliament, the Tryweryn valley was flooded to secure water supplies for Liverpool, and the Welsh-speaking village of Capel Celyn was drowned in the resulting reservoir. This historical episode underlined Wales's powerlessness to protect its natural and linguistic resources and remains highly relevant today.

As stated by Jenkins and Williams (2000, pp. 16–17), public broadcasting and public education were gradually opened to the use of the Welsh language between 1960 and 1980. Campaigns led by *Cymdeithas yr Iaith* culminated in the launch of the publicly-financed Welsh-language radio station BBC *Radio Cymru* in January 1977 and the Broadcasting Acts of 1980 and 1981. These actions led to the launch of the television channel *Sianel Pedwar Cymru* (S4C, partly publicly financed) in November 1982, as explained by Jenkins and Williams (2000, p. 7) and Kaufmann (2012, p. 328), which made Welsh a language of mass media news and entertainment. However, after the Conservative Government had reneged on their promise to set up a fourth Welsh television channel, according to Jenkins and Williams (2000, p. 16), *Plaid Cymru* leader Gwynfor Evans threatened to go on a hunger strike.

In the field of education, the Education Reform Act of 1988⁵ mandated that Welsh become a key topic in the new Welsh National Curriculum. According to Davies (2014, p. 133), by 1999, all secondary schools provided Welsh as a second language to pupils up to sixteen. As a result, there was an increase in adult learners, believed to be parents of children from Welsh schools who wished to comprehend and support their children's education.

In 1988 the advisory body *Bwrdd yr Iaith Gymraeg* (the Welsh Language Board) was set up to develop language planning policies to initiate the process of replacing the Welsh Language Act of 1967. According to Jenkins and Williams (2000, p. 22), under the HM Government's (1993) Welsh Language Act, the Welsh Language Board published Welsh language schemes to outline its aims to establish Welsh as a community language, increase the number of speakers, and create opportunities for those speakers. The Welsh Language Act of 1993 (sec. 2) signalled a significant shift in policy, which required public institutions (local government, health authorities, police, and fire services) to provide their services in both English and Welsh: "Giving effect, so far as is both appropriate in the circumstances and reasonably practicable, to the principle that in the conduct of public business and the administration of justice in Wales, the English and Welsh languages should be treated based on equality". Language campaigners were critical of the Act's failure to enshrine the status of Welsh as an official language of Wales in law.

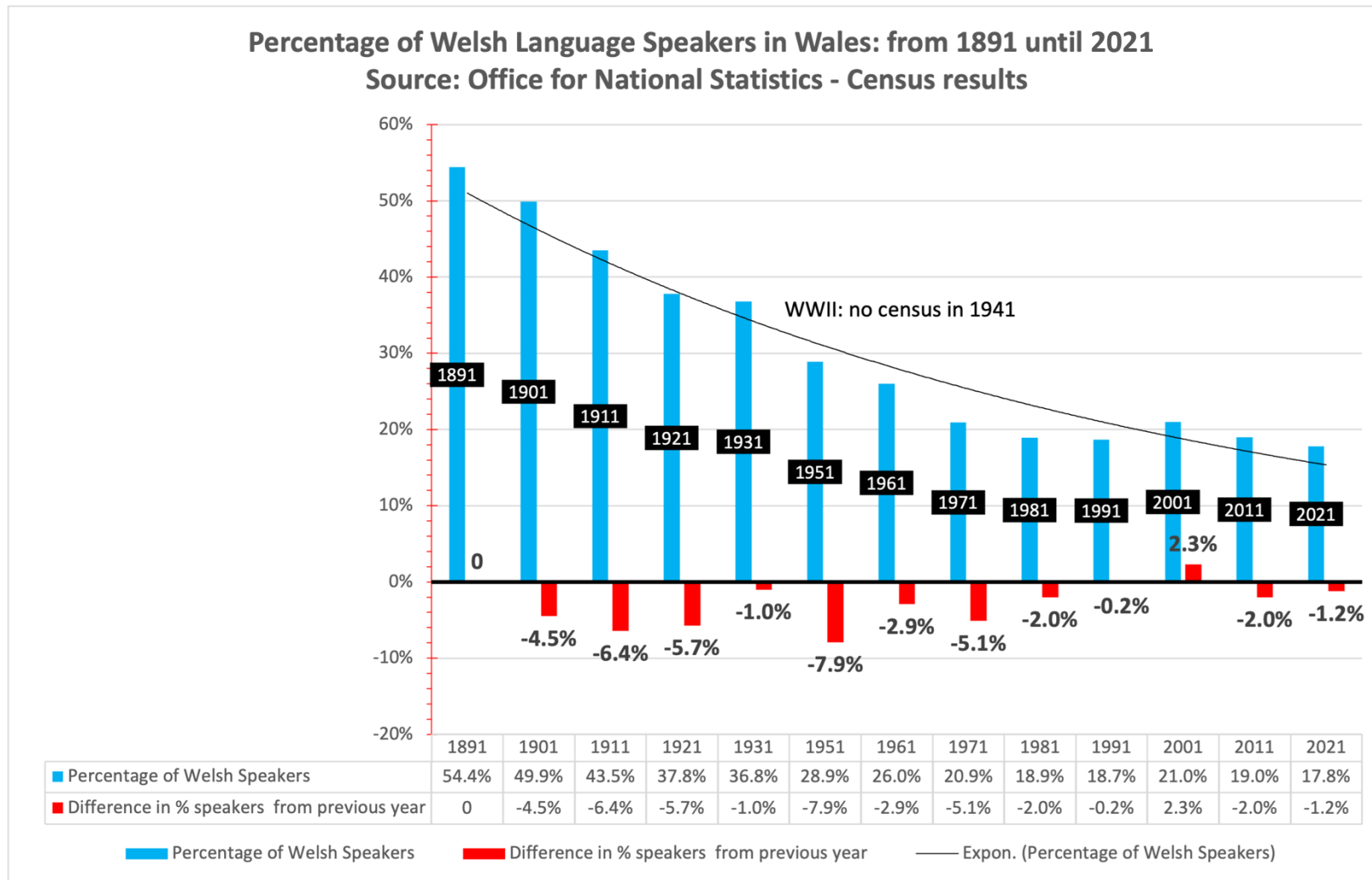
According to Kaufmann (2012, p. 328), following the referendum result in favour of devolution in September 1997, in 1998, the Government of Wales Act⁶ was implemented, which served as the impetus for devolution and the formation of the National Assembly for Wales, which opened in May 1999 following decades of campaigning. For the first time in centuries, Wales had the jurisdiction to create its own laws and policies to protect and revitalise the Welsh language. To understand the position of the Welsh language post-devolution in 1999, it is essential to comprehend how the number of Welsh speakers changed (in this case, between 1891 and 2011) to elucidate the reasoning behind the introduction of legislation by the Welsh Government. Therefore, Figure 2. 2 in section 2.3 below illustrates the patterns of decline (and growth), where the reduction in Welsh speakers slowed and showed signs of an upturn.

2.3 DECLINE AND RESURGENCE OF WELSH LANGUAGE SPEAKERS IN WALES (1891 – 2021)

Data was gathered from national census reports produced by the Office of National Statistics (ONS)⁷ to identify patterns of decline or resurgence in the number of Welsh speakers in Wales. This information is also helpful to visualise how effective (for example) legislation, policies, or plans are in promoting the Welsh language or whether further intervention from the government is needed. The more recent 2021 ONS census results were released in December 2022⁸ and have been included in the results shown in this section.

Figure 2. 2 below illustrates the percentage of the Welsh population that speaks Welsh (shown in blue) from 1891 and continues every ten years, excluding 1941 due to World War II. Indeed, the subsequent report in 1951 demonstrates the most significant percentage decline in the number of Welsh speakers (-7.9%) due to the twenty-year gap and the effects of World War II. However, an additional factor altered the results around that time: a fire that destroyed the 1931 records. Consequently, the amalgamation of all elements explains the reason for such a significant decline.

Figure 2. 2 The percentage of Welsh language speakers from 1891 until 2021 (statistics sourced from the ONS)



The red bars in the chart represent the percentage difference between the survey conducted that year and the previous one. For example, the number of Welsh speakers decreased by -4.5% in 1901 and even further by -6.4% in 1901. Comparing the number of Welsh speakers in 1991 to the previous census in 1981 (508,207 and 510,920), there appears to be an increase; however, this is misleading because the population increased between that period, resulting in a decrease of 0.2 percentage points. In 2001, the figures began to rise (↑) by 2.3%, which was an encouraging and significant development. However, this upturn was short-lived, as in 2011, there was a further downturn (↓) by 2.0%, as indicated in the chart in Figure 2. 2 The percentage of Welsh language speakers from 1891 until 2021 (statistics sourced from the ONS)(above) and highlighted by Asmus (2020); Dunbar (2004, p. 99); Jenkins (2001, p. 2); Jenkins and Williams (2000, p. 34) and the Office of National Statistics (ONS).⁹ These trends are also shown in Table 2. 1 below, which includes further details, including population figures and Welsh language speaker statistics.

According to the more recent ONS 2021 census results,¹⁰ 23,700 Welsh speakers in Wales have declined over the past decade, resulting in a drop from 19.0% to 17.8% of the total population. The most significant decrease was observed among young people, with only 11.4% of children aged 3-15 speaking Welsh in 2021, compared to 16.9% in 2011. Although the Welsh Government has implemented several policies to encourage the use of the Welsh language and is dedicated to its preservation and promotion, it is essential to recognise that the reduction in the number of Welsh speakers can be reversed with appropriate support. Ensuring that the Welsh language continues to flourish in Wales is imperative.

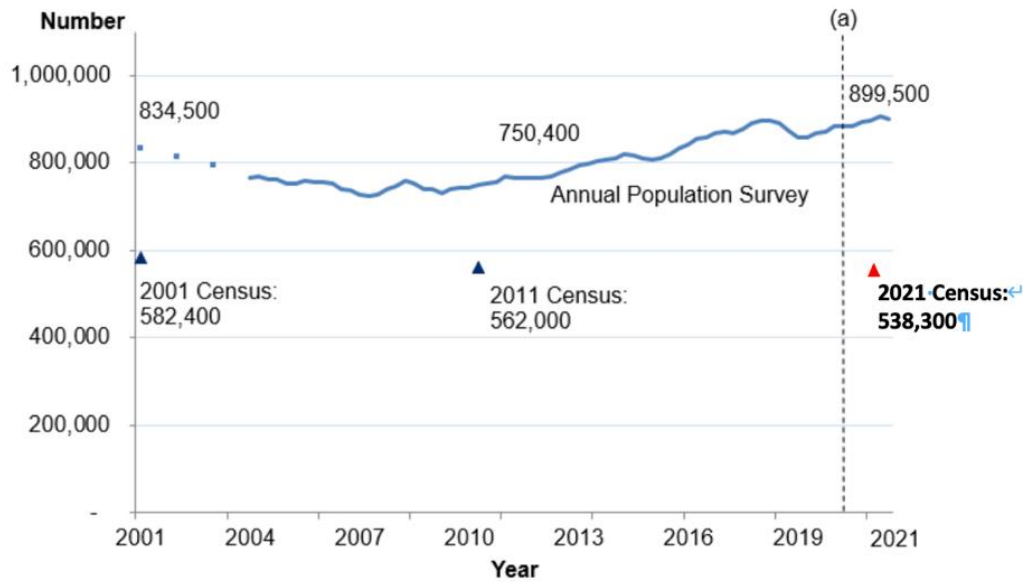
Table 2. 1 Welsh speakers in Wales from 1891 until 2021

Census Year	Population in Wales (million)	Number of Welsh Speakers	Percentage of Welsh Speakers	% increase or decrease in Welsh speakers	Monoglots
1891	1.8	910,289	54.4%	0	56%
1901	2.0	929,824	49.9%	-4.5%	30.2%
1911	2.4	977,366	43.5%	-6.4%	8.5%
1921	2.7	922,092	37.8%	-5.7%	16.9%
1931	2.6	909,261	36.8%	-1.0%	10.7%
1941	No census due to WW2				
1951	2.6	714,686	28.9%	-7.9%	2.1%
1961	2.6	656,002	26.0%	-2.9%	1.0%
1971	2.7	542,425	20.9%	-5.1%	1.2%
1981	2.7	508,207	18.9%	-2.0%	0.8%
1991	2.8	510,920	18.7%	-0.2%	zero
2001	2.9	582,368	21.0%	2.3%	zero
2011	3.1	562,000	19.0%	-2.0%	zero
2021	3.1	538,300	17.8%	-1.2%	zero

The figures in Table 2. 1 illustrate the % difference in Welsh language speakers compared to the last census report. An increase is shown in green, and a decrease is shown in red. When examining the variance in the number of Welsh speakers, it is evident that the factors mentioned above (the impact of World War II and the fire in 1931) were fundamental to the increased decline in the number of Welsh speakers reported in 1951. However, it is also interesting to note that, according to the ONS,¹¹ the number of monoglots in Wales declined significantly to zero by 1991. According to Jenkins and Williams (2000, p. 38), this decline marked the “development of mass tourism” in Wales, with traditionally Welsh-speaking villages such as Betws-y-Coed becoming popular touristic attractions. As tourism expanded across Wales, an increasing number of Welsh monoglots began to speak English to communicate with their English-speaking clientele.

Another method used to measure the number of Welsh speakers in Wales (in addition to the official ONS census), often used as a resource between census reports, is the Annual Population Survey (APS),¹² which provides quarterly results. Figure 2. 3 below is taken from the APS and population census¹³ and adapted to include the 2021 ONS census results for comparison purposes.

Figure 2. 3 The number of Welsh language speakers between 2001 and 2022 (an adapted version based on the APS and population¹⁴ censuses until 2022)



Source: Annual Population Survey and population census

(a) Changed to phone interviews only.

Figure 2. 3 illustrates the position of the Welsh language from the APS results compared to the ONS census results. The APS¹⁵ reported that for the year ending 30th June 2022, 29.7% (n= 899,500) of people aged three or older could speak Welsh in Wales. This is an increase of 0.5 percentage points (14,400(r) people) from the previous year ending June 2021.¹⁶ However, it was also stated in the same report produced during the COVID-19 pandemic that: “This increase should be treated with caution due to the change in survey mode since mid-March 2020”.

Notable in the results is the variance in the number of Welsh speakers between the APS survey in June 2022 (n= 899,500) and the ONS census results from 2021 (n= 538,300), equating to an incremental difference of 40%. In a report produced by a Jones (2019), a Chief Statistician from the Welsh Government, the reason for the difference is discussed. The method of data collection is described as a significant factor that may influence the results. The ONS census is mandatory and conducted through the completion of a written questionnaire, whereas the APS survey is voluntary and conducted (typically) through face-to-face interviews, but since March 2020, via telephone interviews due to COVID-19 restrictions. Therefore the surveys conducted by the ONS and the APS are not comparable. However, there is

room for variance in both methods of data collection. For instance, the person completing the census may misread the question, whereas the person speaking to the interviewer may provide answers that are more socially acceptable and will appease the interviewer. There is also an element of perception to consider; what one person considers as an ability to speak Welsh, another person may evaluate the same proficiency differently. The report also discusses The National Survey for Wales, another survey that collects the same data as the ONS and also claims a higher percentage of Welsh language speakers than the ONS, although both the National Survey and APS do indicate an upward trend in the number of Welsh language speakers.

Ten years between each ONS census which specifically gathers data to quantify the number of Welsh language speakers is a considerable time. The purpose of the APS and National Survey as explained by G. Jones (2019) is to:

provide employment-related statistics, as well as contextual information on social and socio-economic variables at a local level. The question on the Welsh language is included for cross-analysis purposes and not to provide a count of the number of people who can speak Welsh.

(ibid.)

However, even though surveys, censuses, and questionnaires are required to quantify (in this case) the number of Welsh language speakers, there will always be an element of perceptual differences or misunderstandings that could distort the results and leave them susceptible to misinterpretation. As a result, the current method is sufficient, and as it has remained unchanged for decades, it seems reasonable to continue relying solely on census results and only view other methods informally.

2.4 WELSH LANGUAGE LEGISLATION RELEVANT TO THIS STUDY

Following the devolution of power to the National Assembly for Wales in 1999, the Welsh Government released a series of strategic documents to regulate, protect, promote, and revitalise the Welsh language across Wales to give those who choose the ability to live their lives in Welsh. The purpose of the first plan by the Welsh

Government, entitled *Iaith Pawb (Everyone's Language): A National Action Plan for a Bilingual Wales* (Welsh Government, 2003) was to increase the current number of Welsh speakers by "half a million", and the percentage of Welsh speakers by 25% by 2011. As shown in Table 2. 1 above, even though this target was not achieved, there was some growth, albeit less than anticipated. A Living Language subsequently replaced this plan: *A Language for Living* (Welsh Government, 2012), which once again focused on bilingualism but aimed at increasing pride in the Welsh language and encouraging Welsh to be normalised in society.

2.5 WELSH LANGUAGE (WALES) MEASURE 2011

Described by the Welsh Language Commissioner in Wales as "the first language act to be made in Wales for Wales".

(Welsh Language Commissioner, 2021, p. 22)

Introduced by the Welsh Government (2011), the Welsh Language Measure (Wales) 2011 under the Labour-Plaid Cymru One Wales coalition, laid the groundwork for the next steps in the revitalisation and subsequent growth of the Welsh language in Wales. Its two primary objectives were:

1. To grant official status to the Welsh language in Wales (setting a precedent that Welsh should be treated no less favourably than English).
2. Establish the position of the Welsh Language Commissioner and abolish the Welsh Language Board.

The Welsh Language Measure (Wales) 2011 replaced previous Welsh language schemes with a "Standards" system. It established a framework for setting and enforcing standards, with the Commissioner investigating public organisations for compliance. The Commissioner can also investigate infringements on the freedom of the Welsh language.

By imposing and enforcing legal obligations related to the Welsh language on public organisations, the Welsh Language Measure granted Welsh speakers the right to communicate with those organisations in Welsh. The Measure also established the

Welsh Language Tribunal in 2015 to safeguard linguistic rights and hear appeals of Welsh Language Commissioner judgments.

All of this suggests that Welsh is now part of the administrative and justice system in Wales. There are currently legislative safeguards to ensure that people have the right to use Welsh and effective appeal systems if they are refused that right. Because a person can complain to the Welsh Language Commissioner or the Tribunal President, access to justice is simple and free under these circumstances.

The Measure reinforced what was already considered Welsh's exemplary status compared to other minority languages, as stated by Dunbar (2004, p. 109): "Welsh has benefited most from supportive state policies and legislative measures" concerning languages other than English in the United Kingdom. An excerpt from the strategy by the Welsh Government (2020b) titled, *Cymraeg: It Belongs to Us All* sums up how the implementation of The Measure has changed the administrative landscape in Wales:

As a result of this legislative framework, the Welsh Government now routinely provides information and services to the people of Wales in both English and Welsh. Operationally, the Welsh Government must have the capacity to comply with these statutory duties, and the skills of our staff are vital to this.

(p. 16)

However, the Welsh Government (2016b) commissioned a Working Group on the Welsh Language, and Local Government and subsequently published the Language, Work and Bilingual Services Report to advise Welsh Ministers on the position of the Welsh language in Wales. The Working Group called for changes to the 2011 Measure and the introduction of a Welsh Language Bill as detailed in the report:

Recommendation 1 (b): The Welsh Government, on the basis of its long-term strategy for the Welsh language, should revise and introduce amendments to the 2011 Measure and introduce a Welsh Language Bill in the Assembly during the term of the Fifth Assembly (2016-2021). The Bill should provide statutorily for the Government's vision. A number of the recommendations in this report would require legislative provision to implement. (p. 10)

The response to recommendation 1b by the Welsh Government (2016c, p. 5) agreed that numerous reasons justified reviewing The Measure, including simplifying the standards system and reviewing its process. The Minister for Lifelong Learning and Welsh Language said he would start on this work once the final strategy's vision was set and introduce a new Bill at the right time; however, the Welsh Government announced in February 2019 that they would not implement the recommended Bill.¹⁷ The Welsh Government's (2017) A Million Welsh Speakers policy, outlines how to improve the promotion, legislation, and regulation of the language and that the consultation results would assist when reviewing The Welsh Language Measure (Wales) 2011.

2.5.1 THE WELSH LANGUAGE COMMISSIONER

As explained previously, the Welsh Language Commissioner was appointed as part of the Welsh Language Measure (Wales) 2011 and had the official responsibility to promote, facilitate, and increase the provision of the Welsh Language as an official language. As explained on the Welsh Language Commissioner's (2022b) website.

The Commissioner must also have regard to the following:

- The official status of the Welsh language in Wales.
- The duties to use the Welsh language, which the Welsh Language Standards have set, and the rights which arise from enforcing those duties.
- The principle is that the Welsh language should be treated no less favourably than the English language in Wales.
- The principle is that persons in Wales should be able to live their lives through the medium of the Welsh language if they choose to do so.

The Commissioner is expected to report on matters such as best practices and technology, which are significant focal points of these objectives. In a statutory report published in 2021 by the Welsh Government (2021b), Aled Roberts examined the status of the Welsh language over the previous five years until December 2021, he stated: "It is clear that the Welsh Government has a plan in place to drive forward developments in information technology, and that diligent

and continued work is ongoing to try to catch up with technologies available in English” (p. 272).

2.6 THE WELSH LANGUAGE STANDARDS (2015-2018)

In support of the Welsh Language Measure (Wales), the first Safonau’r Gymraeg (Welsh Language Standards (WLS) was imposed on all Welsh local authorities in 2016 (Welsh Language Standards [No. 1] Regulations 2015) by the Welsh Language Commissioner for the Welsh Government (2016d). Each Standard varies according to the organisation it belongs to and is shown on the Welsh Government website.¹⁸

As stated on the Welsh Language Commissioner’s (2022a) website the purpose of the Welsh Language Standards is to create rights for people in Wales to receive public sector services in Welsh. Organisations must comply with standards in the following areas:

- service delivery
- policy making
- formulating new policy
- operational
- promotion
- record keeping

The amount of translation required in adhering to the standards depended on whether existing documents or media had already been translated, such as websites, leaflets, and legislation. However, translation in the public sector would have a stream of content for translation from their public sector colleagues, such as from meetings or promotional material. This study aims to understand the methodology behind the translation of content, which technology is used in the workflow and whether all translations are conducted internally, or a percentage is regularly outsourced. It also interrogates whether TMs are used (or not) and whether the institutions collaborate with other institutions to share resources.

As illustrated by the Welsh Language Commissioner (2021, p. 123), the first Standard was soon followed by a series of standards covering various public sector services as shown in Table 2. 2 below. The Welsh Language Standards (No. 3) Regulations 2016 were not approved but were re-submitted and approved as No. 6 Regulations on 31st January 2017.¹⁹ By April 2018, 103 organisations, including local governments, national parks, the Welsh Government, police forces, universities, and further education colleges, had implemented the standards. In 2019 the Welsh Language Standards [No. 7] Regulations (2018) were introduced to local Welsh health boards and National Health Service (NHS) trusts.

Table 2. 2 Organisations under a duty to comply with Welsh Language Standards 2015-218 (Welsh Language Commissioner, 2021, p. 123)

Group of organisations	Specific organisations	Date standards were implemented
No. 1 regulations	County councils, national parks and the Welsh Ministers (26 organisations)	Implementing standards from 30 March 2016
No. 2 regulations	Various national organisations (33 organisations)	Implementing standards from 25 January 2017
No. 4 regulations	Tribunals in Wales and other adjudication bodies (7 organisations)	Implementing standards from 30 March 2017
No. 5 regulations	Police forces, police and crime commissioners, and fire services (14 organisations)	Implementing standards from 30 March 2017
No. 6 regulations (originally introduced as no. 3)	Universities and further education institutions (25 institutions)	Implementing standards from 1 April 2018
No. 7 regulations	Health boards, NHS trusts, and community health councils (18 organisations)	Implementing standards from 30 May 2019

González Núñez (2019, p. 786) comments on how the successful implementation of the standards was perceived in the translation community at the time: “All of this necessitates a sustained translation effort which is carried out, to a great extent, through the efforts of the Translation Unit and its language professionals”. In addition to praising the Welsh language expertise and professionalism, González

Núñez (p. 781) describes the Welsh language policy regime as “probably the envy of many [sic] minority language communities”.

The Welsh Government’s (2017, p. 67) policy titled, *Cymraeg 2050: A Million Welsh Speakers* policy also commented on international collaborations, where knowledge is shared, “We in Wales have learnt lessons from language planners across the world and have created solutions that have been adopted by others, and this mutually beneficial cooperation will continue”.

In a report published by the Welsh Government (2016a) called “Report of the Working Group on the Welsh language and Local Government”, there was some criticism about the practicality of enforcing the standards, such as “it could lead to token compliance, rather than transforming culture and creating organisations which operate naturally in two languages” (p. 4). This was further illustrated in the same study, which admitted that “perhaps not all areas of Local Government accept their responsibilities towards the language positively and proactively (p. 4).

When the Standards were first introduced into each organisation, it could be argued that translation units/services in the public sector may have been apprehensive, expecting an influx of translation requests, which would have flooded the translation workflows across Wales. This study aims to understand if this was the case or whether the implementation was executed better than anticipated.

2.7 THE WELLBEING OF FUTURE GENERATIONS (WALES) ACT (2015)

The Wellbeing of Future Generations (Wales) Act (2015)²⁰ was enacted to improve the social, economic, environmental, and cultural well-being of Wales and is a legal requirement for the national government, local government, health boards and other public specified public bodies. Public institutions are obligated to strive towards accomplishing all seven goals mentioned below, which involve focusing on long-term solutions, collaborating more effectively with individuals, communities, and other organisations, mitigating issues before they arise, and adopting a more integrated approach:

1. A prosperous Wales.
2. A resilient Wales.
3. A healthier Wales.
4. A more equal Wales.
5. A Wales of more cohesive communities.
6. A Wales of vibrant culture and thriving Welsh language.
7. A globally responsible Wales.

The sixth aim focuses on Welsh language and culture, which is particularly pertinent to this study as the third of the three aims (see section 1.1.1) is to evaluate the impact of recent Welsh language legislation (which would include the ambitions of this policy) on public sector translation workflows with the support of internal Welsh-speaking (non-translation) staff. An important factor to consider is whether Welsh-speaking public sector staff use their language skills at work.

2.8 CYMRAEG 2050: WELSH LANGUAGE STRATEGY (2017)

In July 2017, the Welsh Government (2017) introduced Cymraeg 2050: A Million Welsh Speakers strategy to promote and facilitate the use of the Welsh language and was prepared under section 78 of the Government of Wales Act by the Welsh Government (2006) replacing the Welsh Government's (2012) former strategy, A Living language: A Language for Living (2012-2017).

The Welsh Government's (2017, sec. Overview) policy, Cymraeg 2050 outlines the long-term vision of the Welsh Government to reach one million Welsh speakers by 2050. To achieve this objective, they developed three strategic themes (p. 4). The sections from this policy related to this study will be discussed, such as translation, technology, and behaviour.

1. Theme 1: Increasing the number of Welsh speakers.
2. Theme 2: Increasing the use of the Welsh language.
3. Theme 3: Creating favourable conditions – infrastructure and context.

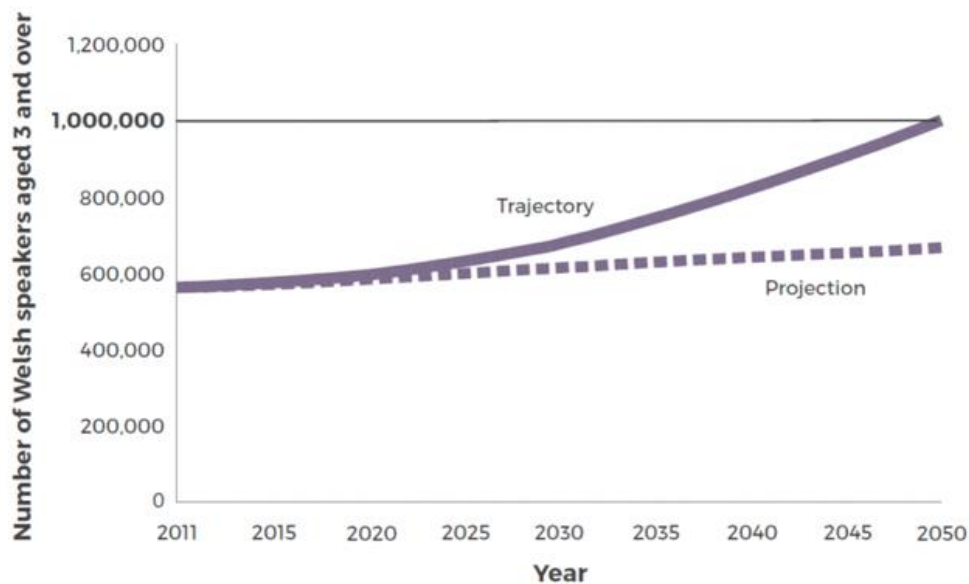
2.8.1 THEME 1: INCREASING THE NUMBER OF WELSH SPEAKERS

The first theme looks specifically at how to increase the use of Welsh in all aspects of life, including in the workplace, which is the focus of this research. Much of this section discusses education, which is beyond the scope of this research.

Interestingly, the strategy illustrates how it envisages the Welsh language progressing with and without implementing the 2050 strategy. The projection shows a gradual increase (see

Figure 2. 4 below) without reaching one million speakers by 2050, and the trajectory, which includes implementing the policy changes (and adhering to them), would mean that the vision of one million speakers would be realised.

Figure 2. 4 Projection and trajectory for the number of Welsh speakers



2.8.2 THEME 2: INCREASING THE USE OF THE WELSH LANGUAGE

This theme looks at training staff in the Welsh language and the percentage of the workforce who use Welsh in the workplace. It also identifies the potential for new research in addressing behavioural patterns to improve the use of Welsh in the workplace.

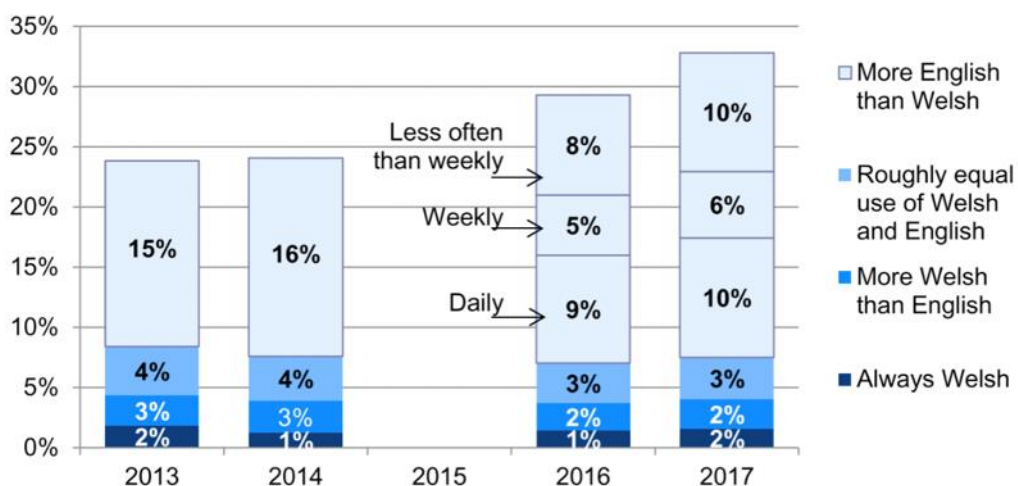
The strategy showed that Welsh language training was beneficial in improving staff usage of the language; however, this research aims to determine if public sector

staff utilise their language skills in their workplace or choose not to, and why that may be. Statistics published by the Work Welsh Programme, a provider of Welsh language training in the workplace, confirmed that 14,965 unique learners (private and public sector) participated in their Welsh language courses in 2020-2021, a decrease of 14.5% (17,505) from the previous year. According to the organisation's website, the decline was partially attributable to the COVID-19 pandemic as well as a reduction in funding for the Centre's Work Welsh scheme in April 2020, which is surprising given the number of learners produced by this programme and how significant its continuation would be if even a fraction of the learners' skills are implemented in the workplace.

In the first annual report by the Welsh Government (2019) regarding Cymraeg 2050: A Million Welsh Speakers (2017-2018), the use of Welsh in the workplace is illustrated as shown in Figure 2. 5 below, shows a clear need for development. However, the Welsh Government (p. 7) report stating it was decidedly positive:

The top line of the graph shows one possible trajectory for the increase towards a million speakers, based on Cymraeg 2050 policy objectives. As seen in the chart, a small amount of progress is envisaged during the first years of the strategy, with greater progress becoming apparent towards the end of the first decade after the launch of the strategy.

Figure 2. 5 The percentage of the government's workforce who use Welsh to do their work by frequency of use



(a) The survey was not held in 2015, and in 2016 the 'More English than Welsh' category was divided into three further categories which are 'more English than Welsh' but speaking Welsh daily, weekly, or less often.

This study will gather further data to understand whether staff may use their Welsh language skills at home but not at work, whether there are personnel who do not report their Welsh language skills, and why that may be due to a lack of confidence. These can be addressed through behavioural techniques or confidence-boosting exercises if that is the case.

2.8.3 THEME 3: CREATING FAVOURABLE CONDITIONS – INFRASTRUCTURE AND CONTEXT

The central part of this theme that relates to this study is Digital Technology and linguistic infrastructure, acknowledged by the Welsh Government (2017, p. 60) that technology needs to be “continuously developed “and is “integral to the delivery” of the strategy. Furthermore, it calls for a “modern and responsive translation profession which makes the full benefit of the latest technology and language resources” (p. 59).

A section dedicated to the translation profession acknowledges the importance of translation and the scope of the skills needed, with the Welsh Government stating (p. 72), “a ready supply of skilled and highly qualified translators and interpreters will be needed”. To meet the demand for an anticipated increase in workload, the Welsh Government (p. 34) continued supporting *Cymdeithas Cyfieithwyr Cymru* (Association of Welsh Translators and Interpreters), “the body that maintains, quality assures and promotes professional standards in translation by improving and developing translators’ skills and knowledge”. Where the strategy discusses the use of the most current machine translation systems to improve translation accuracy, speed, and consistency, it is also worth noting how this relates to their work on the technological infrastructure (translation using computer aids and AI technology, for example), which has been the focus of research at Bangor Cardiff, Swansea, and Aberystwyth universities to date. Following this, the Welsh Government (2018) introduced the Welsh Language Technology Action Plan to meet Welsh language technology demands.

2.8.4 BEHAVIOURAL PATTERNS

The Welsh Government's (2021b) Annual Report on compliance with Welsh Language Standards 2020-2021 described new research designed to use behavioural change techniques to improve the delivery of bilingual public sector services. A pilot research project was commissioned through a Cymraeg 2050 grant. This project experimented with linguistic 'promises' to change patterns of Welsh language use in an institution. They stated in the same Annual Report (ibid.) that it would be used in other organisations if it were to be successful. A subsequent Welsh Government's (2022) Annual Report, confirmed that the project was successful due to the research conducted at Bangor University, and a toolkit had been developed by the ARFer project team (see section 3.4 for further information), which will be implemented. The report stated (p. 12):

The programme aims to change the language habits of colleagues, with Welsh speakers and learners pledging to use more Welsh in the workplace. We are also implementing a Welsh language technology delivery project by default to the organisation's Welsh speakers as part of our Welsh Language Technology Action Plan. Working with Microsoft to develop and launch the Teams human interpretation [sic] function has been a significant focus of our work in this area over the past year.

As this study intends to look at the sentiment and some behaviours of public sector staff, it will be interesting to understand further how the Welsh language is used in the workplace, thereby potentially contributing to further studies in this field.

2.9 WELSH LANGUAGE TECHNOLOGY ACTION PLAN (2018)

Following on from the Cymraeg 2050 strategy, the Welsh Language Technology Action Plan was introduced by the Welsh Government (2018, sec. Overview) to "plan technological developments to ensure that the Welsh language can be used in a wide variety of contexts, be that by using voice, keyboard or other means of human-computer interaction".

Three principal areas were identified to be addressed:

1. Welsh Language Speech Technology
2. Computer-Assisted Translation
3. Conversational Artificial Intelligence

The plan provided a list of tasks (called “work packages” WP) related to the principal areas (1, 2 and 3) detailed above. However, as this study focuses on translation technology, only the relevant work packages (10 and 11, see Table 2. 3) will be discussed (2018, pp. 14–16). The plan contains 27 work packages and is presented in a table format, with a heading explaining: what they intend to do, how they will do it, why it is important, and the risks of not carrying out the directives. The areas highlighted in yellow are particularly relevant to this study. Table 2. 4 below is the Progress Report by the Welsh Government (2020a, pp. 18–19), which explains the work carried out since the Welsh Government’s (2018) Welsh Language Technology Action Plan (2018)

2.9.1 WELSH LANGUAGE TECHNOLOGY ACTION PLAN: (2018)

Table 2. 3 Work Packages 10 and 11: Welsh Language Technology Action Plan (Welsh Government, 2018, pp. 14–16)

(Areas highlighted in yellow are specific to this study)

WP No.	What	Why	How	Deliverable	Risks of not undertaking this work
10	<p>The Workplace Ensuring suitable English/Welsh and Welsh/English machine translation systems for different linguistic domains and registers.</p>	<p>A substantial body of research has been carried out on computer-assisted translation for Welsh and other languages. That research is too extensive to summarise in this document, but one of its central themes is that human translators have been and will be needed to ensure translation quality, and the research evidence suggests that this is unlikely to change. The research also proves, on the basis of detailed evidence, that technology can increase a translator’s productivity, assist in deleting repetitive translation, maintain consistency and speed up the translation process whilst reducing the cognitive strain on the translator—all the while sharing translations between different organisations and translators in real-time. Cymdeithas Cyfieithwyr Cymru (the Association of Welsh Translators and Interpreters) has also stated that it wants to make “the best and most effective use of technology” in the field of translation.</p> <p>For many years, automatic translation facilities such as Google Translate and Microsoft Translator (amongst others) have been available. They are used to provide an automatic gist translation, and to this end, they assist non-Welsh speakers in understanding Welsh language text. They are also being used to suggest sentences where no match exists in a human translator’s translation memory system. To assist human translators to increase the amount of Welsh-language material in Wales’ linguistic landscape, we want to see further development of automatic translation systems.</p>	<p>Commission, where appropriate, and/or work with relevant organisations to improve systems that already exist and disseminate their us</p>	<p>Relevant training data available under an appropriate licence; Application Programming Interface to Welsh/English and English/Welsh translation engines available.</p>	<p>Were translation automation facilities for the use of human translators not to be developed, the Welsh language may not benefit from extant translation technology used for other languages, and Welsh would not be as prevalent as it could be in the linguistic landscape.</p>
11	<p>Take full advantage of existing translation memory software to assist human translators to increase the amount of Welsh-language material in the linguistic landscape. By using translation memories alongside appropriate machine translation it will be possible to share translations in real time</p>	<p>To increase the amount of Welsh in the linguistic landscape in Wales.</p>	<p>Collaboration to ensure the use and sharing of existing translation memory systems and by ensuring new systems where appropriate and practical</p>	<p>Shared computer-assisted translation networks; data on the use of technology and the translations thereby undertake</p>	<p>If action is not taken to create automation facilities for use by human translators, the Welsh language will not benefit from the extant translation technology used for other languages and Welsh will not be as prominent in the linguistic landscape.</p>

2.9.2 WELSH LANGUAGE TECHNOLOGY ACTION PLAN: PROGRESS REPORT (2020)

Table 2. 4 Work Packages 10 and 11: Welsh Language Technology Action Plan (Welsh Government, 2020a, pp. 18–19).

WP No	Description and Action Plan	What's been done/What's being done
10	The Workplace Ensuring suitable English/Welsh and Welsh/English machine translation systems for different linguistic domains and registers	<ul style="list-style-type: none"> • We're funding and adopting in our own work, a number of streams of activity in this area. We're funding Cardiff University to develop a new type of machine translator that uses cross-lingual word embeddings to convert words and terms (this will help us to establish principles that can be used in other aspects of natural Welsh language processing, particularly those where there is much less Welsh language than English language data). • In addition to machine translation, we freely and openly share translation memories. The parallel bilingual data in translation memories can also be fed into automatic machine translation products (see Work Package 11) to increase their productivity. • We also hold discussions with external organisations, to facilitate their use of machine translation, and with some companies to assist them in developing machine translation products. • IBM Watson Translate has introduced the ability to translate from Welsh to English. Cwm Taf Morgannwg University Health Board is the main partner. We welcome new Welsh language products like this from a large company like IBM.
10	Comments on the progression of Workplan 10	<ul style="list-style-type: none"> • Progress has been (is being) made with the development of the new type of machine translator; however, it would be more interesting to be provided with more detail on the "new type of machine translator". • Regarding the openly shared TMs, this research intends to understand how beneficial and advantageous they are to an in-house public sector professional translator and whether they use them. For example, if the translators choose not to use them because the quality of the translations are insufficient, then it may be argued that the parallel data fed into the systems are potentially sub-standard and less reliable than anticipated or hoped. • Also, it would be interesting to know if discussions have been held with other public sector organisations to discuss the potential sharing of TMs data. • It is excellent news that IBM Watson Translate can now translate from Welsh to English; however, the most common combination that requires translation is from English to Welsh.
11	Take full advantage of existing translation memory software to assist human translators to increase the amount of Welsh language material in the linguistic landscape. By using translation memories alongside appropriate machine translation, it will be possible to share translations in real time.	<ul style="list-style-type: none"> • Translation memories have a significant contribution to make to increasing [<i>sic</i>] the amount of Welsh available in the linguistic landscape. At the time of writing, we'd shared 107 translation memories on our BydTerm Cymru website, along with three large memories associated with new terms emerging as a result of COVID-19, all of which are available to be downloaded and used free of charge under an open licence. Translators in all organisations will be able to add these to their translation memory systems and take advantage of translation work already undertaken. • We're also working to ensure that a translation automation plugin Works within our own Translation Memory system so that all the benefits it brings are available to our translators. • We've also benefitted from the fact that we are now using 'SynchroTerm' terminology Software. This benefit has been especially pertinent during the COVID-19 period as it allows us to effectively mine large/urgent texts quickly and securely for our internal translators and contractors. • We're also exploring what work can be done to facilitate the sharing of translation resources between different institutions, • with a view to using what's shared as training data for automatic machine translation products which can be used by professional translators. Part of this work could also include 'scraping', tagging, and aligning parallel Welsh and English language public texts, and then using this data to generate new translation memories and new domain-specific machine translation products.
11	Comments on the progression of Workplan 11	<ul style="list-style-type: none"> • Increasing the number of TMs available to professional translators is beneficial; however, this is only helpful if translators are aware of them, use them and can rely on their quality. Developing an automatic translation plugin is useful for translators; it would be interesting to understand where and how that would be implemented. The comment regarding the remedies to facilitate the sharing of translation resources is highly relevant to this study.

In contrast, even though González Núñez (2019, p. 781) complemented the systems implemented in Wales, she commented on their effectiveness to date by stating: “Despite an overt policy regime which is probably the envy of many minority language communities, language planners have not been able to counter the tide of historical attrition, at least not yet”.

2.10 CYMRAEG: IT BELONGS TO US ALL (2020)

The Welsh Government (2020b) introduced the policy Cymraeg: It Belongs to Us All in 2020, which sets out the goal of becoming a bilingual organisation by 2050. The ambition of the Welsh Government (p. 3) is for all public sector personnel to understand Welsh by 2050, with both Welsh and English used interchangeably as their day-to-day working languages.

Pertinent to this study is the section of this policy that focuses on translation technology (p. 13), which stated the following: “We will focus on the use of technology to make it easier to work in Welsh. We also intend to use technology better to produce Welsh language material without necessarily sending work to translation services”.

The section “Action 9: Review how and why we use translation (Themes: leadership, learning and technology)” discusses how the use of Welsh can be increased in the workplace, and its focus on empowering the staff to produce bilingual content is especially important for this research.

The intention is to make it simpler to use the Welsh language and to produce relevant Welsh content without requiring professional translation services. The policy stated that this could involve translators post-editing more and translating less. In addition, the Welsh Government will be exploring new translation technology and automation to improve efficiencies in the workflow.

2.11 SUMMARY

This chapter provided important contextual information on the Welsh language, focusing initially on the historical decline of Welsh language speakers in Wales, attempts to revive the language and the subsequent implementation of and gradual increase in legislative powers to reinforce the language's official status. This conclusion brings to the forefront key legislation and the current focus of the Welsh Government and the public sector, which impacts this study.

Given the history of the Welsh language, which is currently classified as an endangered minority language, and the severity of the decline in the number of Welsh speakers, the Welsh Government has considered increasing the number of Welsh speakers of utmost importance. The enactment of the legislation is timely with respect to this research study, particularly following the introduction of key legislation by the Welsh Government (2017) such as the Cymraeg 2050 strategy, which aims to reach one million Welsh speakers by 2050, the Welsh Language Standards between 2015 and 2018 (see an explanation on the Welsh Language Commissioner's website (2022a), which is intended to guide and support varying public sector organisations in the provision of bilingual public services. In addition, the Welsh Government's (2018) Welsh Language Technology Action Plan and the subsequent Welsh Government's (2020a) Welsh Language Technology Action Plan Progress Report review innovative ways to improve the technology used to support the translation workflow and the dissemination of the Welsh language. This thesis is a unique and timely study which will investigate what transpired following the implementation of the aforementioned legislation, including other measures brought in by the Welsh Government, such as the Welsh Government's (2020b) Cymraeg: It Belongs to Us All and the Welsh Government's (2016b) Working Group Report, and the Welsh Government's (2016c) response to the report as they discuss key components in the translation workflow, the technology used, the professional translators and stakeholders involved and compliance with the legislation.

As the purpose of this study is to evaluate the impact of the technological turn on professional translation workflows in a public organisation in Wales, it is essential

to identify the key legislation that supports all stakeholders and determine its effectiveness. For instance, adjustments or enhancements may be suggested if legislation imposed on a public sector service does not fully support an internal process (such as a translation requirement) or even hinders its efficiency levels.

It would be reasonable to assume that once legislation has been enacted, it is closely monitored and modified to ensure that it fulfils its intended purpose; however, this is not always the case, and this aspect will be explored in this study. Once the legislation has been implemented, there is a prevalent assumption that the task is complete, despite the reality that it has just started.

Adherence to the Welsh language legislation in the public sector and legislative compliance largely depend on the linguistic competencies of Welsh-speaking public sector employees who have the potential to collaborate with in-house professional Welsh translators and deploy translation tools. The importance of the accuracy and reliability of the technology used to support and realise the provision of an effective translation workflow process cannot be understated, as a fully functional and integrated system could aid compliance with the Standards, resulting in the provision of a fast, efficient, highly reliable, and robust bilingual service. Therefore, it is essential to ensure that the systems currently used fully support the workflow, maximising its potential through the use of innovative methods whilst supporting all stakeholders in the translation workflow (translators and translation requesters) to enable a reliable, fast, and accurate service. This study intends to understand how the processes function, test their accuracy and reliability levels, and determine whether improvements could be made, with recommendations and potential future research ideas.

The Welsh Government is aware of the need to improve current processes and technologies, which was illustrated in the strategy by the Welsh Government (2020b), *Cymraeg: It Belongs To Us All*. The strategy discusses the core components of the workflow, and there are clear emphasises on the areas that need to be addressed, such as improving efficiencies through technology, automation,

empowering a Welsh-speaking workforce and changing behaviours within the workforce.

Therefore this study will address the current systems in place following the implementation of the recent legislation, how the technology is used to support the processes and the capabilities of Welsh language-speaking staff, to determine whether full use is made of their skill sets and finally highlight areas that would benefit from improvement in order to ensure legislative compliance.

The outcome of this study should determine whether Welsh language initiatives thus far have reached (or exceeded) expectations or whether there is room for improvement, with recommendations based on the findings of this study which may be highly instructive for the Welsh Government and the Welsh Language Commissioner. It will provide further understanding of the effectiveness of the technologies used in relation to the legislation and the competencies of Welsh-speaking staff in the public sector who support the implementation of legislation.

3 CHAPTER 3: LITERATURE REVIEW

3.1 INTRODUCTION

It is one thing to give official status to the Welsh language in legislation; it is another, however, to ensure that this status has a far-reaching impact and is respected and reflected in all aspects of life. As has been said about devolution in Wales, giving official status to the Welsh language is also a process rather than an event; a process that is far from completion, but which has certainly seen progress over the past five years.

(Welsh Language Commissioner, 2021, p. 25)

The Welsh Government (2018, p. 9) acknowledges the significance of technology and the necessity for investing in new digital technology advancements to realise their vision of a bilingual Wales. "A continuous, long-term programme of research and development will be needed in this rapidly-changing arena with the advent of neural networks". However, research in this area is still surprisingly embryonic. Bangor University's Language Technologies researchers (D. Prys et al., 2009) published the A4B project report, titled *Improved Translation Tools for the Translation Industry in Wales: an Investigation*, which introduced the concept of translation technology to many translators in Wales, and was the turning point for many. The report focused on the use of computer-assisted translation (CAT) tools to improve translation quality and efficiency. The researchers found a lack of awareness and training among Welsh translators regarding CAT tools and suggested that the government invest in research and development to support the translation industry. Pertinent to this study, the report recommends the development of more accurate and efficient translation tools tailored to the needs of the industry in Wales, more training and support for translators, and additional research into the use of translation tools. The report concludes that the development of improved translation tools would benefit the Welsh translation industry by improving efficiency, reducing costs, and enhancing translation quality. In addition, the report highlights the lack of efficient translation tools and the need for additional training and support due to the complex and ever-changing nature of the translation industry.

Shortly afterwards, Andrews (2010) defended the first doctoral thesis on translation technology in Wales at Bangor University, entitled *Current Practice in Website Localization and its Application to Welsh*. Andrews (2012) investigated the localisation of websites for the Welsh-language market and global markets in his article entitled *Approaches to Website Localization: An Overview from a Welsh Perspective*. The study examined four main areas: the current approach to website localisation in Wales, current practice globally, the readiness of English/Welsh translators for the localisation process, and the Welsh Assembly Government's role. At the time, the Welsh Assembly Government (now known as the Welsh Government) wanted to encourage local, creative businesses to compete more in markets outside Wales. However, important to this study, Andrews (2012, pp. 222–224) claimed that familiarity with technology, collaborative work methods, and communication is essential for good practice in website localisation, stating:

If a culture of communication and collaboration were instilled in the whole localization process, work practices among translators and web developers would be likely to improve, facilitating the spread of bilingual and multilingual websites. This in turn would contribute to achieving the government's targets for the normalizing of the Welsh language and would heighten the profile of Welsh business in the global marketplace.

Andrews (p. 224)

In addition, a 2007 survey found that many English-to-Welsh translators lacked the skills and training required to use CAT tools to localise websites effectively.

Andrews (p. 222) stated that a lack of customer understanding is also a problem in website localisation projects, and it is the web developer's responsibility to educate clients about the process and provide a translation memory (TM). Moreover, Andrews discovered that the rate at which websites are localised in Wales is crucial for the future development of Welsh businesses and the normalisation of the Welsh language in Welsh society.

In addition to policy documents produced by the government for the government or as a marketing ploy by tech giants, there is still a need for additional academic input from an objective, analytical perspective. D. Prys et al. (2021, p. 7) stated,

however, that "we are in the midst of an intense period of innovation and progress, and it is an exciting time to be a researcher in this field."

To provide context for this research, relevant academic literature, reports, policies, plans, and legislation were reviewed from the fields of Welsh language technology, the public sector in Wales and countries with minority languages that are established bilingual nations, such as Canada, or those who look to revitalise their native language as effectively as possible. Existing research has been divided into four sections in the literature review:

Section 3.2: Translation technology research, including studies related to workflows, the combination of MT and TMs, workflows, post-editing, automated post-editing, the technological turn, data handling and organisation.

Section 3.3: Research related to the Welsh context and essential translation technology-related directives.

Section 3.4: Research regarding Welsh language communicators in a bilingual environment in the public sector, focusing on policy, research, and management.

Section 3.5: Research related to the future of translation-related technology and systems.

It is essential for this review to fully comprehend the residual repercussions stemming from the decrease in Welsh language speakers in the communities and cultures of Wales to obtain insights into and analyse the influence of the technological turn on professional translation processes in Wales. As explained by Jenkins and Williams (2000, p. 244), this knowledge will help us fully understand the rationale for language planning and creating legislation through policies, schemes, acts, plans, and standards to "save the language and adopt a positive policy of effective bilingualism". The Welsh Government's (2016b, p. 4) Working Group report which discussed the effectiveness of the Welsh Measures Act in 2011 questioned if there would be "token compliance" rather than "cultural

transformation and the creation of organisations that work naturally in two languages". As a result, widespread implementation, and long-term viability (combined with public acceptance) may be the most challenging hurdles to overcome even after legislation has been passed.

3.2 TRANSLATION TECHNOLOGY

One of the objectives of this research is to examine the use of TMs in workflows in the public sector in Wales and to consider how they could be used more efficiently and whether effective use is being made of them in the first instance. In line with this aim, a significant research project has been developed and implemented at Bangor University, including publishing a TM-sharing platform service. This is provided by the Open Translation Memories website,²¹ where public bodies can upload and download TMs licensed to be put into a text corpus to build on MT systems, emulating the European Language Resource Infrastructure (ELRI) project. This is in effect a first version of a Central TM Bank for Public Services, the elaboration of which is discussed in section 6.7.2.2.1 below. On the Bangor University website, visitors are encouraged to share their data confidentially for research purposes. However, as explained in section 1.3.6, data sharing can be problematic, particularly for public sector organisations, so some organisations may be hesitant to share their TM data. There is an ongoing debate regarding how to safely access copious quantities of big data without breaching confidentiality or risking data theft. Encouraging the public sector to share its data would need to be considered carefully.

As highlighted by Dixon and Birks (2021), studies at Leeds University have researched ways for the Police Force to gather data which would improve their crime prevention methods and a new Problem-Oriented Policing, which would rely heavily on data; however, given the sensitive nature of this data, they needed experts outside the police force to assist, which led to solutions being identified (p. 115). However, there remained concerns regarding the use of the technology, which is a common factor in all industries – if the staff do not know how to use the

systems, they are of no use. So, in many cases, the technology is there – just the in-house staff expertise needs to be addressed (Dixon & Birks, 2021, pp. 122–123)

The significance of such a project is exemplified by Screen (2016b), a Welsh researcher in Wales who has conducted a series of experiments pertinent to this study, which examine how combining both TMs and MT in the translation workflow process would significantly increase productivity and efficiency while reducing cognitive effort for the translator. It is also worth noting that the MT used in this study was SMT, not NMT. Screen (2016b, p. 7) makes a powerful argument stating:

The data analysed show that the translation process can become cognitively less effortful for the translator, that the practical and manual process of translation production in terms of keystrokes is also more efficient and that translator productivity can be greatly improved. These results must be contextualised by looking again at the importance of translation to language planning and policy in Wales. If the use of language technology can speed up translation and help translators produce more whilst also making the translation process ergonomically easier on the practitioners themselves, then given the role translation plays, the use of this technology could also play a major role in [sic] process of revitalizing Welsh in Wales.

Over three years, Screen conducted three research experiments at Cardiff University. Professional Welsh translators translated content from English to Welsh using Translog-II, key-logging software that monitored their keystrokes. Data is produced, which can then be analysed to determine how much effort (cognitive load) was used to complete the translation task. The first experiment by Screen (2016b) wanted to understand if a translator used more effort when translating using TMs than a translator with no TMs. The result showed that the initial preparation time was longer, but the overall translation using TMs involved less effort and more production.

Screen (2017b) conducted a similar experiment; a translation was carried out with and without Google Translate (Statistical Machine Translation as opposed to NMT). He logged the keystrokes again to determine whether translation with or without MT was more efficient in terms of quality, time, and accuracy. Screen's (p. 317) results showed:

No statistical difference between post-editing and translation in terms of processing time [and] a bilingual review by two different translators found little difference in quality between the translated and post-edited texts, and both sets of texts were acceptable according to accuracy and fidelity.

Screen (2017a, p. 127) contended that: "The productivity [workflow] gains that are possible when using MT and TM systems are meaningless if the use of these technologies negatively affects the final quality of texts". However, in agreement with this statement regarding quality, which is an essential part of producing any professional translation, this study understands the benefits of using technology in the public sector setting yet heeds the warnings by Vieira et al. (2021, pp. 1515–1516) where the "need for higher levels of awareness of the specific strengths and, crucially, of the limitations of MT" and note that "even advanced MT systems have significant weaknesses [which] highlights the importance of understanding the potential and the limitations of this rapidly evolving technology". What is intriguing about this study by Vieira et al. (2021), when they conducted a qualitative meta-analysis of research in medical and legal settings, was a difference in MT use between the two locations, particularly with using Google Translate. There seemed to be an understanding of the risks of MT use in the medical setting, as it was used as a last resort, and interactive phrase dictionaries were potentially considered a better option (rather than MT). However, in the legal setting, it was remarkable (considering the implications of inaccurate legal translations) how the limitations and risks were not as highly understood (compared to the medical environment), with examples of how instances of MT use in legal procedures erroneously impacted decisions made in critical legal situations; for example, related to immigration applications and other court judgements:

Given the seriousness of these issues, we were surprised by the scarcity of efforts to promote greater awareness of the risks of MT technology for this field. Attitudes to MT in legal circles also struck us as more ingenuous compared to perceptions of MT in medical settings.

(Vieira et al., 2021, p. 1525)

For this reason, Vieira et al. (2021, p. 1515) suggest further cross-disciplinary research to address a gap in understanding the limitations of MT when used in

settings such as the medical and legal sectors in his study. Pym (2019, p. 7) suggested that the onus on teaching society about what MT can and cannot do (and, in turn, understand its limitations) is an essential task for translation researchers as virtually everyone is using MT, "so they might as well know something about it". It is worth noting that this matter is also highlighted in section 1.3.4, explaining how claims for human parity cause even further confusion regarding the limitations and risks of using MT. However, it is also essential to recognise that given the rate technology is advancing, research needs to be regularly updated. Table 3. 1 below illustrates the differences in perception between the medical and legal settings and their implications.

Table 3. 1 Findings on perception, use and Impact of MT in medical and legal settings.

	Medical settings	Legal settings
Perception of MT	Last resort; High level of awareness of risks	Easy alternative; Inconsistent levels of awareness of risks
Use of MT Situation	High demand and in emergencies	High demand; differentiated risks between behind-the-scenes use (in discovery; patents) vs public-facing (court proceedings; interviews)
Types of technology	Custom-made systems such as interactive phrase systems being tested	Off-the-shelf systems predominate
Evaluation of MT	Variety of approaches, including the use of back translations to evaluate the quality of MT	Lack of specified goal; automatic evaluation promoted as ideal and non-problematic
Implications	Duty of care could be breached; Legal implications arising from failed communication affecting medical outcome; potential for private healthcare facilities avoiding patients who need language facilitation	Duty of care could be breached; potential miscarriages of justice; Legal implications of MT use in its own right (used as evidence of language competency or intimacy level in immigration assessment); potential for lawyers to decline clients who need language facilitation

Therefore, even though Screen demonstrated how using TMs and MT together can positively impact the productivity (in terms of speed and efficiency) in a translation workflow, which would be even more significant in the case of the number of translations carried out in the public sector, there needs to be a greater awareness of the risks, particularly in settings where inaccurate translations can lead to profound consequences. As Vieira et al. (2021, p. 1525) identified the risks in medical and legal settings when using MT, a similar study would be beneficial to evaluate the strengths and weaknesses of TMs combined with MT (rather than MT solely). Research could further assess the use of TMs with MT and a potential Translation Management Tool.

There is also one obvious factor to consider, and this is whether the results of the research are based on SMT rather than NMT; it would be interesting to explore whether the results could be improved again if NMT were used, as it is far superior to SMT in terms of its accuracy and output.

Dowling et al. (2020) addressed the differences between SMT and MT for English>Irish in the domain of public administration; they presented the challenges for SMT and NMT concerning minority languages, in this case, Irish, which would be a reasonable substitute for Welsh comparison purposes. Dowling et al. (2018, p. 18) also proved that, while an out-of-the-box NMT system (as opposed to an NMT system that is developed for that organisation based on their TM data, for example) may not perform as well as a domain-specific SMT system, the future of NMT may still be promising. Dowling et al. (2018, p. 12) commented on the 'data hungry' nature of NMT, and "there a concern that languages with fewer resources may not benefit to the same degree that well-resourced major languages do". These are the same concerns in Wales regarding Welsh. The results were not overwhelming; however, they were enough to convince the authors that NMT would be helpful. The out-of-the-box NMT system was far inferior to a trained SMT system. Dowling et al. (2018, p. 18) stated: "These results are not necessarily surprising given that Irish presents many of the known challenges that NMT currently struggles with (data scarcity, long sentences and rich morphology)".

According to research by M. Prys and Jones (2019, p. 41), translation technology adoption overall has been particularly lethargic in Wales. While low acceptance rates for modern technologies may have seemed predictable for a minority language with limited resources, this changed with the Welsh Government's (2018) Language Technology Action Plan, which prioritised the expansion of such tools as part of its plan to reach A Million Welsh Speakers by 2050 (Welsh Government, 2019, p. 34). Technology is undeniably "central to the definition of translation activity" in a translator's day-to-day workflow process, as discussed by Cronin (2013, p. 2) and Christensen et al. (2017, p. 17). In the early 2000s, academics recognised that translators needed to learn how to use technology in the

translation process. Still, the topic of translator scepticism has been well documented by Bowker (2000), Austermühl and Coners (2001), Somers (2003) and Robinson (2004). It must be noted that even though linguists need to embrace technology, it does not happen without many experiencing anxieties, as Vieira (2020, p. 1) identified in a study where he identifies translation as being described as a profession "under pressure".

A noteworthy article by Christensen et al. (2017, p. 2) demonstrated that "modern-day translators spend most of their time interacting with translation technology" and aimed to fill a theoretical gap by describing the most recent translation technology trends. However, an even more telling/striking conclusion was reached following the analysis of 192 research papers (published between 2006 and 2016) in a small-scale study which mapped the research into distinct categories (Christensen et al., 2017, p. 14). According to this study's findings, many translation-theoretical articles focus on the translator and the influence of technology on translators (rather than the workflow) and the profession in general or on translator training. As for the studies concentrating on the technical elements, they primarily emphasised tool functionalities and evaluated quality. Regarding the workflow, it was demonstrated that the research focuses more on implementing technology in the language industry than the impact on the translation processes:

Even though process research is one of the most rapidly developing areas in TS studies (Munday 2009: 104), this trend does not seem to prevail in translation technology research. Furthermore, our study reveals that relatively few scholars have investigated translation technology in the workplace. Research on translators' interaction with translation tools and how this affects their minds and work processes is relatively scarce.

(Christensen et al., 2017, p. 14)

O'Hagan (2013, p. 503) recognises that the "interrelationship between translation and technology is only deepening". When Sandrini (2016) addressed the use of translation technology in his article 'Towards a Digital Translation Policy', he saw translation as an integral part of language policy. He tried to sketch the contours of

a digital translation policy in the sense of a translation technology policy as an essential component of a translation policy. Sandrini (2016, p. 55) not only takes into consideration technology at the 'core' of the translation industry, he asserts that "[t]ranslators not only need to be proficient in translation technology, but they should master it", which is echoed by other researchers. Sandrini (2016, p. 52) also states that "translation can only survive as a profession [...] if it integrates technology", indeed a stark warning for any audience. A translator must learn how to use the technology (well) to work in the industry. The translation process is dominated by technology, and as highlighted by Gil and Pym (2006, p. 18), "only when translators are critically aware of the available tools can they hope to be in control of their work".

3.2.1 WORKFLOW: THE COMBINATION OF TM AND MT

In this study and by definition, a translation workflow is the sequence of administrative and/or translation processes by which the ST (introduced by the originator) passes from receipt by a translator (or translation unit) to completion of the TT and back to the originator. As highlighted by Vidal et al. (2020, p. 18), since the 1980s MT has been part of the translation workflow, although only since the transition from SMT to NMT have industry, translators and researchers begun to pay attention. More recently, further tools being added to the translator's workflow repertoire, including the use of CAT Tools, the internet, and cloud-based systems, which according to Baker et al. (2009, p. 49), are "usually further supported by Translation Management Tools to monitor and keep track of the progress of several concurrent translation projects".

An excellent illustration of how combining TM and MT is beneficial to the production of a translation workflow was conducted by Screen (2018), as explained in section 3.2 above, which describes how combining technology (TMs and MT) is key to increasing productivity. Considering how much content in the public sector that requires translation has the potential to be highly repetitive, translating large volumes of text efficiently, accurately, and quickly is a common objective for any translation workflow. An insightful experiment combining TMs and MT to translate

content by Screen (Screen, 2018, pp. 259–261) using eight translators demonstrated how the translation output increased from approximately 2.5 million words to about 7 million words per year and identified the cognitive benefits of combining TMs and MT, along with post-editing the TM – which helped the participants in his study to work faster, with a caveat that they were all professionally trained on the systems. This experiment was significant as it demonstrated that combining technologies with post-editing can significantly reduce translation time and effort, decrease costs (due to the technology increasing efficiencies) and accelerate the workflow.

Vieira et al. (2019) also looked at the benefits of post-editing in terms of practice, service, and as a research topic, explaining the effectiveness of MT within CAT tools and bringing MT technology to the centre of the translators' working environment. In addition, these researchers value the incorporation of TMs, which makes sense, given that they include previously translated data. If the TM data is of sufficient quality, it could be argued that combining the two elements (TMs and MT) would improve translation workflows exponentially.

It is common for professional translators to lack confidence when using automated technologies for fear of poor-quality translations poisoning their quality-driven TMs, or potentially their fear could include a concern that technology is advancing so rapidly that their roles as translators could change significantly; for example, to become post-editors rather than translators in the future. The concern is not misplaced, and as explained in section 2.10, where the Welsh Government intends to produce Welsh content without always using a translator, with translators post-editing more and translating less. Autor (2015, p. 28) discusses the potential of automation taking over human labour. However, he concludes that if that happens, the "problem will be one of distribution, not of scarcity [...]. The bogeyman of automation consumes worrying capacity that should be saved for real problems". A similar thought process has been outlined with the combination of TM, MT, and Terminology Management in a more integrated fashion, such as provided by Melby

et al. (2015, p. 675) in their article in an encyclopaedia on translation memory, which would enable translators to prioritise terminology more efficiently.

It is notable in Figure 3. 1, a screenshot of the main editing window in the CAT tool Trados (see section 1.3.1 for information about Trados), that segments have been matched to varying degrees. Some segments display 100% matches and are represented in dark green, and fuzzy matches are shown in orange with the percentage match, and the translator may choose to leave these segments as they are. The translator will usually adjust the target language segments using the software's visual indications and the source language segment as a guide.

Figure 3. 1 A translation memory being used to post-edit a document in Trados sourced from Delyth Prys (M. Prys et al., 2021, p. 109)

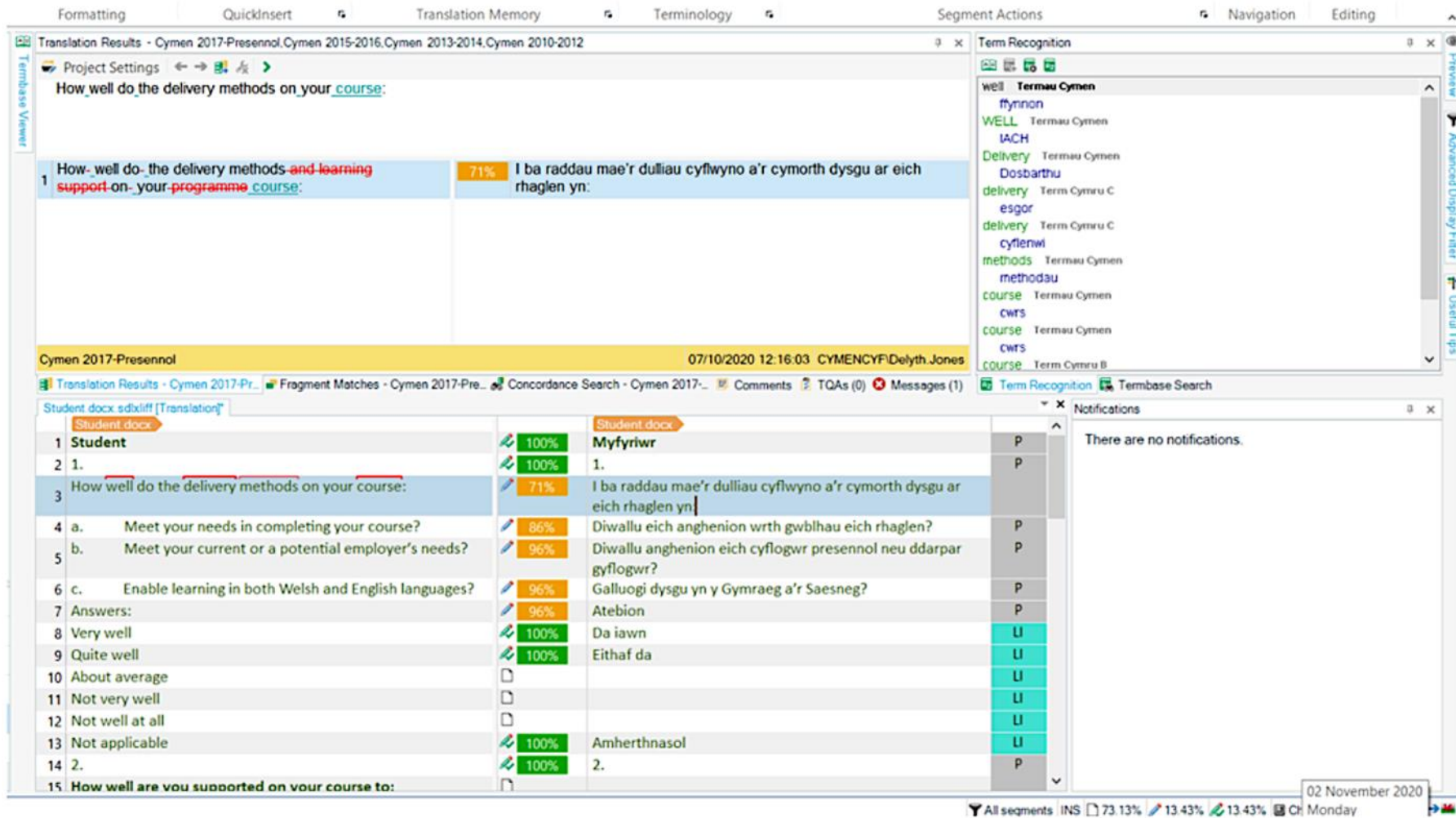
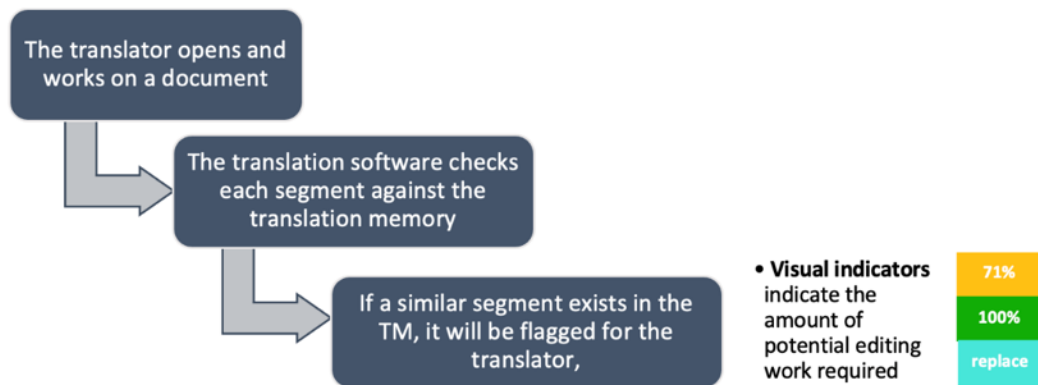


Figure 3. 2 shows a simplified version of how post-editing workflow is used alongside a TM, as highlighted by M. Prys, 2021, p. 109).

Figure 3. 2 Post-editing workflow



M. Prys argues that even though research has proven how beneficial the combination of TMs and MT is to the translator’s workflow, there are further (and much more) practical reasons why these technologies are essential. This is because they are ideal for storing parallel data, specifically for SMT and NMT engines. As noted previously, data is critical and contributes to revitalising minority languages such as Welsh, as suggested by the Welsh Government’s (2003, p. 17) Action Plan and Sayers et al. (2021, p. 9).

There is no doubt that technology has evolved, particularly NMT, which has outsmarted the traditional SMT, and as a result, confidence has grown in its use. However, minority languages are still at risk of extinction, and limited research has hindered their development. M. Prys (2021) sums up the importance and, indeed, the impact that he believes technology has had (and continues to have) on the translation industry:

The danger of extinction for less-resourced languages is, therefore, a real one, and the topic of language revitalisation through language technologies has become an important one for the language and policy planners of governments concerned with protecting the languages and civil rights of their communities. (p. 7)

In the *Language and Technology in Wales* report by M. Prys (2021, p. 108), the section entitled “Implementing NMT at a private Welsh translation company”, it is

explained how the private translation company (Cymen Cyf) and Bangor University developed and embedded NMT technology into the translation workflows by using open-source software (Marian NMT²²) to train NMT engines and embed them in the company's translation tools and technological infrastructure. It would be pertinent to ensure that staff are fully trained and upskilled (if necessary) to understand how to use the tools as part of their integrated workflow process for example, integrating NMT into their CAT tool and potentially a Translation Management Tool (see section 1.3.3).

There is no doubt about the significance of implementing the NMT system and training the system with the company's own TMs is the way forward. It has set a new precedent. As the technology is open-source, it should encourage organisations in public and private sectors to create their own NMT, bespoke to their internal systems. The result would impact the industry by raising confidence levels regarding NMT, its capabilities, and increased efficiencies and productivity consequences. Other researchers, including Chen and Abdul-Mageed (2021, p. 1), used the same open-source software (Marian NMT) with successful results. Their study looks at transfer learning, whereby they built two systems and demonstrated that "relatedness is not required for transfer learning to work but does benefit the performance".

3.2.2 A REVIEW OF EXISTING RESEARCH ON THE USE/IMPACT OF TECHNOLOGY IN TRANSLATION WORKFLOW

3.2.2.1 INTRODUCTION

The importance of technology in translation workflows cannot be overstated. This has led to a growing body of research into its use and impact on the industry. This section provides an overview of the different types of technology used in translation workflows, the benefits and challenges associated with their use, and the potential implications of technology for translation quality, productivity, and remuneration. This study focuses on the Welsh language context, where technology can play a crucial role in enhancing translation workflows and improving the

provision of high-quality Welsh language services, which is a priority for the Welsh government. While there has been some research on the use of technology in translation in Wales, there is still much to be explored regarding its impact on workflows, quality, and costs. This review will be valuable for public and private sector organisations, professional translators, and translation software developers and will contribute to a better understanding of how technology can be effectively utilised in the Welsh language context.

Given the increasing significance of technology in translation workflows, it is critical to review existing research on its use and impact in the industry. In his article, Jiménez-Crespo (2020, p. 322-323) explores the issue of technology's role in translation and the ongoing debate surrounding whether the technological turn in translation has been completed or is still in progress. While some scholars argue that technology's impact on translation may be minimal, others assert that it has significantly influenced modern translation practice and theory. Some scholars view research on technology as a vital component of Translation Studies. This discourse highlights the continual evolution of translation as a field and underscores the need for ongoing exploration of the role that technology plays in shaping it.

The translation industry is rapidly changing due to advancements in technology. As Doherty (2016, p. 962) argues, translators must remain technologically competent to stay ahead of these changes. O'Hagan (2019, p. 16) highlights how technology is disrupting the industry by changing how translators work and how translations are consumed. For instance, machine translation and cloud-based translation tools are becoming increasingly popular and accessible, increasing demand for post-editing services. Additionally, Gambier (2019, p. 344) points out the transformative impact of technology on contemporary practices and markets, particularly in enabling individuals to translate their own content.

However, some authors fail to recognise technology-enabled translation as a distinct area of specialisation or professional practice, treating it merely as another label for translation (p. 356). This oversight limits understanding of the full potential of technology-enabled translation and the unique skills and expertise required to

excel in this field. As a result, it is essential to acknowledge the challenges and opportunities posed by technology-enabled translation and develop specialised skills in areas such as post-editing, terminology management, and machine learning (Doherty, 2016; O'Hagan, 2019; Gambier, 2019).

To remain technologically competent in this rapidly evolving industry, translators can take several steps, such as staying up to date with the latest technological advancements, attending training courses and workshops, and collaborating with other professionals in the field. By embracing technology and developing specialised skills, translators can thrive in the changing landscape of the translation industry.

This section (3.2.2) provides an overview of the various types of technology used in translation workflows. It also discusses the benefits and challenges associated with their use, and their potential implications for translation quality, productivity, and remuneration. It will also explore researchers' challenges in developing language technologies for less-resourced languages.

For professional translation workflows to be effective in the public sector in Wales, they require assistance from a range of stakeholders, including personnel, tools, optimised processes and technology, from the development of the source text (ST) to the delivery of the target text (TT). Therefore, this study aims to assess all aspects of the workflow impacted by technology and those highlighted in the Welsh Government's (2020b) policy, "Cymraeg: It Belongs to Us All." This policy aims to promote and strengthen the use of Welsh in the public sector, so that employees can speak Welsh interchangeably at work, recognising the importance of research gaps addressed in this study.

Existing research indicates that while technology offers significant benefits to translation workflows, it also presents challenges that must be addressed and that continued innovation and development in translation technology are necessary to improve its functionality, accuracy, and security. However, while translation

technologies have created new opportunities and roles, they also pose risks to quality and remuneration.

In Wales, there has been a growing interest in using technology to streamline and optimise translation workflows, with Welsh being a minority language spoken by approximately 20% of the population in Wales. Technology can play a crucial role in achieving the goal of providing high-quality Welsh language services, enabling translators to work more efficiently and with greater accuracy. However, there is still much to be explored regarding the impact of technology on workflows, quality, and costs.

This section (3.2.2) of the thesis aims to review existing literature on the use of technology in Welsh language translation and its impact on workflows in Wales. It will examine the benefits and challenges of using CAT tools, TM software, NMT, and cloud-based Translation Management Tools in the Welsh context. Additionally, it will explore the implications of remote working and the use of technology for collaboration and project management in the Welsh language industry.

This study holds valuable insights for stakeholders, including public sector entities, governments, private or commercial organisations engaged in multilingual communication, professional translators, and translation software developers. It aims to deepen understanding of how technology can effectively enhance translation workflows in Wales, shedding light on the unique challenges and opportunities within the Welsh language context. Moreover, it will pinpoint areas that require further research and offer potential directions for future studies. The study's comprehensive approach ensures its relevance and potential impact on stakeholders.

3.2.2.2 EXPLORING THE ADVANTAGES AND CHALLENGES OF TRANSLATION TECHNOLOGIES: A COMPREHENSIVE OVERVIEW

As discussed in section 1.3, various types of technology are used in translation workflows, including CAT tools (CAT), translation memory (TM) software, machine translation (MT), and cloud-based Translation Management Tools. Translation

technologies offer a variety of advantages and challenges, each with unique characteristics. For instance, CAT tools and TM software enable the automatic storage and retrieval of previously translated text segments, reducing the time and effort required for translation. This can be especially beneficial for content with repetitive language, such as legal or technical documents. However, CAT tools and TM software may not be as effective for creative or highly nuanced content, as they rely on pre-existing translations to provide suggestions.

MT tools use algorithms to translate text automatically, which can be helpful in quickly translating large volumes of content. However, their accuracy can be limited, particularly for content that requires context or cultural understanding, such as idiomatic expressions, jokes, or cultural references. Neural Machine Translation (NMT) is an advanced MT form that uses artificial intelligence to improve translation quality. It can be trained on large datasets and has been shown to perform better than traditional MT, particularly for technical or specialised content. Cloud-based Translation Management Tools enable collaboration and workflow management across teams, locations, and projects. These tools allow for real-time communication and feedback, facilitating efficient project management and enabling teams to work together seamlessly. They also provide enhanced security and data management capabilities, protecting confidential client information.

Overall, translation technologies have revolutionised how translations are completed, making the process faster, more efficient, and more accurate. By understanding the advantages and challenges associated with different technologies, translators and organisations can select the best approach for each project and ensure high-quality translations that meet the needs of their clients.

Translation studies have been evolving rapidly in response to technological advancements. One instrumental approach proposed by Alonso and Calvo (2015, p. 134) emphasises the merging of translators and their technologies, promoting mutual social feedback. This technology-based approach offers a better

understanding of translation and its future, calling for further exploration from both theoretical and empirical perspectives.

The Welsh Government acknowledges the significance of translation technology, as emphasised in the Welsh Government's (2018, p. 6) Action Plan, where they outline their plans to explore the potential of automatic translation systems, enhance the sharing of translation memories, and revise technology procurement procedures to prioritise the Welsh language. These initiatives demonstrate the government's commitment to leveraging translation technology to promote and protect the Welsh language while also improving access to government services and information for Welsh speakers.

Gambier (2019, pp. 350-351) emphasises the importance of Translation Studies evolving to embrace the diverse range of practices in the translation market, including MT, community and volunteer translation, and crowdsourcing. By acknowledging these various forms of translation, Translation Studies can better equip professionals with the necessary skills and knowledge to navigate an evolving industry and meet the demands of an increasingly diverse client base. Interestingly, O'Hagan (2019, pp. 2-10) examines the impact of technology on the translation industry, stating "that the human-machine relationship is in a state of flux, with uncharted paths ahead" and comments on the increasing accuracy and affordability of MT and the improved efficiency and accuracy of translation through TM and TMs. However, challenges remain, such as the quality of MT translations and the rise of non-professional translation, which challenges the traditional role of professional translators. Technology is also changing how translations are delivered, requiring further research into its impact on the industry.

The article by Ehrensberger-Dow and Massey (2020, pp. 354-369) discusses the impact of technology on expert activity, specifically the translation process, and argues that it is necessary to consider human thinking as extending beyond individual minds to encompass interactions with technology. The authors suggest that workplace-based research can provide valuable empirical data on how technology affects human translators and their work. However, conducting

workplace-based research poses challenges such as maintaining confidentiality and reputational risks. To address these challenges, the authors suggest adopting novel methodological approaches and building new theories to optimise translation technology. Additionally, the study sheds light on translators' working conditions and occupational status. Overall, the article argues for a transdisciplinary approach to research that emphasises the need to understand the complex interactions between human translators and technology to ensure that technology empowers, rather than undermines, their work.

Translation technologies have revolutionised the translation industry by making the process faster, more efficient, and more accurate. CAT tools, TM software, MT tools, and cloud-based Translation Management Tools each have unique advantages and challenges. The Welsh Government recognises the significance of translation technology to promote and protect the Welsh language, and Translation Studies must evolve to embrace the diverse range of practices in the translation market. It is necessary to consider human thinking as extending beyond individual minds to encompass interactions with technology, and workplace-based research can provide valuable empirical data on how technology affects human translators and their work.

3.2.2.3 EXAMINING THE IMPACT OF TRANSLATION MEMORY SYSTEMS ON PRODUCTIVITY AND QUALITY: LESSONS FROM BOWKER'S PILOT STUDY AND CURRENT RESEARCH

Bowker's 2005 pilot study examined the impact of Translation Memory (TM) systems on productivity and quality. The study found that while TM can improve productivity, it can also negatively affect quality if not used properly. The group using an unmodified TM was faster but produced lower-quality translations, while the group using a seeded TM produced lower-quality translations. The study recommends proper training and quality control to ensure the appropriate use of translation technology, caution against blindly reusing previous translations, and reminders for translators to read and revise the text. It also suggests that a small, well-chosen TM can be more beneficial than a large, diverse one.

According to M. Prys and Jones (2019), the Welsh Government considers TM and MT technology crucial for industry development and productivity and highlights the potential for a substantial increase in productivity by implementing these technologies. Translators can work faster, handle larger volumes of text, and reduce the time and effort required for translation. Current research consistently shows that using CAT tools and TM software leads to increased productivity and efficiency in translation. Additionally, these tools enable consistent translations, allowing for automatic storage and retrieval of previously translated text segments. Translation consistency contributes to better quality output and improved customer satisfaction.

Screen's (2016a) study investigated the impact of Translation Memory (TM) matches on Welsh-English translators' cognitive and text production effort, productivity, and internal pauses. The study found that adapting and correcting TM fuzzy matches in the 70%-95% range reduced cognitive effort and resulted in shorter internal pauses than manual translation. Translators who used TM matches in this range were faster and produced fewer alphanumeric characters.

According to Doherty's (2016) research, although translation technologies have increased productivity and quality, they have also brought about challenges and uncertainties, such as risks to quality and compensation (discussed in section 3). In Sakamoto's (2019) study, 16 translation project managers in the UK expressed uncertainty and discomfort about the impact of technology on their business practices, particularly regarding machine translation, post-editing pricing, post-editors' skills and profiles, and technology-induced power struggles within the industry. Svoboda et al. (2017, p. 119) highlighted the importance of a quality source text (ST) when facing technological challenges, as a poor ST could lead to inaccurate translations despite accurate output. They also noted that texts in the European Union (EU) are often the result of negotiations involving multiple political levels and may not be written by native speakers, making it challenging to ensure a quality ST.

3.2.2.4 CHALLENGES AND RECOMMENDATIONS FOR MT USE IN HUMAN TRANSLATION WORKFLOWS

In the article by Vieira and Alonso (2018), they examine challenges and recommendations for using artificial neural networks in human translation workflows. The findings suggest that more training and awareness of MT uses and capabilities are necessary, especially in contexts involving large teams and many different professionals. Translators should be free to make decisions crucial to product success, and awareness-raising and communication are required for team members to work in sync. Recommendations include avoiding measures based solely on edit distance for calculating post-editing rates, researching reliable alternatives to word rates, preventing negative uses of activity tracking, improving communication and transparency, and educating society and end-clients on what to expect from MT technology. The report emphasises the importance of open communication and feedback channels for improvement in both the human and technological aspects of MT use.

Another study by Screen (2017a) on using MT for English-Welsh professional translation concludes that post-editing did not significantly benefit professional translators, with no significant differences in processing time and cognitive effort between post-editing and traditional translation. However, post-editing made the text production process easier regarding the total number of keystrokes recorded, and both translated and post-edited texts were acceptable in terms of accuracy and fidelity.

Screen (2017a) examines the use of translation technology, specifically fuzzy and exact matches, and post-editing MT, in speeding up translation between English and Welsh. The research found that these methods do not negatively impact translation quality and can even improve it in some cases. The study contradicts previous research that manual translation is better for quality and that errors are more common in translations produced through editing fuzzy matches. Translation technology productivity gains are confirmed. However, the low uptake of these technologies in the Welsh translation community is notable.

3.2.2.5 THE ADVANTAGES AND LIMITATIONS OF NEURAL MACHINE TRANSLATION (NMT)

Recent research indicates that technological advancements have significantly expanded language coverage, making translation services available in previously inaccessible languages. Neural machine translation (NMT), in particular, has made it possible to translate text in low-resource languages that lack sufficient training data for traditional statistical machine translation (SMT) systems. In a study conducted by M. Prys, NMT technology was successfully implemented into the workflows and infrastructure of a Welsh translation company, leading to optimised translation engines that outperformed Google Translate on both internal and external datasets. However, while NMT is a valuable tool for translation, it is not a replacement for human translators, and NMT output still requires post-editing to ensure accuracy. Furthermore, while post-editing has been introduced as a regular practice in the translation workflow, there are concerns that it may hinder creativity and make translators increasingly passive and lazy. The study highlights the importance of TM and MT technology for industry development and productivity.

3.2.2.6 CHALLENGES AND BENEFITS OF POST-EDITING IN MACHINE TRANSLATION: INSIGHTS FROM STUDIES ON TRANSLATOR RESISTANCE AND QUALITY EVALUATION

Research has evidenced that many translators are reluctant to take on machine translation and post-editing (MTPE) work due to social factors such as payment, experience, employment environment and types of work (Cadwell et al., 2018; Guerberof Arenas, 2013; Moorkens, 2018; Sakamoto, 2019). More specifically, Sakamoto's (2019, p. 201) research was conducted to explain why translators resist post-editing as they feel their professional skills and identities are being side-lined by technology.

Screen (2019) researched to assess the quality of post-edited machine-translated (MT) texts from the perspective of Welsh speakers in Wales. The study showed that post-editing MT does not necessarily lead to translations of lower quality for the

end-user, which supports the use of MT in professional settings. However, the research also highlights the need for more objective methods, such as eye-tracking, to evaluate translation quality. Interestingly, there was no significant difference in the quality of final texts when various translation modalities were used to translate the exact source text. In a prior study by Screen (2017a), post-editing was no more beneficial for professional translators in terms of processing time and cognitive effort than traditional translation. Despite this, post-editing made text production easier regarding keystroke numbers, and both translated and post-edited texts were considered acceptable in terms of accuracy and fidelity. Although the study acknowledges the usefulness of MT as a translation strategy, this specific system did not provide practical benefits, highlighting the need for further research to reach more conclusive results.

The study by Yamada (2019) highlights the advantages and limitations of neural machine translation (NMT). While NMT can produce high-quality translations quickly and easily, it is imperfect and can make similar errors to human translators. However, the highest quality of NMT output can be ensured through post-editing. It is important to note that post-editing may be more challenging for language learners due to NMT's high language proficiency. NMT can be a valuable tool for translation, but it cannot replace human translators, and NMT output must be post-edited by a human translator to ensure accuracy. Therefore, post-editing plays a crucial role in the NMT translation process. Further research is needed to improve the post-editing process and understand the interaction between NMT and human translators.

Based on the above existing research, the use of MT and post-editing (MTPE) has faced resistance from translators due to social factors such as payment, experience, and job environment. However, research shows that post-editing MT can result in translations of comparable quality for end-users. Neural machine translation (NMT) can produce high-quality translations quickly, but it is imperfect and needs post-editing to ensure accuracy. Post-editing remains a crucial element of the NMT

translation process, and further research is needed to improve the post-editing process and understand the interaction between NMT and human translators.

3.2.2.7 THE NUANCED IMPACT OF LANGUAGE AUTOMATION ON THE TRANSLATION PROFESSION: EXPANDING SKILL SETS, CHANGES IN WAGE DISPERSION, AND THE NEED FOR RE-EVALUATING APPROACHES.

The study by Pym and Torres-Simón (2021) examines the complex and multifaceted impact of language automation on the translation profession. As automation becomes more accepted, the skill sets involved in translation are expanding, leading to a broader range of activities and skill sets for translators. Interactive and multilingual skills are becoming more highly valued as a way of authorising and humanising the benefits of automation. However, there may be changes related to wage dispersion. The authors conclude that the impact of automation on the translation profession is nuanced, and changes will be more nuanced than extreme claims of complete disruption by NMT.

The economic impact of machine translation on the translation profession, specifically on pay and job security, was analysed by Vieira (2020). The study found that complaints about pay were mainly related to business practices and MT was not the primary concern. The criticisms of MT were mostly about its limitations and market consequences rather than the fear of being replaced by the technology. The article suggests a wider role for translators across domains and advises against qualified translators leaving technical areas for creative markets, as it could lead to de-professionalisation. The author advocates for open dialogue and exploring business models that integrate, instead of fragmenting, the role of translators across domains as a more productive response to technological advancements.

Therefore, In conclusion, the impact of language automation on the translation profession is complex and multifaceted. While automation expands the skill sets required for translation, leading to more highly valued interactive and multilingual skills, there may be changes related to wage dispersion. The study by Pym and Torres-Simón (2021) suggests that the impact of automation on the translation

profession is nuanced and changes will be more gradual than extreme claims of complete disruption. Vieira (2020) suggests that a broader role for translators across domains and open dialogue is a more productive response to technological advancements than giving in to automation-induced anxiety.

3.2.2.8 THE IMPACT OF TECHNOLOGY ON THE LANGUAGE SERVICE PROVIDER INDUSTRY: ADVANTAGES, CHALLENGES, AND FUTURE DIRECTIONS

Research by Esselink (2019) shows how the language service provider (LSP) industry has been significantly impacted by technology, resulting in a shift towards cloud-based platforms and AI integration. Translation Management Tools and process automation can improve the efficiency and quality of the translation process while reducing costs. However, LSPs face challenges in utilising technology, including incomplete functionality in key areas, issues of ownership and responsibility, and constraints posed by third-party Translation Management Tools. Further research is recommended to optimise Translation Management Tools and process automation in the translation industry. The role of Project Managers in translation has also been transformed by technology, enabling them to focus on more strategic tasks. Additionally, the use of technology can improve customer interactions, projects, and finances, resulting in improved efficiency, productivity, and customer satisfaction.

3.2.2.9 EXPLORING THE ROLE OF LANGUAGE TECHNOLOGIES IN SUPPORTING MULTILINGUALISM AND PRESERVING LESS-RESOURCED LANGUAGES: INSIGHTS FROM RECENT RESEARCH IN WALES

Pym and Torres-Simón's (2021) recent research sheds light on how automation is changing the translation profession. They argue that as automation becomes more prevalent, translators need to expand their skill sets to include interactive and multilingual skills, which are increasingly valued as a way of authorising and humanising the benefits of automation. Meanwhile, D. Prys (2022) highlight the underrepresentation and sustainability issues of Welsh language technology but also emphasises the progress made in recent years. They stress the need for

continued investment in Welsh language technology to prevent minoritised languages from falling behind as new digital services and products come to market and to enable Welsh to participate in multinational and multilingual research and development (R&D) programs.

Furthermore, language technologies are crucial in preserving and promoting less-resourced languages, as discussed in D. Prys et al.'s (2021) article. Researchers in Wales are making strides in developing language technologies for Welsh and other less-resourced languages, despite data scarcity and a lack of resources. The authors recommend interdisciplinary collaboration and the establishment of a National Language Technologies Network in Wales to promote knowledge sharing and support for the development of language technologies. The role of the Language and Technology in Wales 2020 Academic Symposium and the new MSc Language Technologies course at Bangor University are also mentioned as further support for the development of language technologies.

Screen's (2016a) empirical study on Welsh translation shows that technology use speeds up the translation process, reduces variables related to text production, and makes translation cognitively easier. In addition, technology provides support for international communication and distribution, enabling businesses to communicate with clients and customers worldwide. However, only a minority of Welsh translators use technology, which has implications for language planners in Wales. The article also provides a historical account of the growth of the Welsh translation industry since the 1960s and its links to language policy and planning.

3.2.2.10 CHALLENGES AND OPPORTUNITIES IN THE USE AND DEVELOPMENT OF LANGUAGE TECHNOLOGIES FOR LESS-RESOURCED LANGUAGES: INSIGHTS FROM WELSH LANGUAGE TECHNOLOGY RESEARCH

Several challenges associated with technology in translation workflows have been highlighted by Vieira and Alonso (2018); their report discusses both the human and technological aspects of MT use. They explained how using MT in human translation processes can present challenges, particularly in the initial stages. More

training and awareness of MT uses and capabilities are necessary, especially in contexts involving large teams and many different professionals. They also state that improvement often requires open communication and robust feedback channels.

The limitations of MT are a significant challenge, as MT systems still struggle with context, idiomatic expressions, and other linguistic nuances. Integration with existing workflows can also be a challenge, as adopting new technologies can disrupt existing processes, leading to a decline in productivity. Quality control issues can also arise when using MT or relying on automated tools, as errors can be introduced into the translation process. Finally, cybersecurity concerns are a growing issue in the industry, as translation data often contain sensitive and confidential information, making it a target for cybercriminals.

D. Prys et al. (2022) drew attention to the underrepresentation of Welsh language technology and its sustainability issues. The author emphasised the importance of continued development and investment in Welsh language technology to prevent minoritised languages like Welsh from falling behind as new digital services and products come to market. Prys also stressed the need for Welsh to be enabled to join large-scale multinational and multilingual R&D programs and to have a space within the European community. To up-resource minority languages and up-skill their language communities, special attention should be paid. These findings underscore the need for concerted efforts to support and advance Welsh language technology, which can contribute to the preservation and vitality of the language and culture.

M Prys et al. (2021) in their publication, underscored the significance of language technologies in preserving and promoting less-resourced languages and identified key challenges researchers face when developing such technologies for languages like Welsh. One major obstacle is the requirement for substantial amounts of data, which may be lacking in some communities. Additionally, limited resources often exacerbate the difficulty of the task at hand. Despite these difficulties, Welsh researchers have made significant strides in overcoming these hurdles by

developing language technologies for Welsh and other less-resourced languages and addressing data scarcity and resource paucity. This has necessitated interdisciplinary cooperation and the establishment of a National Language Technologies Network in Wales aimed at facilitating knowledge sharing and the exchange of ideas among researchers, industry stakeholders, and policymakers. Efforts such as the Language and Technology in Wales 2020 Academic Symposium, as well as the development of a new MSc Language Technologies course at Bangor University, have furthered the cause of promoting and preserving less-resourced languages by providing support for the development of language technologies for Welsh and other languages in need. Overall, research by D. Prys et al. (2022) highlights the crucial role of language technologies in safeguarding the world's linguistic diversity.

Therefore, based on the above research the use of MT presents challenges in translation workflows due to limitations in context, idiomatic expressions, and other linguistic nuances. Integration with existing workflows can also be disruptive, and quality control issues and cybersecurity concerns can arise. Moreover, Welsh language technology faces underrepresentation and sustainability issues that require continued development and investment. Despite data scarcity and limited resources, Welsh researchers have made significant strides in developing language technologies for Welsh and other less-resourced languages. Efforts such as the National Language Technologies Network and academic symposiums highlight the importance of language technologies in preserving linguistic diversity.

3.2.2.11 THE IMPACT OF TRANSLATION TECHNOLOGY ON TRANSLATOR REMUNERATION: DEBATES AND CONCERNS.

The impact of technology on translator remuneration is a complex and often debated issue. Pym and Torres-Simón (2021) suggest that there may be changes related to wage dispersion, with some language workers earning more and others earning less due to significant investments in technology by language service providers. However, most translator grievances regarding pay are based on business practices rather than MT. Translation technology can exacerbate the

situation further, as language service providers may justify lower rates for TMs and MT outputs. This sentiment is echoed by Olohan (2017), who argues that translation technology can result in lower pay rates for translators, particularly for tasks involving post-editing or database checking. This is especially prevalent in China, where translators may be employed as post-editors or database checkers at lower pay rates than for pre-automation tasks.

Consequently, some translators fear not so much automation as such but what large companies will do with it. The connection between automation and wage dispersion seems most apparent with large language service providers, while the impact on smaller companies and freelancers is less clear. Overall, the impact of technology on translator remuneration is a complex and multifaceted issue that requires careful consideration of the benefits and drawbacks of different technological tools and workflows, as well as fair and ethical business practices.

3.2.2.12 CONCLUSION

3.2.2.12.1 SUMMARY OF THE MAIN FINDINGS

The main findings in this study indicate that technology plays a crucial role in translation workflows and significantly impacts the translation industry, particularly in the context of the Welsh language. The review highlights the advantages and challenges of different types of translation technology and their potential implications for translation quality, productivity, and remuneration. Furthermore, the review underscores the need for ongoing innovation and development in translation technology to enhance its functionality, accuracy, and security.

In addition, the impact of technology on the translation industry is examined, including challenges such as the quality of MT and the rise of non-professional translation. The review also stresses the importance of workplace-based research to optimise translation technology benefits and the need for further research to improve technology deployment and education and to explore new approaches and strategies to optimise translation technology benefits.

This review is highly relevant for various stakeholders, including the Welsh Government, public and private sector organisations, professional translators, and translation software developers. It highlights the need for further research and emphasises the pivotal role of technology in modern translation workflows. Furthermore, it shows that embracing innovation and developing current systems in the public sector in Wales could reduce automation anxieties and foster an empowered, bilingual workforce.

3.2.2.12.2 IDENTIFICATION OF AREAS WHERE FURTHER RESEARCH IS NEEDED.

D. Prys (2022) acknowledges that while language technology has made progress, there are still significant gaps in our understanding of its impact on translation practices, particularly in the Welsh language context. Therefore, large-scale language technology research and development programs are needed to fill these gaps. Specifically, further research is needed to investigate the technology's potential benefits and challenges in Welsh translation and encourage its broader adoption in the industry. Additionally, research is needed to improve the post-editing process and better understand the interaction between NMT and human translators. The review also emphasises the need for ongoing research to optimise the use of TMS and process automation in the translation industry. Furthermore, there is a need to understand the impact of automation on the translation profession fully and to collect additional translation data to pressure the Welsh Government to release bilingual resources and upskill language communities to give Welsh a space within the European community.

3.2.2.12.3 SUGGESTIONS FOR FUTURE RESEARCH ON THE USE AND IMPACT OF TECHNOLOGY ON TRANSLATION WORKFLOWS

In light of recent research, it is evident that there is a need for more in-depth studies on the impact of technology on translation practices. Jiménez-Crespo (2020) stresses the importance of broadening the conceptual focus on "technology" in Translation Studies. Additionally, Doherty (2016) recommends that translators remain technologically competent and take a critical and informed approach to

address the impact of these technologies on international and intercultural communications.

Screen (2016b) suggests that further research is needed to investigate the potential benefits and challenges of technology in Welsh translation and to encourage its wider adoption in the industry. Furthermore, Screen (2016a, 2017b) recommends further research using eye-tracking to measure effort combined with Translog-II and comparing variables across MT and TM systems post-editing. Screen (2017b) concludes that MT is a helpful translation strategy, but more research is needed to draw more definitive conclusions about its practical benefits.

In addition, Yamada (2019) recommends further research to improve the post-editing process and better understand the interaction between NMT and human translators. Nunes Vieira (2020) also emphasises the need for further research to understand the impact of automation on the translation profession fully.

The Welsh Government (2020b) recommends that future research focuses on the use of emerging technology and automation which would impact translation workflow efficiencies and translation quality. D. Prys et al. (2022, p. 22) suggest collecting additional translation data and pressuring the Welsh Government to release bilingual resources and upskilling language communities to give Welsh a space within the European community. To ensure the Welsh language continues to thrive, it is essential to take advantage of the latest technologies, invest in the collection of translation data, and empower the Welsh language community.

Finally, Esselink (2019) recommends further research to optimise the use of TMS and process automation in the translation industry. Overall, these recommendations highlight the need for ongoing research to improve translation practices and ensure that technology benefits and risks are carefully balanced. Specifically, Esselink (2019) suggests the development of more thorough metrics, better integration with machine translation, and the exploration of further automation applications. Additionally, they recommend the need to consider the

ethical implications of technology, such as privacy and data security, when developing new translation tools.

3.2.2.12.4 FINAL REMARKS

In conclusion, this review highlights the need for further research into language technology and translation, particularly in the Welsh context. The identified gaps in research point to the need for large-scale research and development programs to investigate the potential benefits and challenges of technology in translation workflows. Suggestions for future research include investigating the impact of technology on translation quality, improving the post-editing process, understanding the interaction between NMT and human translators, and optimising the use of TMS and process automation. Additionally, there is a need to collect additional translation data and pressure the Welsh Government to release bilingual resources and upskill language communities to give Welsh a space within the European community. The recommendations by scholars and the Welsh Government emphasise the importance of ongoing research to ensure the technology in translation is balanced and benefits the industry as a whole.

3.2.3 WORKFLOW AND PROJECT MANAGEMENT IN PROFESSIONAL INDUSTRY AND INSTITUTIONAL TRANSLATION

Given that the focal point of this study is translation workflows, and to compare translation workflows in the public sector, three organisations were selected to understand their workflow processes from initial translation requests to delivery of the target text.

The translation workflows from the following three organisations were selected for comparison purposes:

- 3.2.3.1 The Canadian Translation Bureau
- 3.2.3.2 Directorate-General for Translation and
- 3.2.3.3 The United Nations

3.2.3.1 THE CANADIAN TRANSLATION BUREAU²³ WORKFLOW

The Canadian Translation Bureau is the primary provider of professional translation services for the Canadian federal government and is responsible for ensuring that all federal documents are available in both official languages, English and French. According to Mossop (2006, p. 3) the Translation Bureau was founded in 1934 to service an: "Institutional, rather than widespread personal bilingualism. Indeed, that is one reason why so much translation is required". As stated by Mallette (2022, p. 439) at the 15th Biennial Conference of the Association for Machine Translation in the Americas, the Translation Bureau employs 1,300 employees worldwide, and between 2021 and 2022, it carried out 28,000 hours of interpretation and translated 360 million words, outsourcing 47% of its volume to the private sector.

Following a bid to upgrade its linguistic services management system to meet current and future demands, in 2020, the Translation Bureau started to gradually roll out its new, cloud-based translation technology management solution to their department called GClingua,²⁴ and at the beginning of 2023, the rollout was still in progress. This application is a customised version of RWS²⁵ Trados Studio, which is owned by RWS (formerly SDL), and MultiTrans, a cloud-based computer-assisted translation software tool that has been adapted specifically for the Translation Bureau. GClingua provides an integrated, centralised translation environment for editing, reviewing, and managing translation projects and terminology, either offline as a desktop application or online as a cloud-based service. Professional translators, language service providers, and organisations utilise this software to manage multilingual content and automate translation processes. RWS Trados Studio, is one of the most popular CAT tools in the translation industry, with a variety of features for TM, terminology management, project management, and NMT and was selected by the Canadian Translation Bureau when they were looking for a secure, integrated, and scalable solution.

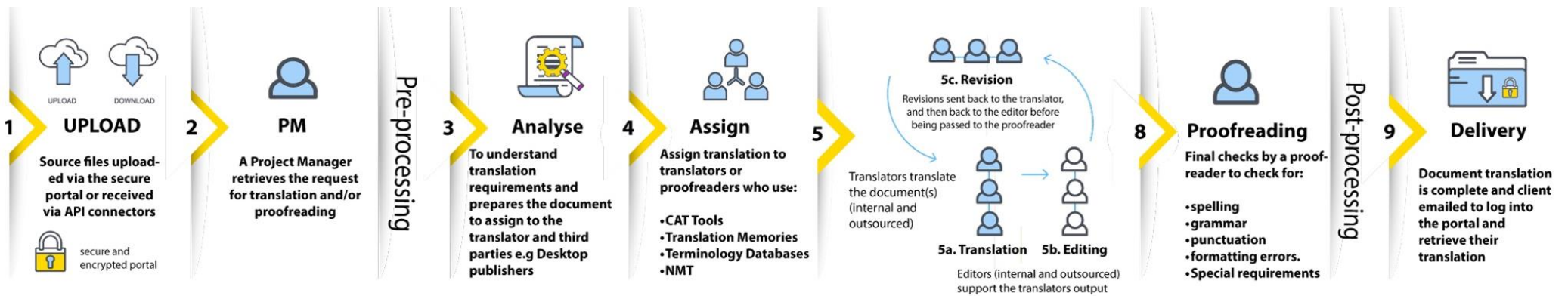
According to the RWS' website announcement²⁶ regarding their collaboration with the Canadian Translation Bureau, they explained how they provided a tailored version of their current systems:

Where project managers have complete control over their linguistic projects, within a secure, user-friendly environment capable of automating tasks, helping them manage projects more efficiently and to the highest security standards [...]. This will up-level the way the Translation Bureau meets numerous stakeholder requirements.

The GClingua Translation Management Tool enables all stakeholders to log into the translation portal and work from within the secure, centralised platform whether they are uploading their translation requests, monitoring the progress of their projects, translating, editing, or proofreading, communicating with all stakeholders (internal and external), or receiving their final translations.

As an illustrative workflow diagram of the translation process at the Translation Bureau has not been specified, this may be because each project is unique and therefore there are numerous ways the translation could be executed. For instance, with or without proofreading, with or without desktop publishing, with or without NMT, and with certain projects requiring only proofreading. Figure 3. 3 depicts an example of how a project is managed by the Canadian Translation Bureau and is based on information gathered from the Translation Bureau's website and the most recent documentation regarding the RWS software.²⁷

Figure 3.3 The Canadian Translation Bureau's translation workflow



The Canadian Translation Service's workflow consists of the following steps:

- 1. Upload:** The client submits a request for translation services along with any reference materials that would be helpful to the Translation Bureau by logging into a password-protected, secure, and encrypted portal and indicating the target language, subject matter, deadline, cost centre code (Project IS Ref Code), and any special requirements. All stakeholders can monitor the translation request's progress. Access to the Translation Management Tool can also be enabled through website connectors.
- 2. Project Manager and Pre-processing:** The project manager **analyses (3)** the document to be translated, taking note of any technical terminology or specialised language that may require additional research or clarification, such as the target audience. The project manager **assigns (4)** the translator within the portal, identifies potential challenges that may occur during the translation process and discusses them with the translator. A third party, such as desktop publishers and terminologists, may be given a GClingua login and be involved at this stage.

3. **Translation:** To ensure translation consistency and accuracy, the translator utilises computer-assisted translation (CAT) tools, such as translation memories, terminology databases, and dictionaries. The translator may also use neural machine translation (NMT) to assist in the translation, but a human translator reviews and edits the final output consistently.
6. **Editing:** The translated document is reviewed by a second translator or editor to ensure that it is accurate, consistent, and meets the Translation Bureau's quality standards. In addition to checking for errors and inconsistencies, the editor provides feedback to the original translator regarding necessary revisions.
7. **Revision:** The original translator makes any revisions or corrections deemed necessary based on the editor's comments. The revised document is then forwarded back to the editor for final review.
8. **Proofreading:** A final editor examines the translated document for errors in spelling, grammar, punctuation, and formatting. The editor also ensures that the final document adheres to any client-specified special requirements.
9. **Final Delivery:** Once the final translation is complete, the client will receive an email with a link to GClingua, where they can retrieve the translation by logging into their portal.

Key features and evaluation of the workflow at the Canadian Translation Bureau

The workflow of the Canadian Translation Bureau utilises a secure, well-planned, and integrated cloud-based Translation Management Tool. This system allows for unambiguous remote access for stakeholders, which is particularly useful during hybrid working and pandemic situations. Key features include a secure portal that provides centralised access to translations, which improves collaboration and communication among stakeholders. As they can monitor the progress of their translation in real-time, it is especially useful.

The system also supports the complex role of translators by having project managers handle pre-processing tasks, which are often time-consuming. This is particularly beneficial when faced with technical difficulties, formatting issues,

unmanageable timeline expectations and outsourcing discrepancies. Integration of CAT tools, TMs, terminology termbases, and NMT streamlines the workflow, reduces costs by ensuring the use of previously translated content, and optimises the translation process using analytics and reporting features. The system ensures consistency and accuracy across multiple languages and domains, which enhances the user experience and maintains brand identity. Overall, the workflow of the Canadian Translation Bureau is efficient, well-designed, and instils confidence in the translation service.

3.2.3.2 THE DIRECTORATE-GENERAL FOR TRANSLATION'S WORKFLOW PROCESS

The DGT (Directorate-General for Translation) is the European Commission's translation service, employing over 1,000 translators and linguists. It is responsible for translating all official documents of the European Commission into the 24 official languages of the European Union, guaranteeing that all EU citizens have access to the same information in their native tongue. It has offices in Brussels, Berlin, and Vienna and a headquarters in Luxembourg City and offers translation services to other EU institutions and member states. The DGT is considered an integral part of the communication infrastructure of the European Union.

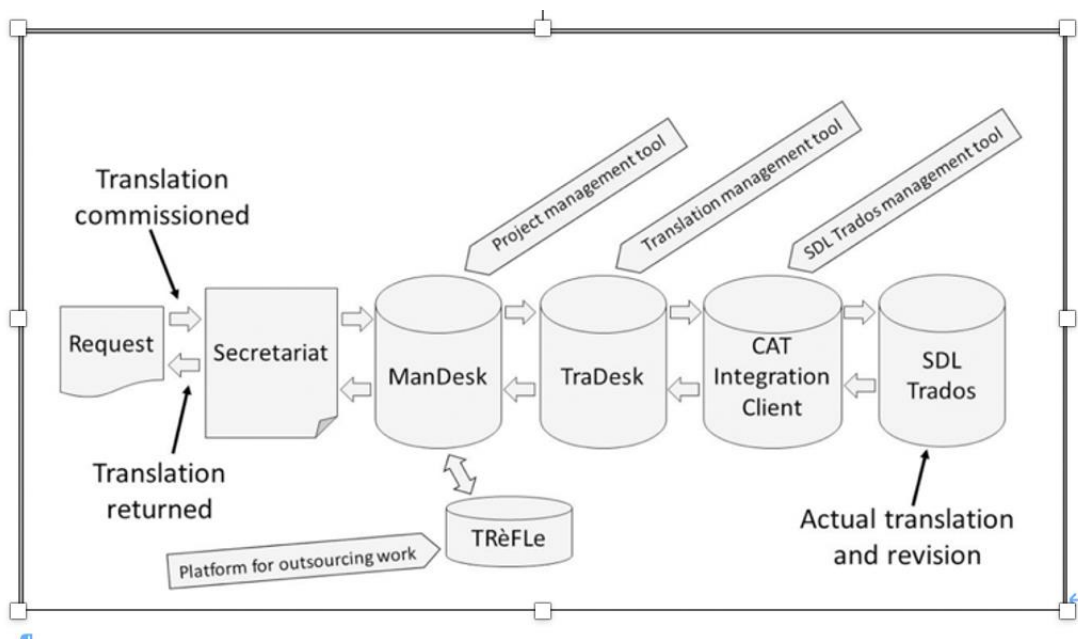
Academic research was conducted by Fernández-Parra (2020) at the DGT to understand its workflow procedures, which has been helpful for this study; therefore, a more accurate workflow schematic is provided. However, the same format used for the Canadian Translation Bureau will be used to explain the procedures for comparison purposes.

Similar to the Canadian Translation Bureau, the DGT's translation workflows are centrally managed with a secure portal, and all translation requests come through the e-poetry platform. ManDesk and TraDesk are two workflow management systems that assist the DGT in managing and ensuring the quality of its translation projects. ManDesk enables translators to accept requests, assign translations to translators, and monitor the progress of translation projects. In addition, it enables translators to communicate with one another and with DGT staff.

TraDesk is a useful tool for the DGT as it allows staff to manage and monitor the quality of translations. In addition, it enables DGT personnel to provide feedback to translators and revise translations. To facilitate the translation process, the DGT employs TRÈFLE, a web-based translation platform that allows translators to work from anywhere. TRÈFLE also includes features such as translation memories, a terminology management system, and a quality assurance tool to aid translators in producing high-quality translations. TRÈFLE is a user-friendly and powerful platform that streamlines the translation process. Figure 3.4, as depicted by Fernández-Parra (2021, p. 115), provides a schematic of the DGT’s translation workflow.

Figure 3. 4 is a schematic of the DGT’s translation workflow, as depicted by Fernández-Parra (2021, p. 115).

Figure 3. 4 Generic translation workflow at the DGT (Fernández-Parra, 2021, p. 115)



The DGT’s Translation Service’s workflow consists of the following steps:

1. **Request:** The client submits a request for translation services and any reference materials that would be helpful to the DGT by logging into a password-protected, secure, and encrypted portal and specifying the target language, subject matter, deadline, and cost centre code. All stakeholders can monitor the progress of the translation request.

2. **Secretariat and Pre-processing:** The Secretariat analyses the to-be-translated document, taking note of any technical terminology or specialised language that may require additional research or clarification, such as the target audience.
3. **Assign:** Once all the background work is complete, the Secretariat will pass the baton on to the next stage, the ManDesk (Manager's Desk). The translation becomes available on the TraDesk (Translator's Desk), a Translation Management Tool at this stage. Any translations that need to be outsourced to freelancers or agencies are facilitated through the TRèfle platform.
4. **Translation:** Once the translator has accepted the translation via ManDesk or TraDesk, they start the process through the CAT Integration Client (a Translation Management Tool that links the DGT systems with RWS Trados). This point in the process is where TMs can be uploaded, and the translation carried out.
5. **Revision:** Revisions are carried out via any of the three platforms: the CAT Integration Client, ManDesk, or TraDesk.
6. **Final Checks and Delivery:** The Secretariat will conduct final checks and return the request to the original sender. Again, what is also noteworthy is the flexibility to cater for different eventualities.

Fernández-Parra (2020, p. 116) explained how the DGT caters to different eventualities, where 'hot lines' are available for short translations needed within 24 hours and how longer translations are treated differently and are managed more carefully by a workflow manager. It appears that all aspects of an efficient workflow are covered. All technology is used to its full capability, complete with staff who are thoroughly trained and conversant with its potential, thus creating an efficient, well-managed workplace and a workflow whereby everyone knows what is expected of them and how to manage their part of the workflow process.

3.2.3.3 THE UNITED NATIONS²⁸ WORKFLOW

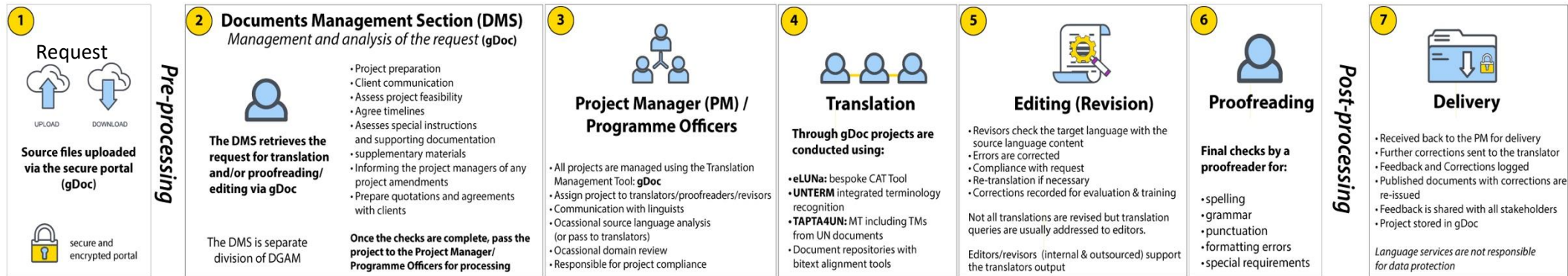
The Translation and Interpretation Service (TIS) is the largest United Nations department within the Department of General Assembly and Conference Management (DGACM) that provides essential interpretation and translation services for all official UN languages: Arabic, Chinese, English, French, Russian and Spanish and German on occasion. It is staffed by a team of experienced translators and interpreters fluent in all six official languages of the United Nations and responsible for providing accurate and timely translations of all United Nations documents, such as speeches, reports, and resolutions. The aim is to ensure all United Nations members have equal access to information and resources. According to the United Nations website, the TIS currently employs 894 individuals. This personnel consist of translators, interpreters, and other support personnel.

As shown on the UN website,²⁹ the organisation uses translation technology tools, such as:

- **gDoc**: A Translation Management Tool that records and manages all translation projects.
- **eLUNa** Suite of language tools, recently designed to meet the needs of United Nations language professionals, is continuously improved based on users' feedback and requests for new functions. All in-house translators and external translators are required to use **eLUNa**, a CAT tool with integrated terminology recognition (**UNTERM**) and machine translation (**TAPTA4UN**) made up of TMs from UN documents.

Figure 3. 5 is a schematic of the United Nations translation workflow, from the start of the translation process to the delivery of the TT.

Figure 3.5 The United Nation's translation workflow



The UN's Translation Service's workflow consists of the following steps:

- 1. Request:** The UN website has a dedicated page for translation requests, where staff fill out a form (linked to the Translation Management platform) and upload the document they would like translated to the password-protected, secure, and encrypted portal, specifying the target language, subject matter, deadline and include any reference materials for pre-processing of the translation. All stakeholders can monitor the progress of the translation request from within the portal, including retrieving historical translations. Clients do not provide style guides, but most language services have their own style rules, and editorial guidelines are often applied to source language content before submitting it for translation.

2. **Pre-processing:** All projects are recorded and stored in gDoc, which provides traceability and shows all process stages. The Documents Management Section (DMS) is responsible for the pre-processing and preparing the project, clarifying, and querying project specifications (or special instructions) and changes with clients and communicating with all stakeholders; however, PMs, Editors and Translators sometimes contact the client directly. The DMS relays any client comments to PMs and sometimes the chief of service. PMs then take over during production.
3. **Project Managers/ Programming Officers (PMs):** PMs (also known as Programming Officers) use a Translation Management Tool (gDoc) to manage and record all translation projects. In all language services, the PM handles deadlines, and other specifications queries assigns internal and external competent translators/revisers to a project and conducts all related communications. The PMs sometimes analyse source language content before being assigned to translators; otherwise, translators themselves would analyse it. Domain review is rare but is sometimes provided at the discretion of PMs or the chief of service. Reviewers recommend or implement corrections. Non-compliances within the process are frequently identified by PMs and even translators and editors. PMs control compliance at all stages. PMs neither verify compliance with specifications nor approve target language content or authorise delivery. It is not clear to what extent this is done at all by other units. PMs do not verify compliance with the specifications before delivery. It is not clear to what extent this is done at all by other units.
4. **Translation:** Both in-house translators and external translators are required to use eLUNa, a proprietary computer-assisted translation tool with integrated terminology recognition (UNTERM) and machine translation (TAPTA4UN) which is made up of TMs from UN documents. Both internal and external translators are required to use eLUNa for translating and gDoc for translation management. Also available are document repositories with full-text search capabilities and bitext alignment tools. Bitext word alignment, or simply word alignment, is the natural language processing task of identifying translation relationships among the words in a bitext, resulting in a bipartite graph between the two sides of the

bitext, with an arc between two words if and only if they are translations of one another. Word alignment is typically carried out after sentence alignment has already identified pairs of sentences that are translations of one another.

5. **Editing and Revising:** Revisers are the second professional translator who compares the content of the target language to the content of the source language to correct errors and other issues and to ensure that the target language content adheres to its intended purpose. This process is repeated until the reviser is satisfied with the quality of the translation, which may involve retranslation. Corrections are recorded for purposes of evaluation and training. Not all translations are revised, but editors are typically contacted with translation queries.
6. **Proofreading:** Proofreading is used as a quality assurance tool to compensate for the lack of revision, at least in some cases. This is a complicated issue since the language services use revision mainly for training purposes to improve the work of junior translators. Only translations by junior translators are revised by someone other than the translator. Proofreading is provided at the discretion of the PMs by text-processors, who implement corrections in consultation with translators.
7. **Delivery:** The PM is accountable for delivering the completed translation. Before delivery, the translator verifies and, if necessary, corrects any translations. All parties receive positive and negative feedback, and all language services have processes for handling feedback and making corrections. Documents that require corrections are reissued, and the reasons are documented. Projects are stored securely in gDoc for an adequate time, but data protection is not the responsibility of language services.

Key features and evaluation of the workflow at the Canadian Translation Bureau

The UN's Translation Management Tool, which operates in the cloud, has been meticulously planned, integrated, and secured, similar to the system used by the Canadian Translation Bureau. This solution is especially useful for remote access by stakeholders during hybrid working or pandemic situations, with a secure portal

that provides centralised access to translations. Stakeholders can collaborate easily and monitor progress in real-time.

One significant difference between the UN's system and that of the Canadian Translation Bureau is the addition of a pre-processing step, called the Documents Management Section (DMS), which emphasises the importance of preparation before the document is sent to a translator. This allows the translator to focus solely on their work rather than being burdened by time-consuming tasks such as technical issues, formatting problems, unrealistic timelines, and outsourcing issues. The project is prepared by the documents management system before being handed over to the project manager, who then supervises the work of translators, editors, and proofreaders. The delivery stage encourages feedback from recipients, thereby strengthening the translation process.

By integrating all of their CAT tools, TMs, termbases and bespoke MT system, built from their own TMs, the workflow is streamlined, and costs are reduced as previously translated content is used. The analytics and reporting features optimise the translation process, ensuring consistency and accuracy across multiple languages and domains, maintaining brand identity. Additionally, feedback is emphasised during the final post-processing stage, which is used to monitor the service and gather data to make further improvements. Overall, the UN's workflow is designed efficiently and promotes confidence in the translation service.

3.2.4 POST-EDITING (PE), AUTOMATIC POST-EDITING (APE), PRE-EDITING AND PRE-PROCESSING

This section explores aspects related to post-editing (PE), automatic post-editing (APE), pre-editing, and pre-processing in the context of translation. These processes play a crucial role in optimising MT output and ensuring accuracy and fluency in translated texts. This section examines the purpose and significance of pre-editing, which involves modifying the source text before MT, as well as the techniques used to adapt the text for better translation results. Additionally, it delves into pre-processing, which encompasses various preparatory steps taken prior to the

translation process, aiming to enhance the quality of the output. Through an exploration of these topics, an understanding of the implications of PE, APE, pre-editing, and pre-processing in translation will be gained.

Post-editing (PE)

Post-editing (PE) can be defined as the act of "editing, modifying and, or correcting, pre-translated text that has been processed by an MT system from a source into (a) target language" (Castilho, 2011, p. 14). Generally, there is a consensus that PE is distinctive from translation and revision, and according to Vieira et al. (2019, p. 2), post-editing of MT is a "service in its own right, with specific guidelines and recently, an international standard", namely ISO 18587:2017.

An empirical analysis was performed by Screen (2017b) with eight professional translators who worked between English and Welsh and were asked to translate 100 sentences from English to Welsh in a timed translation task. There were 17,440 words processed via MT, using Google Translate and Trados. Screen suggested that post-editing MT decreased the likelihood of mistranslation, and the combination of MT with a CAT tool significantly speeded up the translation process and, in some cases, improved the quality (Screen, 2017a, p. 131). However, Screen only conducted the test one way at this point (En>Cy), and it is worth considering whether Welsh>English would produce the same result, although typically, in the context of this research, English>Welsh is a more common direction used.

Despite the importance of PE, as demonstrated by Screen, O'Brien (2016, p. 10) authored an article in the *European Society for Translation Studies Newsletter* in which she discussed the industry's dislike and confusion for PE, describing it as an annoyance. She questioned how the industry was progressing, using technology, and combining MT and PE, TM and PE and TM, MT, and PE. O'Brien explains the direction in which translation technology is going; one minute; the translator is 'translating;' and the next minute, she is revising a match from the TM and then 'editing' an MT proposal. The translation landscape is changing or has changed dramatically.

From a professional translator's perspective, it is little wonder that there is a dislike of PE; for example, in a study by Bowker (2009, p. 135), she explained that post-editors are typically paid half the rate of a translator. It is commonly known that post-editing a document does not always mean less work than translating. On the contrary, as highlighted by Pal (2018, p. 10), professional translators often prefer to translate from scratch. However, Christensen et al. (2017, p. 10) identified that "translators hardly translate from scratch anymore", and they "might now be regarded as de-facto post-editors". Christensen et al. (2017, p. 16) discussed a study by Moorkens and Sasamoto (2017), which produced an interesting result. Their analysis reveals that translation productivity rises when translators work from TM matches, which is consistent with past research, but falls when they edit MT matches and rises when they translate from scratch, which is the opposite of expected.

Vidal et al. (2020) discuss how translators perceive themselves as less productive when post-editing content; this could be an additional reason for their annoyance regarding PE. PE MT output was deemed 'tedious' by Moorkens and O'Brien (2017), who stated: "They prefer to translate from scratch even if it has a negative impact on productivity", which was based on the results from a study by Teixeira (2004, p. 52).

There are indications to suggest that large corporations are increasingly hiring translators for lower compensation as post-editors, responsible for reviewing MT output, or to carry out database checks, especially in China. This trend has become more prevalent since the rise of automation. Translators, however, are less worried about the MT technology itself and more concerned about the potential implications of automation for their roles within larger corporations.

Pre-editing

Pre-editing refers to the process of making modifications to the ST before it is machine translated. The main purpose of pre-editing is to optimise the text so that it can yield better results when translated by a machine. This optimisation may

involve simplifying complex language, adjusting sentence structures, and removing any ambiguities present in the text. These changes aim to enhance the accuracy and fluency of the machine-translated output.

Bowker (2019, p. 252) suggests pre-editing can "remove ambiguities and constructions that cause difficulties in the translation process". This makes sense to a degree, but the question that needs to be asked is how much pre-editing is acceptable and whether the content would need to be signed off by the original author before being translated just in case the pre-editor has altered the meaning or style in any way that the author may disagree with.

Inaccurate changes made during the pre-editing process can have a significant impact on the output. For instance, if a document is intended for the public domain, it will only be understood if the reader has access to both the source text (ST) and the translated text (TT) for comparison. Moreover, it raises concerns about potential bias, including unconscious bias. If we consider a scenario where the document undergoes multiple editing processes involving different individuals, there is a possibility that a politically-motivated article could be simplified or distorted to reflect a different political perspective. Similarly, a medical record could be altered by changing a patient's diagnosis. Although these examples are extreme, they highlight the importance of considering such risks in the pre-editing process.

As AI progresses even further with translation technology advancements, which will only improve over time, what does the future look like for professional translators? As this study is focused on the public sector professional translators, how would they envisage their roles changing if these technologies all become part of their workflow? Would there be a need for translators to specialise even further and, in addition, become experts or masters of translation technology, as suggested by Sandrini (2016, p. 55)? The question then needs to be asked: how feasible would it be to train a seasoned translator who is more used to translating general/non-technical content without online/offline technology than for example, a new translator with little experience but more technology adaptability? What is

remarkably interesting is that researchers such as M. Prys (2021, p. 111) have found that back-translating monolingual content helped to improve BLEU scores, whereas Sayers et al. (2021) have argued that the process of pre-editing translations and following a set of rules helped to improve the MT output and reduce the post-editing time. Bowker and Ciro (2019, p. 252) stated: "Pre-editing can remove ambiguities and constructions that cause difficulties in the translation process". They also explain how the process works from the creation of a new source text, simplifying the language used, reducing sentence lengths, and removing ambiguous words and cultural references for example, so it becomes easier for the MT process to translate the content more accurately, improving the quality of the output. Arenas and Moorkens (2019, p. 221) see pre-editing as an additional process to post-editing, so it would be instructive to investigate whether post and pre-editing would be more labour-intensive. The question here is: which is more effective?

With the continuous advancements in translation technology driven by AI, the future of professional translators is a topic of interest. Specifically focusing on professional translators in the public sector, raises questions about how their roles would evolve if these technologies were integrated into their workflows. Would translators need to specialise further and become experts in translation technology, as suggested by Sandrini (2016, p. 55)? Additionally, it raises the question of the feasibility of training experienced translators who are accustomed to translating general/non-technical content without relying on online/offline technology, compared to new translators who may have less experience but are more adaptable to technology.

Notably, researchers like M. Prys (2021, p. 111) have found that back-translating³⁰ monolingual content can improve BLEU scores, while Sayers et al. (2021) argue that pre-editing translations and following specific rules can enhance MT output and reduce post-editing time. Bowker and Ciro (2019, p. 252) state that pre-editing can eliminate ambiguities and challenging constructions in the translation process. They explain the process of creating a new source text, simplifying language, shortening sentences, and removing ambiguous words and cultural references to facilitate more accurate MT translation and improve output quality.

Regarding pre-editing and post-editing, Arenas and Moorkens (2019, p. 221)) view pre-editing as an additional step to post-editing. Thus, it would be insightful to investigate whether post-editing and pre-editing would require more labour-intensive efforts. Ultimately, the question arises: which approach is more effective?

Automatic post-editing (APE),

As described by Escribe and Mitkov (2021, p. 167), Automatic post-editing (APE), is a process used to correct MT output without human intervention. In a Welsh translation company, M. Prys (2021, p. 119) provides an example of using NMT with APE. Integrating APE rules into the translation pipeline ensured a fixed translation output of *'p'un a yw'* instead of multiple alternative outputs. The study demonstrated the success of this implementation and provided translators with access to a file to add their own rules, resulting in improved output quality and a greater sense of ownership over the technology. Furthermore, the post-editing process became less labour-intensive. APE rules are invaluable to organisations with preferred terms, such as brand consistency or stylistic purposes. These rules ensure that the selected content is always accurate and on brand, and they also ensure language maintenance and continuity, improving the translation quality.

In a Dowling et al. (2016) study, the researchers examined the disparities between SMT and NMT to assist the Irish Government's translation practices. Their research workflow incorporated an automated post-editing (APE) module that utilised manually coded grammar rules. Dowling et al. (2015) introduced this APE module in a previous paper, which stated that they were developing a new automated post-editing module which can be applied to MT output to correct mistakes and orthographic impossibilities. It uses Irish surface orthography rather than deeper morphological analysis to correct morphological errors. While the corrections made by this module are minor, they do improve the grammar and readability of the content, with Dowling et al. (2015, pp. 4–5) stating: "While the aim was to correct errors and improve readability and grammar, initial tests show an improvement [in readability and grammar as opposed to no improvement]". This is of interest to this study; however, if the improvement is only minor, the tool potentially would

become obsolete whilst trying to compete with the surging advancements of NMT. To obtain an accurate assessment of the device, it would be logical to explore how this APE module would perform with NMT instead of SMT.

Pre-processing

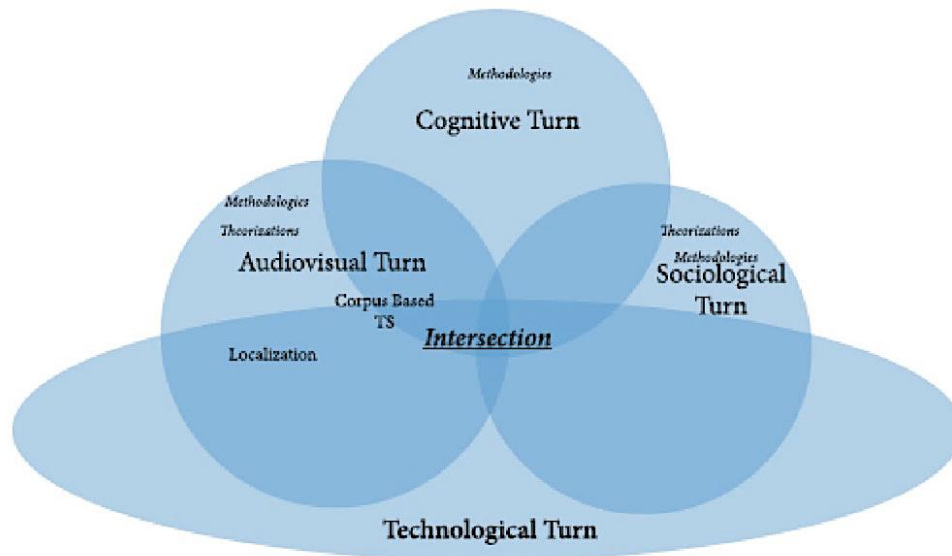
As described in this chapter (see Figure 3. 4), *pre-* and *post-*editing must not be confused with the term 'pre-processing' used by the DGT and as described by Fernández-Parra (2020, p. 116). Pre-processing relates to background management of the translation, such as collecting and preparing any reference material to assist the translator, allowing the translator to concentrate on the translation element. Until the translator receives the translation, they are unaware of any preparation involved. It is noteworthy that at this stage, the translator still does not have the document to hand, as the next stage in the process is when the documents are passed to the "Secretariat".

In conclusion, post-editing, automatic post-editing, pre-editing, and pre-processing are integral processes in the field of translation, playing a crucial role in optimising MT output and ensuring the accuracy and fluency of translated texts. The empirical analysis by Screen demonstrated the benefits of post-editing in reducing mistranslations and speeding up the translation process. However, there is a mixed perception within the industry, with some translators expressing dislike and concerns about the implications of automation. Pre-editing, on the other hand, aims to optimise the source text to improve MT results, but caution must be exercised to avoid inaccurate modifications that may impact the final output. The future of professional translators in the face of advancing translation technology raises questions about specialisation and adaptability. Further research is needed to explore the effectiveness of pre- and post-editing approaches and their labour-intensive nature. As the translation landscape continues to evolve, it is crucial to navigate the intersection of human expertise and technological advancements for the benefit of accurate and high-quality translations.

3.2.5 THE TURNS

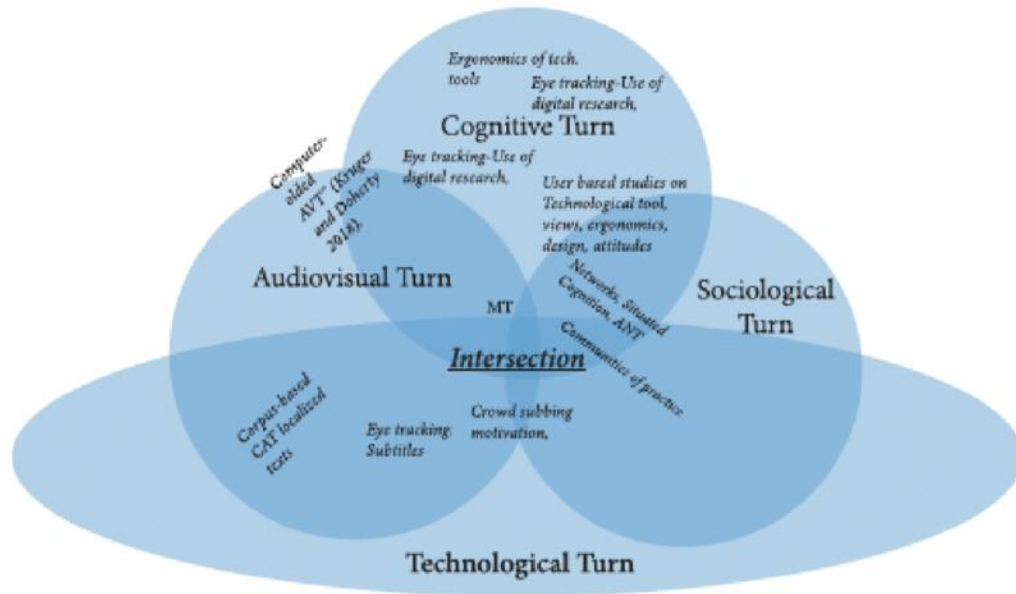
Researchers in Translation Studies have referred to "turns" since the 1970s. To this day, references are made to "turns" however, researchers have some disputes about the position of the technological turn (which is the focus of this research) amongst researchers. They are perplexed about when it happened, if it happened when it ended, or if it has ended. In a recent study entitled *The technological turn in translation studies: Are we there yet? A transversal cross-disciplinary approach* by Jiménez-Crespo (2020, p. 315), he asks the question of whether the "technological turn "paradigmatic", or "disciplinary turn" (there is also confusion about what it is called) has ended. The article discussed the turns over the years and attempted to justify the position of the technological turn that was made in 2020. However, he concluded that the turn had already been completed, but Jiménez-Crespo (2020, p. 315) also stated: "The 'technological turn' will continue to permeate across the discipline for decades to come". He investigated how Translation Studies had undergone a "radical change of direction" (p. 323) and had "fully embraced technology" (p. 331) and produced Venn diagrams to illustrate how technology can now be the "connective tissue of the discipline" (p. 328). The first diagram (Figure 3.3) shows Jiménez-Crespo's interesting interpretation of how the 'technological turn' meets sub-disciplines or areas with standard links through methodologies, theorisations, descriptive studies, or empirical studies".

Figure 3. 6 Venn diagram illustrated by Jiménez-Crespo (2020, p. 329): the intersection of turns and sub-disciplines through technology.



Even though the Venn diagram by Jiménez-Crespo (2020, p. 325), above illustrates how the industry’s disciplines overlap, it could be questioned why other ‘turns’, such as the Motivational, Empirical, Pragmatic, Ideological, globalisation, or the turn of the millennium, are not also mentioned, given that they have played a role and are still resonating in the profession. It would be intriguing to examine how they overlap, but it is outside the scope of this study. Critical to this study is whether the ‘technological turn’ has concluded or is continuing. If it has not finished its cycle, this thesis can only partially analyse its impact on professional translation workflows. The second Venn diagram (Figure 3. 7) below by Jiménez-Crespo (2020, p. 325), shows how technology has filtered into many sub-disciplines, research trends and directions and is classed as a ‘core component.’

Figure 3. 7 Venn diagram illustrated by Jiménez-Crespo (2020, p. 329) intersection of 'turns' and different studies in TS (translation studies).



3.2.6 TECHNOLOGICAL TURN

When the technological turn began and ended is not agreed upon by researchers. Researchers agree that the first effects of the technological turn were felt a few years ago, but it is difficult to pinpoint the precise year. When the technological turn began and ended is not agreed upon by researchers. Below is a summary (Table 3. 2) of when key researchers in Translation Studies claimed the technological turn began, with differences ranging from 2002, when Chan was believed to have first mentioned the turn, to those such as Alonso and Calvo (2015, p. 142), questioning whether it occurred at all and whether it was "another facet of a sociological or even cultural turn".

Table 3. 2 Researchers' opinions on when (or if) the technological turn took place.

Author	Claim	Date Started
Snell-Hornby (2006, p. 116)	Simultaneous interpreting had its own "Technological Turn" in the first half of the 20th century.	1st half of the 20th century
Cronin (2010, p. 1)	It was stated that it began "at the close of the first decades of the noughties" and that 'we might term this time the 'Technological Turn' although Chan and others had already used it.	End of the first decades of the 2000s
O'Hagan (2013, p. 512)	With the advancement of translation technologies, Translation Studies are experiencing "a Technological Turn."	Written in 2013, and states that Translation Studies are experiencing a Technological Turn
Qian (2013, p. 2)	In an interview with Qian, Chan mentioned the Technological Turn in 2002 and said that the Turn had progressed even further and is now a 'technological revolution'.	2002 was mentioned in an article; Chan believed in 2013 that the Turn had already finished and was a Technological Revolution.
Cai, Zhang (2015, p. 429)	Cai and Zhang stated (in past tense) that the Technological Turn of translation studies has 'occurred' in translation studies.	Already finished in 2015
González (2015, pp. 25, 26)	The Technological Turn is driven not by theoretical developments in cognate areas of inquiry [...] but is an emergent property from new forms of translation practice.	Emerging in 2015
Alonso & Calvo (2015, 142)	Questioned whether the Technological Turn was just another facet of a sociological or cultural turn (so, therefore, not even a turn in its own right).	Questioned whether a Technological Turn existed
Christensen et al. (2017, 14)	Claimed that it had already started by 2006 and is continuing.	It started before 2006 and is still in progress
Kenny (2017, p. 6)	"We are on the cusp of a refinement of the 'Technological Turn' in translation studies - one that will see more critical humanities and social-science-inspired research into translation technologies."	Kenny envisages 2017 as being on the cusp of a refinement that integrates translation studies more with other domains such as social sciences
Fantinuoli (2018, p. 3)	Fantinuoli said, "Currently, interpreting might be on the verge of a [...] Technological Turn in interpreting."	In 2018, interpreting was on the verge of a Turn
Jiménez-Crespo (2020, p. 315)	The question was asked, "Are we there yet."	2021, it is still on-going

According to Kenny (2017, p. 6), "we are on the verge of a refinement of the 'technological turn' in translation studies - one that will see more humanities and social science-inspired research into translation technologies".

Table 3. 2 above consolidates opinions from well-known researchers in the translation studies industry on when they believe the technological turn started and completed (or, in some cases, did not start or did not complete). It clearly shows the differences of opinion across a wide range of experts.

In the broader context, researchers from Translation Studies have continuously debated whether the field is undergoing or has completed this particular 'turn,' sometimes without a clear understanding of what they mean by 'the term, turn' itself. According to Snell-Hornby (2006, p. 366), a disciplinary turn is a paradigmatic change (or change of direction) that is "dynamic and can only be assessed as such in retrospect". In other words, as Snell-Hornby (2006, p. 369) stated: "A disciplinary 'turn' can only be perceived and defined as such after it has already occurred", so is the technological turn complete? In an interview with Qian (2013, p. 3), Chan suggests that it has already happened and even considered that the technological turn evolved into a "technological revolution". Chan predicted in the same interview, the next sequential 'turn', the "revolutionary turn" (2013, p. 3). It has been suggested by Gambier and van Doorslaer (2016, p. 2) that 'turns' in Translation Studies have become a "new perspective, a new angle " or, as as described by Snell-Hornby et al. (2010, p. 366): "Paradigmatic change, as well as a redefinition of the subject concerned".

Many researchers and linguists would like to answer whether the technological turn has ended or confirm whether they are still experiencing its "effects" and whether we have moved on. Snell-Hornby (2006, pp. 150–166) refers to the turn as a translation turn in Cultural Studies and claims that Translation Studies is "always re-inventing the wheel" (p. 153). She confirms her belief that a clear majority supports the stance that the turn has indeed been completed, and he even concludes that the turn ended in the first half of the twentieth century. Conversely, some believe that the technological turn is still turning.

Jiménez-Crespo (2020, p. 322) lists O'Hagan as one who is concerned that the impact of technology in Translation Studies might be minimal, along with Doherty (2016, p. 947); however, O'Hagan (2013, p. 6) clearly states the opposite: "a technological turn in translation studies will enrich the discipline with a greater insight into contemporary translation as a technology-mediated activity". The question of whether the technological turn is a paradigmatic change of direction or considered complete has been addressed previously by scholars, such as Jiménez-Crespo (2020, p. 314), using different arguments and with different conclusions.

The majority claims that the discipline has already completed the turn: although interpretations of the notion of a 'turn' as described earlier in this chapter might differ as described by: Chan (2007), Christensen et al. (2017), Cronin (2010), O'Brien and Conlan (2018), O'Hagan (2013), and others have recently expressed their doubts such as Alonso and Calvo (2015). Kenny (2017, p. 6) believes that the turn is dynamic and has been refining itself; therefore, it is far from over, stating: "We are on the cusp of a refinement of the 'technological turn' in translation studies - one that will see more critical humanities- and social-science-inspired research into translation technologies".

While Doherty (2016, p. 950) states that Translation Studies have been "slow to adopt such translation technologies", he also defines technological advancements as fast-changing, and the ongoing technological evolution in translation has yielded unprecedented gains in terms of increased translator productivity. Therefore, his viewpoint is, in fact, more positive than Jiménez-Crespo portrays. Jiménez-Crespo (2020, p. 361) comes to an interesting conclusion from the research by Gambier and van Doorslaer (2016, pp. 2–3), stating how they see a turn as a new "perspective, a new angle within T[ranslation] S[tudies]" and like a type of 'fashion', if they mean that the turn could quickly go out of fashion, however, the connotations behind this is more casual in nature, it could be argued that it is more of a generational turn, suggesting longevity and growth.

Whilst comparing the opinions of key researchers in translation about the different turns and how or when they came about, the opinions vary considerably.

Snell-Hornby (2006, p. 131) acknowledged the "breath-taking developments" in technology during the 1990s and how they affected the role of the translator and interpreter and how studies terminology and computer-aided translation "occupy a world of their own, beyond the expertise of the scholar in "ordinary" or literary turns of the 1990s", yet what was noteworthy was that she referred to the technological turn concerning interpreting only (rather than interpreting and translation). When she discussed translation, she used *globalization*; *globalization* turn or *globalism* instead (thirty-four times). Even though the article is entitled, *The*

turns of Translation Studies, the term "technological turn" is surprisingly mentioned only once, "empirical turn" was mentioned six times, and "pragmatic turn" was ten times.

Snell-Hornby's (2006, p. 150) negative response toward other researchers was surprising. She stated that Translation Studies had "at least two childhood diseases", firstly, with researchers "re-inventing the wheel" by regurgitating content and secondly, that researchers do not study other researchers' work out of pride and often claim to be the first to explore a topic that has been discussed many times. "Books that would have fit the intellectual climate thirty years ago continue to be published today", she continued, expressing her disapproval of replicated works. She calls for a more "unified discourse" that "all field researchers might view as relevant, if not immediately central, to their own endeavour" (p. 150).

This study aims to understand the impact the turn has had (or continues to have) on translation workflows in the chosen organisations and how translators perceive their technologically enhanced working environment. The industry has witnessed several significant turns impacting the translator's workflow and domain, including the pragmatic turn in the 1970s and a cultural turn in the 1980s. The current situation, which includes the introduction of advanced AI technology, raises the question of whether the technological turn has been replaced or is still in progress. Predictably, scholars have dismissed these assertions, but these statements question whether they instil false confidence in MT users, misplaced anxiety in front-line translators, or confusion.

Academics have predicted future trends. Olohan (2017, p. 272) stressed the importance of a shift in "critical studies of translation technology and materialities", focusing on "objects and artefacts: practices such as MT post-editing or knowledge-specific practise" with a specific academic goal. On the other hand, others stress the importance of educating and influencing people about related topics and professions. Doherty (2016, p. 652) stated that translation studies research is commonly acknowledged to be "ignored [in professional circles] in favour of the

more palpable and immediate improvements afforded by translation technology solutions". Similarly, Translation Studies research is frequently overlooked in developing TM, MT, and MT post-editing tools, as highlighted by Moorkens and O'Brien (2017), and Lumeras and Way (2017) commented on how translation professionals often misunderstand the source of their affection for translation technology tools. Nevertheless, Jiménez-Crespo (2020, p. 332) sums up the importance of technology being here to stay: "What is true is that technology is now an integral part of the discipline of TS (even if sometimes incorporated reluctantly), as well as the societal and disciplinary understanding of translation, and will continue to be so for years to come".

3.2.7 DATA MANAGEMENT

There are always considerations regarding the storage and collation of data; with NMT, the main hurdle is the amount of data needed to meet the requirements of AI and Deep Learning. Minority languages such as Welsh find it challenging to create such vast amounts of data; however, researchers recognise this, particularly those at Bangor University who claim to have managed to achieve almost the impossible, as noted by D. Prys et al. (2021, p. 7) "projects such as Mozilla's Common Voice, recording their voices so that enough speech data exists" for their speech data research projects which have been high on the agenda following the Welsh Language Technology Action Plan was released. The Welsh Government (2020a, p. 18) acknowledge TM storage in the Welsh Language Technology Action Plan: "In addition to MT, we freely and openly share translation memories. To increase their productivity, the parallel bilingual data in translation memories can also be fed into automatic MT products (see Work Package 10) to increase their productivity".

Suggestions have been made by the Welsh Government (2020a, p. 18) to use MT "to create 'synthetic data' where there is little real data available in a language". This idea is echoed by other researchers, including Joscelyne et al. (2020, p. 12) from TAUS.³¹ As described in section 1.3.6, TAUS has devised innovative ways to gather and monetise data, whereby copious quantities of parallel corpora are purchased and sold in their 'Marketplace' for businesses using the data to bolster

their TM banks. Although an intriguing endeavour, it is not necessarily the most ethical method, as it is uncertain whether the data is clean and free of sensitive information. What could be deemed confidential to the original organisation may not be considered confidential by anyone else who has handled the data. In a seminar³² where D. Prys was a keynote speaker in 2022, she discussed potential methods to deal with data, such as jumbling the content; however, this is disputed as the content could lose context.

Another potential solution was also highlighted by D. Prys in a recent publication by the Welsh Government (2020a, p. 7) where she stated: "willingness of public bodies to share texts such as their translation memories is also part of the solution", which is a key area of discussion in this thesis. This research looks at the potential of sharing (or pooling) TM data between all public bodies and creating open-source technology, including a central portal to connect public sector organisations and encourage inter-institutional collaborations. Another avenue that has not been considered, and this study aims to understand, is whether a source of data (or, more specifically, parallel corpora) has not been accessed, such as TM data from outsourcing. The management of outsourced content will be investigated during this study to understand the process and application of TM data retrieval; surveys and focus groups will also help determine whether the internal translation staff use their internal tools to their full potential.

3.2.8 ORGANISATION

In the conclusion of a recent report on the position of the Welsh language, commissioned by the European Language Equality, an interesting comment was made by the authors:

It is often more attractive to chase after new and exciting project ideas, and funding opportunities are often prejudiced in favour of such ventures; attention needs to be paid to improving, consolidating, and further developing existing tools and resources. At the same time, minoritised languages such as Welsh need to take full advantage of any emerging innovative solutions, playing their full part in the LT developments for Europe.

(D. Prys et al., 2022, p. 22)

One striking observation is where D. Prys et al. (2022) discuss developing existing tools and resources rather than creating new tools; however, there is no mention of staff development to use the tools properly nor how the workflow functions with the existing tools. This warranted further research and will be addressed in this study.

Also, given the number of projects, including portals, sharing platforms; dictionaries; spellcheckers; bilingual dictionaries; open-source systems; corpus projects (and more) that are in planning or development; it is not surprising that the Welsh Language Commissioner recommended the introduction of a Language Planning "Powerhouse". The idea was initially mentioned in the *Language, Work and Bilingual Service Report of the Working Group on the Welsh Language and Local Government Report* by the Welsh Government (2016a), which identified a need to focus more on supporting public bodies and services, recommending the formation of a "Powerhouse" whose vision should lead to completely bilingual public bodies' by carrying out the following together with "practical actions" enforced (p. 9):

- to develop and sustain a national Welsh language strategy.
- to prepare legislation
- strategic language planning with a focus on the workplace
- promoting and facilitating the language and
- providing leadership in areas supportive of Local Government and other public bodies, such as training, digital developments, and original research

(Welsh Government, 2016b, p. 9)

However, as stated in the conclusion of the Welsh Commissioner's (2021, p. 289) report, there has been some opposition to this by Plaid Cymru, Dyfodol i'r Iaith and others who believe that an independent body would be better placed to lead on the promotion of the Welsh language.

The success of new initiatives and programmes, such as the establishment of an independent translation body or the development of existing translation tools and resources, largely depends on the skills and competence of the staff responsible for managing them. This is where project management comes into play. Project management is a multifaceted discipline that requires a thorough understanding of goals, stakeholders, risks, and opportunities, as well as the latest technologies and tools for maximum success. Providing project managers with the necessary training and support is crucial to ensure project and organisational success. In the field of translation, project management is closely connected to the translation workflow. Translation project management involves planning, coordinating, and controlling the resources and activities involved in translating a text from the source language to the target language. The translation workflow, on the other hand, refers to the actual process of translating a document, from initial preparation to final delivery, and includes various stages such as translation, editing, proofreading, and formatting.

Effective translation project management ensures that the translation workflow runs smoothly, deadlines are met, quality standards are maintained, and resources are utilised efficiently. Therefore, understanding translation project management is essential to effectively managing the translation workflow and produce high-quality translations. Translation project management is a complex and challenging task, but it is essential to ensure that translation projects are completed on time, within budget, and to a high standard of quality. By following the key principles and techniques of translation project management, you can increase the chances of success for your next translation project.

3.2.9 THE ART AND PRACTICE OF TRANSLATION PROJECT MANAGEMENT: A COMPARATIVE ANALYSIS OF TWO KEY RESOURCES

Both Walker's (2022) book, *Translation Project Management*, and Dunne and Dunne's (2011) book, *Translation and Localization Project Management: The Art of the Possible*, are valuable resources for project management (PM) in the translation and localisation industry. While both texts offer insights into the field, Walker's

(2022) book stands out for its specific focus on current project management workflows and processes, making it an essential guide for reinforcing any potential recommendations to improve existing workflows and processes suggested in this research study. Walker (2022, pp. 255-256) Walker (2022, pp. 255-256) also provides a useful list of areas in need of future investigation, including workflow, economics, sociology of translation, and vendor and client management, which are significant areas explored in this thesis.

While both texts offer practical guidance and strategies for managing translation projects, they have some key differences. When Walker (2011, p. 3) refers to Dunne and Dunne (2011), he comments on how "The book is undoubtedly a leading contribution" and probably the "best-known publication" concerning translation PM. According to Walker (2022, p.4), the book does not provide overall and detailed coverage of project management. Instead, it offers insights into specific stages of the project life cycle or the context of translation project management.

Walker (2022) is a comprehensive textbook covering the entire translation PM lifecycle, including case studies, discussion questions, and supplementary readings. It is an essential resource for PM training courses in translation studies and for professional translators and language service providers. The book is organised as a teaching training manual, with one semester in mind and is designed for educators with translation students who are inexperienced with PM. In an editorial note, Walker (p. xxi) discusses the book's usefulness for interpreters. Regardless of experience level, Walker's book is a valuable resource for anyone managing translation projects. It is well-written and straightforward, offering practical advice to anyone interested in translation project management. Walker (p. 4-5) focuses on decision-making factors using two popular frameworks, Project Management Body of Knowledge (PMBOK) and Projects IN Controlled Environments (PRINCE2), as well as the British Standards Institution's (2015) international standard ISO 17100:2015 *Translation Services – Requirements for Translation Services*. It provides readers with clear insights into contemporary PM practices specific to translation services and an understanding of critical interrelated aspects of the process. It draws from

key works in business studies on management, economics-related aspects of PM, and international standards for PM processes (ISO 17100:2015, as stated above).

In contrast, Dunne and Dunne's (2011) book discusses extensively the skills necessary for successful project management translation and localisation. It is considered essential reading for translation studies students, educators, and scholars. The authors initiate a dialogue between translation studies researchers and scholars, educators and trainers, students and practitioners, and language industry stakeholders by emphasising the significance of PM in the translation industry and providing best practices for all translation management-related issues (pp. 1-10). This book is highly recommended for individuals who seek to develop their knowledge and skills in the administration of translation and localisation projects.

There are some notable differences between the two books. Firstly, Dunne and Dunne (2011) discuss translation and localisation PM, while Walker (2022) focuses solely on translation PM. Secondly, Dunne and Dunne (2011) take a more theoretical approach to PM, investigating the applicability of PM concepts to translation and localisation (Dunne and Dunne, 2011, pp. 22-29). In contrast, Walker adopts a more pragmatic stance, guiding the complete translation PM process, i.e. "from the cradle to the grave" (p. 18), drawing on real-world case studies and emphasising the benefits of pre-production. Thirdly, Walker provides additional in-depth instruction on the entirety of the translation PM process, emphasising the factors impacting decision-making at various phases and how external pressures shape the management of a translation project (Walker, 2022, pp. 128-137). Dunne and Dunne offer a more general overview of PM in the translation and localisation sector, with less emphasis on the translation PM process. Finally, Dunne and Dunne's book was published in 2011, while Walker's in 2022. Consequently, Walker examines more recent developments in the translation industry, such as the current impact of technology on translation PM workflows (2022, pp. 240-241), which is a core focus of this doctoral thesis.

In conclusion, both Walker's (2022) book, *Translation Project Management*, and Dunne and Dunne's (2011) book, *Translation and Localization Project Management: The Art of the Possible*, provide valuable resources for project management (PM) in the translation and localisation industry. While both texts offer practical guidance and strategies for managing translation projects, they have some key differences. Dunne and Dunne's book is considered important reading for students, educators, and researchers in translation studies, providing a more theoretical approach to PM and emphasising the significance of PM in the translation industry. Walker's book, on the other hand, is a comprehensive textbook that covers the entire translation PM lifecycle from a more pragmatic perspective, utilising real-world case studies and focusing on six fundamental project constraints: cost, time, scope, quality, benefits, and risk, with discussion points, potential assignments, and suggested further reading. While both books are valuable resources, Walker's book provides more recent developments in the translation industry. It covers the entire translation PM process in-depth, pertinent to this study, and an essential read for PM courses in translation studies programs and professional translators and service providers.

3.3 THE WELSH CONTEXT AND KEY TRANSLATION TECHNOLOGY-RELATED DIRECTIVES

Research related to translation technology in Wales is embryonic. There is no evidence suggesting that any research has been conducted on the main subject of this thesis, looking specifically on the impact of translation technology on public sector professional translation workflows in Wales, which is surprising given the importance afforded to the technology mentioned in numerous governmental policies, plans and strategies. For example, the recent Welsh Government's (2017, p. 4) policy, *Cymraeg 2050: A Million speakers'* states: "Cymraeg 2050 notes the importance of technology for the future of the Welsh language, and the necessity for the technology to support Welsh, for the language to be used in as many situations as possible" and how it is essential to work alongside the technology sector, to ensure that the technology is used.

Most research in Wales has been (and is) conducted via educational institutions in public sector organisations. The central hub in this field is based at Bangor University's Language Technologies Research Unit, with related research carried out at Cardiff, Swansea, and Aberystwyth Universities. Due to the paucity of available research in translation and technology, academics turn to recommendations for future studies from indications in government policies, action plans and regulatory standards to support any applications for funding any research. As explained by D. Prys et al. (2019, p. 368), "Previously, there was no strong tradition of research in speech technology, machine translation or AI in Welsh universities, although it can be argued that these were, in any case, new fields of study and that developing these areas for Welsh meant that Wales gained important new capacity in these fields".

An example of how governmental requests for information from translation industry experts lead to ideas for research and development, which then come to fruition as a policy or a plan, came when the Welsh Government (2016b) commissioned Rhodri Glyn Thomas, the Welsh Heritage Minister (position held in 2016) and Chair of the Working Group on the Welsh Language and Local Government in 2016 to advise Welsh Ministers on the issue of "Language, Work, and Bilingual Services", which then led to the "Report of the Working Group on the Welsh Language and Local Government". At that point, the Labour Party, which formed the Welsh Government (2016c), had already published their party manifesto, Taking Wales Forward 2016-2021. There was a notably minimal reference to the Welsh language, and even less regarding Welsh language technology: "We want to see the Welsh language used more extensively and for the numbers who speak it grow" and in the Welsh language section:

1. Work towards one million people speaking the Welsh language by 2050.
2. Continue to invest in encouraging more people to use and speak Welsh in their everyday lives.
3. Amend the Welsh Language Measure so businesses and others can invest in promoting the use of the Welsh language and establish a Language Usage Fund.

(Welsh Government, 2016d, p. 14)

There was a nod to research grants but no detail. The Government needed to understand what needed to be done to achieve these goals, and therefore the Working Group on the Welsh Language and Local Government was formed. The response to the manifesto by the Working Group was forward-thinking, insightful, and decisive. It also paved the way for further (and even more focused) research into the technology required to make the goal of Cymraeg 2050 happen.

The Labour Party manifesto sets a target of 1 million Welsh speakers by 2050. Achieving this would be a considerable feat. The education system would be the main means of creating Welsh speakers, but bilingual public services could contribute substantially to the process. Language training in the workplace would create new Welsh speakers and would give confidence to those uncertain of their ability in Welsh to use the language from day to day. It would also give Welsh speakers a chance to use the language in the workplace and in using public services.

(Welsh Government, 2016c, p. 2)

Thanks to the innovation and insight of the Working group's experts, who presented their recommendations to the Welsh Government, the spotlight was clearly on technological enhancement, training, and a better understanding of changing workforce behaviours in the public sector. Some of the recommendations from the report were used in forming the well-received (due to it providing a specific plan for technology) document by the Welsh Government (2018) titled, The Welsh Language Technology Action Plan, and then subsequent Progress Report (Welsh Government, 2020a, p. 19). Rhodri Glyn Thomas, the chair of the Working Group, stated: "If we are serious about creating a bilingual Wales with Welsh and English existing with equal status and with citizens able to use their language of choice, our public services must be provided bilingually" (Welsh Government, 2016c, p. 40). The members of the Working Group recognised that specific gaps needed to be addressed to ensure compliance with recent legislation:

There is general agreement that Local Government needs reform and that it needs new freedom to be active and to encourage an activist culture within communities. This freedom, coupled with leadership and the responsibilities mentioned above, are essential to the success of the aim of creating a bilingual nation.

(Welsh Government, 2016c, p. 5)

The Welsh Government's (2018) Welsh Language Technology Action Plan is an essential component of this present study as it highlights gaps in research addressed in the aims of the thesis, such as the sections of the Working Group report implemented by the Welsh Government (2016a) which look at the use of the Welsh language in Local Government administration; Training, Technology and Changing Behaviours. What was also intriguing about the information was its timing. Not only was it commissioned after the Labour Manifesto (if it had been carried out before, then the Government could have included better detail regarding technology and the Welsh language), but also after the implementation of Welsh Language Standards in 2015 by the Welsh Language Commissioner for the Welsh Government (2016d), which focuses specifically on implementing an extensive set of rules regarding Welsh services in the public sector. At that point, a plan to support the technology needed to be created for the Standards to succeed. This explains why the working paper was commissioned when it was, which is positive and indicates that the Government seeks expertise to innovate and improve the current systems in situ, namely, in this case, all matters related to equality of the Welsh language in Wales, which led to the research currently taking place today.

The Welsh Government's response to the Working Group Report on the Welsh Language and Local Government was delivered orally in the Senedd on June 14, 2016 (and released as a statement in October 2016³³). The Welsh Government stated that the recommendations were positive, except for the proposal to "impose minimum language skills on every post in the local government workforce, whatever the requirements of those posts".³⁴ The response from the Welsh Government³⁵ was that this was already in place and local governments "assess every new or vacant post for language skills requirements prior to recruitment and appointment". This is significant to this study because the level of Welsh-speaking (bilingual) staff is a substantial means of support to the translation workflow within the public sector, and whether Welsh-speaking staff use their skills as expected when employed in the public sector is a vital component of this investigation.

Welsh Government's (2016c, p. 30) first recommendation from the Working Report was: "The Welsh Government should articulate an ambitious vision and publish a new strategy for the Welsh language as a matter of urgency", to which the current Welsh Government's First Minister's response whilst in his position as Cabinet Secretary for Finance and Local Government was:

Rather than implementing the recommendations one by one, however, we are of the view that the new draft strategy for the Welsh language and its action plans will provide us with the opportunity to draw the strands together in a powerful and effective way. This would enable the Welsh Government to give a clear direction to Welsh language policy, which has support in all parts of Wales, is integrated, and makes the most of scarce resources.

The new draft strategy for the Welsh language focuses on the need to plan, through the education system, to 'increase the number of people who can work through the medium of Welsh in a number of specialist fields and services, so that Welsh services are available to people.' We believe that this is the most immediately effective way of meeting the objective of increasing the number of people who can use Welsh in the workplace.

It is possible to move forward with most of the report's other recommendations, and we support the focus on leadership, Welsh in the workplace and as a language of administration in local government, training, digital opportunities, behaviour change and the resilience of communities where Welsh is strong.

Mark Drakeford, Cabinet Secretary for Finance and Local Government (2016)³⁶

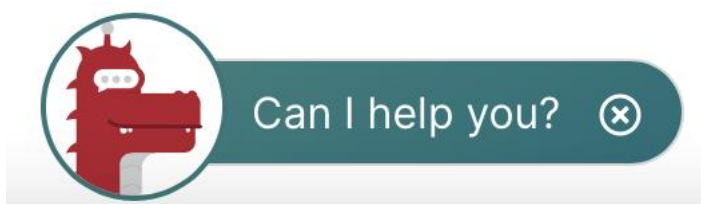
As explained above, current research is focused on the most recent policy by the Welsh Government (2018), the Welsh Language Technology Action Plan, which pinpoints three key areas: speech technology, MT and conversational AI. To address these key areas, and as explained in the European Language Equality report on the Welsh Language, D. Prys et al. (2022, p. 14) highlighted 'Technology and the Welsh Language', which is the title of an important new research initiative that started in 2020 at Bangor University, with annual funding from the Welsh Government. The project aims to build a suite of novel resources, tools, and services for Welsh, provided under open, permissive licences.

Some of the essential components or language technology "building blocks" may be built in the spirit of the Basic Language Resource Kit (BLARK), as suggested by Alegria and Sarasola (2017, p. 11), which is a minimal set of primary resources (software modules, corpora, dictionaries) necessary to further research and development in the field of language technology. In addition, such as a free version of a spelling and grammar checker, a Welsh transcriber, a Welsh personal assistant called Macsen, and a free version of the language tool compendium Cysgliad were also included in this project, as explained by D. Prys et al. (2022) in the European Language Equality report stated previously. The intention is for businesses to use the tools, and the report indicated that twenty-one of these outputs have already been included in the European Language Grid, with nine more promised by the end of March 2022 (pp. 11–14).

Another innovative tool developed for the Welsh language is the chatbot called BOBi³⁷ a bilingual FAQ (facts and quotes) generation system created by Cardiff City Council to assist Cardiff residents. Users can ask Bobi questions to access information related to daily life, such as school term times and recycling, which is accessible in Welsh.

below shows the image used for the chatbot.

Figure 3. 8 The image used for the chatbot BOBi.



Trawsgrifiwr,³⁸ the first Welsh speech-to-text transcriber, has been republished with the potential to be integrated with other products and services. The Vocab 'mouse over' dictionary for websites is a helpful and innovative service that enables non-Welsh speakers and learners to access websites written in Welsh; this would also assist learners in testing their vocabulary. Some Text-To-Speech voices for Welsh have been created using older diphone technology and newer unit selection voices that sound more natural.

Supercomputing Wales³⁹ is an additional technological contribution of note in Wales and is supported by an experienced and specialised technical support team. This £16m investment programme is co-funded by the European Regional Development Fund (ERDF) and the Welsh Government to provide university research teams with access to powerful computing facilities to carry out high-profile science and innovation projects (such as current training speech models for the Welsh language) within the consortium universities - Cardiff University, Swansea University, Bangor University, and Aberystwyth University. When Aled Roberts, the Welsh Language Commissioner (2021, p. 277), mentioned Supercomputing in his 5-year report, describing them as "truly massive datasets to be able to train better quality models", he also discussed the development of MT with NMT and the challenges with data and training networks that necessitate substantial supercomputing resources. It is little wonder why in her report, D. Prys et al. (2022, p. 13) explained that "it is anticipated that greater use of them will be made of them in the near future".

3.4 WELSH LANGUAGE STAFF: A BILINGUAL ENVIRONMENT

When referring to the staff working in a bilingual environment, the Working Group Report commissioned by the Welsh Government (2016b, p. 6) stated: "A country which gives status to two languages should demand personal and visible commitment from those employed to lead governmental bodies in Wales and impose fundamental linguistic requirements on everyone employed by those services".

One of the points referred to same Working Group report (p. 6) referred to the Welsh language in Local Government administration: "[H]owever, a very different and far more ambitious mindset will be required if the Welsh for adults' sector is to respond to the demand for a workplace which will, in time, be bilingual". This research intends to provide surveys to respondents in English and Welsh, identifying how many Welsh speakers select the option to survey in Welsh when given the opportunity. This would also assist in evaluating the behaviour of Welsh

speakers and compare organisations when allowed to utilise Welsh in the workplace.

In the same Working Group Report by the Welsh Government (2016a), their findings disclosed a need for more Welsh speakers in certain professions, such as social services. However, when the Welsh Language Commissioner evidenced that out of 595 job adverts from nine local authorities checked, only 12 posts included 'essential status' language requirements (2%), and only 10 (1.7%) had 'desirable statuses' (p. 13). Therefore, not only is there a shortage of Welsh speakers because the roles were not advertised with Welsh in mind but also, even if the potential new employees did have Welsh language skills, it would not be a pre-requisite to disclose them or use them in the workplace.

What needs to be considered is that even if they employ staff with Welsh language skills, can they guarantee that these skills are used? Further research is required to see if staff use their Welsh language skills and, if they choose not to, explore why this may be the case. The impact of staff not using their language skills could place additional burdens on other staff members and reduce the offering of a bilingual service to the community. In addition, the statistics on Welsh language communication skills collated by the Human Resources (HR) Departments would not be correct. However, as Welsh policy denotes, it would be beneficial to investigate whether HR follow up with new employees to see if they are using their skill sets to provide bilingual service. The Working Group report by the Welsh Government (p. 13) stated: "Clearly, we need to ask: what is the point of educating generations of young people through the medium of Welsh, or to speak Welsh unless the use is made of those skills in public services which have statutory bilingual requirements?".

Based on their findings, the Working Group recommended stricter measures to enforce a more bilingual environment, but the Welsh Government disagreed. Meanwhile, at Bangor University, research was being conducted on innovative methods that would increase the use of Welsh in the workplace by using science

and behavioural methodologies such as the ARFer Programme, as discussed in section 2.8.4.

This doctoral thesis considers how to increase the use of the Welsh language at work by better understanding what encourages or discourages staff from using their skills and why some individuals who understand Welsh are reluctant to use it. In addition, it seeks to understand why staff choose not to use their skills, considering how Welsh speakers are crucial to supporting an effective workflow.

As explained on Bangor University's website, the ARFer⁴⁰ programme (see section 2.8.4) is the product of their research and collaboration with experts inspired by a methodology called Eusle and a company called Soziolinguistika Klusterra in the Basque country (with a similar minority language status as Welsh). ARFer is a programme designed to shift organisations from being passively bilingual towards being actively bilingual, where both Welsh and English are used. A culture that does not always default back to English can be nurtured by supporting staff to use Welsh more at work. The programme provides evidence of positive results and significant increases in language use. At the time of writing this study, the programme seeks organisations to inspire and collaborate with. They stated in their literature: "Many organisations can tell us how many of their staff can speak Welsh and how many are learning Welsh. However, it is difficult to measure how much Welsh is being used daily in workplaces. We are keen to understand this and help staff use more Welsh at work".⁴¹

The Welsh Language Commissioner (2021) conducted a research study to understand more about the use of Welsh in public services. Over five years, qualitative data was collated on the public's opinion; they were asked to consider: "What language would you prefer to use when dealing with public bodies?" (p. 142). The results (shown in Table 3. 4) indicated a decline in 2020 (from previous years) with those who prefer to use Welsh when dealing with public bodies. The reason for this potentially was the pandemic, which was at its height during this period, and most public servants worked from home.

Table 3. 3 What language would you prefer to use when dealing with public bodies? (p. 142)

	Welsh	English	Don't know	Don't mind	Depends on the service
2016	32%	63%	1%	4%	Option not offered
2017	32%	61%	0%	6%	Option not offered
2018	32%	42%	0%	Option not offered	26%
2019	33%	47%	0%	Option not offered	20%
2020	16%	57%	0%	Option not offered	27%

As shown in Table 3. 4, nearly all individuals who prefer to use Welsh in all services consistently strive to do so. They confirm their commitment to utilising Welsh language services when interacting with public bodies.

Table 3. 4 Results from staff who always try to use Welsh language services when dealing with public bodies (p. 143)

	Yes	No
2016	–	–
2017	–	–
2018	89%	11%
2019	94%	6%
2020	98%	2%

This information bears substantial academic significance within the context of this study for two key reasons. It provides an engaging avenue to explore the following inquiries:

1. The extent of staff utilisation of Welsh language skills in the workplace, as it holds the potential to provide valuable support in the translation workflow process.
2. The underlying reasons behind staff members' decisions to refrain from using their Welsh language skills, warranting an understanding of the factors influencing this choice.

3.5 FUTURE RESEARCH AND DEVELOPMENT

Acknowledging the existing challenges, researchers are cognisant of the need for further efforts to achieve substantial growth in the number of Welsh language speakers by 2050. To address this objective, the team at Bangor University is actively exploring innovative technological approaches that can contribute to this endeavour. The work of D. Prys et al. (2022, p. 21) has identified areas within the field of language technology that had previously received limited or no research attention. Specifically, they highlight the potential use of "Welsh Knowledge graphs" and their potential to assist the Welsh language. The concept of knowledge graphs has been extensively discussed by Ehrlinger and Wöß (2016, p. 2) who trace its origins back to its introduction by Google in 2012. They provide various definitions, but ultimately define a knowledge graph as a system that acquires and integrates information into an ontology and utilises a reasoner to derive new knowledge.

Interestingly, Zhao et al. (2021, p. 4039) explain that knowledge graphs are now being employed to train Neural Machine Translation (NMT) models without relying on parallel corpora. This aspect is particularly relevant for minority languages with limited data, such as the Welsh language. The utilisation of knowledge graphs in this context could potentially overcome the data scarcity challenge and offer intriguing possibilities for enhancing Welsh language translation and understanding.

However, even though this research is beyond the scope of this study, it is interesting how researchers are being creative in their goals and trying to get ahead of the game. D. Prys et al. (2022, p. 21) stated that a: "Key new area for development is bilingual models to aid minoritised languages such as Welsh where users constantly have to switch between their own language and the majority language (English in the case of Welsh)." The same paper discussed Welsh language sentiment. Understanding the sentiment of a workforce is key to understanding how to support them to reach their potential. As discussed in section 2.8.4, behavioural tools are paving the way forward in collaborative cross-disciplinary research, which is becoming increasingly more prevalent. For example, recently,

Vieira et al. (2021, p. 1) looked at the societal impacts of MT and conducted a critical review of the literature on medicine and law, which was necessary to gather more knowledge on the subjects.

3.6 SUMMARY

The progress and challenges of integrating the Welsh language into various aspects of life, particularly in translation workflows, require a dedicated focus on research and improvements. While little research is directly related to the specific topic at hand, the determination to grow the Welsh language is palpable. Advancements in research in Wales have raised the bar for minority languages, but there are still gaps that need to be addressed.

To fully understand the effectiveness, efficiency, and suitability of internal translation workflow processes in public sector organisations, further research is necessary. Internal systems have remained unchanged for a considerable time, while policies have evolved, resulting in a potential misalignment. It is crucial to comprehensively assess the tools used within the workflow, provide training for translation staff, and manage their workflow in relation to CAT tools, TMs, and MT. Keeping staff up to date with changes and ensuring their understanding of expectations is vital for supporting the workflow process, especially in Welsh language communications, and adhering to internal and governmental policies.

The research undertaken by the Welsh Government's (2016b) Working Group has initiated staff behavioural changes, but there is a need for further empowerment. Staff, particularly Welsh language speakers, should be encouraged to become more involved in supporting the workflow, while also ensuring they are not overwhelmed. It is essential to investigate the utilisation of language skills by new staff members and whether Human Resources effectively track and support Welsh-speaking staff. Augmenting the workflow with additional technological assistance has the potential to simplify the task and foster a bilingual community of colleagues.

Regarding technology, creating effective NMT systems, as demonstrated by the experiment conducted by Bangor University, shows promise for the Welsh language. Further research is required to explore how this technology can be harnessed on a larger scale, leveraging available Supercomputing resources. This includes investigating methods to retrieve more professionally translated content, training NMT systems using TMs, and consistently disseminating the Welsh language.

To answer the main research question and achieve the aims and objectives of this study, it is crucial to develop a robust methodology that facilitates the collection of relevant data for analysis and discussion. Chapter 6 provides an explanation of the methodologies utilised to accomplish the purpose of this study, followed by a comprehensive discussion and recommendations for further research, development, and improvements.

4 CHAPTER 4: METHODOLOGY

4.1 INTRODUCTION

The purpose of this study is to evaluate the impact of the technological turn on professional translation workflows in the bilingual setting of the public sector in Wales. In order to accomplish this, case studies and surveys were used to gather qualitative and quantitative data from key stakeholders to determine whether current translation technology and processes are useful, efficient, and accurate, reaching their full potential alongside an internal Welsh-speaking (non-translation) workforce.

For this research, a mixed methodology as described by Saldanha and O'Brien (2013, p. 22), was adopted for a case study approach to measure and understand the impact of the technological turn on professional translators' workflows in three separate public sector organisations in Wales. The selected organisations were chosen for various reasons, including their proximity to one another, but most importantly, they were representative of typical public sector organisations in Wales. In addition, they were all subject to the exact Welsh language legislation requirements (such as the Welsh Language Standards 2015-2018) equally, and they all provided translation services to in-house public sector staff within their respective organisations. This is discussed further in section 4.3.

From each organisation, the following data was gathered:

1. Three STs (one per organisation).
2. Nine CAT tool Analysis Sheets (three per organisation).
3. Nine .rtf (rich text format) documents displaying TM matches (three per organisation).

The purpose of collating this data was to assess the reliability of the CAT tool and accuracy (focussing on word counts) and to compare variances in stored TMs to discover what would happen if the TMs were pooled together and ascertain the potential causal effect on the professional translator's workflow. It could be

assumed that (for example) the TMs from Swansea Council would contain the most TM matches when analysing their own document; if not, they could benefit from accessing a more extensive, pooled TM bank.

In addition, a diverse range of perspectives and sentiments were gathered through surveys among three groups of stakeholders:

1. General staff.
2. In-house professional translators.
3. Recently qualified translators, and translation students studying a BA or Master's in translation.

It was anticipated that the broader the scope of respondents and the variety of skill sets and experience would be significant enough to provide valuable data to reflect all aspects of the workflow process accurately and enough to assess and evaluate the advantages and disadvantages of the current translation workflow processes in each organisation, demonstrating the effectiveness (or lack thereof) the process and technology implemented. Based on the results, any challenges that may impede (or have impeded) the progression of the technological turn could then be identified and, as a result, lead to recommendations for systems improvements, staff education, training, and professional development.

Following analysis of the surveys from the translation staff, any ambiguous data was re-submitted via a supplementary questionnaire that was compiled and sent to the translation staff in each organisation. The document contained nine questions to obtain additional information related to the translation workflows and outsourcing, as detailed in Appendix 17. Following completion of the data-gathering process (see Appendix 18, 19 and 20), and to promote the validity of the evaluations concluded in this thesis, two focus groups were held, and all respondents were invited; one was held at Swansea University and the other at Swansea Council. The Welsh Government chose not to take part.

TM data comparison: The aim was to compare translation memory (TM) data from three distinct public sector organisations’ computer-assisted tools (CAT tools), noting disparities between each tool by analysing the source text (ST), specifically the accuracy of the Analysis Sheet generated by the CAT tool itself when a document is uploaded to the in-house CAT tool. The focus will be on word counting and understanding the level of TM data stored in the TM bank. Following data collection, it was intended to use the data to determine the impact technology has had on the internal translation workflow and whether there is room for improvement, such as in terms of reliability, efficiencies (production and cost), speed of service, accuracy, productivity, automation, and exploring the possibility of creating a culture of sharing and pooling TM data between organisations inter-institutionally (see Figure 4. 4).

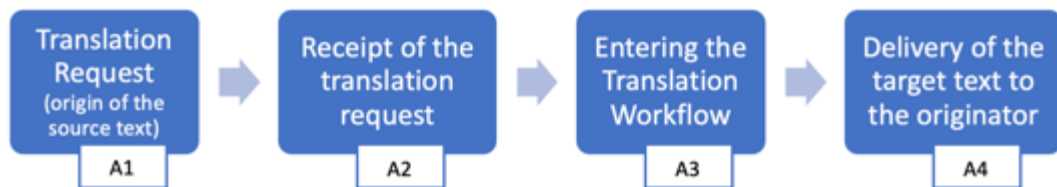
Surveys: Three surveys were designed for three different respondent groups; firstly, the professional translators who translate from English to Welsh in the in-house, public sector translation unit/service; secondly, the public sector staff who request the translation services and provide Welsh language support during their daily duties; and those who are in training or have been recently trained via the MA or BA in Translation Studies (to become translators) from Swansea University, thus both novice and seasoned linguists. The three surveys were tailored to each respondent type, as shown in Table 4. 1.

Table 4. 1: Survey name by respondent type

	Survey Name	Location of respondents
1	Translation Unit/Services	All Welsh translation staff, based in-house in each public sector organisation
2	All Staff	All staff working in the public sector organisation
3	MA and BA Students	All BA (Bachelor of Arts) and MA (Masters) students who attended Swansea University, studying translation (or related) degrees

To clarify, the principal focus of this study was on the professional translator’s workflow within the three separate public sector organisations in Wales during their in-house translators’ daily activities, such as the following simplified diagram, Figure 4. 1.

Figure 4. 1 A simplified version of a professional translation workflow



A translation request is typically raised by a staff member within the organisation (A1) and then sent to the in-house Translation Department for processing (A2). It is then added to the Translation Workflow software within the organisation (A3) until signed off and returned to the originator (A4).

4.2 RESEARCH SETTING SELECTION METHOD

Selecting the most suitable research setting was a primary concern. The aim was to reach out to respondents who have previously used the translation workflow procedure as part of their daily duties, whether as a curator of the content (ST), a recipient of the target text (TT) translated by a Welsh translator employed in the public or a Welsh translator located in-house. The study was conducted in two parts and reached out to three different respondent types:

- Staff who had previously requested a translation in their public sector workplace.
- In-house translators who translate in one of the study’s three organisations.
- Recently qualified individuals could potentially bring an alternative perspective on the use of technology and the industry’s future.

A set of criteria was defined to identify appropriate research settings, and organisations must comply with each measure to participate in the study, as shown in Table 4. 2.

Table 4. 2 The criteria for organisation selection

	Stipulation	Reasoning
1	The organisation was in the public sector	The focus, dictated by the research question and sub-questions, was related to gathering data solely from the public sector
2	A recognition of Swansea University by the organisation, as a serious, research-led University	To gain access to potentially confidential data and insight into/from the internal translation services staff (Part 1), and then all staff (non-translation), current and past students (Part 2), plus having a history of previous collaborations was considered advantageous to the success of the study
3	The organisation needed to have signed up to the Welsh Language Standards Regulations (from 1-7) between 2015-2018 and was adhering to the Standard during the study	Focussing on Welsh translation workflows in the public sector, one of the points of interest was compliance with the Welsh Language Standards (2015-2018), so all participating organisations must have agreed to adhere to the standard set out by the Welsh Commissioner.
4	The organisation needed to have an internal translation team who translates English<>Welsh written language content	The key respondents of this study derive from the translation units within each participating organisation. Without this essential part, there would be no workflow to study.
5	Non- Disclosure Agreements or Confidentiality Agreements	It was prudent to offer to sign a Non-Disclosure Agreement before any research took place; however, none of the organisations felt it was necessary. Instead, legal formalities and permissions were clearly shown at the start of the surveys (called Consent). The informants would only be able to proceed through the survey providing they consent to the permissions stated. (4.4.3.4)

It was determined that choosing the research setting before designing the survey/questionnaire was beneficial to tailor it precisely to the target audience in each location. In addition, conducting a pilot study with representative participants in at least one of the organisations was considered prudent to highlight any potential anomalies and ensure that the software was working efficiently, collecting the data as expected. As the overall objective was to gather sensitive, personal, and confidential data at a micro-level (in both Part 1 and Part 2), care was taken when

approaching each organisation to provide transparency, non-bias, and a comprehensive understanding of the research goals.

4.3 PARTICIPATING ORGANISATIONS

After careful consideration, it was determined that Swansea University, Swansea Council, and the Welsh Government were the preferred choice for participation in this study for several reasons. Not only due to the relative proximity of the organisations, but more importantly, they were representative of typical public sector organisations, they were all subject to the exact Welsh language legislation requirements (such as the Welsh Language Standards 2015-2018) to an equal measure and they each provided translation services to in-house public sector staff within their organisation. In September 2019, direct contact was made with the three organisations. Due to the sensitive nature of the data to be collated, it was deduced that time was needed to build a rapport with the decision-makers (or staff). To accomplish this, telephone and email conversations were held with key personnel, such as translators and staff who could assist with the study, to explain the research and answer any questions they might have. In turn, this would result in respondents being better prepared to distribute surveys (Part 2) or collect data for the study when the time came to begin data collection (six months later) (Part 1).

In addition, it was considered that the organisations may be highly protective of disclosing confidential information published in this thesis, so maintaining transparency was important from the beginning. All conversations were held with staff in authority whom their managers approved to assist in this study, and any documents distributed were approved beforehand. All discussions on the telephone were backed up with emails, therefore maintaining a traceable account of correspondence.

4.3.1 CITY AND COUNTY OF SWANSEA COUNCIL

Swansea, Gower, and the surrounding area are governed by the City and County of Swansea Council, one of Wales' Principal Areas, employing approximately 11,300 staff members.⁴² The council is made up of 72 members who represent 36 electoral wards. The Labour Party has controlled the Swansea Council since 2012.⁴³

As with Swansea University, the Council encourages the use of Welsh and the provision of cy<>en services and has a dedicated staff member, a Standards Officer responsible for Welsh Language Standards (2015-2018) compliance. The Welsh Language Standards 2015-2018 (see section 2.6) superseded their Welsh Language Scheme on 30th March 2016 and remained monitored by the Welsh Language Commissioner (see 2.5.1). The council website provides a webpage which includes links to all documentation related to Swansea Council, and the Welsh language⁴⁴ is available via download and contains the following information:

- Implementing the Welsh Language Standards (2018).
- How the authority complies with the Welsh Language Standards 2018.
- How the authority monitors compliance with the Welsh Language Standards 2018.
- MS Word version Standards English.
- 5-year Welsh Language Strategy.
- Swansea Council Welsh Language Annual Report.
- Welsh Language Annual Report.
- Welsh Language Standards 2015-2018 (compliance notice City and County of Swansea).

4.3.1.1 SWANSEA COUNCIL RESPONDENTS

When selecting Swansea Council as a case study and following a discussion on social media with the Leader of the Council, an email address was provided as a direct contact regarding the progression of my research. A bilingual email was devised, and a link within the presentation was sent to the Council Leader's office, which disseminated the contents with a link to all staff via email. This was a seamless process, which the council accommodated efficiently.

4.3.2 SWANSEA UNIVERSITY

Swansea University is a research-led university established in 1920 and based in the City and County of Swansea. The university actively promotes bilingualism (cy<>en) and has committed to meet the statutory Welsh Language Standards (No. 1) Regulations 2015 (see section 2.6), which they implemented on 1st April 2018⁴⁵ following receipt of a compliance notice from the Welsh Language Commissioner in September 2017. This explains which services the University will deliver in Welsh and how the University will guarantee that Welsh language issues are fully considered in any policy or strategic decision-making.

The Welsh Language Policy Officer within the University ensures that the University adheres to the Welsh Language Standards 2015⁴⁶ (which superseded their Welsh Language Scheme) and establishes and promotes opportunities for students, members of the public, and staff to study and use Welsh. Their website has a page with internal and external links to display the university's pledge to comply with the Welsh language legislation called 'Swansea University's Commitment to the Welsh language'.⁴⁷

The Welsh language skills of staff as of 31st July 2020 are displayed on the Swansea University website.⁴⁸ There are 2245 administrative and 1817 academic staff at the time of writing. Their level of Welsh Language ability is documented on their website. Table 4. 3 shows the Welsh language competency levels for Academic Staff, and Table 4. 4 shows the same data but from the Administrative Staff:

Table 4. 3 Welsh language competency: Academic staff (Total 1817) at Swansea University

	Read	Write	Speak	Understand
Prefer not to say	70	72	69	70
Not at all	1025	1133	1017	937
A little	324	241	341	379
Fairly well	58	47	48	85
Fluently	148	133	150	153
Not known	192	191	192	193

Table 4. 4 Welsh language competency: Administrative staff (Total 2245) at Swansea University

	Read	Write	Speak	Understand
Prefer not to say	45	46	45	40
Not at all	1079	1265	1035	889
A little	628	479	689	759
Fairly well	99	106	79	140
Fluently	160	114	163	183
Not known	234	235	234	234

With over 4,062 employees based on two campuses⁴⁹ in the Swansea City area, there are three faculties,⁵⁰ and all staff are expected to support the Welsh Language legislation.

All new employees join live induction training with presentations from all key areas. The University provides free access to a one-hour Welsh language introductory course and a one-hour Welsh Language Standards (2015-2018) course to explain expectations regarding the use of Welsh in their workplace. Staff are also given access to various guides, accessible from the staff intranet. 'All-staff' email circulars are sent out sporadically, which again encourages the use of Welsh. Connecting with a member of the translation was straightforward via an introductory email. This provided the necessary link to proceed with the study.

4.3.2.1 SWANSEA UNIVERSITY RESPONDENTS

In the first instance, it was anticipated that permission would be granted from the Academic Registry to disseminate the survey via an email to 'All Staff,' however, as this was not possible, an alternative method was to send via the University newsletter. There were no guarantees that enough respondents would reply; therefore, it was decided to message staff members (particularly those in senior positions and marketing/sales roles) via LinkedIn. LinkedIn⁵¹ is a social media platform founded in 2002 with over 163 million users. Many users work at Swansea University; therefore, it was apparent that staff were also accessible via a direct message, so it could be assumed that there was a high probability that the user would respond if the message were appellative enough.

4.3.2.2 BA/MA STUDENT RESPONDENTS

These respondents provided an additional perspective to this study: a novice (currently in training) or recently trained and a potentially more experienced user of translation technology. Their opinions on how they see the present and future of their chosen career path and how technology has impacted translation, whether they use it and how it has advanced throughout their academic journey until now will provide interesting results. The drawback with these respondents was trying to reach them; however, thanks to a Supervisor at Swansea University, who reached out directly to the students and graduates on two occasions, there was some success and enough data for this study.

4.3.3 THE WELSH GOVERNMENT

The Welsh Government is the devolved government of Wales. The government consists of the First Minister, the Welsh Ministers who attend cabinet meetings (and deputy ministers who do not), and the Counsel General. Civil servants across key areas such as health, education, environment, and the Welsh language assist them. There are sixteen offices throughout Wales, four in North Wales, three in Mid Wales, three in Southwest Wales and six in Southeast Wales.

The Welsh Government introduces legislation, develops policies (see section 2.4) and proposes Welsh laws (Senedd bills). Their goal is to ensure that the people of Wales can engage with their government and any public sector organisations in their language of choice. They commit to providing high-quality bilingual services at any time.

The Welsh language is regarded as a national treasure, and numerous plans have been devised to preserve and grow the language. The Welsh Government (2017) set a goal to reach one million Welsh speakers by 2050 (see section 2.8), with many plans in place, as discussed in full in Chapter 2.

4.3.3.1 WELSH GOVERNMENT RESPONDENTS

It was considered from the offset that inviting the Welsh Government to participate in the study would be the most challenging. However, following a conversation with a senior-level translator from the internal translation service, participation was agreed upon, although at that stage (before starting the research), to what extent was not yet explored. However, in Part 1, the TM Comparison was conducted without issue, and the staff were very committed to supporting this study.

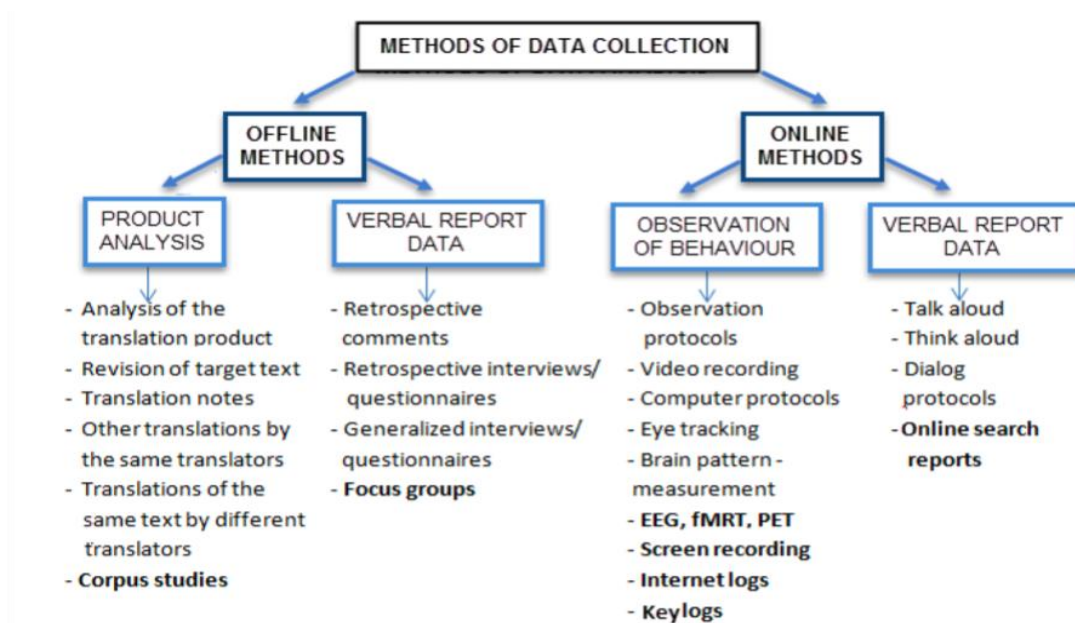
However, despite numerous attempts to gather survey data from the Welsh Government, which was anticipated to be straightforward (as with Part 1), the surveys were not issued to the staff as intended. One participant from the Welsh Government did complete the staff survey, and the response is included in the results.

4.4 RESEARCH DESIGN

Preparing the research design was not as straightforward as anticipated. Numerous options were available and commonly used in the translation industry, particularly regarding translation workflows, surveys, and procedures (see Figure 4. 4). Initially, the research model took a different, more complex route as the intention was to conduct a more ethnological approach by conducting the research study on-site. Considerations were given on whether to ask the Translation Departments to translate a much larger quantity of content whilst monitoring the translators with Think Aloud Protocols, Eye-Tracking devices, and screen recording. It was concluded that this was too ambitious for this study, and an unnecessary workload for the translators, given that the data needed to produce the required results only warranted the translation of a smaller text, such as approximately 500 words.

The Methods of Data Collection diagram below (Figure 4. 2) developed by Krings (2005, p. 348) and with the more recent methods (in bold) provided a systematic overview of the comprehensive current methods of data collection used in translation process research and adapted for this study.

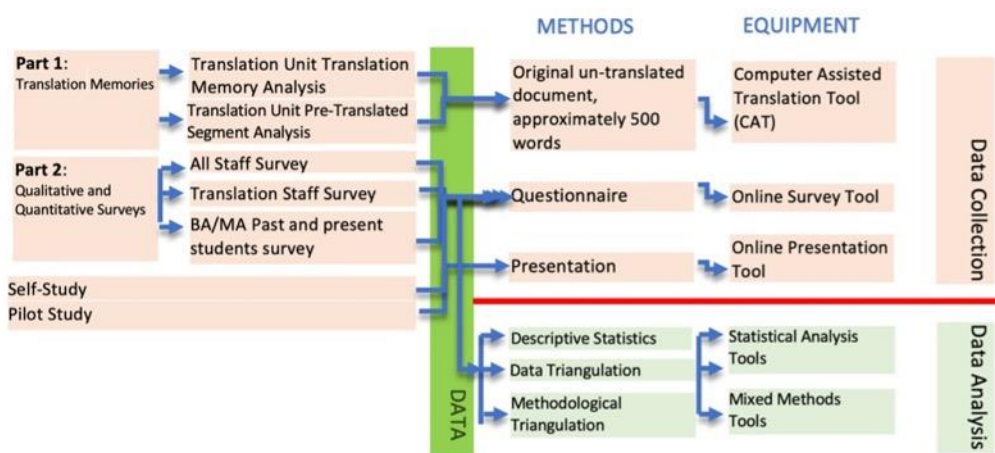
Figure 4. 2 Methods of Data Collection: Adapted from Krings (2005, p. 348)



In recent years, technology has brought far more enhanced AI to the translation marketplace that necessitates a distinct skill level, such as eye trackers, observation tools and even technology that measures brain patterns. This level of technology would access data related to measuring cognitive load however is beyond the scope of the current study.

Therefore, after considering the research question (and sub-questions), it was concluded that keeping the research design simple was vital to managing the research data effectively and understanding any limitations. By reducing the length of the content used in Part 1, removing the translation element and the different technologies, and surveying respondents for the rest of the study, it was concluded that enough data would be produced to answer the research question(s). The differences in TMs between the three organisations will gain insight into opinions of the service, the translation industry, and the workflow process across each site. Figure 4. 3 below shows the research design and method of data collection. It demonstrates both the qualitative and quantitative methods adopted.

Figure 4. 3 Methods of data collection as embedded in the overall flow of data.



Although having previously considered asking the survey respondents to use their translation resources on much larger documents (2,000 words), it also became apparent that that was not necessary because the CAT tool Analysis (already in situ and easily accessible) would provide sufficient data on a smaller scale, which would be simpler to manage, more practical, particularly when combined with accessing

the pre-translated content. It is worth noting that including complex (and unreliable) technology, when not particularly necessary, could cause frustration and produce potentially inaccurate results; this would waste a significant amount of time and effort. Regarding the content for analysis, it was decided that each organisation would provide one document of approximately five hundred words, as explained below.

For Part 2, preparing three separate surveys appeared straightforward, but it also had its challenges. See section 4.4.3.1 for a further explanation of the Survey and Presentation Design.

4.4.1 THE RESPONDENTS

Each organisation was contacted for participation three times, once to participate in Part 1 (TM Comparison), then for Part 2 (The Surveys), and a final third time to answer a questionnaire devised post-receipt of the surveys to gather additional information related to the workflow, outsourcing staffing, and recruitment for example. Staff who agreed to attend the Focus Group meetings were contacted separately to invite them to participate. The following three sections clarify the methods of communication used by each organisation.

4.4.1.1 PART 1: TM COMPARISON RESPONDENTS

The respondents were all professional Welsh language translators (en<>cy) based in each of the three organisations in this study, whose role was to provide Welsh language translations for in-house staff. Access to the service in all three organisations was via contacting the designated email address provided for translation on the main website.

4.4.1.2 PART 2: SURVEY RESPONDENTS

The surveys aimed to gather data from a wide range of stakeholders, those who have participated in the translation workflow in the public sector organisation where they work, either as a requester of translation services (All Staff) or as a professional Welsh translator and user of the translation technology in the

workflow (Internal Translation Staff). In addition, to provide an alternative perspective, translation students (or recently qualified) from the BA/MA Translation course at Swansea University.

It was essential for the chosen respondents to provide enough reliable, and quality data to analyse the impact of the technological turn by evaluating the current translation technology in use, as well as gathering the sentiments from all in-house staff regarding the current and future in-house translation processes and potential, as well as the BA/MA student's perspectives on the technology in the industry and its future.

4.4.1.3 INTERNAL TRANSLATION STAFF

These respondents were in-house professional Welsh language translators who use the technology in the translation workflow as part of their daily duties, their opinions, sentiment, and perspectives were considered invaluable data to this study. However, a drawback was the limited number of Welsh translators in the organisations involved in this study, resulting in fewer respondents; it was concluded that quality over quantity would suffice, and enough data was gathered for this study. To recruit respondents, sending direct emails was initially considered; however, a targeted approach through an introduction from their colleagues was more effective.

4.4.1.4 ALL STAFF

These respondents were the in-house public sector staff, generators of the ST and recipients of the TT. Gaining insight into their opinions, sentiments, and perspectives of the workflow procedure due to their experience would provide instrumental empirical data for assessment. The benefit of this type of respondent is that numerous staff members have varying backgrounds; however, a significant hindrance is ensuring that only staff who have used the translation service would complete the survey. The survey aimed to collect data from genuine translation service users to gather their opinions to improve the systems, so it was essential to determine that the respondents were valid participants.

4.4.1.5 BA/MA STAFF

As these respondents were current or recently trained translators, they were not considered employees of the organisation (Swansea University); consequently, they did not participate in Part 1, and their Part 2 survey focused explicitly on their backgrounds and experiences. Because they were new to the industry, their input would provide a unique perspective on their use of tools, sentiment, and overall opinion of the current and future industry. There was difficulty in directly contacting potential respondents to participate; however, after numerous requests via email, a small but sufficient number of participants responded, allowing for the collection of sufficient data.

4.4.2 PART 1: TM COMPARISON STUDY

The objective of Part 1 was to gather evidence to demonstrate even the slightest difference in the quantity of stored TMs (pre-translated segments of text) between three public sector organisations with an in-house Welsh translation department. Each organisation in part 1 is expected to maintain a greater number of TMs pertinent to their document than the other two. Swansea Council, for instance, would have more TM information about their document than Swansea University.

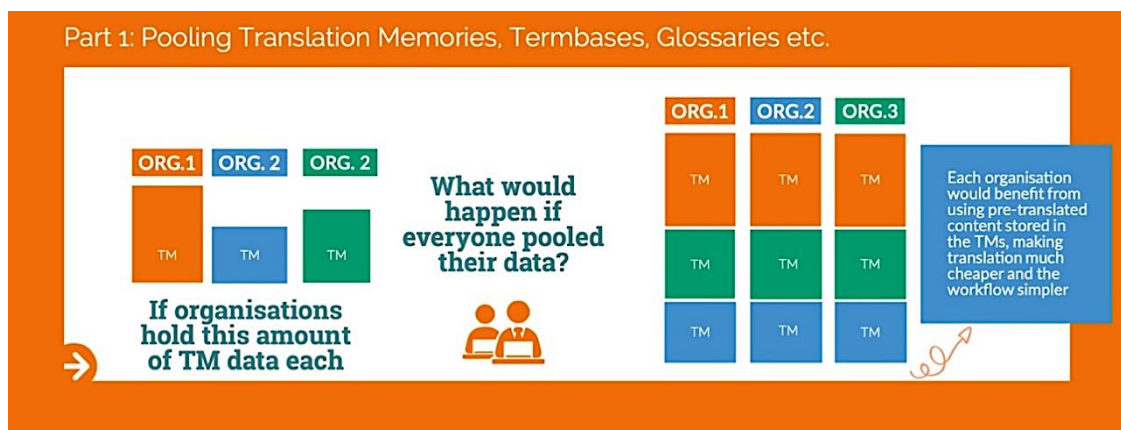
After analysing the data from Part 1, the aim was to discover what would happen if the TMs were pooled together and ascertain the potential causal effect on the professional translator's workflow. The intention was to demonstrate a variance in the quantity of TMs stored within each organisation's in-house CAT tool program. It was anticipated that when combining the TMs, the added/pooled segmented data would provide the translator(s) in the Translation Unit/Services with a much greater bank of pre-translated content to apply to future translations, thus contributing to a better, more efficient, and faster translation process.

The present study lends itself to an empirical approach based on collecting data via surveys and comparing TMs stored within each organisation. From analysing the three data sets taken from the three separate workflows in three organisations and collating staff opinions, any differences in the organisation's stored TMs would be

identifiable. If the data confirmed any differences, then a recommendation could be made that the public sector pool TMs together, creating a much larger, more extensive TM and pre-translated content, which any public sector organisation could, in turn, access. The consequences would not only affect the workflow efficiencies (increase translation speed, decrease pressure on the translators, increase the number of available pre-translated segments) but have the potential to significantly reduce cost and overheads and circulate the language on a broader scale.

The image shown in Figure 4. 4 below demonstrates how pooling TM data may help public sector organisations. It depicts how an organisation stores the various amounts of pre-translated, segmented translation data, in this case, TMs (shown on the left-hand side of the image), and on the right, if organisations were to share their data by "pooling" this information, it is reasonable to assume that each organisation would gain access to a much larger TM data repository, as depicted on the right-hand side of the image.

Figure 4. 4 Illustration to show how pooling TM data can benefit all organisations



4.4.2.1 DOCUMENT SELECTION FOR TRANSLATION AND ASSESSMENT

Initially, it was thought that the only way to gather evidence to identify disparities in TM resources between organisations was to ask each Translation Unit/Service to select one of their internal translation staff to translate a sizeable document (see: section 4.5 Research Constraints). The issues arising from conducting an analysis in this way meant that the study might infringe on a considerable amount of the

translator's time, so there was a high probability that the research would be less likely to prosper or be well received. However, after carefully considering what was needed to achieve adequate results for this study, it was determined that this method was an unnecessary burden on the organisation, and a shorter document of approximately five hundred words would be sufficient.

Therefore, each Translation Unit/Service was asked to supply a five-hundred-word (approximately) general language document that would be typically translated in their organisation. Thus, three documents were presented, one from Swansea Council, one from Swansea University and a third from the Welsh Government. It was imperative that the document had not been translated previously so there would be no TMs stored in any system. Each organisation took the three documents and uploaded them individually into their in-house CAT tool (DVX3), so the document could be analysed, and the system-generated output (the Analysis Sheet and .rtf) could be assessed and compared between the three organisations.

4.4.2.2 WORD COUNTING

The process of carrying out a document's word count is part of the translation workflow process, as highlighted by Cai and Zhang (2015, p. 433). The word count provides a guide to how long a document will take to translate, and if outsourcing, the rate of pay for a document translation is typically calculated based on the word count, as explained in more detail in section 1.3.1 above. However, to assess the accuracy of the translation technology used by the public sector translators, checking the word count, and comparing it between the three organisations would potentially indicate whether the translation workflow is functioning accurately and efficiently from the beginning of the process or whether any issues need to be addressed.

Therefore, this study chose three different methods to test the word count. Firstly, the CAT tool Analysis Sheet (as discussed in section 1.3.1) is a report the CAT tool generates when a document is uploaded to the system. The Analysis Sheet provides the translator with detailed information about the document, including a word

count based on its document analysis. Secondly, through Microsoft Word and its internal word counting facility; and thirdly, using Flesch-Kincaid (see Solnyshkina et al., 2017, p. 238), which provides not only a word count but also a readability grade based on the average number of syllables per word and the average number of words per sentence. This is also helpful in this study as it confirms that all documents sent by the organisations in this study contain general (non-technical) language.

In the translation industry, it is acknowledged that document word counts frequently vary between software and even between individuals who manually count words. This is important because the most common means of calculating the cost of a translation is by word count. Other methods are used, for example in the German translation market, whereby prices are often calculated per page. However, this can be misleading as there are usually no stipulations regarding font or margin sizes, so an organisation could easily use a small, thin font and increase the margins to accommodate more text. This study looks for variations in word count using standard methods such as Microsoft Word (which can show word counts), the CAT tool software and Flesch-Kincaid.

4.4.2.3 CAT TOOL ANALYSIS SHEET

When uploaded to the in-house CAT tool called DéjàVu (referred to as the current version name DVX3 hereafter), the CAT tool Analysis Sheet tool would provide the critical data for comparison purposes to evaluate each ST document and identify any variations between organisations in terms of TM matches and word counts, in order to see how accurately the tools in each organisation evaluate the three ST documents. Therefore, Swansea Council, Swansea University, and the Welsh Government would each produce three Analysis Sheets, amounting to nine in total. In section 1.3.1, an Analysis Sheet example and further explanation is provided.

4.4.2.4 COLLECTING THE DATA (RTFS AND ANALYSIS SHEETS)

After the source texts are run through DVX3, the organisations provided an rtf. (Rich Text File) document for each source text. The .rtf file is a spreadsheet formatted to show any repetitive content detected by the organisation's TM. An example of an .rtf file is shown in Figure 4. 5.

Figure 4. 5 Example of an .rtf file received.

ID	Source	Target	Comments	Status
0000004	{00102}Please do not translate this column{00103}	{00102}Please do not translate this column{00103}		
0000009	{00102}English{00103}	{00102}English{00103}		
0000014	{00102}Welsh{00103}	{00102}Cymraeg{00103}		
0000021	{00102}Guide to Extra Help and Support{00103}			
0000027	SEO & keywords			
0000030	Support at University, Support and Wellbeing, Student Services, Specialist Support, Mentoring, Student Wellbeing, Student's Mental Health and Wellbeing, Prospective Students			

The first Column (ID) is an identification column, and each segment (a portion of text) is allocated an individual ID number. The text from the ST appears in the second column (Source). The third column (Target) indicates whether any previously translated 'matches' have been found in the TM, i.e. TT, that is an exact translation of the ST. The fourth column, "Comments", is blank; no comments were made. The fifth column (Status), which appears if a match is found, is coloured green. When a segment (usually a sentence) is translated and then saved to a TM, it

can be re-used in future translations. Therefore, when a new document is uploaded and (for example) the same sentence needs to be translated, the previous translation matches the 'new' requested translation with the old translation. However, it does not have to be an 'exact' match. As shown in Figure 4. 6 below, which is a screenshot of the DVX3 Analysis Sheet, under the column 'Type', the proportion of the match is defined in percentages, such as 95% or 99% (almost exact matches), but 50% or 74% are significantly less of a match. 'No matches' represents the content with no matches in the TM. Figure 5. 1 shows that nine Analysis Sheets and nine .rtf files were collected, i.e. three generated by each organisation. Results from the .rtf files and Analysis Sheets are shown in section 5.2.1.2.

Figure 4. 6 An example of the CAT tool Analysis Sheet indicating (in red) where the matches are shown under 'Type'.

All Files

Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	0	0	0	0.00%	0
Chars/word: 6.04	Guaranteed Matches	0	0	0	0.00%	0
TM Matches >	Exact Matches	0	0	0	0.00%	0
	95% - 99%	0	0	0	0.00%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	4	24	148	4.28%	0
	No Match	29	537	3242	95.72%	0
	Total	33	561	3390	100.00%	0
	Internal Repetition	6.37%				

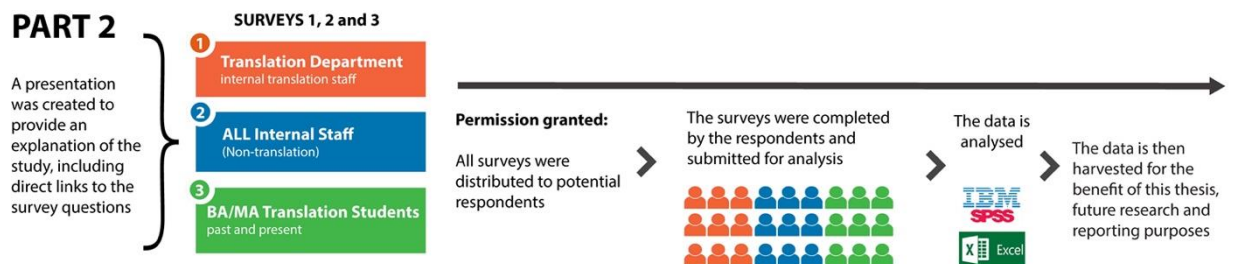
4.4.3 PART 2: THE THREE SURVEYS

This is a mixed-methods comparative analysis of the current internal translation workflow processes in order to understand their function in terms of productivity, accuracy, functionality, reliability, efficiency, usability, and cost efficiencies, as well as the overall satisfaction levels and sentiment of the key stakeholders involved in the process and to determine whether the current process meets expectations from all parties.

The surveys examine the perspectives of three types of stakeholders: general staff, in-house professional translators, and BA/MA translation students (current and recently qualified), focussing on in-house translation technology, the workflow process, staff Welsh language skills (and levels of support) plus their technological competence, any in-house training requirements, and the future.

This unique study examines how the translation workflows in each department manage translation projects, from raising the translation request with the ST to the final distribution of the TT, illustrated in Figure 4. 7 and a simplified version shown in Figure 4. 1.

Figure 4. 7 Part 2: The three surveys



4.4.3.1 SURVEY AND PRESENTATION DESIGN

Three surveys were designed for the three types of respondents in Welsh and English. Initially, it was considered whether one survey should be created to cover all respondents. However, when the questions were collated, the length of the survey became too extensive, so it was decided to design a more targeted, role-centric approach:

- Translation Unit/Services Survey: Internal Welsh translation staff employed by the organisation.
- Staff Quiz/Staff Survey: All staff employed by the organisation (not including translation staff).
- BA/MA Student Survey: Swansea University translation students, present and recently qualified.

To stand out from a typical survey and capture potential respondents, it was decided to introduce each survey with a professional-looking presentation and a more detailed research explanation. This was an unusual approach which received positive comments during the pilot study.

4.4.3.2 FORM DESIGN

There are several online survey platforms available, ranging from free versions such as Google Forms and Microsoft Forms to Survey Monkey, a paid service which is more complex. Following a trial of all three, it was determined that Microsoft 365, and Microsoft Forms, was the preferred option, not only because it was free but also because it was available to employees of all three organisations.

Consideration was given to the wording of the surveys; for example, if the language was too formal or too colloquial, or if the terminology contained inaccurate terminology or highly technical words, then the respondents may not be willing (or able) to provide answers. Similarly, and as with all text, without the benefit of inflexion or body language to help convey the questions' meaning, attention was

needed to ensure that the content was easy to follow, unambiguous, and without bias.

It was also pertinent that as translation technology and the software are core elements of this study, questions were designed to understand respondents' preferences, likes/dislikes, their usage of them and understanding of their purpose. To ensure that all potential tools were named in the survey an internet search was conducted. A range of familiar CAT tools and MT tools were thereby chosen based on popularity, so the translators would be familiar with some of the tools (for example Trados, Systran, Memsource and Google Translate, Microsoft Translator, Bing Translator), but Translation Management Tools such as Wordbee, and others that may or may not be familiar to the participating translators. The objective was to determine which tools are preferred and which are generally underutilised or unknown. It should be noted that Bing Translator and Microsoft Translator are depicted as two separate entities in this study, despite the fact that they are essentially the same tool and are still referred to as Bing by translators. However, Bing Translator now refers more specifically to the Microsoft Translator-powered translation portal. Nevertheless, it was determined that it was necessary to include both entities, as excluding one would risk translators who are still familiar with Bing as an MT tool not including it in their response.

The design aspect of Microsoft Forms was easy to follow. Uniformed images were designed to portray a distinct feel and keep the reader entertained whilst focused. When an individual was invited to participate, attention was given to protocol, in this case the individual's consent. As no organisation required a Non-Disclosure Agreement, this section was used to gain consent and ensure that all the ethical approvals necessary to proceed were adhered to. The respondents could also select whether to complete the survey in English or Welsh.

The questions for the three separate surveys were carefully designed based on the data required to answer the research question and sub-questions, and then divided into distinct categories to retain the respondent's attention. A generic list of survey

questions would risk losing the reader's interest and preventing them from completing the survey. For example, the Staff Survey has seven sections:

1. Consent (which needs to be agreed upon before the respondent can move to the next section)
2. About You (collection of demographic information and qualifying the respondents so any outliers could be removed)
3. Your Work and Workplace
4. Technology
5. The Future (of the translation industry)
6. Quality Control
7. And finally (their thoughts about the future of the translation industry).

Each of the three forms differed slightly, with sections applicable to a specific respondent type, such as the Staff Survey (see Appendix 14), which focused on the workflow from beginning to end. Consequently, each step of the workflow, including their Welsh language contribution and perceptions, was required to be included. In addition, and to cover all aspects regarding the main research question, the Translation Unit/Services Survey (see Appendix 14) focused on the translation workflow from their perspective, from start to finish, including sentiment. Finally, the purpose of the BA/MA Survey (see Appendix 16) was to collect demographic data, but also to understand their translation experience, opinions of the technology/software used, and sentiments about the translation industry. Consequently, the Translation Unit/Service Survey contained questions regarding translation technology that were irrelevant to the Staff Survey. The layout of the survey questions is set out in the following sections: 4.4.3.3 for the Staff Quiz/Survey, 4.4.3.4 for the Translation Unit/Services, and 4.4.3.5 for the BA/MA Student Survey.

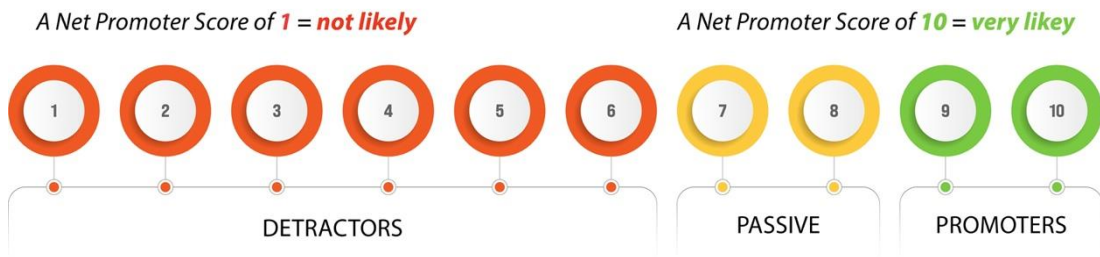
Microsoft Forms provides a reporting solution for the received data, such as the number of completed surveys and the average completion time. This information is useful for survey design, as a lengthy survey increases the likelihood that respondents will abandon it. Conveniently for all, Microsoft Forms permits the incorporation of diverse questioning formats during the form design. The following were utilised in each of the three surveys with both closed and open questions:

1. **Choice:** This was used for the simple dropdown boxes such as those for *yes/no/maybe* answers and was only used on *yes/no/maybe* question types.
2. **Text:** A text-type question can accept either a short (one-line) answer or a long (multiple-line) response, making it a useful and versatile tool for qualitative data collection.
3. **Rating:** This method was used for instance to assess the respondent's thoughts on the translation industry; it is a fast way to collect data.
4. **Ranking:** For instance, when given a list of software, the respondent ranks them in order of preference. This not only generates results indicating the overall preferred software, but also highlights the less popular and less well-known tools, which may include new technology.
5. **Likert Scale:** Used as described below for *strongly agree/strongly disagree* type responses and displayed in a simple manner allowing for quick selection.
6. **Net Promoter Score:** As explained below, used to gather preference data.

As the aim was to collect both qualitative and quantitative data, then varying the question type was helpful, not only to make the process more interesting for the respondent but to choose appropriate questions that would generate the different types of information sought. For example, questions that only require a *yes/no/maybe* answer, would necessitate a choice question, but questions about sentiment would benefit more from a Likert Scale or Net Promoter Score, which speed up the survey as they simply select a number or an option. Although the Likert Scale or Net Promoter Score question types do not provide definitive answers (such as *yes/no/maybe*), they enable the user to gauge their feelings toward the question by selecting from a list of options, for example: *strongly agree/agree/neither agree nor disagree/disagree/strongly disagree* (Likert Scale) or, from 1 = *never* to 10 = *always* (Net Promoter Score).

Net Promoter Scores are effective in generating answers to questions that produce a type of preference. For example:

Question: How likely are you to receive your Welsh Translation back on time?



As shown by Nice Systems Inc. (2021), the responses are divided into three sections:

- detractors** (negative viewpoint) = numbers from 0 (zero) to 1,2,3,4,5, and 6
- passives** (in the middle) = numbers 7 and 8
- promoters** (very positive opinion) = numbers 9 and 10

Where there may be alternative answers, the respondent will be able to enter further information under *other*. This applies to all three surveys.

The staff survey was piloted with a small group of respondents whose demographics matched those of the staff participants in order to identify and avoid any possible issues during data collection. This proved useful, as they proposed solutions to a few minor issues concerning link sharing and numbering. As the potential number of respondents for the Translation Unit/Services Survey and the BA/MA Survey was low, there was a conscious effort not to contact these participants too frequently before sending the main survey, in order to avoid causing irritation. It was deemed sufficient to pilot only the Staff survey to obtain feedback on the questions and verify that it served its intended purpose.

All ethical procedures were complied with, and a consent form was circulated, with the usual proviso that participation was entirely voluntary and that participants could withdraw at any time.

4.4.3.3 STAFF QUIZ/STAFF SURVEY

This survey consisted of 34 questions (see Appendix 14). There were demographic questions initially, such as *gender, age, nationality, education, employer, and native*

language(s). Likert scales were used to understand the respondent's level of Welsh language proficiency, and particular attention was given to understanding the respondent's Welsh language communication skills, such as *spoken, written, reading, and listening* levels at home compared to the workplace. If there were any disparities between home and the workplace, this would be interesting, not only from a Human Resource perspective, which recruits staff that do or do not claim to be Welsh communicators and may be hesitant to use their Welsh in the workplace. If staff choose not to use their Welsh language skills, that will alter the intended dynamic of a bilingual workforce and add unnecessary burdens to the already busy and pressurised schedule of the professional translators. It was also essential to gather data on the respondent's understanding of Welsh language legislation and their awareness of the Welsh Language Standards 2015-2018, as it is vital to working in a bilingual setting.

Questions were designed to understand their requests for translations from the Translation Staff and to understand how confident they were with the service. For example, if they said they did not use MT, the form would skip to the following section. An in-built bridging option within Microsoft Forms was used to speed up the process, allowing users to move forward if a section did not apply to them.

Using a mixture of *yes/no/maybe* answers, Likert scales, and pre-empting their answers by offering a list to choose from but adding a blank alternative option such as *other*, the respondent would not have to overthink. This method would help hold the reader's attention for the survey duration.

The respondent was free to answer (or not) what they would like to change regarding the translation workflow. This was a significant question and an opportunity for them to voice their opinions. It was strategically placed slightly before the end, hoping that survey fatigue had not set in. There was also an opportunity to provide any additional comments the respondent may have, a chance to enter a competition for a £25 Amazon voucher, and to take part in a focus group. To ensure the reader felt comfortable not joining the focus group, a social annotation was added: *PS, don't worry, you can say no*. This survey took an

average of 9.23 minutes, and 151 responses were received. A total of 146 were suitable for use, and those discarded were due to the respondents not being an employee of the participating organisation.

4.4.3.4 TRANSLATION UNIT/SERVICES SURVEY

The survey consisted of 48 questions (see Appendix 15) split into the following seven sections:

1. Consent
2. About You
3. Your Work and Workplace
4. Technology
5. The Future
6. Quality Control
7. And Finally

As with all surveys, an in-built bridging option within Microsoft Forms was used to speed up the survey, allowing users to move forward if a section did not apply to them. For example, if they said they did not use MT, the form would skip to the following section. After completing the consent section, the respondent was asked generic questions such as gender, age, nationality, education, employer, *and native language(s)*. Additional questions were added to determine the respondents' working language pairs and job titles. However, to continue to provide anonymity, answering this question was optional. Further multiple-choice questions delved further into the professional experience of the reader. The idea was to understand the linguistic background and specialism of the reader, which is key to answering one of the research sub-questions relating to the linguistic expertise in-house.

One main difference between this survey and the other two was the requirement to understand the impact of the workload on staff, to gauge their stress levels and look for opinions, likes, and dislikes. A mixture of Likert scales, multiple choice, and options to rank translation technology tools in order of preference was used to look for a pattern in the respondents' choices across the organisations. Particular

attention was paid to understanding their use of MT, their level of trust, and how it has impacted their workflow.

Most questions were multiple choice or pre-determined, so the respondent did not have to overthink the answer. Some answers did require a written response, such as the description of their in-house translation workflow and a request for them to add any comments about translation technology, with a reminder that their response is anonymous to encourage them to speak freely. It was considered whether to provide pre-determined answers; however, it was decided that this would be impossible due to the number of potential configurations, and the respondent would find it easier to write the workflow. A few examples were given to encourage a more uniform response, plus the option to email the answer was also provided, such as:

How is the translation workflow carried out in your workplace? *

*For example: Receive Translation > Assign to internal translator > Receive translation back > Assign to proofreader > Receive proofread translation back > Quality check > Return to original sender. If you have a document that explains this better, then please email [REDACTED]
[REDACTED]

Particular attention was given to this question as it was essential to answering the research question and the focal point of the research. Considering the impact of the technological turn on the industry, it was imperative to look at how the staff within the in-house translation unit/service see the future. A Likert scale and then asking the respondent to imagine their role as a translator in 2035 would generate interesting responses and expose their inner thoughts on the potential implications of technology on the industry in general and how their role as a professional translator may change over time. In the 'And Finally' section, a question was asked with a *yes/no/maybe* answer, which posed a sensitive and controversial point regarding combining resources between public sector organisations. This, once again, is the focus of this research, and comparing responses between organisations should indicate the general feeling amongst professionals. As with all surveys, the respondent can enter a competition for a £25 Amazon voucher and participate in a

focus group. To ensure the reader felt comfortable not joining the focus group, a social annotation was added: *PS, don't worry, you can say no*. This survey took an average of 21.57 minutes, 11 responses were received, and 11 were suitable for use in this study.

4.4.3.5 BA/MA STUDENT SURVEY (CURRENT AND RECENTLY QUALIFIED TRANSLATORS)

This survey consisted of 27 questions (see Appendix 16), split into the following five sections:

1. Consent: As explained previously, the respondent cannot continue without agreeing to the consent section
2. About You: To gather background data on the respondents and ensure they meet the criteria.
3. Technology
4. The Future
5. And Finally

Following the completion of the consent form, information such as the respondent's *gender, age, nationality, and course name* was collected to determine their background and qualifications, albeit in some cases this was incomplete. To determine the respondent's professional experience as a translator, additional questions were presented, such as whether they hoped to specialise in a subject, with the option to add other fields and demonstrate diversity. The respondents were also asked to select a response from an options list about whether they had decided on their next career step, with the option *I don't know, not a clue!* included to make them feel more comfortable selecting this response if they wished. The greater the respondent's professional experience, the more qualified their responses could be assumed to be.

The BA/MA Students were not public sector employees, so many of the questions asked in the previous two surveys regarding workflows and processes did not apply. Using Likert scales to determine which tools they will or will not use when translating and a question to rank a list of nine translation tools in order of

preference, the following section aimed to gauge respondents' opinions on their use of CAT tools, MT, and Translation Management Tools. The purpose of these questions was to determine their preferred and most-used tools.

Using a *yes/no* dropdown, the section that follows examines specifically whether respondents have used MT to translate content and then post-edited it, as well as a Likert scale to determine how frequently they use each of the eleven translation tools. This will reveal whether their MT output has been post-edited and which tools are utilised most frequently.

Using the same list of tools and a Likert scale, respondents were asked whether they have confidence in the tools. It is reasonable to assume that the results will be comparable to those highlighting their preferred tools. To determine which tools are preferred, this question was repeated, but this time respondents were asked to specify which MT tool they trusted the most.

On a scale from 0 (*difficult*) to 10 (*easier*), respondents were asked whether they believe translation technology makes translation more or less difficult. This question would clarify the effectiveness of the tools in practice. In addition, a second scale ranging from 0 (*not at all*) to 10 (*extremely*) was provided to assess the respondents' perceptions of the technology's contribution to their workflows. If the respondents express dissatisfaction or disappointment with the use of their preferred language tools, it provides empirical evidence indicating that the technology does not fulfil the anticipated advantages. This negative feedback serves as valuable evidence that the technology fails to meet expectations and does not deliver the intended value or benefits to its users. Such findings shed light on the shortcomings and limitations of the technology, informing future research and development efforts aimed at addressing these issues and improving user experience.

To understand the respondent's sentiments about the future of the industry, being a translator in ten years' time, the changing role of a translator, and machines taking over the role of a translator, a Likert scale ranging from *very worried* to *very*

excited was used to gather information regarding the translation profession and its future. This question was especially pertinent because it revealed their level of confidence in the future and whether they have any concerns.

To gather qualitative data regarding future sentiment, the respondents were requested to articulate their perceptions of the translator's role in the year 2035. The selection of this particular year was based on careful consideration of temporal proximity to the survey completion date. By choosing a timeframe that is neither excessively distant nor overly proximate, respondents were provided with an opportunity to offer informed perspectives on the future and how they envision it. This approach ensures that the data collected reflects a plausible and realistic outlook, enabling deeper insights into the expectations and forecasts surrounding the translator's role in the coming years.

Finally, they were asked to comment on the translation industry and assured that their responses would remain anonymous in order to encourage candid and insightful responses. They were asked to choose from a predetermined list of answers in order to identify any areas of technology that they felt could be improved. The responses included the need for additional training to reduce complexity and cost reduction.

The respondent could enter a competition for a £25 Amazon voucher and participate in a focus group, as with all surveys. To ensure that the reader felt comfortable declining to join the focus group, the social annotation: *PS, don't worry, you can say no* was included. This survey took an average of 16.01 minutes to complete, and 42 responses were received; all 42 were appropriate for this study.

4.5 RESEARCH CONSTRAINTS

This section outlines the study's limitations that were beyond the researcher's control. They are mentioned so that researchers interested in performing comparative research would consider them before conducting the research.

4.5.1 EFFECTS OF A GLOBAL PANDEMIC ON DATA COLLECTION

Initially, an ethnographic study on the premises of each organisation was deemed essential to the success of this study; however, in early 2020, with the onset of the global COVID-19 pandemic, it became apparent that confidence in carrying out this study on-site was low as social distancing measures had been implemented. The potential of numerous lockdowns, which closed all offices, was fast becoming commonplace, and the forecast for returning to normality was becoming unpredictable. Most public sector staff in office environments worked remotely from their homes. The reason for this was that any interactions could be minimised between staff, and the COVID-19 infection rate would remain as low as possible. Early in the study, a decision was made to tailor any data collection specifically to an online audience and off-site.

Initially, in 2020 there was a fear of the unknown due to the unprecedented pandemic with staff working from home. Staff were unfamiliar with working from home, so there were numerous frustrations with technology (cloud-based and equipment issues). They needed to learn how to use unfamiliar technology, such as online communication, including video calling.

It was decided to disseminate all surveys as soon as they were prepared and passed the pilot study phase; delaying distribution could have caused further complications as staff (at the time of the compilation of the surveys) were settled in their home-based roles and any technical issues had been dealt with, this study did not want to send out the surveys whilst any further disruptions were taking place.

Due to factors that frequently impede data collection, such as trying to collect data from a person in a busy office environment, it was considered that staff working from home would be advantageous for this study. It was also pertinent to consider the Hawthorne Effect, as explained by Oswald et al. (2014, p. 53), which occurs when respondents alter or improve their normal behaviour due to an awareness of being studied, so it could be assumed that compiling their responses whilst working from home may allow them to provide more openly honest answers than if a

researcher were present – especially if it were made clear that the survey was anonymous. In addition, they would not be sensitive to their colleagues’ subject bias or prejudice, which can influence the validity of the data.

4.5.2 PILOT STUDY

Once the surveys were designed and completed, a pilot study was considered essential to highlight any issues that may occur during the main study. There were procedural aspects of each survey that required testing, notably ensuring the links from the presentation to the relevant survey worked correctly and the bridging on the surveys, which would guide the respondent to the relevant section for example, if they had never used MT, then they would not be asked questions about their experience with MT.

Respondents in the pilot study were selected as they were representative of the respondents in the main study. Eight full-time staff members based at Swansea University were sent the three surveys, and five responded with suggestions such as how to display the English content in the introduction alongside the Welsh language and continuity regarding timing to complete the surveys. The surveys were subsequently updated and distributed via staff email (Swansea Council), staff newsletter and direct emails (Swansea University) and LinkedIn messaging. The Welsh Government were contacted via email directly to encourage participation.

The benefit of conducting a pilot study with representative participants was much more insightful than envisaged. It was useful to test the process and obtain alternative perspectives on how elements of the surveys may be improved, with suggestions that a researcher may not have even considered. Providing respondents with a straightforward, error-free, and well-organised experience would lessen their likelihood of prematurely abandoning the survey or retrieval of poor-quality results data. If they were to leave, there would be less data collected for analysis, fewer results and perhaps even a need to modify and redistribute the survey.

4.5.3 RELIABILITY AND VALIDITY

To produce useful results that are accurate and credible in order to answer the research question comprehensively, it was essential to ensure the reliability and validity of this study. For example, the targeted survey questions in Part 2 (staff/students/translator) and the instructions, process and translation content in Part 1 needed to be tailored to their roles, be unambiguous and not be designed to steer the respondent towards a specific answer, instead allowing them to provide their own independent responses. However, where quantitative answers were required, the respondents were often able to add their own options if necessary for example, when asking students about their future career plans.

Saldanha and O'Brien (2013, p. 30) describe the 'researcher unintentional expectancy effect', and the significance of being cognisant of the numerous threats to validity. Particularly relevant to this study was the threat posed by the sample size, the type of content provided, and the method used to conduct the analysis (Part 1), as described in section 4.4.2.1. By coincidence, all organisations utilised the same analysis software (DVX3), and a smaller sample (500 words) of non-technical content representative of the content they work with was requested. The procedure to be completed was clarified via email, with a follow-up phone call to ensure clarity.

To ensure reliability, as highlighted by Saldanha and O'Brien (2013, p. 35), it is essential that this study is replicable and transparent, and that the data collection/methodology employed is dependable, resulting in credible findings. It would be possible, for instance, for an auditor to examine the results and follow the detailed processes. Moreover, during the focus groups triangulation was used to cross-check the results and clarify any ambiguities in the data.

5 CHAPTER 5: RESULTS FROM THE TM COMPARISON AND THE THREE SURVEYS

5.1 INTRODUCTION

This chapter presents a mixed-methods evaluation of how translation services function between three public sector organisations in Wales: Swansea Council, Swansea University, and the Welsh Government. To address the main research question, this study needed to directly engage civil servants who have either requested translation services (the provider of the ST) or produced the translation (the translator generating the TT). The evaluation took place in the form of a TM comparison on the one hand and three surveys on the other. Following the distribution of the surveys, the Translation Unit/Services staff received a supplementary questionnaire with additional questions to clarify the in-house workflow and procedures. The qualitative and quantitative results from the three surveys, and the supplementary questionnaire, are presented here:

1. Staff working in the public sector (Staff Quiz/Staff Survey, see Appendix 14)
2. Staff who provide Welsh translations for the organisation (Translation Unit/Services Survey, see Appendix 15)
3. Past and present BA/MA translation alumni (BA/MA Student Survey, see Appendix 16)

The chapter is organised into the following sections: section 5.2 investigates the differences in TM data between the three public sector organisations: Swansea Council, Swansea University, and the Welsh Government, whereas section 5.3 examines the results from three surveys distributed to the three organisations and one supplementary questionnaire. In particular, section 5.3.1 presents the results of the Staff Quiz/Staff Survey; section 5.3.2 presents the results of the Internal Translation Unit/Services Survey and section 5.3.3 presents the results of the BA and MA Student Survey. Each survey is broken down into the following categories:

1. Background, qualifications, and expertise of the respondents.
2. Technological competence and tools in the workplace setting.
3. Translation workflow process.
4. The future of the industry.

However, the Staff Quiz/Staff Survey contains an additional category: Welsh language proficiency and the BA/MA Student Survey did not include the Translation Workflow process.

The results will give an insight into the efficiencies and productivity of the translation workflows in each organisation and the impact of the technological turn in the workplace. It should be noted that the Welsh Government completed the TM comparison but not the surveys. However, one respondent from the Welsh Government did submit a complete survey, which is included in the results, even though they had not received it via their organisation.

5.2 RESULTS FROM THE TRANSLATION MEMORY COMPARISON

This section is a comparative study of the quantitative differences in TM output between the three organisations. It is anticipated that this may provide supportive evidence to answer the research questions. This research aims to understand whether the organisation(s) have embraced translation technology as effectively and efficiently as anticipated by this study. For example, if the technology is not updated or configured correctly, staff will not benefit from its full potential. Consequently, efficiency levels may be hindered or even remain stagnant, along with the workflow process. This raises questions regarding TM resources in public sector organisations and how they are managed and maintained.

Firstly, documents provided by each organisation will be assessed, looking at word counts and readability scores to evaluate the complexity of the language used in the text. The readability score will be determined using the Flesch Kincaid Readability Test, as explained in 4.4.2.2. Following the data processing in this section (TM Comparison) and the survey results, Chapter 6 will present further discussion and analysis to provide potential solutions.

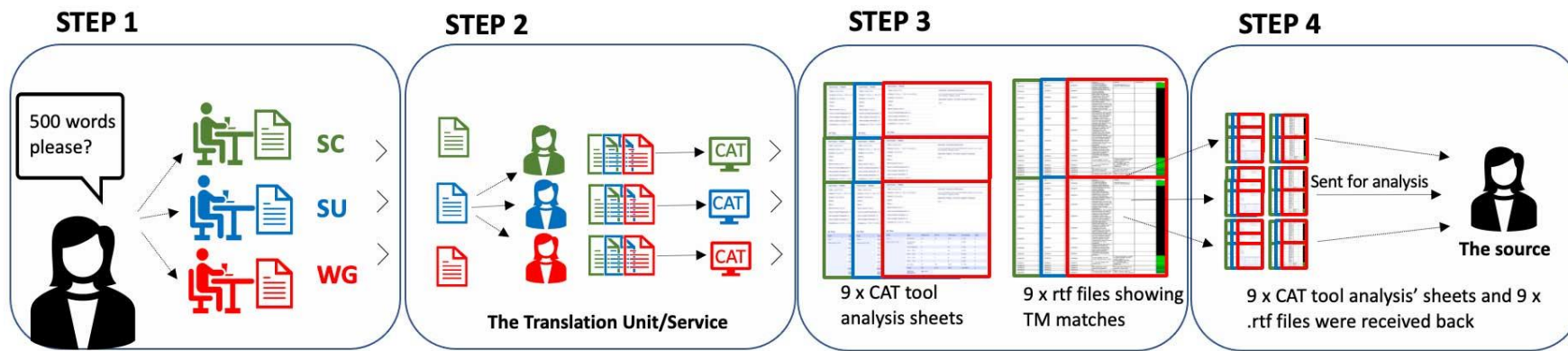
5.2.1 DOCUMENTATION FOR ANALYSIS

As explained in Chapter 4: Methodology, each organisation was asked to provide content of approximately 500 words for TM analysis; however, it was anticipated that there would be minimal variance between the results. If the text for analysis were significantly longer, then it could be expected that a more significant difference would be visible in the results. For this study, it was decided that a shorter text should provide enough data for comparative purposes as the analysis aims to find differences in TM data between the organisations, however small that may be. It was deemed that there was a higher chance that the organisations would participate in the study if they were asked to provide a small sample of raw text instead of a much larger document.

It was a crucial element of this study that each organisation taking part confirmed that the content provided for this study was original, raw source text (ST) which had not been translated previously (online or offline) nor run through their TMs before. The reason for this is that when the document is uploaded to their CAT tool, there is an even playing field with the three organisations as the TMs would not recognise the document and therefore provide an accurate assessment of the stored TM data. For example, if Swansea Council had previously translated their document, the TMs would pick up 100% of the content and defeated the object of trying to compare TMs between the three organisations in the study.

To clarify the process followed to gather the TM data for analysis, Figure 5. 1 below illustrates the four steps taken in further detail, from initial contact with the three (colour-coded) organisations (Swansea Council, Swansea University and Welsh Government), to the return of the eighteen documents for analysis in this study.

Figure 5. 1 The process for gathering TM data from Swansea Council, Swansea University, and the Welsh Government



As already explained, it is essential to note that the STs (1, 2 and 3) had not been translated previously. When each organisation puts the three documents through their TMs, their CAT tool analysis will reflect stored TM data only. The matches (e.g., exact matches, duplicates, 95-99% match etc.) and the quantitative output could then be compared between the organisations to look for any differences. Each organisation confirmed that they all used the same CAT tool software (DVX3), which meant there was confidence that the output would be formatted comparably.

5.2.1.1 WORD COUNT COMPARISONS

Table 5. 1 below provides the results from the TM comparison, detailing the variations in word count, ranging from 544 words by DVX3 to 437 words by Microsoft Word and Flesh Kincaid, i.e. 8% less for ST1. For ST2 and ST3, the variation is 1%. Word counting plays a significant role in the translation workflow process; a high word count indicates a longer text, more time needed to translate the content and more substantial cost implications, and that is before looking at the technical aspect of the document. If the translation requires a specialism, such as a medically or legally trained translator, an external translator may need to be sourced, resulting in further expense. If an organisation has access to a large bank of TMs, then even with a large word count, some of the content may already have been translated and can be re-used, so the word count is reduced, and the time to complete the translation is reduced and so on. This research is based on a low word count, so any differences in word counts between the organisations will be significant if the study scaled up in line with the annual output of a public sector translation service.

Table 5. 1 Source text analysis results for TM comparison (by organisation)

	Source text	From	MS Word: word count	DVX3 word count	Flesch Kincaid word count	Flesch Kincaid Grade Level	Flesch Kincaid Ease Score	Reading Level
1	SEO for Translation (Appendix 1)	Swansea University	437	544	437	10.4	42.3	College grade (16-18 years) Difficult
2	Warm Homes (Appendix 2)	Swansea Council	564	561	568	9.1	56.4	10 th to 12 th Grade (15 years) Fairly difficult
3	Test Piece (Appendix 3)	Welsh Government	597	600	598	13.4	39.7	College grade (16-18 years) Difficult

Each recipient in each organisation was able to process the three source texts, i.e. the one they provided themselves, as well as the two STs supplied by the other two

organisations. Each document was imported into DVX3 in each organisation. The import process means the content was segmented automatically into one sentence per row. Any previously translated content was recognised by the TM database and flagged up for the translator to decide if the translation was to be used (or not).

5.2.1.2 TRANSLATION MEMORY RESULTS

The analysis of TM data from three organisations aimed to look for variations and anomalies between the contents of their repositories of translations, which will provide us with insights into their translation workflow processes. The three organisations' TM data analysis results are presented in Figure 5. 2. Column A identifies every row by number. Column B shows the names of the three organisations in this study: Swansea Council, Swansea University, and the Welsh Government. Column C shows the title of each source text. Columns H to AR show the Analysis Sheets' results, which show TM matches within each document.

Figure 5. 2 Breakdown of the CAT tool Analysis Sheets supplied by each organisation for each document.

A	B	C	G	H	I	J	K	L	M	N	O	P	R	S	T	U	V	W	X	Z	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR				
Line Number	Organisations involved in this study	Name of the document submitted for analysis	DéjàVu	Duplicates			Guaranteed Matches			Exact Matches			95% - 99%			85% - 94%			75% - 84%			50% - 74%			No Match			Total			Internal Repetition													
			CAT Tool Document Analysis Results from	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters		Percentage	Segment	Words	Characters	Percentage								
1	Swansea University (SU)	SEO for Translation by SU	WG	12	25	252	5.51%	0	0	0	0%	3	4	35	0.74%	2	2	20	0.37%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	54	508	3425	93.38%	71	544	3732	100%	19.91%
2		SC	12	30	252	5.51%	0	0	0	0%	5	6	55	1.10%	0	0	0	0%	0	0	0	0%	0	0	0	0%	8	33	248	6.07%	46	475	3177	87.32%	71	544	3732	100%	19.91%					
3		SU	12	30	252	5.51%	0	0	0	0%	5	6	55	1.10%	1	9	53	1.65%	0	0	0	0%	2	29	180	5.33%	23	121	824	22.24%	28	349	2368	64.15%	71	544	3732	100%	19.91%					
4	Swansea Council (SC)	Warm Homes by SC	WG	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	4	24	148	4.28%	29	537	3242	95.72%	33	561	3390	100%	6.37%				
5		SC	0	0	0	0%	0	0	0	0%	15	186	1149	33.16%	5	59	366	10.52%	0	0	0	0%	1	8	45	1.43%	2	37	196	6.60%	10	271	1634	48.31%	33	561	3390	100%	6.37%					
6		SU	0	0	0	0%	0	0	0	0%	5	1	27	0.18%	0	0	0	0%	2	#	65	1.78%	0	0	0	0%	5	37	206	6.60%	21	513	3092	91.44%	33	561	3390	100%	6.37%					
7	Welsh Government (WG)	Test Piece by the WG	WG	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	24	600	3714	100.00%	24	600	3714	100%	2.48%				
8		SC	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	2	15	79	2.50%	22	585	3635	97.50%	24	600	3714	100%	2.48%					
9		SU	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	1	8	48	1.33%	23	592	3666	98.67%	24	600	3714	100%	2.48%					

5.2.1.3 ANALYSIS OF ST1: SEO FOR TRANSLATION

ST1 (see Appendix 1) was submitted by Swansea University in an Excel spreadsheet format, ready to be uploaded directly into DVX3. The first column, which is grey, contains content presumably for marketing or website purposes. At the top of the column is an explicit instruction for the translators; *Please do not translate this column*. This widespread practice would stop the translator from translating and charging the originator for the additional content. Even though the first column contains only 119 words, the instruction is explicit, and if the translator inadvertently translates the content, the organisation cannot be charged for the error. They would simply have wasted their time and effort. However, if documents are much larger and instructions like this are ignored, the implications and costs to the organisation could be significant.

The second column, headed *English*, contains content destined for translation, which formed the content that was word counted. The third (and final) column is headed *Welsh*, and the rest is left blank, ready for the translation to be inserted. It is ubiquitous for a spreadsheet such as this to be presented for translation, particularly when the TT may be received (in this case) by a non-Welsh speaker. The recipient can cut and paste the content into its destination, such as a website or design file, and be confident that it will be placed accurately. One consideration which has not been highlighted concerns character counts. Content translated out of English often takes up more character space. There is a possibility that once the content is (for example) uploaded to a website, it may then need to be altered to fit in a limited space. This 'back and forth' can be time-consuming and unnecessary if a character count were to be provided. Once the text had been run through DVX at each organisation, the .rtf file generated by Swansea University contained 72 segments, of which 11% (n= 8) of the segments indicated a translation memory match to some degree. The .rtf file generated by Swansea Council contained 71 segments; 7% (n= 5) indicated a translation memory match to some degree. The first row, which stated *Please do not translate this column*, was left blank, different from the response from Swansea University.

The .rtf file generated by the Welsh Government contained 71 segments, out of which 7% (n= 5) indicated a translation memory match to some degree. Notably, the TM picked up the ST and did not provide a translation; the ST was repeated. Each organisation uploaded the "SEO for Translation" ST supplied by Swansea University to DVX3 and produced an Analysis Sheet based on the TM resources of that organisation. The output from each organisation is shown in Figure 5. 3, which provides a snapshot of the results from all organisations for "SEO for Translation" ST only.

Figure 5. 3 A snapshot from Figure 5. 2 with data for ST1 (SEO for Translation)

The headings in this line (words, segments etc.) are referred to 'Type' in this context

H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
DéjàVu X3	Duplicates			Guaranteed Matches			Exact Matches			95% - 99%			85% - 94%			75% - 84%			50% - 74%			No Match			Total			Internal Repetition									
CAT Tool Document Analysis Results from	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Internal Repetition
WG	12	25	252	5.51%	0	0	0	0%	3	4	35	0.74%	2	2	20	0.37%	0	0	0	0%	0	0	0	0%	0	0	0	0%	54	508	3425	93.38%	71	544	3732	100%	19.91%
SC	12	30	252	5.51%	0	0	0	0%	5	6	55	1.10%	0	0	0	0%	0	0	0	0%	0	0	0	0%	8	33	248	6.07%	46	475	3177	87.32%	71	544	3732	100%	19.91%
SU	12	30	252	5.51%	0	0	0	0%	5	6	55	1.10%	1	9	53	1.65%	0	0	0	0%	2	29	180	5.33%	23	121	824	22.24%	28	349	2368	64.15%	71	544	3732	100%	19.91%

The three organisations produced the exact figures. Duplicates (columns I – L), Guaranteed Matches (columns M-P), 85%-94% matches (columns Z-AA), Totals (columns AN-AQ) and Internal Repetitions (column AR). The analysis shows that each organisation confirmed that the document contains 71 segments, 544 words, 3,723 characters, and an internal repetition of 19.91%. Despite no segmental differences in this analysis, the .rtf output from Swansea University had 71 segments, whilst Swansea University and the Welsh Government showed 72. Therefore, although each organisation used the same technology and uploaded the same content to the same CAT tool, the systems did not provide the same output.

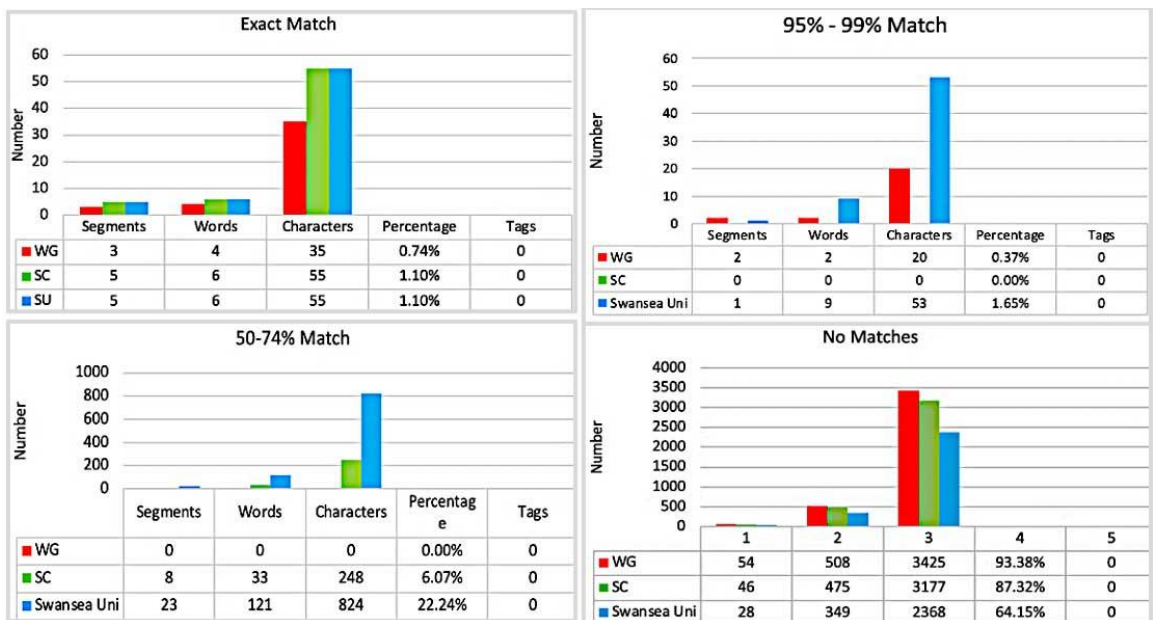
Even though the final totals match, there are differences as follows. The percentages are shown after the analysis breakdown refers to the percentage of the overall content, the higher the percentage, the larger the TM match:

- **Exact matches:** whilst Swansea Council and Swansea University agree, the Welsh Government picked up 4 exact matches rather than 6 words (Swansea University and Swansea Council) and 3 exact matches rather than 5 words (Swansea University and Swansea Council).
- **95-99%:** Each organisation produced different results. Swansea University picked up the most with 1 segment and 9 words (1.65%). Swansea Council did not pick up any matches, whilst the Welsh Government picked up 2 segments and 2 words (0.37%).
- **75-84%:** Swansea University is the only organisation to match any content in this range, with 2 segments and 29 words (5.33%).
- **50-74%:** The Welsh Government did not match any content in this range. However, Swansea Council matched 8 segments, 33 words (6.07%). Swansea University matched 23 segments, 121 words (22.24%).
- **No match:** The organisation with the most segments finding 'No match' is the Welsh Government with 54 segments, 508 words (93.38%), followed by Swansea

Council with 46 segments, 475 words (87.32 words). Finally, with 28 segments, Swansea University, 349 words (64.15%).

For ST1, therefore, the differences in the Analysis Sheets between the organisations appear to be minor; however, as this study is based on a short representation of content, the variances would be much more significant if scaled up to reflect the standard output. They are further illustrated in Figure 5. 4. Even though the variances may be minor, as Swansea University produced the ST, it would be considered highly probable that there would be a higher quantity of TM matches with the University’s own ST and fewer matches with the other two organisations.

Figure 5. 4 Differences in results between organisations for ST1.



5.2.1.4 ANALYSIS OF ST2: WARM HOMES.

The "Warm Homes" (ST2) (see Appendix 2) was submitted as a two-page Press Release on headed paper in a Word document, ready to be uploaded directly into DVX3. Even though the document was on headed paper, the header and footer (containing minimal content) were inaccessible and hidden (not selectable). Text that is not selectable is significant as this content should not be included in the word count and subsequently should not be translated or chargeable.

As Swansea Council created the ST, it was anticipated that there would be quite a high TM match. The .rtf produced by Swansea University contained 33 segments, of which 21% (n= 7) indicated a translation memory match to some degree. The .rtf produced by Swansea Council contained 33 segments, of which 63% (n= 21) indicated a translation memory match to some degree. Finally, the .rtf from the Welsh Government contained 33 segments, of which 24% (n= 8) indicated a translation memory match to some degree. However, 4 segments only contained 1 number, so the percentage does not represent the actual word matches.

Each organisation uploaded the "Warm Homes" document supplied by Swansea Council DVX3 and produced an Analysis Sheet. The output for each organisation is displayed in Figure 5. 5, showing a snapshot of the results from all organisations for 'Warm Homes'.

Figure 5. 5 A snapshot from Figure 5. 6 with data for ST2

The headings in this line (words, segments etc.) are referred to 'Type' in this context

H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
DéjàVu X3	Duplicates			Guaranteed Matches			Exact Matches			95% - 99%			85% - 94%			75% - 84%			50% - 74%			No Match			Total												
CAT Tool Document Analysis Results from	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Internal Repetition
WG	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	4	24	148	4.28%	29	537	3242	95.72%	33	561	3390	100%	6.37%
SC	0	0	0	0%	0	0	0	0%	15	186	1149	33.16%	5	59	366	10.52%	0	0	0	0%	1	8	45	1.43%	2	37	196	6.60%	10	271	1634	48.31%	33	561	3390	100%	6.37%
SU	0	0	0	0%	0	0	0	0%	5	1	27	0.18%	0	0	0	0%	2	10	65	1.78%	0	0	0	0%	5	37	206	6.60%	21	513	3092	91.44%	33	561	3390	100%	6.37%

Each organisation produced the same results in the following sections: Duplicates (columns I – L), Guaranteed Matches (columns M-P), Totals (columns AN-AQ) and Internal Repetitions (column AR). The analysis showed 33 segments, 561 words, 3,390 characters, and an internal repetition of 6.37%, the same for each organisation. However, even though the totals are the same, in this instance, there are differences in the results as follows:

Exact Matches: Swansea Council has 15 exact matches, with 186 words and 1,149 characters, equating to 1.10% of the content of the entire document. The Welsh Government has no exact matches, and Swansea University has 5 segments, one word and 27 characters, accounting for 0.18% of the document.

95% - 99%: Swansea Council shows 5 segments, 59 words and 366 characters, 10.52% of the document. Neither the Welsh Government nor Swansea University had 95% - 99% matches.

85% - 94%: Neither the Welsh Government nor Swansea Council had any 85%-94% matches, but Swansea University has 2 segments, 10 words, and 65 characters, amounting to 1.78% of the document.

75% - 84%: Swansea University and the Welsh Government had no matches in this range, but Swansea University has 1 segment, 8 words, and 45 characters, amounting to 1.43% of the document.

50%-74%: The Welsh Government shows 4 segments, 24 words, 148 characters, amounting to 4.28% of the document. Swansea Council has 2 matches, 37 words, and 196 characters, which accounts for 6.60% of the document. Swansea University also has the exact percentage matches in this range with 6.60%. However, they have 5 segments, 37 words, and 206 characters.

No match: The Welsh Government contained the most significant content with no matches with 29 segments, 537 words, and 3,242 characters, accounting for 95.72% of the content. Swansea University follows the Welsh Government, with 10 segments, 271 words, and 1,634 characters – 48.31%. As expected, as Swansea Council generated the document, the analysis showed the least matches in this section for Swansea Council with 10 segments, 271 words, and 1,634 characters, amounting to 48.31% of the document.

For ST2, therefore, the differences in the Analysis Sheets from the organisations appear to be minor, as with ST1. These differences are further illustrated in the following Figure 5. 6.

Figure 5. 6 Differences in results between organisations for ST2



Even though they may be minor variances, this study is based on a short document. As Swansea Council produced the ST, it would be considered highly probable that there would be a higher quantity of TM matches with the Council's own ST and fewer matches with the other two organisations. In this instance, minor variances would result in more significant differences when scaled up to the total number of translations.

5.2.1.5 ANALYSIS OF ST3: TEST PIECE

The third ST (ST3), entitled "Test Piece" (see Appendix 3), was submitted by the Welsh Government as a two-page Word document, ready to be uploaded directly into DVX3. The subject was Health and Social care; however, the content was not technical but more general language. The .rtf produced by Swansea University contained 24 segments; the .rtf did not present any TM matches. However, row 8 in Figure 5. 2 (Column H) shows fuzzy matches between 50%-74%.

The .rtf produced by Swansea Council contained 24 segments, but there were no TM matches. However, see Figure 5. 2, Column H (Row 9), which shows fuzzy matches between 50%-74%.

The rtf produced by the Welsh Government contained 24 segments but no TM matches. However, see Figure 5. 2, Column H (Rows 7, 8 and 9). Row 7 represents the results from the Welsh Government, and unlike the results from Swansea Council (Row 9) and Swansea University (Row 7), there are no matches at all.

Notably, as this document originated from the Welsh Government, it would be presumed that if any TM were to be detected, they would be from the Welsh Government above all. These results are significant and will be discussed further in Chapter 6.


Each organisation uploaded the "Test Piece" document supplied by the Welsh Government to DVX3 and produced an Analysis Sheet. The output for each organisation is recorded in Figure 5. 7 below, which provides a snapshot of the results from all organisations for "Test Piece".

Figure 5. 7 A snapshot from Figure 5. 8 with data for ST3

The headings in this line (words, segments etc.) are referred to 'Type' in this context

H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
DéjàVu X3	Duplicates			Guaranteed Matches			Exact Matches			95% - 99%			85% - 94%			75% - 84%			50% - 74%			No Match			Total			Internal Repetition									
CAT Tool Document Analysis Results from	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Segment	Words	Characters	Percentage	Internal Repetition
WG	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	24	600	3714	100.00%	24	600	3714	100%	2.48%
SC	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	2	15	79	2.50%	22	585	3635	97.50%	24	600	3714	100%	2.48%
SU	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	1	8	48	1.33%	23	592	3666	98.67%	24	600	3714	100%	2.48%

Note the ZERO amount of TM matches here



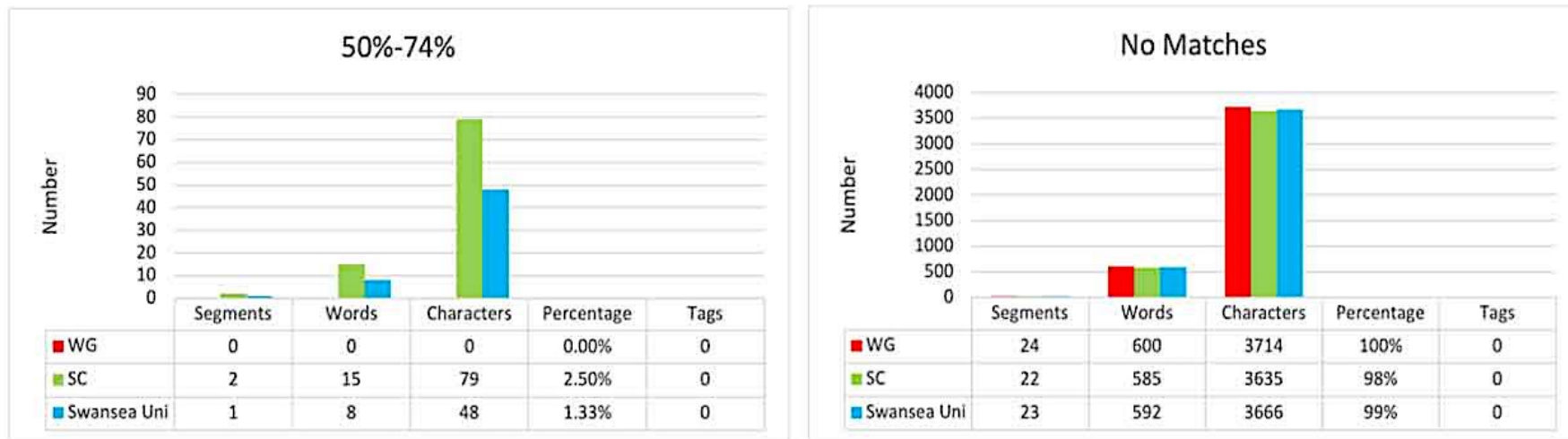
Even though all three of the .rtf documents did not show any TM matches, this was not the case in the Analysis Sheet, as this showed matches in the 50-74% range. Note the bracketed area that shows the lack of the highest TM matches. There is no duplicated content within the text, guaranteed matches, or exact matches. However, as shown in columns AF to AM, there are differences between the organisations. As the Welsh Government produced this ST, we can expect that there would be more potential TM matches with the Government’s ST and fewer matches with the other two organisations.

The three organisations produced no matches shown in the rtf. file: therefore, no previously translated content in the TMs matched the new content. Note the area in Figure 5. 7 that states: ‘Note the ZERO amount of TM matches here’; this shows zero matches for Duplicates. (columns I- L), Guaranteed Matches (columns M-P), 95%-99% (columns U-X), 85%-94% (columns Z-AA), 75%-84% (columns AB-AE), Totals (columns AN-AQ) and Internal Repetitions (column AR). The differences are found in the following match ranges:

- **50-74% (columns AF to AI):** The Welsh Government analysis showed 0 (zero) matches, whilst Swansea Council showed 2 segments, 5 words and 79 characters, accounting for 2.5% of the document.
- **No Matches (columns AJ-AM):** There were considerable *No matches* as anticipated, with the Welsh Government showing 24 segments, 600 words, and 3,714 characters (i.e. the entire document). Swansea Council stated 22 ‘No matches’, 585 words, and 3,635 characters (accounting for 98% of the document). Finally, Swansea University produced 23 non-matched segments with 592 words and 3,666 characters (99% of the document).

The three Analysis Sheets showed the same number of segments (24), the exact word count (600 words) and the same character count (3.714 characters). Similarly, internal repetition was 2.48% for all organisations. For ST3, therefore, the differences in the analysis sheets from the three organisations appear to be minor, as with ST1 and ST2. These differences are further illustrated in the following Figure 5. 8 below.

Figure 5. 8 Bar Graphs showing some of the differences in results between organisations (Test Piece – Welsh Government)



What is noticeable about these results is that, interestingly, whereby the Welsh Government produced the document, it may be assumed that there would be far more TM matches with their document, as demonstrated with SEO for Translation and Warm Homes. However, looking at the segments with 'No matches', one would anticipate that the Welsh Government would have the least amount. This is not the case. The Welsh Government have 9.1% more segments than Swansea Council and 4.4% more than Swansea University. Following the presentation of the TM results in the above sections, the data will be amalgamated with the results from the surveys, which are discussed in the following sections.

5.3 RESULTS FROM THE THREE SURVEYS

This section aims to present a comprehensive analysis of the qualitative and quantitative results data from the three surveys, as discussed in Chapter 4:

- The **Internal Staff Quiz/Staff Survey** (section 5.3.1): This survey targets civil servants (internal staff) who have requested translations from their internal Welsh translation services.
- The **Internal Translation Unit/Services Survey** (section 5.3.2): This survey targets the staff in each organisation which provides translation services within each organisation).
- The **BA & MA Student Survey** (section 5.3.3): This survey targets students currently studying translation or who recently graduated.
- The qualitative data from the **Supplementary Questionnaire** (section 5.4).

The overarching aim is to use the data collected to consider the impact of internal translation technology on the internal Welsh translation procedures in the three selected public sector organisations. To organise the data, each survey question belongs to one of four categories and sub-categories (see Table 5. 2 below). For a visual reference, the various shades in each sub-category highlight the different topics being analysed within the main category heading; for example: under Background Qualifications and Expertise of the Respondents, there are: **A: Demographics**, **B: Linguistic Competence**, **C: Welsh Language Proficiency** and **D: Workplace**.

For comparison purposes across each organisation, many questions in one survey are repeated (or similar) in another or all three. Where a bar graph is displayed and discussed, the percentage results are only based on the options shown in the legend. For example, *n/a* or outliers may not be included in the legend; therefore, they will only be shown in the main results table.

Participation in each question was 100%, except when mentioned otherwise.

5.3.1 RESULTS FROM THE STAFF QUIZ/STAFF SURVEY

Responses to the Staff Quiz/Staff Survey were received and collated between March 2021 and May 2021. The results were organised into categories (see Table 5.2). The answers to the quantitative data questions are discussed in the relevant sections.

A total of 150 respondents completed the Internal Staff Quiz/Staff Survey; however, four respondents were not representative of the survey criteria, as they were from outside the organisation, so they were not included in the results after that. After the four respondents were deleted, 146 remained in the study, and they took an average of nine minutes and thirty seconds to complete the survey. As it was anticipated that the survey would take approximately five minutes to complete, an assumption can be made that the respondents took their time to consider their answers, signifying that they can be regarded as credible and well thought out.

All graphs and tables within the results can be compared with the main tables at the start of each category to clarify the results. The breakdown of respondents between organisations is as follows: Swansea Council: 36% (n= 52), Swansea University: 64% (n= 93) and Welsh Government: 1% (n= 1).

Table 5. 2 Staff Quiz/Staff Survey: A breakdown of categories in this survey

NO.	CATEGORY TITLE	CATEGORY DESCRIPTION	SUB-CATEGORY DESCRIPTION
5.3.1.1	Background, Qualifications and Expertise of the Respondents	This category looks at the background and experience of each respondent, their Welsh language proficiency levels, and their positioning within the workplace, including their educational background and experience in their organisation.	Demographics
			Linguistic Competence
			Welsh Language Proficiency
			Workplace
5.3.1.2	Technological Competence and Tools in the Workplace Setting	This category looks at the translation technology commonly used/preferred in the workplace and the sentiment regarding these tools and their everyday use. In addition, whether there is sufficient training and upskilling of staff to meet the demand for translation services in the public sectors in Wales.	Machine Translation
5.3.1.3	Translation Workflow Process, including Function, Quality, Training and Sentiment	This category assesses whether there has been an impact on translation workflow processes, the effectiveness and function of productivity, if the quality of translation is maintained, and sufficient training in situ to capitalise on new technology and upgrades. In addition, it assesses the sentiment, confidence levels, lead times and quality control methods.	Workflow
			Training
			Sentiment
			Delivery
5.3.1.4	The Future of the Translator and the Industry	This category questions the perception of translation technology in the short term and long term. In addition, it looks at the impact on the professional translator's role and any future projections and the sentiment surrounding the industry in general.	Technology
			Sentiment

5.3.1.1 BACKGROUND, QUALIFICATIONS AND EXPERTISE OF THE RESPONDENTS

Firstly, the demographics of the respondents are discussed, followed by a discussion of the tables:

Table 5. 3	Levels of linguistic competence among the participants
Table 5. 4	Welsh Language Proficiency in the Workplace
Table 5. 5	The Workplace
Table 5. 6	Technological competence and tools in a workplace setting: Machine Translation
Table 5. 7	Translation workflow process: Workflow, Training, Sentiment, Quality and Delivery
Table 5. 9	The future of the translation industry

5.3.1.1.1 DEMOGRAPHICS

As shown in Figure 5. 9, 100% participated in this question.

Figure 5. 9 Number of respondents by organisation



57% (n= 84) of the total 146 respondents were *female*, 40% (n= 59) from Swansea University and 17% (n= 25) from Swansea Council, a difference of 23% (n= 34). 43% (n= 62) were *male*, 18% (n= 28) were from Swansea Council, 23% (n= 34) were from Swansea University, and 1% (n= 1) from the Welsh Government, a negligible difference of 5% (n= 8) between Swansea Council and Swansea University.

It is important to consider the implications of male-to-female staff ratios. Prys et al. (2009, p. 9), observed that numerous studies have confirmed that females are less likely to be interested in IT and computer studies. In a more recent publication⁵² by the Welsh Government, the trend remains the same. Consequently, it could be

argued that a predominantly female workforce may be more technologically challenged than a male or mixed gender workforce.

Out of the 146 respondents, 99% (n= 144) completed the survey in *English*, and 1% (n= 2) completed it in *Welsh*. Out of the staff who completed the survey in *Welsh*, one worked at Swansea University (part-time hours), and the other was from Swansea Council (full-time hours).

Overall, most respondents (36%, n= 53) were aged between 45-54, followed by the 35-44 (28%, n= 41) then 25-34 (17%, n= 26), followed by the older age groups 55-64 (11%, n= 17). Only 1% (n= 2) were over 65, and 4% (n= 4) selected *prefer not to say* and *n/a*. The overall mean age was M= 44.54, from Swansea University: M= 42.66, Swansea Council: M= 47.59 and the Welsh Government M= 60. However, as the Welsh Government respondent is one person only, the average age of 60 is not representative.

When assessing the nationalities of the respondents, 11 different nationalities were recorded. Swansea University was the most culturally diverse, with 82% (n= 9) nationalities, compared to Swansea Council with 18% (n= 2). Out of 146 respondents, most Welsh nationals (36%, n= 52) were based at Swansea University; however, 27% (n= 39) were in Swansea Council, and the proportion of English nationals was more significant at Swansea University (13%, n= 18) than at Swansea Council (8%, n= 11). *British* was selected by only Swansea University respondents (5%, n= 7), and the UK was selected by 1% (n= 1) from Swansea Council. *Western European* was selected by 1% (n= 2) from Swansea University and 1% (n= 2) from Swansea Council. The remaining nationalities comprised 1% (n= 1) for *Central and Eastern Europe, Mediterranean & Middle East, Persian and Asia*. 2% (n= 3) of the respondents selected *n/a*.

All 146 respondents disclosed their level of education as follows:

- Doctoral Degree: Swansea University: 23% (n= 16) of respondents
- Master's Degree: Swansea University: 21% (n= 30), Swansea Council: 6% (n= 9) and Welsh Government: 1% (n= 1) from the Welsh Government.

Bachelor's Degree (honours): Swansea Council: 16% (n= 23), Swansea University: 19% (n= 28)

- Bachelor's Degree: Swansea Council: 1% (n= 1), Swansea University: 2% (n= 3)
- Higher National Diploma: 3% (n= 5) from Swansea Council and 1% (n= 2) from Swansea University.
- Higher National Certificate: Swansea Council: 3% (n= 4) and 1% (n= 1) from Swansea University

The remainder consisted of 1% (n= 2) with a teaching qualification, 1% (n= 2) claimed to be professionally qualified (unspecified), and the rest were educated to GCSE level: Swansea Council: 1% (n= 2) and Swansea University: 3% (n= 4).

To gather further information about the respondents, they were asked to confirm their job titles. As it was not compulsory to answer this question, it was anticipated that there would be few answers. However, that was not the case, as 81% (n= 18) out of 146 participants responded significantly higher than anticipated.

Several outliers were deleted from the job title results (n= 43) as they did not provide a representative answer. The word cloud shown in Figure 5. 10 highlights the most common words used, which is *Officer* with 22% (n= 26). The second most common word was *Manager*, with 15% (n= 18) responses.

Figure 5. 10 Job Title of Respondents by Word Cloud



5.3.1.1.2 LINGUISTIC COMPETENCE

The respondents' linguistic competence levels are detailed in Table 5. 3, focusing primarily on their native language skills and confidence in their linguistic ability in the workplace.

Table 5. 3 shows a substantial amount of *n/a* in the results, and Table 5. 4 shows a large number of *other*. However, due to a technical error with Microsoft Forms, 36% of respondents could not select their preferred option. All *n/a* option results are shown in the main results in Table 5. 3, and *other* in Table 5. 4 but are not included in the results in the percentages shown on the graph. This is also helpful when visualising the charts, as the *n/a* option would detract from the *other* responses. This can be assumed from this point in the study onward.

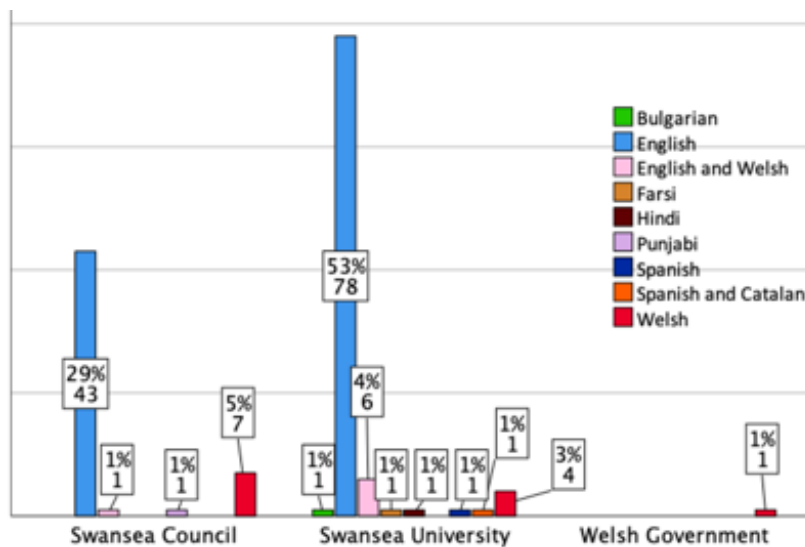
Table 5. 3 Levels of linguistic competence among the participants

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO BACKGROUND & EXPERIENCE (LINGUISTIC COMPETENCE)														
Linguistic Competence														
Staff Quiz Survey						SC		SU		WG		Total		
Survey question numbers						n	%	n	%	n	%	n	%	
Q Total Number of Respondents =						52	36%	93	64%	1	1%	146	100%	
5	What is (are) your native language(s)?					Bulgarian	0	0%	1	1%	0	0%	1	1%
						English	43	29%	78	53%	0	0%	121	83%
						English and Welsh	1	1%	6	4%	0	0%	7	5%
						Farsi	0	0%	1	1%	0	0%	1	1%
						Hindi	0	0%	1	1%	0	0%	1	1%
						Punjabi	1	1%	0	0%	0	0%	1	1%
						Spanish	0	0%	1	1%	0	0%	1	1%
						Spanish and Catalan	0	0%	1	1%	0	0%	1	1%
						Welsh	7	5%	4	3%	1	1%	12	8%
					TOTAL	52	36%	93	64%	1	1%	146	100%	
10	I lack confidence in my Welsh writing skills					Strongly Disagree	4	3%	9	6%	0	0%	13	9%
						Disagree	4	3%	1	1%	1	1%	6	4%
						Neither agree nor disagree	5	3%	8	5%	0	0%	13	9%
						Agree	11	8%	19	13%	0	0%	30	21%
						Strongly agree	12	8%	19	13%	0	0%	31	21%
						n/a	16	11%	37	25%	0	0%	53	36%
					TOTAL	52	36%	93	64%	1	1%	146	100%	
10	I say I can't write in Welsh as I am embarrassed to use it for work purposes					Strongly Disagree	10	7%	22	15%	0	0%	32	22%
						Disagree	5	3%	13	9%	1	1%	19	13%
						Neither agree nor disagree	8	5%	8	5%	0	0%	16	11%
						Agree	7	5%	8	5%	0	0%	15	10%
						Strongly agree	4	3%	8	5%	0	0%	12	8%
						n/a	18	12%	34	23%	0	0%	52	36%
						TOTAL	52	20%	93	34%	1	0%	146	100%

5.3.1.1.2.1 “WHAT IS (ARE) YOUR NATIVE LANGUAGE(S)?”

This study looks at Welsh language competence, which may not be utilised to its full potential within the organisation, or whether there are specific reasons behind staff members who lack confidence in their skills and ability to communicate in Welsh. To understand the native languages of the respondents, they were asked to select from a pre-coded list containing *Welsh*, *English* and *other* (any other native language can be typed in at this point), and the results are shown below in Figure 5. 11.

Figure 5. 11 What are your native languages?



The majority, 82% (n= 121), class themselves as *English native speakers*, 29% (n= 43) respondents from Swansea Council, 53% (n= 78) from Swansea University and 0 (zero) from the Welsh Government). The second most significant quantity of respondents, 9% (n= 12), were *Welsh speakers*, 5% (n= 7) from Swansea Council, 3% (n= 4) from Swansea University and 1% (n= 1) from the Welsh Government.

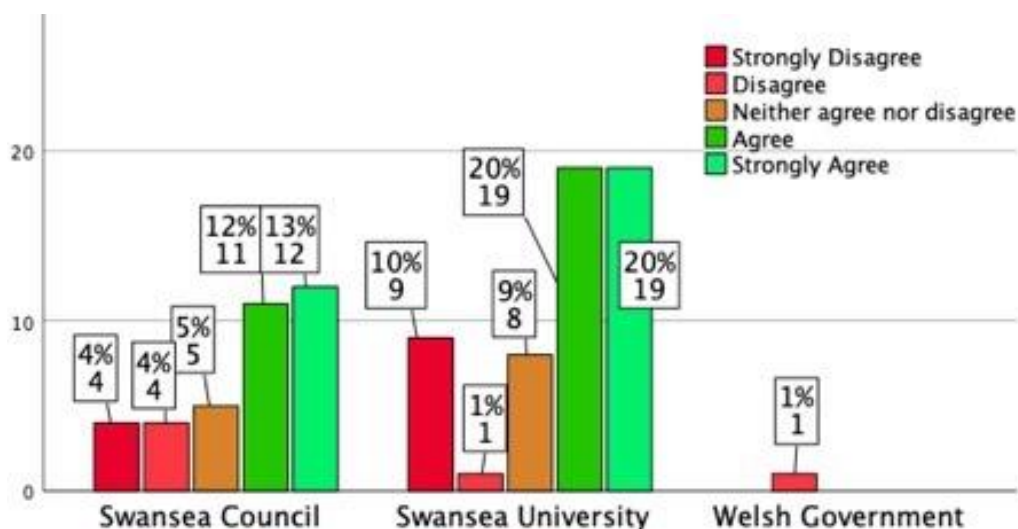
The following largest amount was those who chose *English and Welsh* as their native languages. 1% (n= 1) was from Swansea Council and, 4% (n= 6) from Swansea University, 0 (zero) from the Welsh Government. The rest of the results comprise quantities no greater than 1. Swansea Council had 1% (n= 1) of *Punjabi* natives. Swansea Council had 1% (n= 1) *Bulgarian*, 1% (n= 1) *Farsi*, 1% (n= 1) *Hindi*, 1% (n= 1) *Spanish* and 1% (n= 1) *Spanish and Catalan*.

A very interesting observation is the number of nationalities participating in this study. There were nine nationalities mentioned; Swansea Council had respondents from 44.4% (n= 4) nationalities. Swansea University's respondents comprised 88.8% (n= 8) nationalities. The Welsh Government had only 1% (n= 1) respondent, so a comparison was impossible. There is double the quantity (n= 8) of nationalities in Swansea University compared to Swansea Council (n= 4), and the 1% (n= 1) response from the Welsh Government was not of any significance in determining the number of diverse nationalities in the Government. It would be interesting to understand how representative these percentages are with the national statistics in Wales; however, this is beyond the scope of this study.

5.3.1.1.2.2 "CONFIDENCE IN WELSH WRITING SKILLS"

Whilst organisations encourage and maintain staff records⁵³ with Welsh language skills, it was interesting to understand whether these skills are used (as anticipated) in the workplace or whether a lack of confidence would hinder their bilingual performance. This is important where language is concerned, mainly when a bilingual workplace is enforced (and is required to report) communication levels in both official languages (En and Cy) and subsequently strives to adhere to the Welsh Language Standards, as discussed in section 2.6. Employing bilingual (Cy and En) staff who do not utilise their complete skill set in the workplace would signify that the organisation's records could be considered potentially unreliable data. Similarly, this could be significant when tracking the level of Welsh language expertise if there are staff who have not disclosed any linguistic skills, such as that they have attended classes externally (improved their Welsh language skills) and not reported this for staff records to be updated. The respondents' confidence level in their Welsh writing skills is illustrated in Figure 5. 12, and 100% participated in this question.

Figure 5. 12 Confidence in Welsh Writing Skills



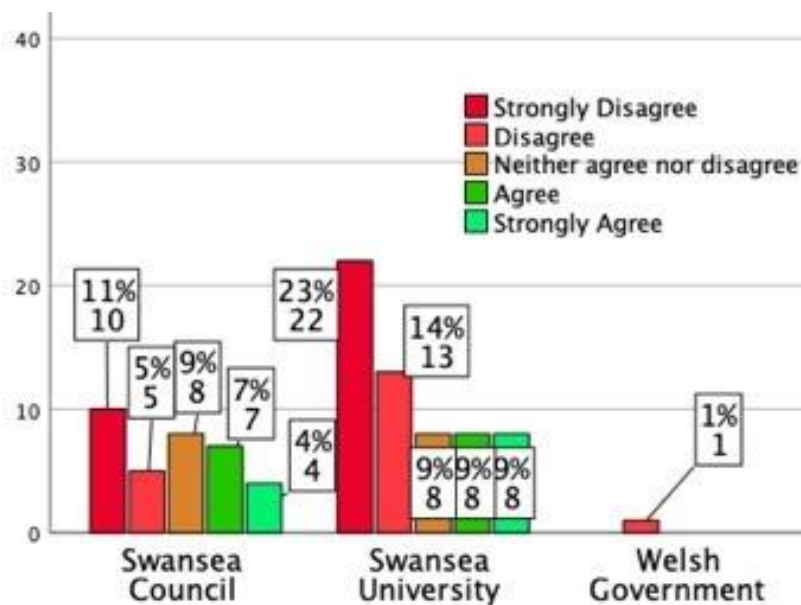
25% (n= 23) from Swansea Council and 40% (n= 38) from Swansea University selected *strongly agree* and *agree* with the statement *that I lack confidence in my Welsh writing skills*. The difference between Swansea Council and Swansea University is 15% (n= 15), which is notable. The outliers, 36% (n= 53), were selected *n/a* and excluded from the bar graph calculation.

Regarding those who *strongly disagree* and *disagree* by organisation, 8% (n= 8) were from Swansea Council and 11% (n= 10) from Swansea Council, which is a negligible difference. The 1% (n= 1) respondent from the Welsh Government *disagreed* with the statement; however, this result is not representative of the overall result for the Welsh Government.

5.3.1.1.2.3 “HESITATION TO USE WELSH LANGUAGE SKILLS”

This question aims to understand whether staff hesitate to use their Welsh language skills due to embarrassment (as opposed to lack of skill) and, as a result, do not declare in the workplace that they can write in Welsh. The importance of this question within the study is to understand whether staff are potentially unaccounted for when the organisation assesses the level of Welsh expertise in the workplace. The results from this question compiled via a Likert scale are shown below in Figure 5. 13.

Figure 5. 13 Participants who say they can't write in Welsh as they are too embarrassed to use it for work purposes.



When looking at the results and excluding the 36% (n= 52) from the bar chart which stated *n/a*, the results show that in total, 35% (n= 51) *strongly disagree or disagree with the statement*, with the difference between Swansea Council 10% (n= 15) and Swansea University 24% (n= 35) being 14% (n= 20), a notable difference. The 1% (n= 1) respondent from the Welsh Government selected *disagree*.

18% (n= 27) *Strongly agree or agree* with the statement, and the difference between those was 2% (n= 5), based on 8% (n= 11) from Swansea Council and 10% (n= 16) from Swansea University.

5.3.1.1.3 WELSH LANGUAGE PROFICIENCY

This category aims to understand the respondent's level of Welsh language competence and focuses specifically on those who stated in Question 5 of the survey that one of their native languages is Welsh. To understand their usage of Welsh, staff are encouraged to state whether they *speak, write, read, or listen* in the *home* and *workplace*. In addition, and for comparison purposes, the respondents were asked to select (for each skill set) their level of competence from a pre-determined list, including *fluency, high, low, moderate, and not at all*. The respondent's Welsh language proficiency levels in the workplace and at home are shown in Table 5. 4 below:

Table 5. 4 Welsh Language Proficiency (Part 1 of 2)

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO BACKGROUND & EXPERIENCE (LINGUISTIC COMPETENCE)										
Welsh Language Proficiency										
Staff Quiz Survey		SC		SU		WG		Total		
Survey question numbers		n	%	n	%	n	%	n		
Q	Total Number of Respondents =	52	36%	93	64%	1	1%	146	100%	
6	Speaking in the WORKPLACE	Fluent	4	3%	7	5%	1	1%	12	8%
		High	2	1%	0	0%	0	0%	2	1%
		Low	0	0%	3	2%	0	0%	3	2%
		Moderate	0	0%	1	1%	0	0%	1	1%
		Not at all	1	1%	4	3%	0	0%	5	3%
		Other	45	31%	78	53%	0	0%	123	84%
		Total	52	36%	93	64%	1	1%	146	100%
	Writing in the WORKPLACE	Fluent	3	2%	5	3%	1	1%	9	6%
		High	2	1%	2	1%	0	0%	4	3%
		Low	0	0%	1	1%	0	0%	1	1%
		Moderate	1	1%	1	1%	0	0%	2	1%
		Not at all	1	1%	5	3%	0	0%	6	4%
		Other	45	31%	79	54%	0	0%	124	85%
		Total	52	36%	93	64%	1	1%	146	100%
	Reading in the WORKPLACE	Fluent	3	2%	6	4%	1	1%	10	7%
		High	3	2%	1	1%	0	0%	4	3%
		Low	0	0%	2	1%	0	0%	2	1%
		Moderate	0	0%	1	1%	0	0%	1	1%
		Not at all	1	1%	4	3%	0	0%	5	3%
		Other	45	31%	79	54%	0	0%	124	85%
Total		52	36%	93	64%	1	1%	146	100%	
Listening in the WORKPLACE	Fluent	4	3%	7	5%	1	1%	12	8%	
	High	2	1%	0	0%	0	0%	2	1%	
	Low	0	0%	3	2%	0	0%	3	2%	
	Moderate	0	0%	1	1%	0	0%	1	1%	
	Not at all	1	1%	3	2%	0	0%	4	3%	
	Other	45	31%	79	54%	0	0%	124	85%	
	Total	52	36%	93	64%	1	1%	146	100%	
Speaking in the HOME	Fluent	4	3%	7	5%	1	1%	12	8%	
	High	2	1%	0	0%	0	0%	2	1%	
	Low	1	1%	5	3%	0	0%	6	4%	
	Moderate	0	0%	1	1%	0	0%	1	1%	
	Not at all	0	0%	3	2%	0	0%	3	2%	
	Other	45	31%	77	53%	0	0%	122	84%	
	Total	52	36%	93	64%	1	1%	146	100%	

Table 5. 4 Welsh Language Proficiency (Part 2 of 2)

7	Writing in the HOME	Fluent	3	2%	5	3%	1	1%	9	6%
		High	1	1%	1	1%	0	0%	2	1%
		Low	1	1%	3	2%	0	0%	4	3%
		Moderate	2	1%	2	1%	0	0%	4	3%
		Not at all	0	0%	4	3%	0	0%	4	3%
		Other	45	31%	78	53%	0	0%	123	84%
	Total	52	42%	93	64%	1	1%	146	100%	
	Reading in the HOME	Fluent	3	2%	6	4%	1	1%	10	7%
		High	2	1%	1	1%	0	0%	3	2%
		Low	1	1%	4	3%	0	0%	5	3%
		Moderate	1	1%	1	1%	0	0%	2	1%
		Not at all	0	0%	3	2%	0	0%	3	2%
		Other	45	31%	78	53%	0	0%	123	84%
	Total	52	36%	93	64%	1	1%	146	100%	
	Listening in the HOME	Fluent	4	3%	7	5%	1	1%	12	8%
		High	2	1%	0	0%	0	0%	2	1%
		Low	0	0%	4	3%	0	0%	4	3%
		Moderate	0	0%	1	1%	0	0%	1	1%
Not at all		1	1%	3	2%	0	0%	4	3%	
n/a		45	31%	78	53%	0	0%	123	84%	
Total	52	36%	93	64%	1	1%	146	100%		
10 My Welsh isn't good enough for work	Agree	10	7%	16	11%	0	0%	26	18%	
	Disagree	3	2%	7	5%	1	1%	11	8%	
	n/a	2	1%	7	5%	0	0%	9	6%	
	Neither agree nor disagree	6	4%	9	6%	0	0%	15	10%	
	Strongly Agree	27	18%	45	31%	0	0%	72	49%	
	Strongly Disagree	4	3%	9	6%	0	0%	13	9%	
Total	52	36%	93	64%	1	1%	146	100%		
10 I went to a Welsh school but I know my Welsh isn't suitable	Agree	3	2%	2	1%	0	0%	5	3%	
	Disagree	7	5%	4	3%	1	1%	12	8%	
	n/a	24	16%	55	38%	0	0%	79	54%	
	Neither agree nor disagree	0	0%	4	3%	0	0%	4	3%	
	Strongly agree	2	1%	1	1%	0	0%	3	2%	
	Strongly Disagree	16	11%	27	18%	0	0%	43	29%	
Total	52	36%	93	64%	1	1%	146	100%		
10 I do all my own [Welsh] translations :-)	Agree	2	1%	4	3%	0	0%	6	4%	
	Disagree	5	3%	11	8%	1	1%	17	12%	
	n/a	1	1%	6	4%	0	0%	7	5%	
	Neither agree nor disagree	2	1%	3	2%	0	0%	5	3%	
	Strongly Agree	2	1%	5	3%	0	0%	7	5%	
	Strongly Disagree	40	27%	64	44%	0	0%	105	71%	
Total	52	36%	93	64%	1	1%	146	100%		

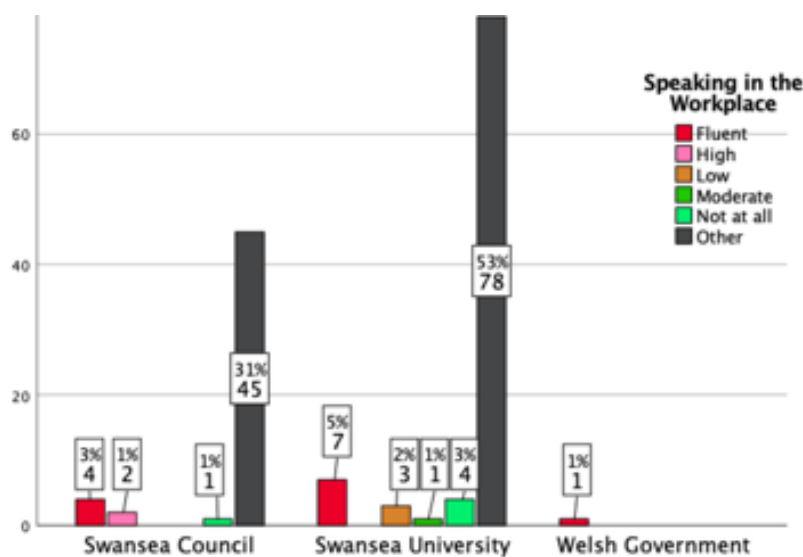
Due to a technical error with Microsoft Forms, respondents encountered difficulty selecting both English and Welsh. Once the issue was remedied, most respondents filtered through and completed the questions in this category. It is estimated that potentially two respondents could not participate and are classed under *Other* in Table 5. 4 and included in the graphs in this section so they did not distract from the results (as in the previous section).

Even though there is a potential that a small number (1%, n= 2) of respondents were unable to participate, it is essential to note that as only 13% (n= 19) claimed to be native *Welsh* speakers, each respondent's response is deemed as highly relevant to the analysis and this study. To avoid duplication of content, as the first and second paragraph applies to each question in this section, it will not be repeated but may be assumed to apply. This affects the remaining questions on using Welsh at home and in the workplace.

5.3.1.1.3.1 “SPEAKING [WELSH] IN THE WORKPLACE”

As shown in Figure 5. 14, the total number of respondents claim to speak Welsh to some degree in the workplace is 12% (n= 18). Out of this number, 8% (n= 12) claim to be *fluent* speakers, 1% (n= 2) *high-level* speakers, 2% (n= 3) *low-level* speakers and 1% (n= 1) *moderate* speakers. 4% (n= 5) selected the option, *not at all* and (n= 123) were classed as *other* as there was no response.

Figure 5. 14 Speaking [Welsh] in the Workplace.

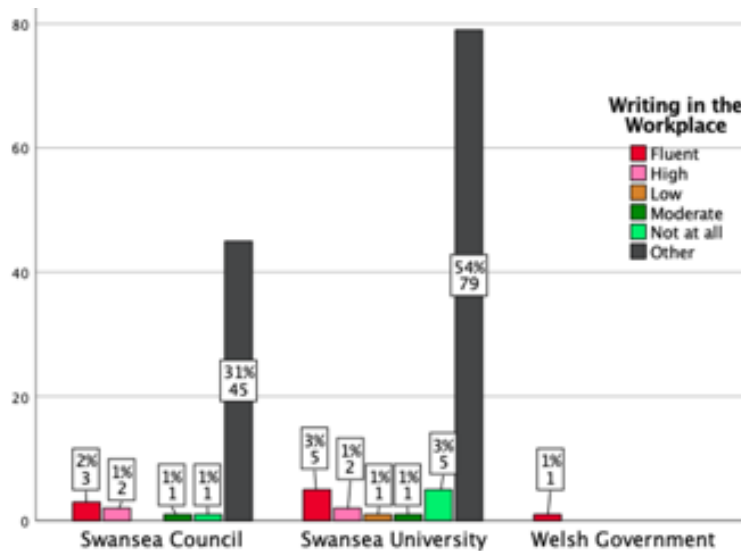


- Swansea University:** The highest number of Welsh speakers in the workplace with 8% (n= 11), 30% (n= 7) classed themselves as *fluent*, 4% (n= 1) as a *moderate* speaker and 13% (n= 3) as *low-level speakers* and 17% (n= 4) *not at all*. 31% (n= 45) were classed as *other*.
- Swansea Council:** A total of 4% (n= 6) native Welsh speakers in the workplace, with 17% (n= 4) claiming to be *fluent* and 9% (n= 2) of a *high-level* and 4% (n= 1) stating *not at all*. 53% (n= 78) were classed as *other*.
- Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh speaker.

5.3.1.1.3.2 “WRITING [WELSH] IN THE WORKPLACE”

As shown in Figure 5. 15, the total amount of respondents who claim to be able to write in Welsh to some degree is 12% (n= 18). Out of this number, 8% (n= 12) claim to be *fluent* writers, 1% (n= 2) are *high-level* writers, 2% (n= 3) are *low-level* writers and *moderate* writers 1% (n= 1).

Figure 5. 15 Writing [in Welsh] in the Workplace

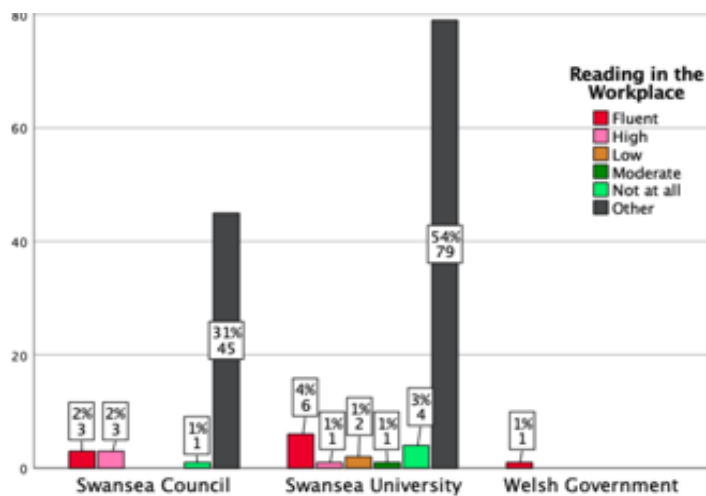


- **Swansea University:** The highest number of Welsh writers in the workplace with 6% (n= 9), 3% (n= 5) classed themselves as *fluent* writers, 1% (n= 2) as *high-level*, 1% (n= 1) as a *moderate* writer and 1% (n= 1) as a *low-level* writer.
- **Swansea Council:** A total of 4% (n= 6) native Welsh writers in the workplace, with 2% (n= 3) claiming to be *fluent* writers and 1% (n= 2) of a *high-level* and 1% (n= 1) as a *moderate* writer.
- **Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh writer.

5.3.1.1.3.3 “READING [WELSH] IN THE WORKPLACE”

As shown in Figure 5. 16, the total amount of Welsh language readers in the workplace is 12% (n= 17). Out of this number, 7% (n= 10) claim to be *fluent* readers, 3% (n= 4) are *high-level* readers, 1% (n= 2) are *low-level* readers, and 1% (n= 1) is a *moderate* reader.

Figure 5. 16 Reading [in Welsh] in the Workplace.

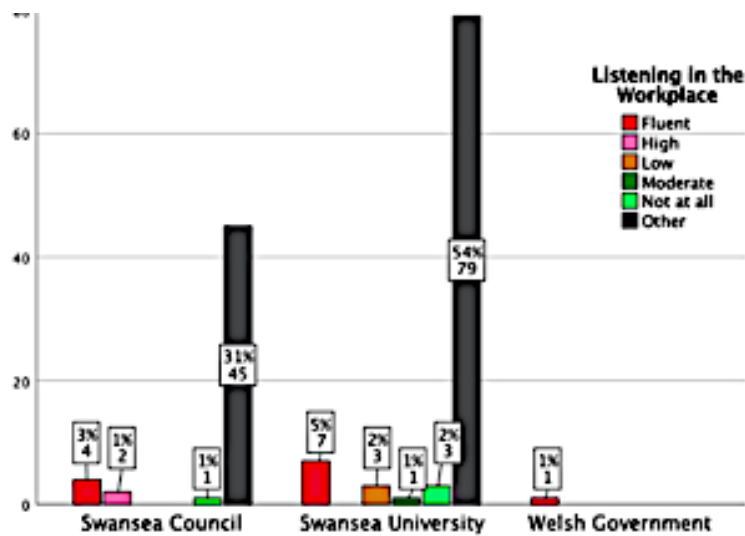


- **Swansea University:** The highest number of Welsh readers in the workplace with 7% (n= 10), 4% (n= 6) classed themselves as *fluent* readers, 1% (n= 1) as *high-level*, 1% (n= 1) as a *moderate* reader and 1% (n= 2) as a *low-level* reader.
- **Swansea Council:** A total of 4% (n= 6) native Welsh readers in the workplace, with 2% (n= 3) claiming to be *fluent* readers and 2% (n= 3) of a high-level
- **Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh reader.

5.3.1.1.3.4 “LISTENING [WELSH] IN THE WORKPLACE”

As shown in Figure 5. 17, the total amount of Welsh language listeners in the workplace is 12% (n= 18). Out of this number, 8% (n= 12) claim to be *fluent* listeners, 1% (n= 2) are *high-level* listeners, 2% (n= 3) are *low-level* listeners, and 1% (n= 1) are *moderate* listeners.

Figure 5. 17 Listening [to Welsh] in the Workplace.



- **Swansea University:** A total of 8% (n= 11) native Welsh listeners in the workplace, with 5% (n= 7) claiming to be *fluent* listeners and 1% (n= 1) of a *moderate* level and 2% (n= 3) as a *low-level* listener.
- **Swansea Council:** A total of 4% (n= 6) native Welsh listeners in the workplace, with 3% (n= 4) claiming to be *fluent* listeners and 1% (n= 2) of the *high-level* listener.
- **Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh listener.

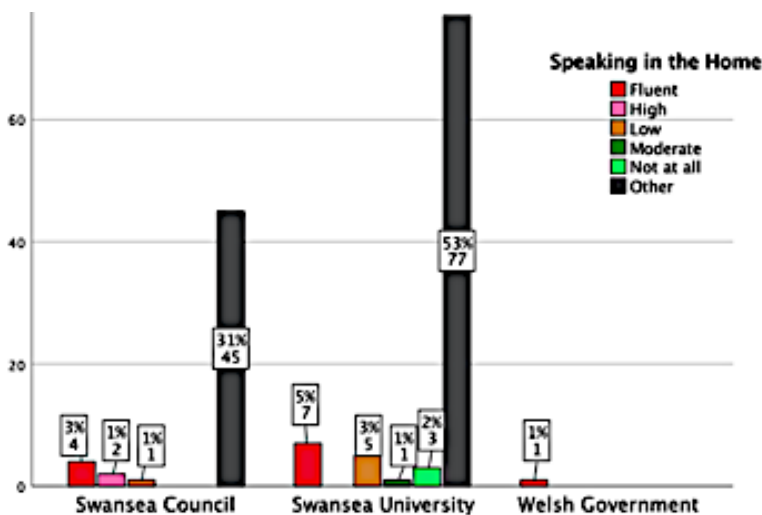
“LEVEL OF WELSH PROFICIENCY IN THE HOME”

This section asks identical questions to the preceding section, except that where the Welsh language capabilities were previously assessed in the workplace, they are compared with their Welsh language communication at home. The goal is to identify any differences between the two locations. For comparative purposes, respondents are asked to select their degree of competence (for each skill set) from the same pre-determined list: *fluency*, *high*, *low*, *moderate*, and *not at all*. As with the previous section, the same potential technical error affected two potential results.

5.3.1.1.3.5 “SPEAKING [WELSH] IN THE HOME”

As shown in Figure 5. 18 below, the total amount of Welsh language speakers in the workplace is 14% (n= 21). Out of this number, 8% (n= 12) claim to be *fluent* speakers, 1% (n= 2) are *high-level* speakers, 4% (n= 6) are *low-level* speakers, and 1% (n= 1) is a *moderate* speaker.

Figure 5. 18 Speaking [Welsh] in the Home.



5.3.1.1.3.6

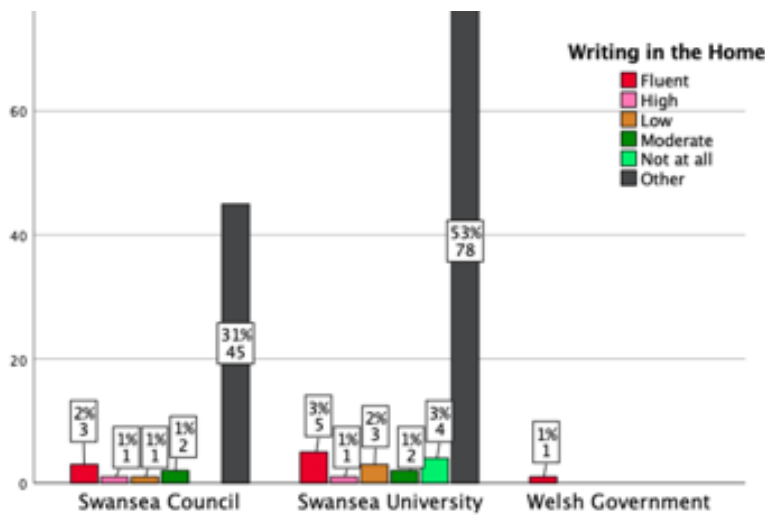
5.3.1.1.3.7

- **Swansea University:** The highest number of Welsh speakers in the home with 8% (n= 13), 5% (n= 7) classed themselves as *fluent*, 1% (n= 1) as a *moderate* speaker and 3% (n= 5) as *low-level* speakers.
- **Swansea Council:** A total of 5% (n= 7) native Welsh speakers in the home, with (3% n= 4) claiming to be *fluent*, 1% (n= 2) of a *high-level* and 1% (n= 1) *low-level* speaker.
- **Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh speaker.

5.3.1.1.3.8 “WRITING [WELSH] IN THE HOME”

As shown in Figure 5. 19, the total amount of Welsh language writers in the home is 13% (n= 19). Out of this number, 6% (n= 9) claim to be *fluent* writers, 1% (n= 2) are *high-level* writers, 3% (n= 4) are *low-level* writers, and 3% (n= 4) are *moderate* writers.

Figure 5. 19 Writing [Welsh] in the Home



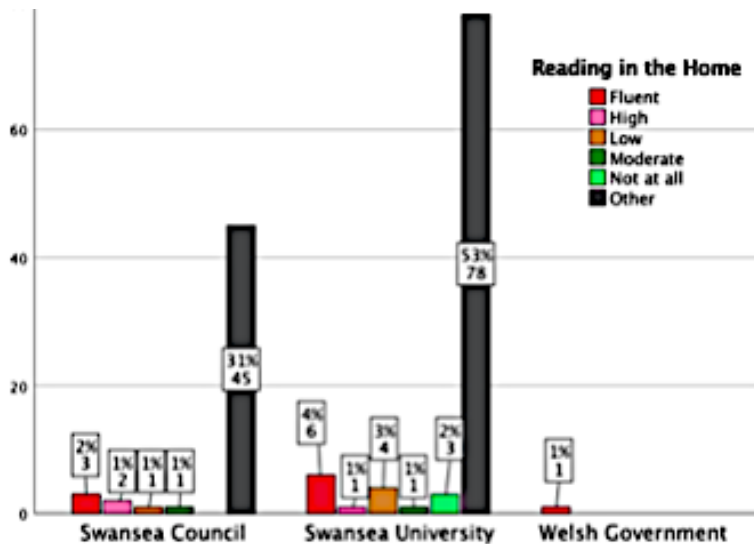
Swansea University: The marginally higher number of Welsh writers in the home with 9% (n= 12), 4% (n= 6) classed themselves as *fluent*, 1% (n= 1) as a *high-level* writer, 1% (n= 1) as a *moderate* writer and 3% (n= 4) as *low-level* writers.

- **Swansea Council:** A total of 5% (n= 7) native Welsh writers in the home, with 2% (n= 3) claiming to be *fluent*, 1% (n= 2) of a *high-level*, 1% (n= 1) *moderate* level writer and 1% (n= 1) *low-level* writer.
- **Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh speaker.

5.3.1.1.3.9 “READING [WELSH] IN THE HOME”

As shown in Figure 5. 20, the total amount of Welsh language readers in the home is 13% (n= 20). Out of this number, 7% (n= 10) claim to be *fluent* readers, 2% (n= 3) are *high-level readers*, 3% (n= 5) are *low-level readers*, and 1% (n= 2) are *moderate* readers.

Figure 5. 20 Reading [Welsh] in the Home

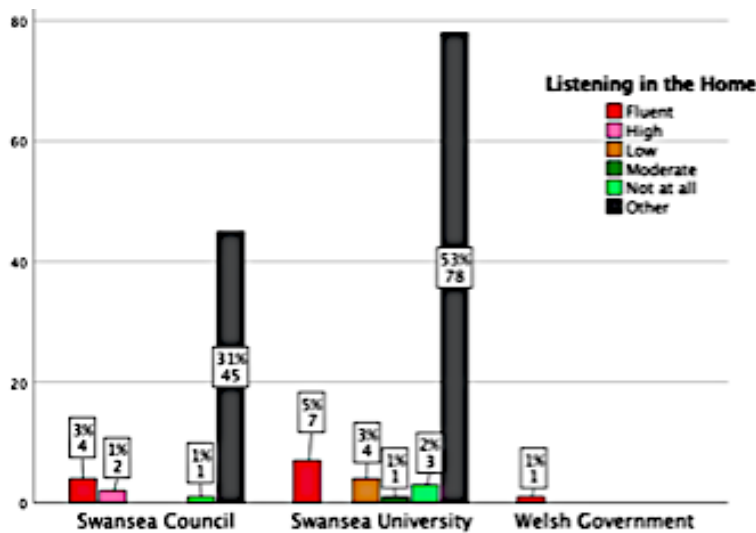


- **Swansea University:** The highest number of Welsh readers in the home with 8% (n= 13), 5% (n= 7) classed themselves as *fluent*, 1% (n= 1) as a *moderate* speaker and 3% (n= 5) as *low-level* speakers.
- **Swansea Council:** A total of 5% (n= 7) native Welsh speakers in the home, with 3% (n= 4) claiming to be *fluent*, 1% (n= 2) of a *high-level* and 1% (n= 1) *low-level* speaker.
- **Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh speaker.

5.3.1.1.3.10 “LISTENING [TO WELSH] IN THE HOME”

Overall, the total amount of Welsh language listeners in the home is 19 (13%). Out of this number, 8% (n= 12) claim to be *fluent* speakers, 1% (n= 2) are *high-level* speakers, 3% (n= 4) are *low-level* speakers, and 1% (n= 1) is a *moderate* speaker, as shown in Figure 5. 21.

Figure 5. 21 Listening [to Welsh] in the Home.

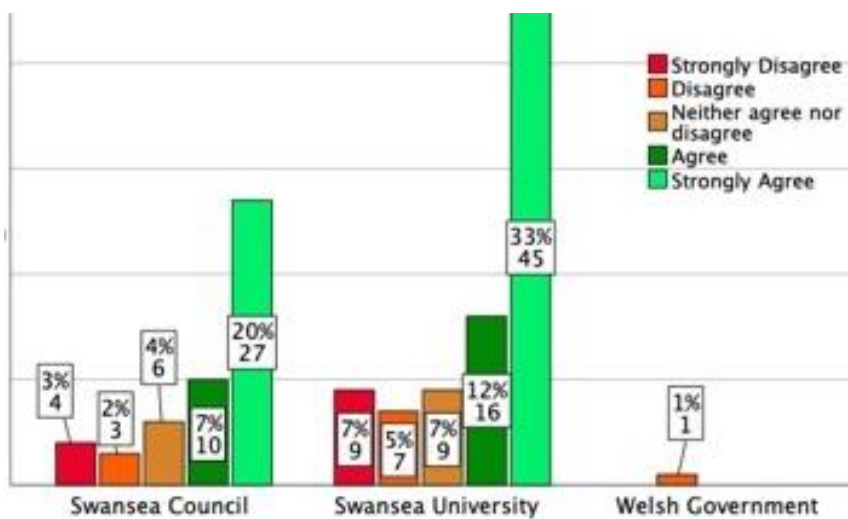


- **Swansea University:** the highest number of Welsh listeners in the workplace with 9% (n= 12), 5% (n= 7) classed themselves as *fluent*, 1% (n= 1) as a *moderate* speaker and 3% (n= 4) as a *low-level* listener.
- **Swansea Council:** A total of 4% (n= 6) native Welsh listeners in the workplace, with 3% (n= 4) claiming to be *fluent* and 1% (n= 2) of a *high level*.
- **Welsh Government:** The 1% (n= 1) respondent claims to be a *fluent* Welsh speaker.

5.3.1.1.3.11 “MY WELSH ISN’T GOOD ENOUGH FOR WORK”

The aim of this question (and the set of questions contained in Question 10) is to gather data to gain further insight into whether staff in each organisation use their Welsh language skills in the workplace. Even though this question is similar to previous questions, such as *Writing Welsh in the workplace*, this study intends to understand how the respondents use their language skills. It focuses on those who can communicate in Welsh yet consider their skills inadequate for workplace use. The results obtained from a Likert scale and the responses are shown in Figure 5. 22.

Figure 5. 22 My Welsh isn’t good enough for work.

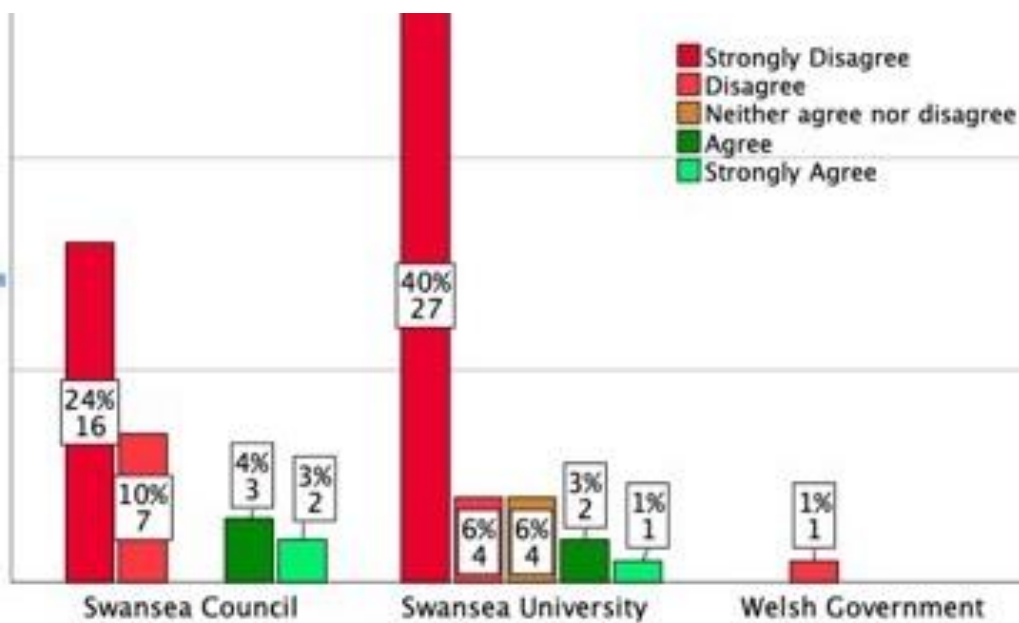


When looking at the results for this question (not by organisation), the results show a clear majority of 67% (n= 98) who *strongly agree* or *agree* that their Welsh language skills are not good enough for work; by organisation, 42% (n= 61) of Swansea University staff, 25% (n= 37) of Swansea Council staff and 1% (n= 1) from the Welsh Government, as opposed to 17% (n= 24) who *strongly disagree* or *disagree*, 11% (n= 16) of Swansea University staff and 5% (n= 7) of Swansea Council staff. The remainder selected to neither *agree nor disagree* or *n/a*.

5.3.1.1.3.12 “I WENT TO A WELSH SCHOOL, BUT I KNOW MY WELSH IS NOT SUITABLE”

This question aims to understand further the background of the respondent. The focus is on whether, following a Welsh education, their Welsh language skills are being used in the workplace. The results from this question (using a Likert scale) are shown below in Figure 5. 23; notably, 54% (n= 79) selected *n/a*.

Figure 5. 23 I went to a Welsh school, but I know my Welsh is not suitable.

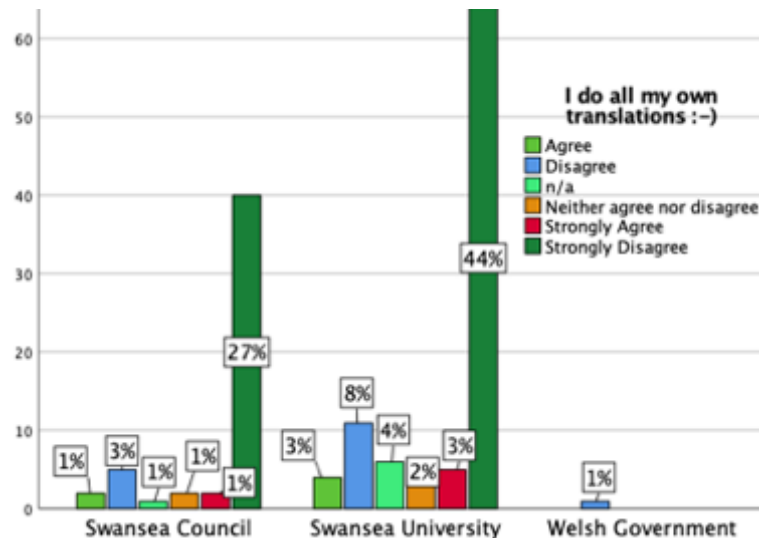


There is majority of 37% (n= 55) *strongly disagree* or *disagree* that they went to a Welsh school but know that their Welsh language skills are not good enough, 21% (n= 31) from Swansea University, 16% (n= 23) from Swansea Council and the 1% (n= 1) respondent from the Welsh Government selected *disagree*. 5% (n= 8) *strongly agree* or *agree* with the statement, 2% (n= 3) from Swansea University and 3% (n= 5) from Swansea Council.

5.3.1.1.3.13 “I DO ALL MY OWN WELSH TRANSLATIONS”

This question aims to understand whether each respondent’s Welsh language skills are utilised in the workplace. The results from this question are shown in Figure 5. 24.

Figure 5. 24 I do all my own Welsh translations.



There is a clear majority of 83% (n= 122) who *strongly disagree* or *disagree* that they do their own translations, 52% (n= 75) from Swansea University and 30% (n= 45) from Swansea Council. The 1% (n= 1) respondent from the Welsh Government selected *disagree*.

9% (n= 12) *strongly agree* or *agree*, which consisted of 2% (n= 3) from Swansea University and 3% (n= 5) from Swansea Council. The remainder was *n/a*, with 5% (n= 7), 4% (n= 6) from Swansea University and 1% (n= 1) from Swansea Council. Finally, 3% (n= 5) neither *agreed* nor *disagreed* (2%, n= 4 from Swansea University and 1%, n= 1 from Swansea Council).

5.3.1.1.4 WORKPLACE

This category looks at the staff in their workplace. The questions in this category look at job classifications, which are unequal across organisations. The main results are displayed in Table 5. 5 below.

Table 5. 5 The Workplace

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO BACKGROUND & EXPERIENCE (LINGUISTIC COMPETENCE)										
The Workplace										
Staff Survey		SC		SU		WG		Total		
Survey question numbers		n	%	n	%	n	%	n	%	
Q	Total Number of Respondents =	52	36%	93	64%	1	1%	146	100%	
12	What Grade is your job classification?	Grade 3	0	0%	1	1%	0	0%	1	1%
		Grade 4	2	1%	4	3%	0	0%	6	4%
		Grade 5	0	0%	6	4%	0	0%	6	4%
		Grade 6	5	3%	7	5%	0	0%	12	8%
		Grade 7	6	4%	22	15%	0	0%	28	19%
		Grade 8	7	5%	12	8%	0	0%	19	13%
		Grade 9	10	7%	15	10%	0	0%	25	17%
		Grade 10	4	3%	15	10%	0	0%	19	13%
		Grade 10a	0	0%	2	1%	0	0%	2	1%
		Grade 11	6	4%	3	2%	0	0%	9	6%
		Grade 12	4	3%	0	0%	0	0%	4	3%
		Other	8	5%	5	3%	0	0%	13	9%
		Prefer not to say	0	0%	1	1%	1	1%	2	1%
			Total	52	36%	93	64%	1	1%	146
13	How long have you worked at your current workplace/organisation?	1 to 2 years	4	3%	2	1%	0	0%	6	4%
		1 year or less	0	0%	4	3%	0	0%	4	3%
		2 to 4 years	1	1%	21	14%	0	0%	22	15%
		More than 4 years	47	32%	66	45%	1	1%	114	78%
		Total	52	36%	93	64%	1	1%	146	100%
14	How many hours a week do you work on average at your current workplace?	0-16 hours	1	1%	1	1%	0	0%	2	1%
		16-24 hours	3	2%	5	3%	0	0%	8	5%
		24-32 hours	3	2%	6	4%	0	0%	9	6%
		32-40 hours	32	22%	60	41%	0	0%	92	63%
		40+ hours	13	9%	21	14%	1	1%	35	24%
		Total	52	36%	93	64%	1	1%	146	100%

5.3.1.1.4.1 “GRADES OF JOB CLASSIFICATIONS”

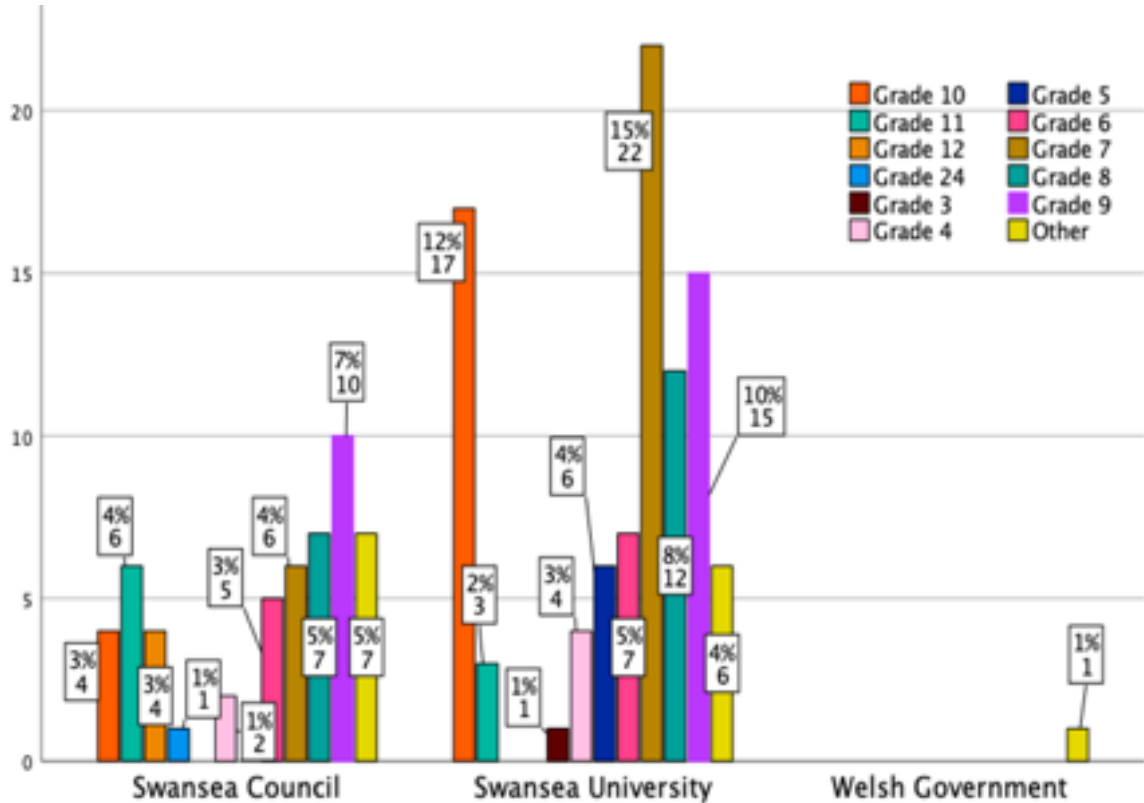
Job classification is a formal technique used in the public sector to define and evaluate a role’s duties, responsibilities, tasks, and authority level objectively and professionally. This method is structured with compensation or salary grades tied to the job classification results. The job classification system provides parity in job titles and salary ranges, qualifying levels for each pay grade with a transparent view of promotional prospects and increases in remuneration, all based on the amount of knowledge, skill, experience, and education required to do each job. This question aims to understand the grading parameters in Swansea University, Swansea Council, and the Welsh Government.

The respondent from the Welsh Government did not confirm her status. The grading system is published on each organisation’s website (Swansea University,⁵⁴ Swansea Council,⁵⁵ Welsh Government⁵⁶); notably, the grading/bands are not comparable. For example, a Grade 7 staff member in Swansea University would receive between £30,497 to £36,382 per annum, whilst a Grade 7 in Swansea Council would receive between £25,481 to £28,672 per annum. The equivalent of Grade 7 in Swansea University is between Grades 8 and 9 in Swansea Council. The Welsh Government banding scheme is different as the Grade 7 range in Swansea University would be classed under the Management Band 2 (£30,600 to £37,410). There were several outliers, 9% (n= 13) placed in the *other* category as they did not represent the set criteria. For example, these were *not sure*, *nk*, etc. and 1% (n= 2) who *prefer not to say*.

Understanding how much an individual is paid in one calendar year would provide the data to calculate an individual’s time. For example, if a person took ten minutes to complete this survey, that has a cost implication if it was completed in work time. This aspect is particularly poignant to this study as the cost for higher-grade staff is far greater than for example, a new and inexperienced staff member. As shown in Figure 5. 25, 100% participated in this question. Grade 7 was the most common response, with 15% (n= 22), followed by Grade 10 with 12% (n= 17) and Grade 9 with 10% (n= 15). Interestingly the highest response was from Swansea

University, but the responses overall were from a wide range of staff, from Grade 3 to Grade 25.

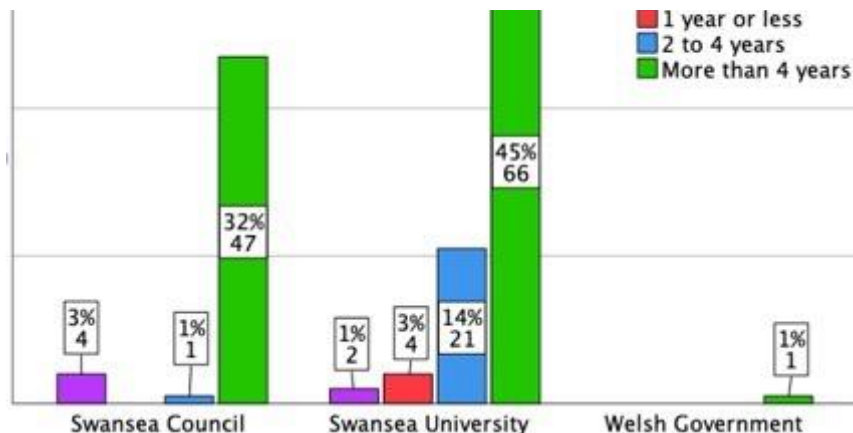
Figure 5. 25 What grade is your job classification?



“LENGTH OF TIME WORKED AT CURRENT WORKPLACE/ORGANISATION”

Looking at the years of service of each respondent provides an indicator of their experience and knowledge of systems and processes within their organisation, as shown in Figure 5. 26.

Figure 5. 26 How long have you worked at your current workplace?

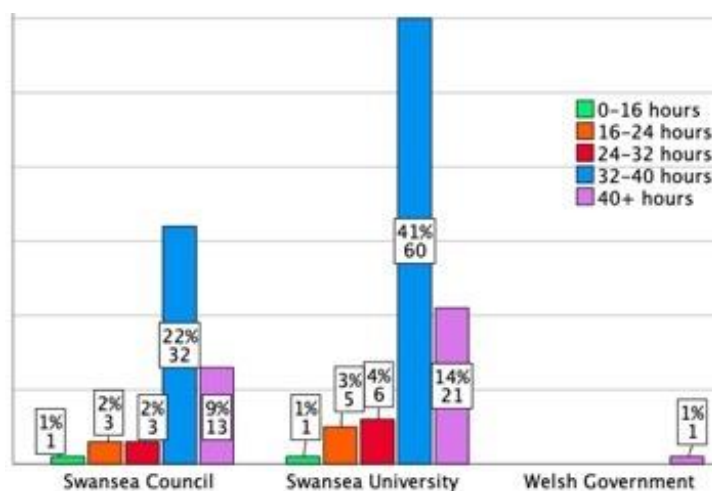


The results show that 77% (n= 113) of respondents have an average of *more than 4 years* of service, 45% (n= 66) from Swansea University, 32% (n= 47) from Swansea Council and 1% (n= 1) from the Welsh Government. 14% (n= 21) of Swansea University respondents claimed to have been employed for *2-4 years*, as opposed to Swansea Council with 1% (n= 1). 1% (n= 2) from Swansea University and 3% (n= 4) from Swansea Council respondents *selected 1-2 years* of service. Finally, 3% (n= 4) answered 1 year or less at Swansea University, and there were no respondents for Swansea Council.

5.3.1.1.4.2 “HOURS OF WORK PER WEEK AT CURRENT WORKPLACE”

This question attempts to understand the degree of manpower available between the respondents in each organisation by looking at the number of hours worked each week. As shown in Figure 5. 27, the results of this question indicate that 87% of all staff work over 32 hours a week.

Figure 5. 27 How many hours a week do you work on average at your current workplace?



The results show that a clear majority of staff, 63% (n= 92), work full-time (between *32-40 hours* a week), 41% (n= 60) from Swansea University, and 22% (n= 32) from Swansea Council. 24% (n= 35) work *over 40 hours* a week, 14% (n= 21) from Swansea University, 9% (n= 13) from Swansea Council and 1% (n= 1) from the Welsh Government. The smallest quantity was *0-16 hours* per week with 1% (n= 2) respondents, 1% (n= 1) from Swansea Council and 1% (n= 1) from Swansea University, then a total of 5% (n= 8) between *16-24 hours*, 3% (n= 5) from Swansea

Council and 2% (n= 3) from Swansea University. Next, 24 to 32 hours total of 6% (n= 9), 4% (n= 6) from Swansea University and 2% (n= 3) from Swansea Council.

5.3.1.2 TECHNOLOGICAL COMPETENCE AND TOOLS IN THE WORKPLACE SETTING

In the Staff Quiz/Staff survey, only three questions applied to this category and subcategory, MT.

5.3.1.2.1 MACHINE TRANSLATION (MT)

The overview of answers to this question is shown in Table 5. 6 and expanded on below.

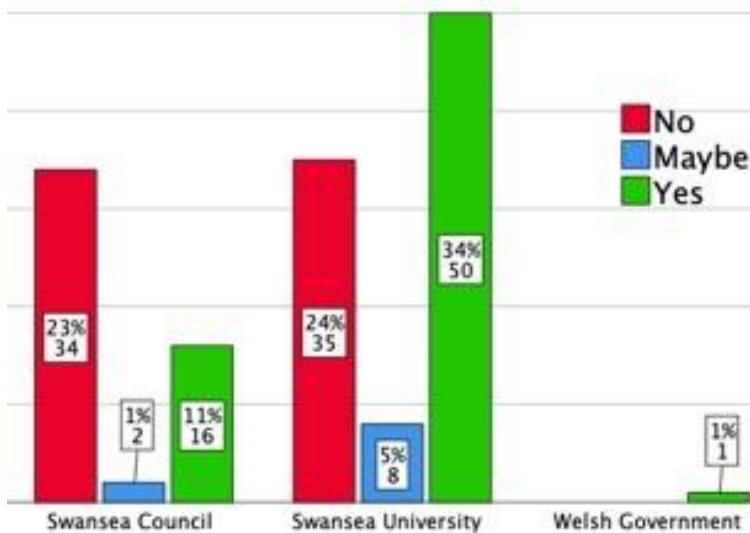
Table 5. 6 Technological competence and tools in a workplace setting: Machine Translation

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO TECHNOLOGICAL COMPETENCE AND TOOLS IN A WORKPLACE SETTING										
Machine Translation										
Staff Quiz Survey		SC		SU		WG		Total		
Survey questions + numbers		n	%	n	%	n	%	n	%	
Q	Total Number of Respondents =	52	36%	93	64%	1	1%	146	100%	
27	Have you ever used Machine Translation (e.g. Google Translate) to translate content instead of using the Translation Department service?	Maybe	2	1%	8	5%	0	0%	10	7%
		No	34	23%	35	24%	0	0%	69	47%
		Yes	16	11%	50	34%	1	1%	67	46%
		TOTAL	52	36%	93	64%	1	1%	146	100%
28	If you answered 'Yes' to number 27 (the answer below this question), why did you use Machine Translation?	The qualitative data from this question is shown after these tables.								
10	I use Google Translate	Agree	14	10%	34	23%	1	1%	49	34%
		Disagree	6	4%	9	6%	0	0%	15	10%
		n/a	1	1%	4	3%	0	0%	5	3%
		Neither agree nor disagree	7	5%	12	8%	0	0%	19	13%
		Strongly Agree	3	2%	16	11%	0	0%	19	13%
		Strongly Disagree	21	14%	18	12%	0	0%	39	27%
		TOTAL	52	36%	93	64%	1	1%	146	100%

5.3.1.2.1.1 “HAVE YOU EVER USED MACHINE TRANSLATION (E.G., GOOGLE TRANSLATE) TO TRANSLATE CONTENT INSTEAD OF USING THE TRANSLATION DEPARTMENT SERVICE?”

This question looks explicitly to understand if the respondent has ever used MT instead of sending content to the internal translation services in their organisation. The responses to this question are significant, as the results from the qualitative question in this category aim to identify the reasons behind their choice to use MT rather than a professional translation service, as shown in Figure 5. 28.

Figure 5. 28 Have you ever used MT to translate content instead of using the translation service?



By organisation, it is interesting to note the proportion of respondents who selected yes, such as with Swansea Council at 11% (n= 16), Swansea University with the majority of 34% (n= 50) and the Welsh Government at 1% (n= 1). Overall, 7% (n= 10) respondents answered *maybe*, 47% (n= 69) answered *no*, and 46% (n= 67) answered *yes*. Those who answered *No* were as follows: Swansea Council: 23% (n= 34), marginally more with Swansea University: 24% (n= 35) and none for the Welsh Government. Finally, a much smaller amount was selected, *maybe*, with 1% (n= 2) from Swansea Council and 5% (n= 8) from Swansea University. There is a difference between Swansea Council and Swansea University; even though those who

selected *no* were very even between the two organisations, the difference between those who selected *yes* was 23%.

5.3.1.2.1.2 “IF YOU ANSWERED ‘YES’ TO NUMBER 27, WHY DID YOU USE MACHINE TRANSLATION?”

This question aims to understand any reasoning behind the staff’s technology usage (such as, in this instance, MT) in the workplace. The results from CAT tools, Technological impact on workflow and training are detailed in the Translation Service Survey and the BA/MA Student Survey. Out of the sub-categories, only MT applies in this survey. The top five reasons for respondents to use MT were the following, not including 47% (n= 69), who were classed as *n/a* as they answered *no* to question 26:

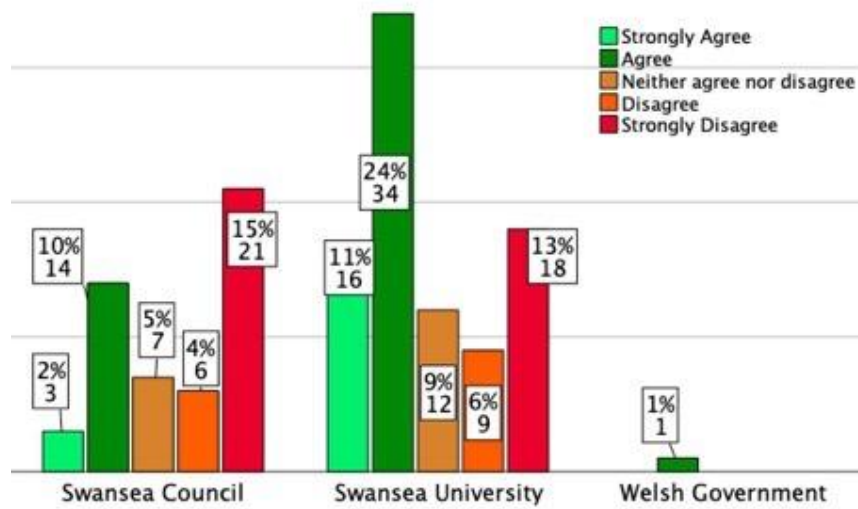
1. *It was faster* (30%, n= 43)
2. *It wasn’t important to be 100% correct* (6%, n= 9)
3. *It was easier* (5%, n= 7)
4. *Proofreading* (1.4%, n= 2)
5. *Advised to use by translation service and for quickness. Also, have to use wording in emails indicating ‘no hold up’ and not being a Welsh speaker; this isn’t true!* (1%, n= 1)

The qualitative results were informative and interesting to read; out of the comments made (not including the pre-determined comments), there were comments such as: *advised to use by translation service and for quickness*, one *needed to obtain a translation for signage*, and another wanted to *check content which may have been technical*.

5.3.1.2.1.3 “I USE GOOGLE TRANSLATE”

This question was designed to understand the internal use by staff of Google Translate; this question offers the respondent a choice from six options on a Likert Scale. As shown in Figure 5. 29, the results are split by organisation and clearly show the number of respondents who use the MT.

Figure 5. 29 I use Google Translate



The total number of respondents who *agree* or *strongly agree* to the statement that they use Google Translate is 47% (n= 68), 34% (n= 50) from Swansea University, 12% (n= 17) from Swansea Council and 1% (n= 1) from the Welsh Government. Those respondents who *disagree* or *strongly disagree* with the statement and therefore claim that they do not use Google Translate totals 36% (n= 54), 18% (n= 27) from Swansea University and 18% (n= 27) from Swansea Council.

14% (n= 19) respondents remained impartial by selecting *neither agree nor disagree*, 5% (n= 7) from Swansea Council and 8% (n= 12) from Swansea University and 3% (n= 5) selected *n/a*, 1% (n= 1) from Swansea Council and 3% (n= 4) from Swansea University.

5.3.1.3 TRANSLATION WORKFLOW PROCESS, INCLUDING FUNCTIONALITY, QUALITY, TRAINING AND SENTIMENT

This section aims to gather information about the translation workflow in each organisation from the perspective of the staff who request translation services, how (or whether) they are used effectively, and their impact on a typical workplace setting in the public sector. None of these questions is repeated in the other surveys.

5.3.1.3.1 WORKFLOW

Displayed in Table 5. 7 are the results from the staff survey: Translation-Workflow Process.

Table 5. 7 Translation-Workflow Process: Workflow, Training, Sentiment, Quality and Delivery (page 1 of 3)

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO THE TRANSLATION WORKFLOW PROCESS										
COLOUR CODE =		Workflow		Training		Sentiment		Quality		
Staff Survey		SC	SU	WG	Total					
Survey questions + numbers		n	%	n	%	n	%	n	%	
Q	Total Number of Respondents =	52	36%	93	64%	1	1%	146	100%	
	I do try to do my own translations just to get it done!	Agree	4	3%	12	8%	1	1%	17	12%
		Disagree	10	7%	14	10%	0	0%	24	16%
		n/a	10	7%	19	13%	0	0%	29	20%
		Neither agree nor disagree	2	1%	4	3%	0	0%	6	4%
		Strongly Agree	2	1%	5	3%	0	0%	7	5%
		Strongly Disagree	24	16%	39	27%	0	0%	63	43%
		TOTAL	52	36%	93	64%	1	1%	146	100%
10	I do all my own translations :-)	Agree	2	1%	4	3%	0	0%	6	4%
		Disagree	5	3%	11	8%	1	1%	17	12%
		n/a	1	1%	6	4%	0	0%	7	5%
		Neither agree nor disagree	2	1%	3	2%	0	0%	5	3%
		Strongly Agree	2	1%	5	3%	0	0%	7	5%
		Strongly Disagree	40	27%	64	44%	0	0%	105	72%
		TOTAL	52	36%	93	64%	1	1%	146	100%
	I use the Welsh Translation Service to translate my content	Agree	11	8%	32	22%	0	0%	43	29%
		Disagree	3	2%	6	4%	1	1%	10	7%
		n/a	0	0%	3	2%	0	0%	3	2%
		Neither agree nor disagree	2	1%	5	3%	0	0%	7	5%
		Strongly Agree	35	24%	40	27%	0	0%	75	51%
		Strongly Disagree	1	1%	7	5%	0	0%	8	5%
		TOTAL	52	36%	93	64%	1	1%	146	100%
16	When (approximately) was the last time you requested a Welsh translation from the translation department?	1-2 months ago	9	6%	11	8%	0	0%	20	14%
		2-3 months ago	4	3%	6	4%	0	0%	10	7%
		3-4 months ago	2	1%	4	3%	0	0%	6	4%
		4-5 months ago	0	0%	2	1%	0	0%	2	1%
		5-6 months ago	3	2%	3	2%	0	0%	6	4%
		6+ months ago	6	4%	28	19%	1	1%	35	24%
		less than 1 month ago	24	16%	24	16%	0	0%	48	33%
		Never	4	3%	14	10%	0	0%	18	12%
		Over a year ago	0	0%	1	1%	0	0%	1	1%
		TOTAL	52	36%	93	64%	1	1%	146	100%
18	How do you request a translation?	Other	4	3%	13	9%	0	0%	17	12%
		Email	12	8%	36	25%	0	0%	48	33%
		Form completion online	0	0%	1	1%	0	0%	1	1%
		Form on intranet	1	1%	0	0%	0	0%	1	1%
		I don't know	0	0%	3	2%	0	0%	3	2%
		n/a	0	0%	1	1%	0	0%	1	1%
		Online form via intranet	1	1%	0	0%	0	0%	1	1%
		Online portal	0	0%	1	1%	0	0%	1	1%
		Sharepoint - and it's very confusing	0	0%	1	1%	0	0%	1	1%
		Sharepoint link	0	0%	1	1%	0	0%	1	1%
		Someone in my school send such request	0	0%	1	1%	0	0%	1	1%
		Through HR (Jobs)	0	0%	1	1%	0	0%	1	1%
		Upload	34	23%	34	23%	1	1%	69	47%
TOTAL	52	36%	93	64%	1	1%	146	100%		
20	Did your LAST translation request arrive back when you expected?	n/a	4	3%	19	13%	0	0%	23	16%
		No	5	3%	21	14%	1	1%	27	18%
		Yes	43	29%	53	36%	0	0%	96	66%
		TOTAL	52	36%	93	64%	1	1%	146	100%

Table 5. 7 continued (page 2 of 3)

21	How long did it take (working days) for you to receive your last translation request back?	Other	4	3%	13	9%	0	0%	17	12%
		1 - 2 days	20	14%	14	10%	0	0%	34	23%
		2 - 3 days	3	2%	12	8%	0	0%	15	10%
		3 - 5 days	3	2%	13	9%	0	0%	16	11%
		5 - 7 days	5	3%	5	3%	0	0%	10	7%
		7 - 10 days	1	1%	6	4%	1	1%	8	5%
		I have no idea	0	0%	8	5%	0	0%	8	5%
		Less than 24 hours	14	10%	6	4%	0	0%	20	14%
		More than 10 days	2	1%	13	9%	0	0%	15	10%
		n/a	0	0%	1	1%	0	0%	1	1%
		We don't have a lead time	0	0%	2	1%	0	0%	2	1%
		TOTAL		52	36%	93	64%	1	1%	146
22	Did your request for a translation slow down your own workflow, for example, stopped you from getting things completed at your normal pace?	Can't remember the last time I	0	0%	1	1%	0	0%	1	1%
		requested a translation through the translation team. Usually any content that needs to be translated is done by Welsh speaking colleagues.	4	3%	15	10%	0	0%	19	13%
		n/a								
		No, it didn't slow me down	30	21%	29	20%	1	1%	60	41%
		O avoid requesting translations	0	0%	1	1%	0	0%	1	1%
		Plan for time it takes to receive translation. Sometimes proofing of larger documents can take a while	1	1%	0	0%	0	0%	1	1%
		Simple requests are handled quickly and efficiently longer paragraphs often delay work.	1	1%	0	0%	0	0%	1	1%
		Sometimes depending on workload	0	0%	1	1%	0	0%	1	1%
		Yes, it slowed me down	16	11%	46	32%	0	0%	62	42%
		TOTAL		52	36%	93	64%	1	1%	146
23	How much confidence do you have with the speed of the Translation Service? 0 = Not at all Confident 10 = Extremely Confident	0	0	0%	5	3%	0	0%	5	3%
		1	0	0%	2	1%	0	0%	2	1%
		2	0	0%	3	2%	0	0%	3	2%
		3	2	1%	5	3%	1	1%	8	5%
		4	5	3%	5	3%	0	0%	10	7%
		5	4	3%	13	9%	0	0%	17	12%
		6	3	2%	10	7%	0	0%	13	9%
		7	5	3%	10	7%	0	0%	15	10%
		8	8	5%	7	5%	0	0%	15	10%
		9	8	5%	6	4%	0	0%	14	10%
		10	13	9%	13	9%	0	0%	26	18%
Missing	0	0%	0	0%	0	0%	0	0%		
TOTAL		48	33%	79	54%	1	1%	128	88%	
24	Did you consider not having your content translated?	n/a	4	3%	14	10%	0	0%	18	12%
		No	46	32%	54	37%	0	0%	100	68%
		Yes or Maybe	2	1%	25	17%	1	1%	28	19%
		TOTAL		52	36%	93	64%	1	1%	146
25	If you answered 'yes' or 'maybe' to the above, why did you consider not to get your content translated?	The qualitative data from this question is shown after these tables.								
26	How confident are you that your translation request will be completed on time? 1 = Not at all confident 10 = Extremely confident	0	0	0%	5	3%	0	0%	5	3%
		1	0	0%	2	1%	0	0%	2	1%
		2	1	1%	5	3%	0	0%	6	4%
		3	2	1%	3	2%	1	1%	6	4%
		4	1	1%	8	5%	0	0%	9	6%
		5	6	4%	10	7%	0	0%	16	11%
		6	2	1%	7	5%	0	0%	9	6%
		7	3	2%	13	9%	0	0%	16	11%
		8	10	7%	12	8%	0	0%	22	15%
		9	12	8%	8	5%	0	0%	20	14%
		10	0	0%	0	0%	0	0%	0	0%
Missing	11	8%	6	4%	0	0%	17	12%		
TOTAL		48	33%	79	54%	1	1%	128	88%	

Table 5. 7 continued (page 3 of 4)

21	How long did it take (working days) for you to receive your last translation request back?	Other	4	3%	13	9%	0	0%	17	12%
		1 - 2 days	20	14%	14	10%	0	0%	34	23%
		2 - 3 days	3	2%	12	8%	0	0%	15	10%
		3 - 5 days	3	2%	13	9%	0	0%	16	11%
		5 - 7 days	5	3%	5	3%	0	0%	10	7%
		7 - 10 days	1	1%	6	4%	1	1%	8	5%
		I have no idea	0	0%	8	5%	0	0%	8	5%
		Less than 24 hours	14	10%	6	4%	0	0%	20	14%
		More than 10 days	2	1%	13	9%	0	0%	15	10%
		n/a	0	0%	1	1%	0	0%	1	1%
		We don't have a lead time	0	0%	2	1%	0	0%	2	1%
TOTAL		52	36%	93	64%	1	1%	146	100%	
22	Did your request for a translation slow down your own workflow, for example, stopped you from getting things completed at your normal pace?	Can't remember the last time I Requested a translation through the translation team. Usually any content that needs to be translated is done by Welsh speaking colleagues.	0	0%	1	1%	0	0%	1	1%
		n/a	4	3%	15	10%	0	0%	19	13%
		No, it didn't slow me down	30	21%	29	20%	1	1%	60	41%
		I avoid requesting translations	0	0%	1	1%	0	0%	1	1%
		Plan for time it takes to receive translation. Sometimes proofing of larger documents can take a while	1	1%	0	0%	0	0%	1	1%
		Simple requests are handled quickly and efficiently longer paragraphs often delay work.	1	1%	0	0%	0	0%	1	1%
		Sometimes depending on workload	0	0%	1	1%	0	0%	1	1%
		Yes, it slowed me down	16	11%	46	32%	0	0%	62	42%
TOTAL		52	36%	93	64%	1	1%	146	100%	
23	How much confidence do you have with the speed of the Translation Service? 0 = Not at all Confident 10 = Extremely Confident	0	0	0%	5	3%	0	0%	5	3%
		1	0	0%	2	1%	0	0%	2	1%
		2	0	0%	3	2%	0	0%	3	2%
		3	2	1%	5	3%	1	1%	8	5%
		4	5	3%	5	3%	0	0%	10	7%
		5	4	3%	13	9%	0	0%	17	12%
		6	3	2%	10	7%	0	0%	13	9%
		7	5	3%	10	7%	0	0%	15	10%
		8	8	5%	7	5%	0	0%	15	10%
		9	8	5%	6	4%	0	0%	14	10%
		10	13	9%	13	9%	0	0%	26	18%
		Missing	0	0%	0	0%	0	0%	18	12%
TOTAL		48	33%	79	54%	1	1%	128	88%	
24	Did you consider not having your content translated?	n/a	4	3%	14	10%	0	0%	18	12%
		No	46	32%	54	37%	0	0%	100	68%
		Yes or Maybe	2	1%	25	17%	1	1%	28	19%
		TOTAL	52	36%	93	64%	1	1%	146	100%
25	If you answered 'yes' or 'maybe' to the above, why did you consider not to get your content translated?	The qualitative data from this question is explained after these tables.								
26	How confident are you that your translation request will be completed on time? 1 = Not at all confident 10 = Extremely confident	0	0	0%	5	3%	0	0%	5	3%
		1	0	0%	2	1%	0	0%	2	1%
		2	1	1%	5	3%	0	0%	6	4%
		3	2	1%	3	2%	1	1%	6	4%
		4	1	1%	8	5%	0	0%	9	6%
		5	6	4%	10	7%	0	0%	16	11%
		6	2	1%	7	5%	0	0%	9	6%
		7	3	2%	13	9%	0	0%	16	11%
		8	10	7%	12	8%	0	0%	22	15%
		9	12	8%	8	5%	0	0%	20	14%
		10	0	0%	0	0%	0	0%	17	12%
Missing	11	8%	6	4%	0	0%	11	8%		
TOTAL		48	33%	79	54%	1	1%	128	88%	
29	Name ONE thing that you would like to change regarding the Translation Workflow in your organisation. E.g. 'make' it faster', 'make' it automatic', 'access the translation from my computer' etc	The qualitative data from this question is explained after these tables.								
32	Do you have any further comments about Welsh translations in your workplace? Do let me know what you think.	The qualitative data from this question is explained after these tables.								

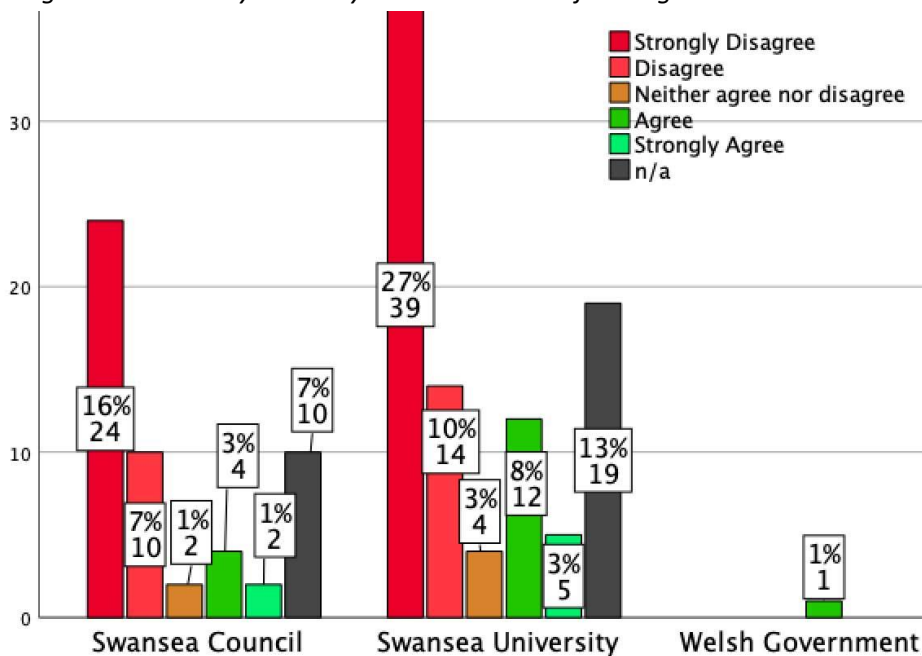
Table 5. 7 continued (page 3 of 4)

15	Have you received any training to comply with The Welsh Language Standards (No. 7) Regulations 2018?	Maybe	5	3%	13	9%	0	0%	18	12%		
		No	31	21%	35	24%	1	1%	67	46%		
		What's that?	1	1%	2	1%	0	0%	3	2%		
		Yes	15	10%	43	29%	0	0%	58	40%		
		TOTAL	52	36%	93	64%	1	1%	146	100%		
10	I consider not translating content where possible	Agree	7	5%	24	16%	1	1%	32	22%		
		Disagree	10	7%	16	11%	0	0%	26	18%		
		n/a	2	1%	4	3%	0	0%	6	4%		
		Neither agree nor disagree	5	3%	11	8%	0	0%	16	11%		
		Strongly Agree	2	1%	11	8%	0	0%	13	9%		
		Strongly Disagree	26	18%	27	18%	0	0%	53	36%		
		TOTAL	52	36%	93	64%	1	1%	146	100%		
		17	What is the lead time on any translation request (working days)?	1 - 2 days	19	13%	12	8%	0	0%	31	21%
2 - 3 days	10			7%	16	11%	0	0%	26	18%		
3 -5 days	6			4%	7	5%	0	0%	13	9%		
5-7 days	1			1%	10	7%	0	0%	11	8%		
7-10 days	2			1%	5	3%	0	0%	7	5%		
Dependent on length - short sentences come back quickly, longer documents can take months!	1			1%	0	0%	0	0%	1	1%		
Depends on the length of the translation you require.	0			0%	1	1%	0	0%	1	1%		
Depends on the length. Covid has made time longer.	1			1%	0	0%	0	0%	1	1%		
I have no idea	4			3%	3	2%	0	0%	10	7%		
Less than 24 hours	4			3%	3	2%	0	0%	7	5%		
More than 10 days	1			1%	14	10%	1	1%	15	10%		
n/a	4			3%	14	10%	0	0%	18	12%		
too long and not reliable (when related to HR work)	0			0%	1	1%	0	0%	1	1%		
We don't have a lead time	1			1%	2	1%	0	0%	3	2%		
TOTAL	52			36%	93	64%	1	1%	146	100%		
19	How likely are you to receive your Welsh Translation back on time? 0 = Not very likely 10 = Extremely likely			0	0	0%	5	3%	0	0%	5	3%
				1	1	1%	3	2%	0	0%	4	3%
				2	0	0%	3	2%	0	0%	3	2%
				3	3	2%	4	3%	0	0%	7	5%
				4	0	0%	3	2%	1	1%	4	3%
		5	5	3%	10	7%	0	0%	15	10%		
		6	1	1%	9	6%	0	0%	10	7%		
		7	2	1%	11	8%	0	0%	13	9%		
		8	9	6%	10	7%	0	0%	19	13%		
		9	13	9%	13	9%	0	0%	26	18%		
		10	14	10%	8	5%	0	0%	22	15%		
		Missing	0	0%	0	0%	0	0%	18	12%		
		TOTAL	48	33%	79	54%	1	1%	146	100%		

“I DO TRY TO DO MY OWN TRANSLATIONS JUST TO GET IT DONE!”

This question used a Likert Scale to determine to what extent employees would carry out internal Welsh translations themselves rather than referring the request to the Translation Services department of the organisation, as shown in Figure 5. 30.

Figure 5. 30 I do try to do my own translations just to get it done!



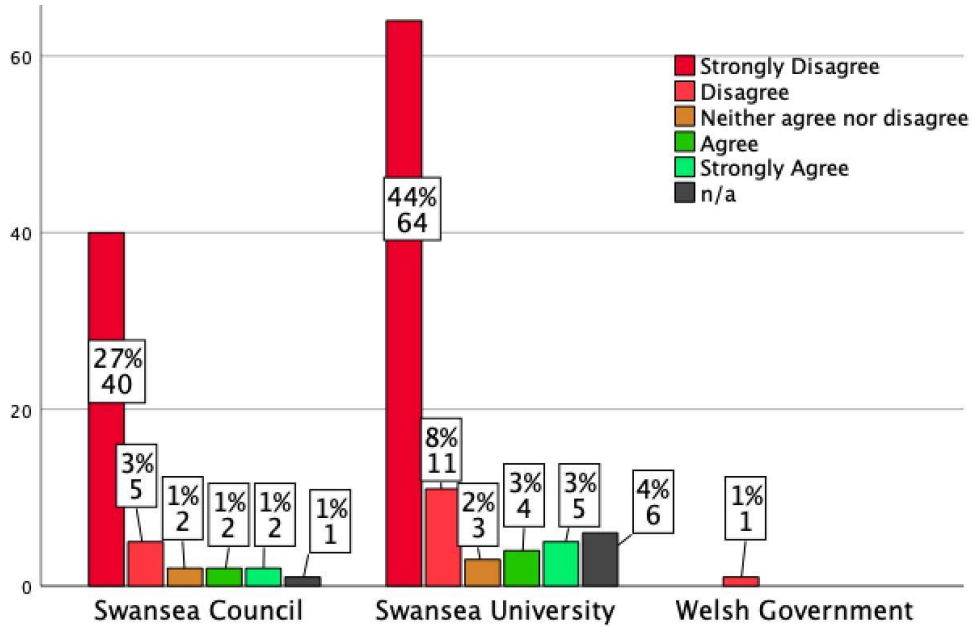
There is a significant majority of respondents, 59% (n= 87), who either *disagree* or *strongly disagree* with the statement, 23% (n= 34) from Swansea Council and 37% (n= 53) from Swansea University. 17% (n= 24) either *agree* or *strongly agree*, 4% (n= 6) from Swansea Council, 11% (n= 17) from Swansea University and 1% (n= 1) from the Welsh Government. 1% (n= 2) from Swansea Council and 3% (n= 4) selected *neither agree nor disagree*, and the remaining 20% (n= 29), 13% (n= 19) from Swansea Council and 7% (n= 10) from Swansea Council selected *n/a*.

The responses to this question will be discussed further in Chapter 6 and mapped alongside Welsh language competence levels to gain an understanding of any reasoning behind the higher proportion of respondents who choose not to translate their content themselves and those who may have the skill set to translate but prefer or decide not to do so.

5.3.1.3.1.1 “I DO ALL MY OWN WELSH TRANSLATIONS”

Respondents were asked whether they carried out their own Welsh translations in-house via a Likert scale, as shown in Figure 5. 31.

Figure 5. 31 I do all my own Welsh translations.



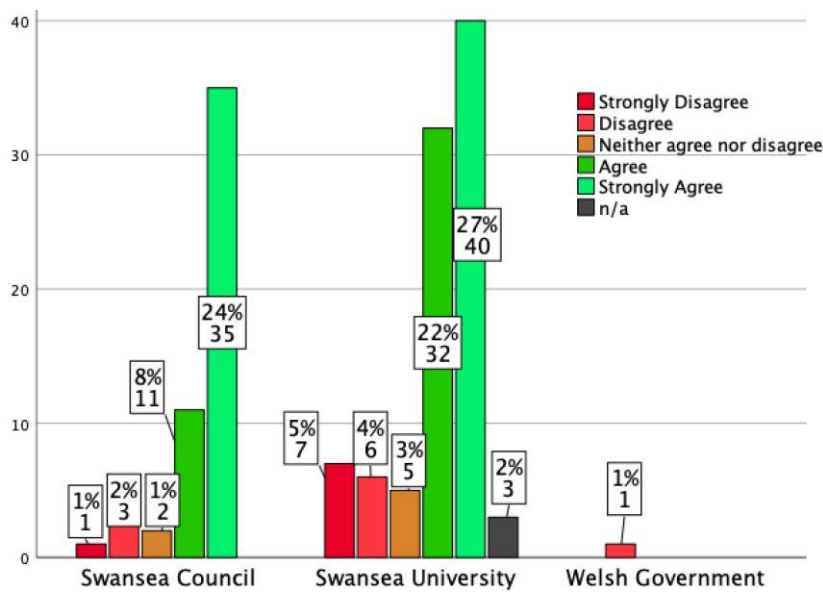
A majority of 83% (n= 121) *disagreed* or *strongly disagreed* with the statement that they do their own [Welsh] translations, 30% (n= 45) from Swansea Council, 52% (n= 75) from Swansea University and 1% (n= 1) from the Welsh Government.

8% (n= 13) *agreed* or *strongly agreed*, 2% (n= 4) from Swansea Council, and 6% (n= 9) from Swansea University. A total of 3% (n= 5) *neither agreed nor disagreed*, 1% (n= 2) from Swansea Council and 2% (n= 3) from Swansea University) and the remainder were *n/a*, 1% (n= 1) from Swansea Council and 4% (n= 6) from Swansea University.

5.3.1.3.1.2 “I USE THE WELSH TRANSLATION SERVICE TO TRANSLATE MY CONTENT”

To gain insight and an understanding of the staff who use the Welsh translation services within their organisation, this question provides interesting and valuable results (gathered via a Likert scale), particularly those who disagree with the statement, as shown in Figure 5. 32.

Figure 5. 32 I use the Welsh Translation Service to translate my content.

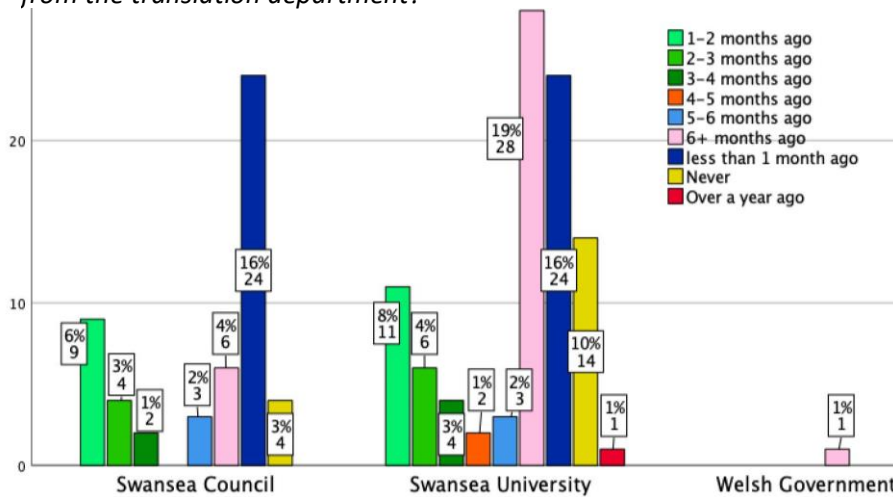


When looking at the results overall, 81% (n= 118) *strongly agree or agree* with the statement, 32% (n= 46) from Swansea Council and 49% (n= 72) from Swansea University. The rest of the results are made up of 13% (n= 18) who *strongly disagree or disagree*, 3% (n= 4) from Swansea Council, 9% (n= 13) from Swansea University and 1% (n= 1) from the Welsh Government. The remainder is made up of those who *neither agree nor disagree* (1% (n= 2) from Swansea Council and 3% (n= 5) from Swansea University) and 2% (n= 3) who selected *n/a*.

5.3.1.3.1.3 “WHEN (APPROXIMATELY) WAS THE LAST TIME YOU REQUESTED A WELSH TRANSLATION FROM THE TRANSLATION DEPARTMENT?”

To understand the quantity and frequency of Welsh translation requests received, the respondents were asked to indicate when they last requested a Welsh translation from their internal translation services, as shown in the overview in Figure 5. 33.

Figure 5. 33 When (approximately) was the last time you requested a Welsh translation from the translation department?

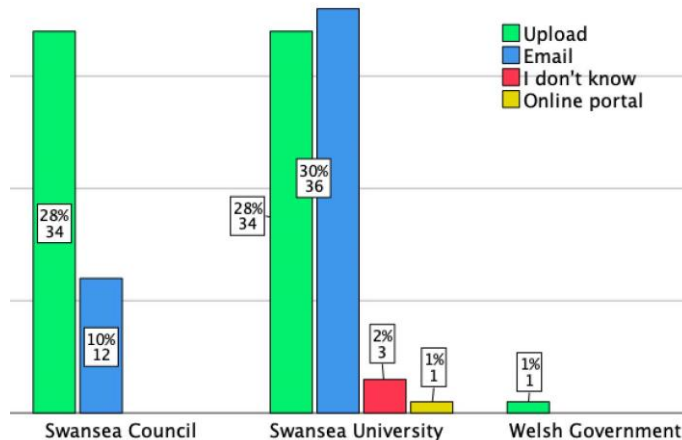


The respondents were asked to select from a pre-determined list, as shown in the legend in Figure 5. 35. Looking at the overall results, the largest quantity selected was less than a month ago, which was chosen by 32% (n= 48) and 16% (n= 24) from both Swansea Council and Swansea University. This was followed by 6+ months ago with a total of 24% (n= 35), 4% (n= 6) from Swansea Council, 19% (n= 28) from Swansea University and 1% (n= 1) from the Welsh Government. Next, 1-2 months ago, with 14% (n= 20), made up of 6% (n= 9) from Swansea Council and 8% (n= 11) from Swansea University, then never with 13% (n= 18), 3% (n= 4) from Swansea Council and 10% (n= 14) from Swansea University. The rest were made up from 3-4 months ago, 4% (n= 6), with 1% (n= 2) from Swansea Council and 3% (n= 4) from Swansea University, 4-5 months ago, 1% (n= 2) from Swansea Council and 5-6 months ago, with 4% (n= 6), 2% (n= 3) from both Swansea Council and Swansea University. Only 1% (n= 1) were selected over a year ago, and they were from Swansea Council.

5.3.1.3.1.4 “HOW DO YOU REQUEST A TRANSLATION?”

When looking at the workflow process within the organisation, it was imperative to understand how each respondent would request a translation. The answers to this question would also provide evidence to support the clarity of the workflow process in situ, as shown in Figure 5. 34.

Figure 5. 34 How do you request a translation?



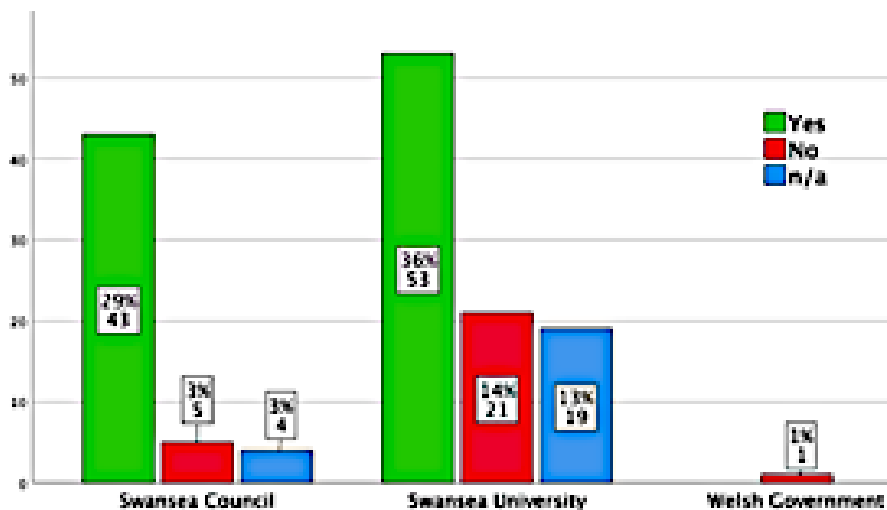
Overall, the majority, 47% (n= 69), state that they *upload* their requests, and 23% (n= 34) from both Swansea Council and Swansea University. This was followed by those who *email*, 33% (n= 48), 8% (n= 12) from Swansea Council and 25% (n= 36) from Swansea University. There are 12% (n= 17) who state *other*, 3% (n= 4) from Swansea Council and 9% (n= 13) from Swansea University, and 2% (n= 3) from Swansea University who *do not know how to*, with the rest the respondents who wrote individual comments such as those from Swansea Council: *completed a form on the intranet* 2% (n= 2) from Swansea University, 1% (n= 1) from Swansea University, who specified *through HR*, 1% (n= 1) stated that they *used an online portal*, 1% (n= 1) noted that *they used SharePoint - and it's very confusing*, and another 1% (n= 1) also mentioned a *SharePoint link* and finally, one who stated 1% (n= 1) *Someone in my school* sends this type of request. Essentially it is noticeable that there are eight different ways to request a translation ranging from a form, an email, the intranet, a portal, SharePoint, via HR (Human Resources), via another person in the school, and uploading, although it is not clear what is meant by

uploading in this instance, it could be presumed to be SharePoint, where the translators can pick up the translation request.

5.3.1.3.1.5 “DID YOUR LAST TRANSLATION REQUEST ARRIVE BACK WHEN YOU EXPECTED?”

This question aims to understand whether the in-house translation workflow process meets expectations. The importance of this question cannot be underestimated as it is explicitly worded to gather data not related to lead times or quality but, moreover, what is *expected* of the service. Respondents were asked to select from three pre-determined options: *yes*, *no*, and *n/a*, as shown in Figure 5. 35.

Figure 5. 35 Did your LAST translation request arrive back when you expected?

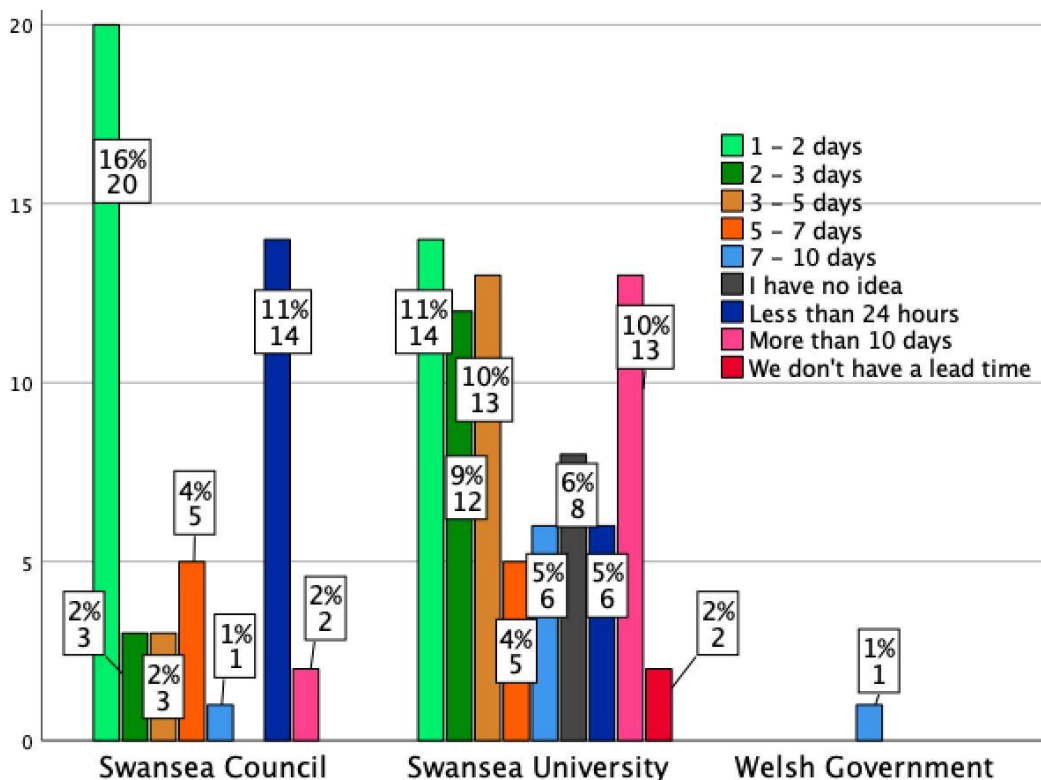


Overall, there was a clear majority, with 65% (n= 96) selected *yes*, they did receive their translation back when expected. This comprised 29% (n= 43) from Swansea Council and 36% (n= 53) from Swansea University. 18% (n= 27) selected *no*, 3% (n= 5) from Swansea Council, 14% (n= 21) from Swansea University and 1% (n= 1) from the Welsh Government. 16% (n= 23) selected *n/a*, 3% (n= 4) from Swansea Council and 13% (n= 19) were from Swansea University.

5.3.1.3.1.6 “HOW LONG DID IT TAKE (WORKING DAYS) FOR YOU TO RECEIVE YOUR LAST TRANSLATION REQUEST BACK?”

Once again, looking at workflows, this question aimed to understand whether there are any differences in the lead times between organisations. Respondents were asked to select an appropriate answer from a list of pre-determined answers ranging from Less than 24 hours to More than 10 days, as shown in Figure 5. 36. Given that, according to data provided in this study, one of the most common reasons for outsourcing translations is due the time it would take to translate a document with a larger word count (as opposed to a document with a lower word count, which would typically be faster to translate) therefore, it could be argued that many of the translations conducted ‘in-house’ would be comparable between the organisations.

Figure 5. 36 How long did it take (working days) for you to receive your last translation request back?



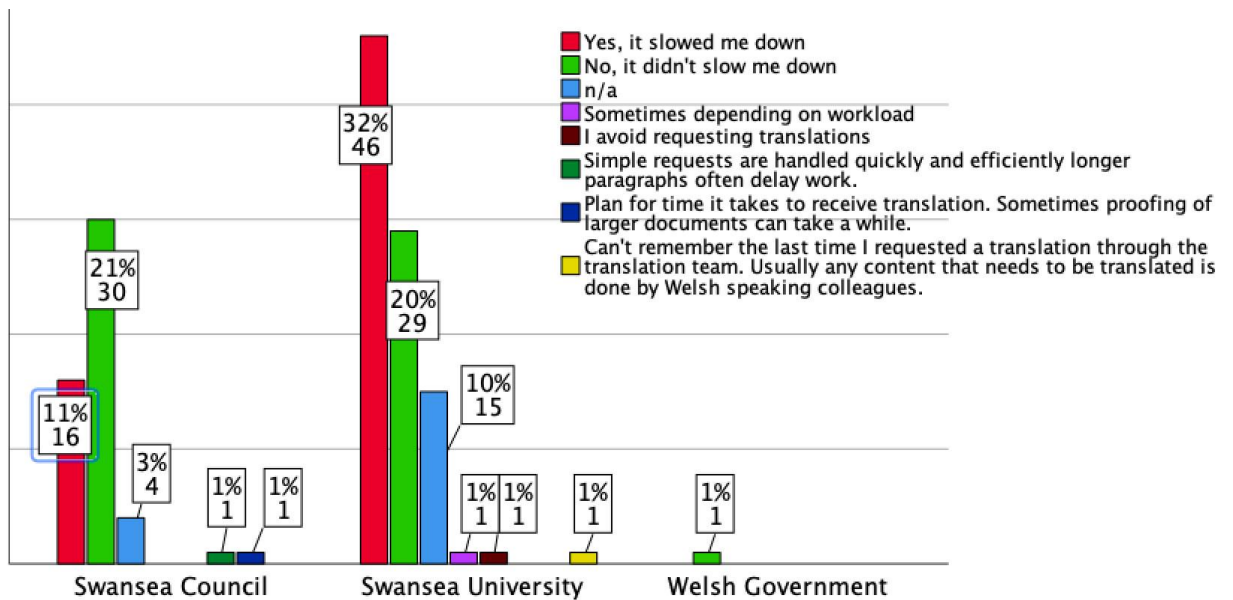
The largest group selected and, therefore, the most common timescale was *1-2 days* with 27% (n= 34), 14% (n= 20) from Swansea Council and 11% (n= 14) from Swansea University, followed by *less than 24 hours* with 16% (n= 20), 11% (n= 14) from Swansea Council and 5% (n= 6) from Swansea University.

Next, was *3-5 days* which was selected by 12% (n= 16), made up of 2% (n= 3) from Swansea Council and 10% n= 13 from Swansea University. Then *2-3 days* with 11% (n= 15), 2% (n= 3) from Swansea Council and 9% (n= 12) from Swansea University, and *more than 10 days* with 12% (n= 15), 2% (n= 2) from Swansea Council, 10% (n= 13) from Swansea University and 1% (n= 1) from the Welsh Government. Following on, *5-7 days* with 8% (n= 10) and 4% (n= 5) from both Swansea Council and Swansea University. The remainders were 7% (n= 8) selected *7-10 days*, and 6% (n= 8) claimed *no idea*. 2% (n= 2) from Swansea University state they *do not have a lead time*. 1% (n= 1) of respondents selected *n/a*, and 9% (n= 17) selected *other* but were excluded from the chart so the rest of the results could be visible and compared.

5.3.1.3.1.7 “DID YOUR REQUEST FOR A TRANSLATION SLOW DOWN YOUR OWN WORKFLOW FOR EXAMPLE, STOPPED YOU FROM GETTING THINGS COMPLETED AT YOUR NORMAL PACE?”

This question asks if the respondents found that, when they requested a translation, it slowed their workflow or not. An overview of the results is shown as shown in Figure 5. 37.

Figure 5. 37 Did your request for a translation slow down your own workflow?



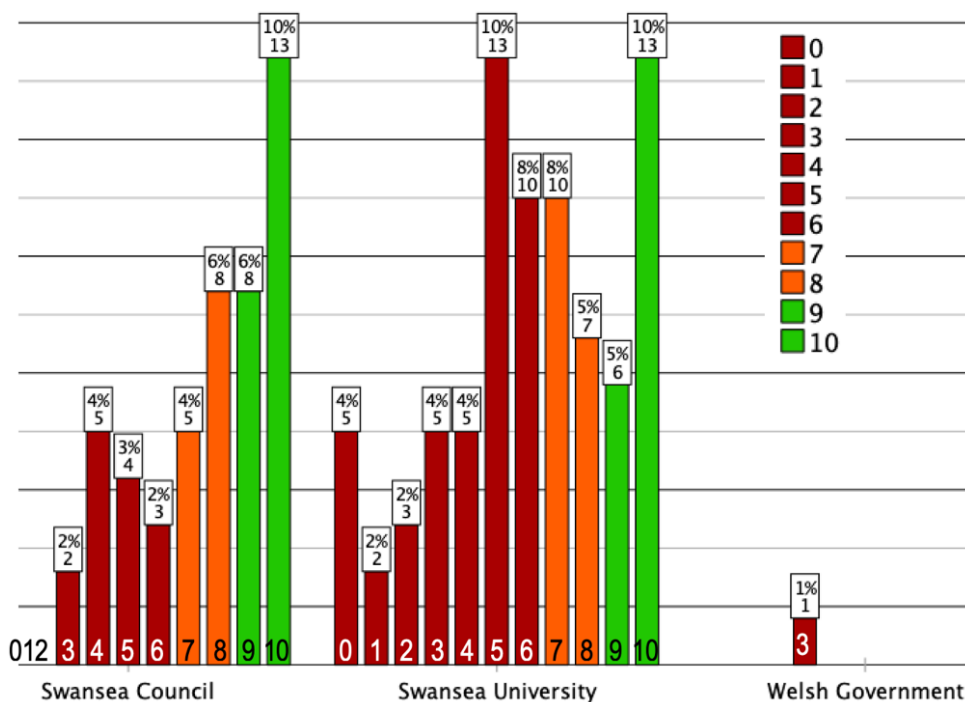
The results overall demonstrated that both options produced even responses between Swansea University and Swansea Council; 43% (n= 62) chose *yes, it slowed me down*, 11% (n= 16) from Swansea Council and 32% (n= 46) from Swansea University. 42% (n= 60) selected *no, it didn't slow me down* with 21% (n= 30) from Swansea Council, 20% (n= 29) from Swansea University and 1% (n= 1) from the Welsh Government. There were 13% (n= 19) who selected *n/a*, 3% (n= 3) from Swansea Council and 10% (n= 15) from Swansea University. The rest were individual, 1% (n= 1) qualitative responses such as the following:

Swansea Council	<ol style="list-style-type: none"> 1. Plan for the time it takes to receive the translation. Sometimes proofing of larger documents can take a while. 2. Simple requests are handled quickly and efficiently; longer paragraphs often delay work.
Swansea University	<ol style="list-style-type: none"> 3. Can't remember the last time I requested a translation through the translation team. Usually, any content that needs to be translated is done by Welsh-speaking colleagues. 4. I avoid requesting translations. 5. Sometimes depending on the workload.

5.3.1.3.1.8 “HOW MUCH CONFIDENCE DO YOU HAVE WITH THE SPEED OF THE TRANSLATION SERVICE?”

Confidence levels are key to understanding the usefulness and efficiencies of the workflow process. This question looks specifically at confidence levels regarding the turnaround speed of the translation service provided within each organisation. For this question, respondents were asked to score their opinions; in this case, their level of confidence was from 0 (not very confident) – to 10 (extremely confident), resulting in a Net Promoter Score (NPS), as explained in the section 4.4.3.2. The results of this question are shown in Figure 5. 38.

Figure 5. 38 How much confidence do you have with the speed of the Translation Service?



Key: 0 = Not very confident

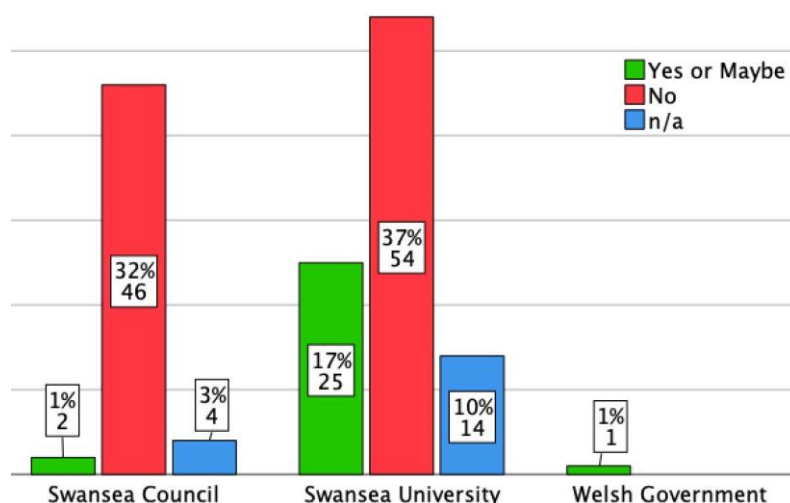
10 = Extremely confident

Out of a potential 146 respondents, 88% (n= 128) participated in this question, 37% (n= 48) from Swansea Council, 62% (n= 79) from Swansea University and 1% (n= 1) from the Welsh Government. When looking at the overall results, confidence is high, with a majority of 20% (n= 26), 10% (n= 13) from Swansea Council and 10% (n= 13) from Swansea University selecting option 9 followed by option 10 with a total of 17% (n= 22), 11% (n= 14) from Swansea Council and 6% (n= 8) from Swansea University. Option 8 was selected by 15% (n= 19) of the respondents, 7% (n= 9) from Swansea Council and 8% (n= 10) from Swansea University, followed by option 7, with 15% (n= 19), 2% (n= 2) from Swansea Council and 9% (n= 11) from Swansea University. The following highest result was option 5 with 12% (n= 15), 4% (n= 5) from Swansea Council and 8% from Swansea University (n= 10) then, option 6 with 8% (n= 10), 1% (n= 1) from Swansea Council and 7% (n= 9) from Swansea University Next, option 4, 3% (n= 4), 2% (n= 3) from Swansea Council, 2% (n= 3) from Swansea University and 1% from the Welsh Government (n= 1), option 3, with 5% (n= 7), 2% (n= 3) from Swansea Council and 3% from Swansea University (n= 4) and option 2, 2% (n= 3) from Swansea University. Finally, option 1, with 3% (n= 4), 1% (n= 1) from Swansea Council and 2% from Swansea University (n= 3) and Option 0, with 4% (n= 5) from Swansea University. Even though there are signs of confidence, these results warrant a discussion in full in Chapter 6.

5.3.1.3.1.9 "DID YOU CONSIDER NOT HAVING YOUR CONTENT TRANSLATED?"

This question aimed to determine whether the individual respondent had to consider or decide whether to translate content into/or out of Welsh. Given the legislation which requires translation services (as explained in section 1.1.4) to provide bilingual service, in-house training, and awareness of the legal requirement to ensure that documentation is available in Welsh and English should leave no doubt in the mind of the civil servant when carrying out their work duties. Respondents were asked to select from a pre-coded dropdown list, including *yes* (or *maybe*), *no*, and *n/a* (not applicable), as shown in Figure 5. 39 below.

Figure 5. 39 Did you consider not having your content translated?



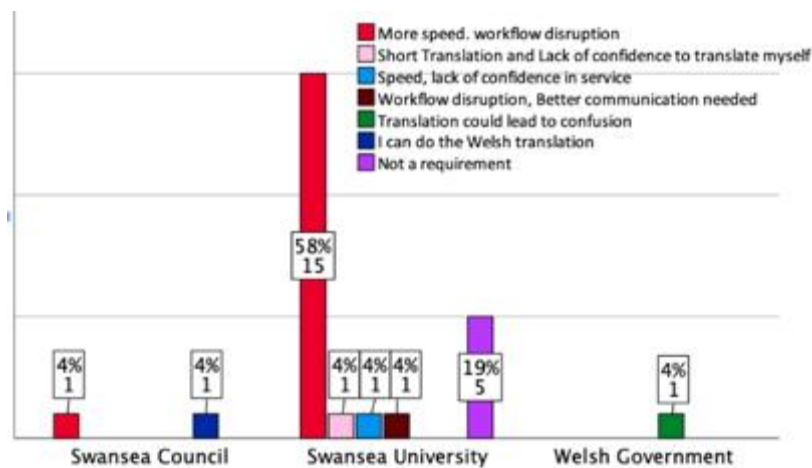
69% (n= 100) selected *No*, 32% (n= 46) from Swansea Council and 37% (n= 54) from Swansea University. 19% (n= 28) selected *yes or maybe*, 1% (n= 1) from Swansea Council, 17% (n= 25) from Swansea University and 1% (n= 1) from the Welsh Government. 13% (n= 18) selected *n/a*, 3% (n= 4) from Swansea Council and 10% (n= 14) from Swansea University. Based on the overall results, a clear majority claimed they did not even consider not having their content translated.

Welsh Government: Even though only 1% (n= 1) of respondents, it was noteworthy that the respondent selected *yes or maybe*. This may be because the respondent is a native Welsh speaker, so in some cases, it is easier to translate their content. Considering the differences, levels of Welsh language skills will also be addressed to understand if this may be the reason for the variations.

5.3.1.3.1.10 “IF YOU ANSWERED ‘YES’ OR ‘MAYBE’ TO THE ABOVE QUESTION (DID YOU CONSIDER NOT HAVING YOUR CONTENT TRANSLATED?), WHY DID YOU CONSIDER NOT TO GET YOUR CONTENT TRANSLATED?”

The objective of this qualitative question was to gain a further understanding of why they considered not getting their content translated, as shown in Figure 5. 40. The percentages are based on the number of participants in this question, as explained below.

Figure 5. 40 If you answered, yes or maybe to the above (question 24), why did you consider not to get your content translate?



100% of the respondents who said yes to Question 24 (Why did you consider not having your content translation) contributed to this question. Therefore 18% (n= 26) out of the 100% (n= 146) respondents participating in this survey responded to this question. 1% (n= 2) selected *n/a* as their answer and are not included in the results below. To organise the results, each comment was placed into groups based on similar answers and categorised based on its content and why the participants chose *not to translate their content*. The categories and explanations of them are shown below in Table 5. 8.

Table 5. 8 Categories of responses by respondents to said yes to the previous question: Did you consider not having your content translated?

Category	Explanation
More speed, workflow disruption	The respondent(s) required a faster service as the delays were disrupting their workflows
Short translation and lack of confidence to translate myself	The respondent(s) stated that they only had short translation(s) and did not feel confident translating the content themselves
Speed, lack of confidence in service	The respondent(s) required a faster service and lacked confidence in the translation service
Workflow disruption and better communication needed	The respondent(s) state that their workflow has been disrupted, and they would like better communication
Translation could lead to confusion	The respondent stated that a Welsh translation could be confusing
I can do the Welsh translation	The respondent stated that they could translate the content into Welsh
Not a requirement	The respondent(s) stated that a Welsh translation was not a requirement when they made this decision.

Once the 18 responses had been categorised, the results are now as follows: The category with the most significant results, 62% (n= 16), stated their reason for considering not getting translations was due to the requirement for more speed and less disruption of their workflow. Interestingly, 58% (n= 15) of these results were from Swansea University and 1% (n= 1) from Swansea Council. The other respondent (1%, n= 1) from Swansea Council stated that they *carry out their Welsh translations*, which may be considered low as it was anticipated that more Welsh native speakers would state that they translated their own content.

However, when the respondents are asked to confirm their native language(s), these individuals state *English* and *strongly agree* that their Welsh is not good enough for work. There was a total of 14% (n= 19) respondents who claimed to be Welsh native speakers: Swansea Council: 6% (n= 8), Swansea University: 7% (n= 10), and Welsh Government: 1% (n= 1).

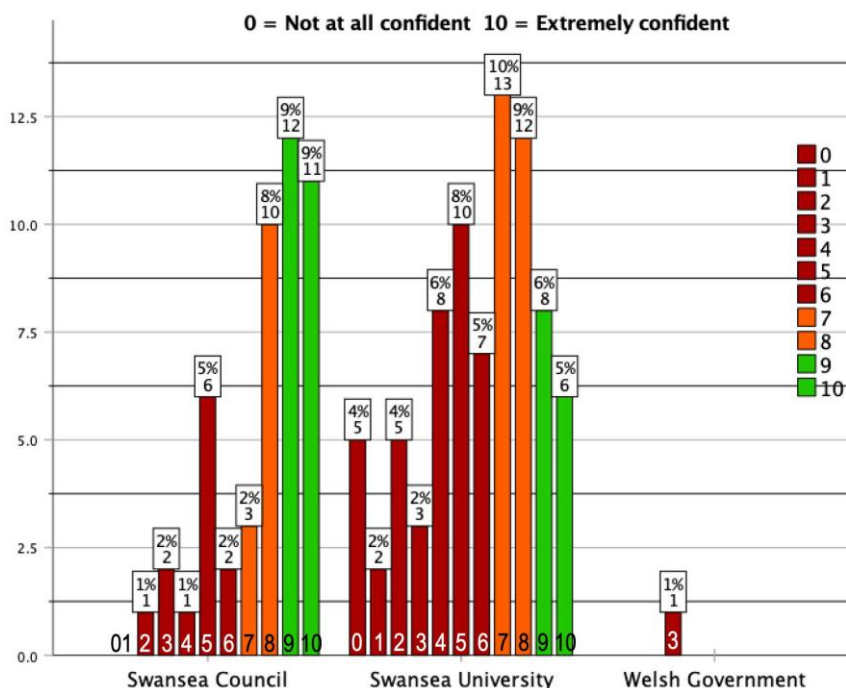
19% (n= 5) of respondents (all from Swansea Council) stated that they did not get their content translated because it was *not a requirement in that instance*. The rest

of the 12% (n= 3) responses from Swansea University were all individuals (4%, n= 1) and stated firstly that their *translation was short*, and they *lacked the confidence to translate it* for themselves. This individual was consistent in their responses throughout the survey and confirmed that even though they classed themselves as *Welsh* by nationality, their native language was *English*.

5.3.1.3.1.11 “HOW CONFIDENT ARE YOU THAT YOUR TRANSLATION REQUEST WILL BE COMPLETED ON TIME?”

This question is intended to understand confidence levels related to the internal translation workflow, specifically the receipt of their requested translations and whether they would receive the translation they requested back on time or may be discouraged if the service is unreliable. It may be considered that a high level of confidence in the efficiencies of an internal process/service would often encourage potential stakeholders to use the service as and when there is a requirement. However, the opposite would also apply should there be a lack of confidence. The results are shown in Figure 5. 41, where 100% participated in this question. The respondents were asked to rate their confidence levels, with 0 (zero) = *not at all confident* and 10 = *Extremely confident*.

Figure 5. 41 How confident are you that your translation request will be completed on time?



The most common response was option 8, with a total of 17% (n= 22) responses, 8% (n= 10) from Swansea Council and 9% (n= 12) from Swansea University. The second most popular response was option 9, with 15% (n= 20) responses, 9% (n= 12) from Swansea Council and 6% (n= 8) from Swansea University. Next is the top option, 10 with 14% (n= 17) responses, 9% (n= 11) from Swansea Council and 5% (n= 6) from Swansea University. A total of 12% (n= 16) selected option 7, 2% (n= 3) from Swansea Council and, 10% (n= 13) from Swansea University and next, 13% (n= 16) selected option 5, 5% (n= 6) from Swansea Council and 8% (n= 10) from Swansea University. A total of 7% (n= 9) selected option 4, 1% (n= 1) from Swansea Council and 6% (n= 8) from Swansea University, and 7% (n= 9) selected option 4, 1% (n= 1) from Swansea Council and 6% (n= 8) from Swansea University. 7% (n= 9) selected option 6, 2% (n= 2) from Swansea Council and 5% (n= 7) from Swansea University and then 5% (n= 6) selected option 3, 2% (n= 2) from Swansea Council, 2% (n= 3) from Swansea University and 1% (n= 1) from the Welsh Government. The final, lowest choices were firstly option 0 (zero) with 4% (n= 5), all from Swansea University, option 2 selected by 3% (n= 3), 1% (n= 1) from Swansea Council and 2% (n= 2) from Swansea University. Finally, option 1, with 2% (n= 2) from Swansea University. What is clear from the results is that there is a difference between organisations, particularly when looking at Swansea University and Swansea Council, as the results from Swansea University are potentially more negative than positive. This will be discussed further in Chapter 6.

5.3.1.3.2 TRAINING

5.3.1.3.2.1 “HAVE YOU RECEIVED ANY TRAINING TO COMPLY WITH THE WELSH LANGUAGE STANDARDS (NO. 7) REGULATIONS 2015 - 2018?”

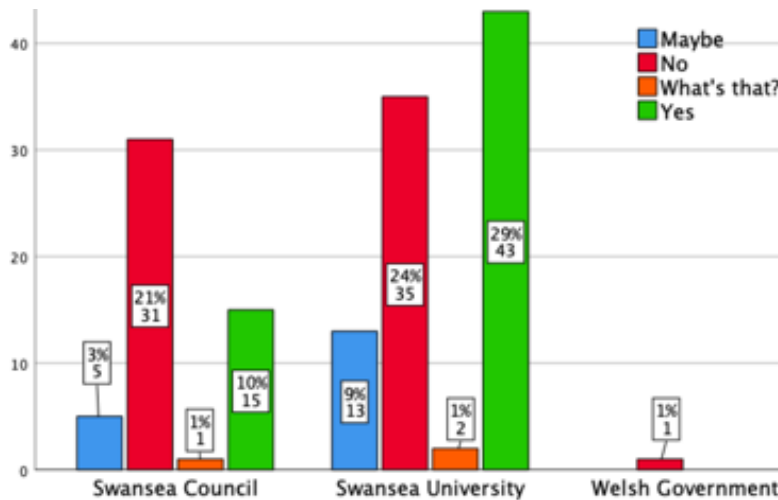
Since implementing the Welsh Language Standards between 2015 and 2018, it has been widely acknowledged that staff have needed to be supplied with information and training to understand, comply with, and meet the Standards, as explained in section 2.6. The Welsh Government’s (2021a) policy and strategy document entitled “*Cymraeg 2050: our plan for 2021 to 2026*” demonstrates a clear vision to increase the use of Welsh to meet the *Cymraeg 2050* target of one million Welsh

speakers. They claim to look to “double the daily use of Welsh and increase the use of Welsh at the heart of their work” but also comment that “language use depends on many complex factors, situations, and contexts” (p. 15). One of the factors mentioned is the importance of training and expanding training to lead a bilingual country to new sectors (p. 22).

Based on the above and an understanding that, for staff to comply with the Standards, they need to be informed, this study looks to ask the respondents directly and simply whether they have received any training. It may be assumed that a legal requirement such as the Standard would be well recognised by staff and fully implemented in the organisations selected for this study.

Participants were asked if they had received training to comply with the Welsh Standards 2015-2018. The results are shown in Figure 5. 42.

Figure 5. 42 Have you received any training to comply with The Welsh Language Standards (No. 7) Regulations 2015 – 2018?



The highest proportion overall selected *no* with 46% (n= 67), 21% (n= 31) from Swansea Council, 24% (n= 35) from Swansea University and 1% (n= 1) from the Welsh Government. There were 39% (n= 58) who selected *yes*, 10% (n= 15) from Swansea Council and 29% (n= 43) from Swansea University. 2% (n= 3) selected *what's that?* 1% n= 1) from Swansea Council and 1% (n= 2) from Swansea

University. 12% (n= 18) claimed they were unsure and selected *maybe*, and 2% (n= 3) selected *what's that?*

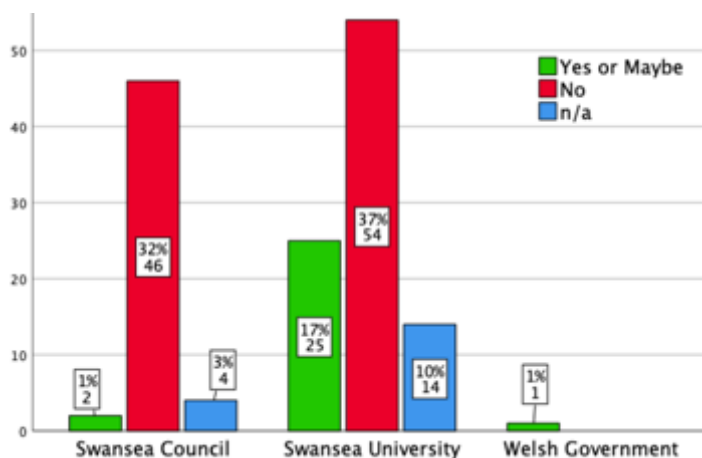
The results from this question will be discussed further in Chapter 6 and mapped alongside other questions that look at sentiment and attitudes towards sending or not translating content if possible.

5.3.1.3.3 SENTIMENT

5.3.1.3.3.1 "I CONSIDER NOT TRANSLATING CONTENT WHERE POSSIBLE"

This question aims to understand whether respondents consider not translating content into Welsh. The respondents were asked to select from a dropdown list of three pre-coded answers, *yes or maybe*, *no* and *n/a*. The option *yes or maybe* was not classed as two different options in this instance because of the survey question asking if they considered not translating, which has a similar meaning in this context to the word *maybe*. The results are shown in Figure 5. 43 below.

Figure 5. 43 If you answered *yes or maybe* to number 24, why did you consider not to get your content translated?



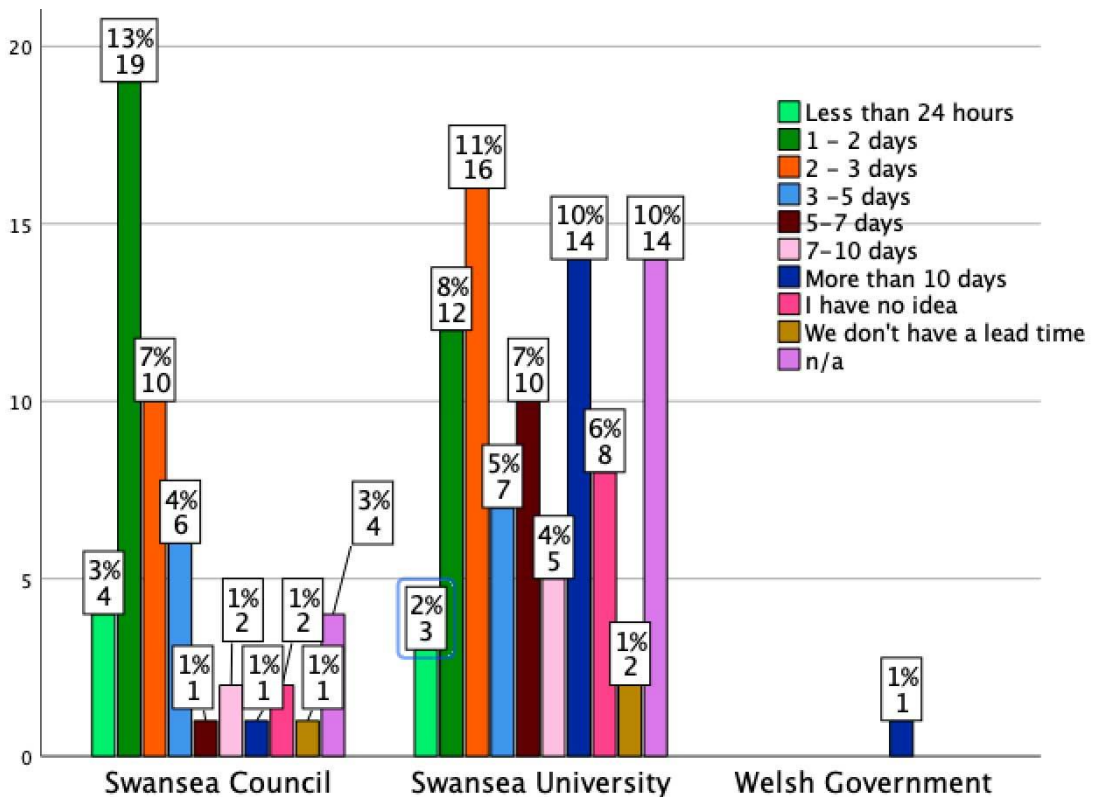
19% (n= 27) selected *yes or maybe*, 1% (n= 1) from Swansea Council, 17% (n= 25) from Swansea University and 1% (n= 1) from the Welsh Government. 69% (n= 100) selected *no*, which was made up of 32% (n= 46) from Swansea Council and 37% (n= 54) from Swansea University. The remaining 13% (n= 18) selected *n/a*, 3% (n= 4) from Swansea Council and 10% (n= 14) from Swansea University.

5.3.1.3.4 DELIVERY

5.3.1.3.4.1 “WHAT IS THE LEAD TIME ON ANY TRANSLATION REQUEST (WORKING DAYS)?”

Under the sub-category Delivery in Workflow, this question was designed to ascertain whether the respondents were aware of any lead times. Even though other questions in this study are similar such as: *How long did it take (working days) for you to receive your last translation request back?* This question will highlight any expectations the staff who request translations may have. Respondents were asked to select from nine pre-coded options, as shown in the legend in Figure 5. 44.

Figure 5. 44 What is the lead time on any translation request (working days)?



The majority of respondents totalling 21% (n= 31), selected 1-2 days, 13% (n= 19) from Swansea Council and 8% (n= 12) from Swansea University, which is an indication that the staff who requested translations do expect fast service. It may also be assumed that the length of the content for internal translation usually has a

small word count.

The second most popular option selected is *2-3 days*, with 18% (n= 26), 7% (n= 10) from Swansea Council and 11% (n= 16) from Swansea University. Notably, there is a change in expectations with the next most popular option whereby 12% (n= 16) selected *more than 10 days*, 10% (n= 14) from Swansea University, 1% (n= 1) from Swansea Council and 1% from the Welsh Government.

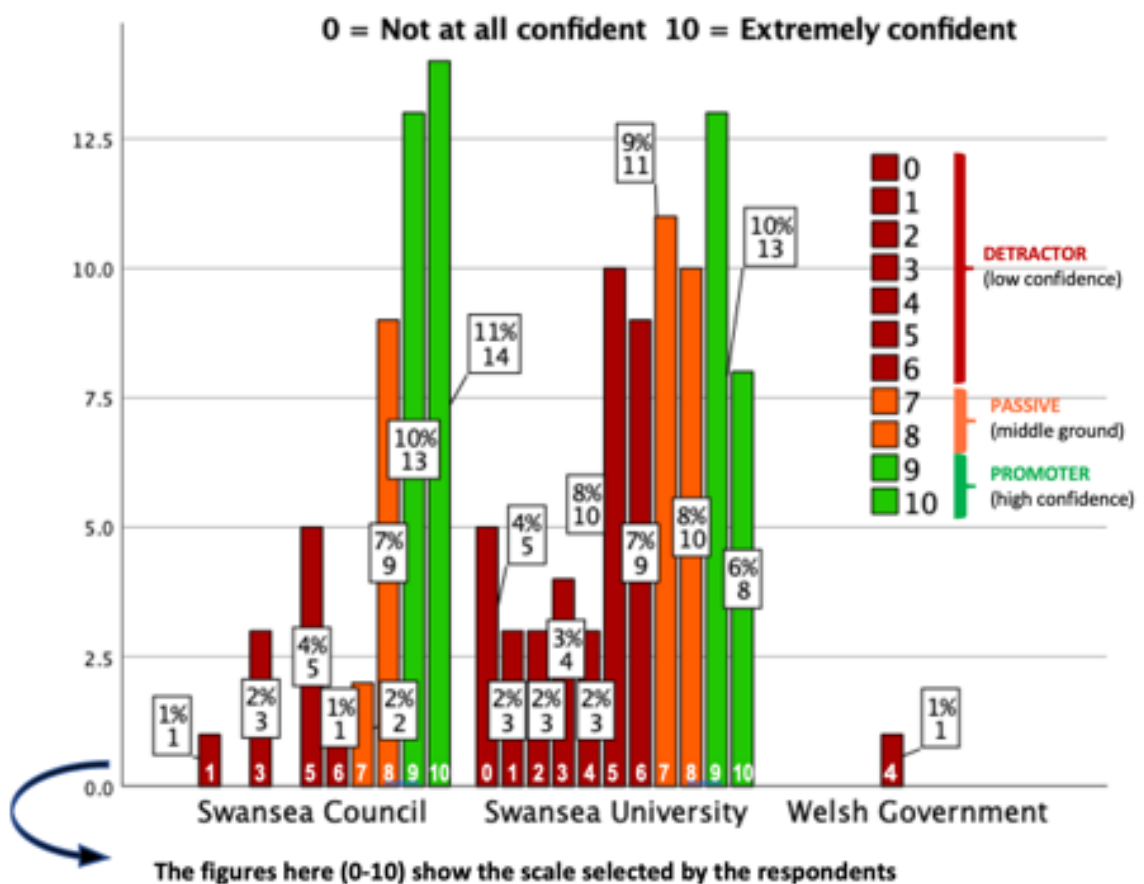
This is then followed by *3-5 days* with 9% (n= 13), 4% (n= 6) from Swansea Council and 5% (n= 7) from Swansea University. 8% (n= 11) selected *5-7 days*, 1% (n= 1) from Swansea Council and 7% (n= 10) from Swansea University. 5% (n= 7) claimed the lead time is *less than 24 hours*, 3% (n= 4) from Swansea Council and 2% (n= 3) from Swansea University and 2% (n= 3), 1% (n= 1) from Swansea Council and 1% (n= 2) from Swansea University stated that they *don't have a lead time at all*. 7% (n= 10), 1% (n= 2) from Swansea Council and 6% (n= 8) from Swansea University stated that they had *no idea*, and 13% (n= 18), 3% (n= 4) from Swansea Council and 10% (n= 14) were *n/a*. The remaining responses comprised 4 qualitative answers, so all were individual responses (1%, n= 1). These responses are shown below:

Swansea Council	<ul style="list-style-type: none">• Dependent on length - short sentences come back quickly, and longer documents can take months!• Depends on the length. COVID [-19] has made time longer.
Swansea University	<ul style="list-style-type: none">• It depends on the length of the translation you require.• Too long and not reliable (when related to HR work).

5.3.1.3.4.2 “HOW LIKELY ARE YOU TO RECEIVE YOUR WELSH TRANSLATION BACK ON TIME?”

Once again, this question addresses the delivery of Welsh translations and whether the respondents believe they will likely receive their Welsh translations back on time. This looks at the respondents’ reliability and perception of the service, whether there is confidence in receiving the translations back when expected or not. Once again, respondents were asked to score their opinions (in this case, their level of confidence), resulting in a Net Promoter Score of 0 (zero) (see section 4.4.3.2 for an explanation of this scoring system). An overview of the results is shown in Figure 5. 45.

Figure 5. 45 How likely are you to receive your Welsh translation back on time by organisation?



Out of the total potential respondents, 100% (n= 146), 88% (n= 128) replied to this question, which consisted of 92% (n= 48) of the respondents from Swansea Council and 85% (n= 79) of the respondents from Swansea University, plus the 1% (n= 1) respondent from the Welsh Government.

The highest combined figure totals 20% (n= 26), 10% (n= 13) from Swansea Council and 10% (n= 13) from Swansea University, who selected option 9, signifying that the majority believe they will receive their translations back on time. This is confirmed further by the second highest total with 17% (n= 22), 11% (n= 14) from Swansea Council and 6% (n= 8) from Swansea University selecting the highest option, 10.

This pattern continues with the respondents selecting the higher figures such as 15% (n= 19) selected option 8, 7% (n= 9) from Swansea Council and 8% (n= 10) from Swansea University, 18% (n= 15) selected option 5, then 4% (n= 5) Swansea Council and 8% (n= 10) from Swansea University. 11% (n= 13) selected option 7, 2% (n= 2) from Swansea Council and 9% (n= 11) from Swansea University and 8% (n= 10) selected option 6, 1% (n= 1) from Swansea Council and 7% (n= 9) from Swansea University. 5% (n= 7) selected option 3, 2% (n= 3) from Swansea Council and 3% (n= 4) from Swansea University, and 3% (n= 4) selected option 4, 2% (n= 3) from Swansea University and 1% (n= 1) from the Welsh Government. 2% (n= 3) respondents from Swansea University selected option 2, 3% (n= 4) selected option 1, 1% (n= 1) from Swansea Council and 2% (n= 3) from Swansea University, and finally, 4% (n= 5) from Swansea University selected 0 (zero). The results indicate that the responses are more favourable for Swansea Council than Swansea University, which will be discussed further in Chapter 6.

5.3.1.4 THE FUTURE OF THE INDUSTRY

The following table represents the future of the industry, as seen by the respondents, and seeks to understand the respondents' sentiments. Displayed in Table 5. 9 are the results from the Staff Quiz/Staff Survey: The Future of the Translation Industry.

Table 5. 9 The future of the translation industry

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO THE FUTURE OF THE TRANSLATION INDUSTRY										
COLOUR CODE +		Technology								
Staff Survey		SC		SU		WG		Total		
Survey questions + numbers		n	%	n	%	n	%	n	%	
Q		Total Number of Respondents =								
		52	36%	93	64%	1	1%	146	100%	
29	Name ONE thing that you would like to change regarding the Translation Workflow in your organisation. For example, 'make it faster' 'make it automatic' 'access the translation from my computer' etc.	<p>The qualitative data from this question is shown after these tables.</p>								
30	Would you be willing to take part in a focus group to give your opinions about technology in the translation industry?	Other	0	0%	2	1%	0	0%	2	1%
		I am interested to know how translation of other languages can also be expedited	0	0%	1	1%	0	0%	1	1%
		Maybe	5	3%	10	7%	0	0%	15	10%
		No	44	30%	66	45%	1	1%	111	76%
		Yes	3	2%	14	10%	0	0%	17	12%
		TOTAL	52	36%	93	64%	1	1%	146	100%
32	Do you have any further comments about Welsh translations in your workplace? Do let me know what you think... any comments are invaluable to my research.	The qualitative data from this question is shown after these tables.								
33	Thank you for completing this survey, your response is greatly appreciated. Please rate how you feel about the translation industry right now :-) 1 star =dislike. 5 stars = love it!	1	0	0%	5	3%	0	0%	5	3%
		2	2	1%	5	3%	1	1%	8	5%
		3	14	10%	31	21%	0	0%	45	31%
		4	19	13%	29	20%	0	0%	48	33%
		5	17	12%	21	14%	0	0%	38	26%
		Missing	0	0%	2	1%	0	0%	2	1%
		TOTAL	52	36%	91	62%	1	1%	146	100%

5.3.1.4.1 TECHNOLOGY

This section looks at the future of technology based on respondents' opinions and whether the respondents would like change to happen, asking for their comments. This category questions the general perception of the Welsh translation workflows in the short term and long term from a user of the translation service perspective. In addition, it looks at the impact of the professional translation workflow on their day-to-day activities. It encourages thoughts and sentiments surrounding the industry and its workflows. As the findings of this study demonstrate (especially in the qualitative comments), many respondents have differing viewpoints and appear to want to express their views on this topic. By giving individuals inside each organisation a voice, this research will be able to get more up-to-date information and explain any points of interest that arise as a consequence of the findings.

5.3.1.4.1.1 "NAME ONE THING THAT YOU WOULD LIKE TO CHANGE REGARDING THE TRANSLATION WORKFLOW IN YOUR ORGANISATION"

Of the 146 respondents, 85% (n= 124) provided suggestions, and 18% (n= 27) were *n/a*. 19% (n= 28) of respondents from Swansea Council provided 32 suggestions, and 45% (n= 66) of respondents from Swansea University provided 92 suggestions. The 1% (n= 1) of Welsh government respondents provided one suggestion. The list of categories is shown below in Table 5. 10, with a short explanation.

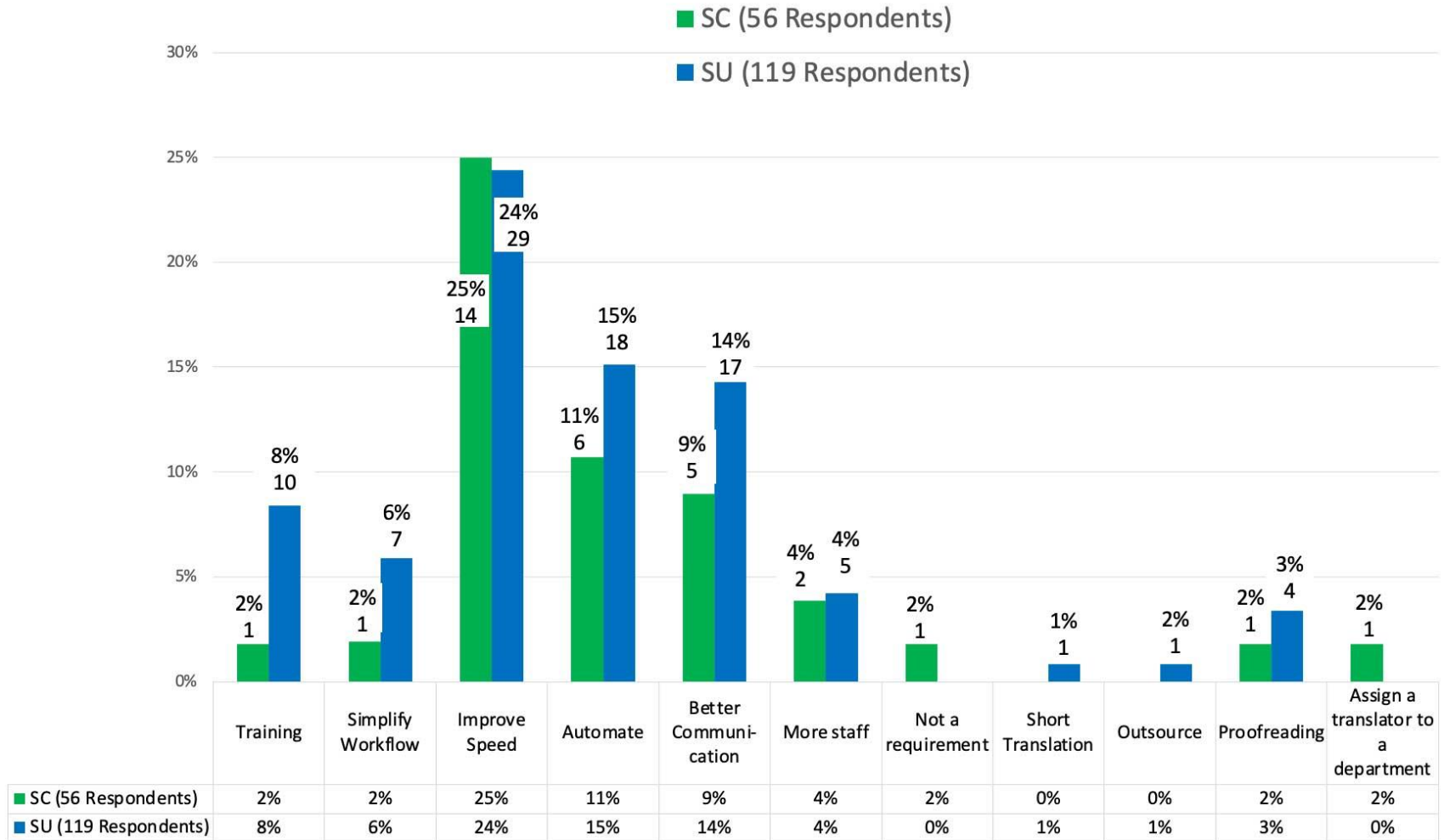
Table 5. 10 Categorised list from Name ONE thing that you would like to change regarding the Translation Workflow in your organisation.

Category	Explanation
Training	More training required
Simplify Workflow	The respondent(s) would like the workflow to be simpler
Improve Speed	Faster Turnaround times requested
Automate	The respondent(s) would like the system to be automated
Better Communication	The respondent(s) felt that there was a need for better communication
More staff	The respondent(s) felt that the translation team needed additional staff
Not a requirement	The translation service was not a requirement for these respondents
Short Translation	These respondents only needed very short translations
Outsource	The respondent outsources to a translation agency
Proofreading	The respondent(s) uses MT, mainly for proofreading purposes
Assign a translator to a department	The respondent(s) would like a translator assigned to their department to improve the service
Improve Translation Memories	This respondent claims that improving TM and domain-specific TMs would improve matters
N/a	Respondents selected n/a

The results were formulated differently because the answers were qualitative rather than quantitative. The totals shown in Figure 5. 45 below show the number of comments made by each organisation (as opposed to one selection or comment per individual), and therefore the most popular suggestions for change are more visible, and the variance between Swansea University and Swansea Council is clearer. The Welsh Government was not shown on the chart as there was only one answer, and the result is explained below.

Each response from each participant was listed, and where more than one suggestion was made for example, *Faster speed* and *automate the process*, two suggestions were allocated to the categories *Improve speed* and *automate*, based on the answers given.

Figure 5. 46 What the respondents would like to change about the workflow (Results by comment not respondent)



The following suggestions for change were received in the following order of popularity and will be discussed further in Chapter 6:

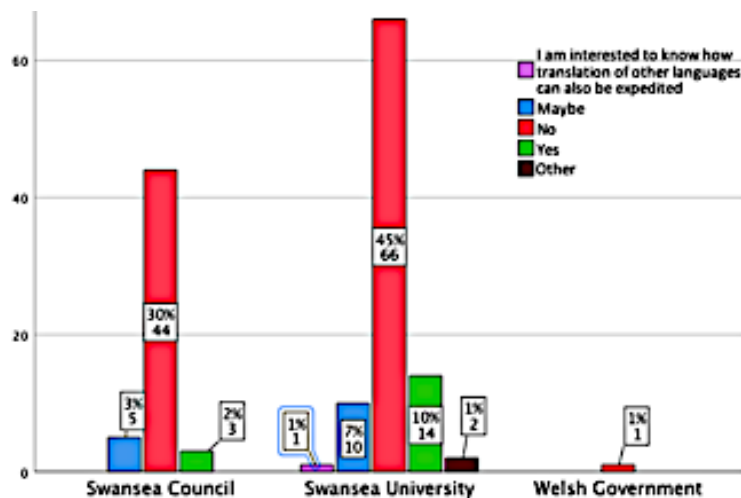
1. Improve speed (for a faster turnaround of workload)
2. Automate (the workflow)
3. Better communication
4. Training (of staff on the technology)
5. Simplify Workflow
6. More staff (to cope with demand)
7. Proofreading
8. Assign a translator to a department (to help with specialist terminology)
9. Short Translation
10. Outsource
11. Not a requirement
12. Improve Translation Memories: This respondent claims that improving TM and domain-specific TMs would improve matters

It is clear from the results that there is a pattern in the data, particularly when looking at the suggestions for speed of translations, automation and communication in both Swansea Council and Swansea University. More in-depth results will need to be discussed further concerning *larger documents*, how staff members see the service as being *overwhelmed* even before they send a document for translation, and one comment stated that *we perceive that an incorrect[ion] machine translation is less offensive than no translation*. Indeed, some staff are happy with the service, but many appear keen to comment and be heard.

5.3.1.4.1.2 “WOULD YOU BE WILLING TO TAKE PART IN A FOCUS GROUP TO GIVE YOUR OPINION ABOUT TECHNOLOGY IN THE TRANSLATION INDUSTRY?”

This question, which asks if the respondents would be willing to participate in a focus group to voice their opinions, received a positive response overall, with 23% (n= 33) respondents indicating an interest in participating in the group. The results are shown in Figure 5. 47 and discussed below.

Figure 5. 47 Would you be willing to take part in a focus group to give your opinion about technology in the translation industry?



75% (n= 111) members of staff selected *No*, 30% (n= 44) from Swansea Council, 45% (n= 66) from Swansea University and 1% (n= 1) from the Welsh Government. 10% (n= 15) selected *maybe*, 3% (n= 5) from Swansea Council and 7% (n= 10) from Swansea University, 12% (n= 17), 2% (n= 3) from Swansea Council and 10% (n= 14) selected *yes*. There was 1% (n= 1) of respondents who wrote, *I am interested to know how the translation of other languages can also be expedited*, and 1% (n= 2) chose to select *other*.

5.3.1.4.1.3 “DO YOU HAVE ANY FURTHER COMMENTS ABOUT WELSH TRANSLATIONS IN YOUR WORKPLACE?”

Respondents were asked to comment about how they *feel* about Welsh translations in their workplace, with the freedom to write and indicate their whole sentiment. The goal of this question is to understand how staff perceive the service concerning their work and as the comments are anonymous, it is anticipated that the responses will provide a clear indication of the sentiment in their workplace. Each response was categorised as shown in Table 5. 11, although some answers provided belonged to more than one category. For example, many who claim that they would like the service to be *faster* often mentioned that the delays are more prevalent, mainly when documents are larger, and that their own workflow has faced disruption due to the delays in translation. The same applied to the

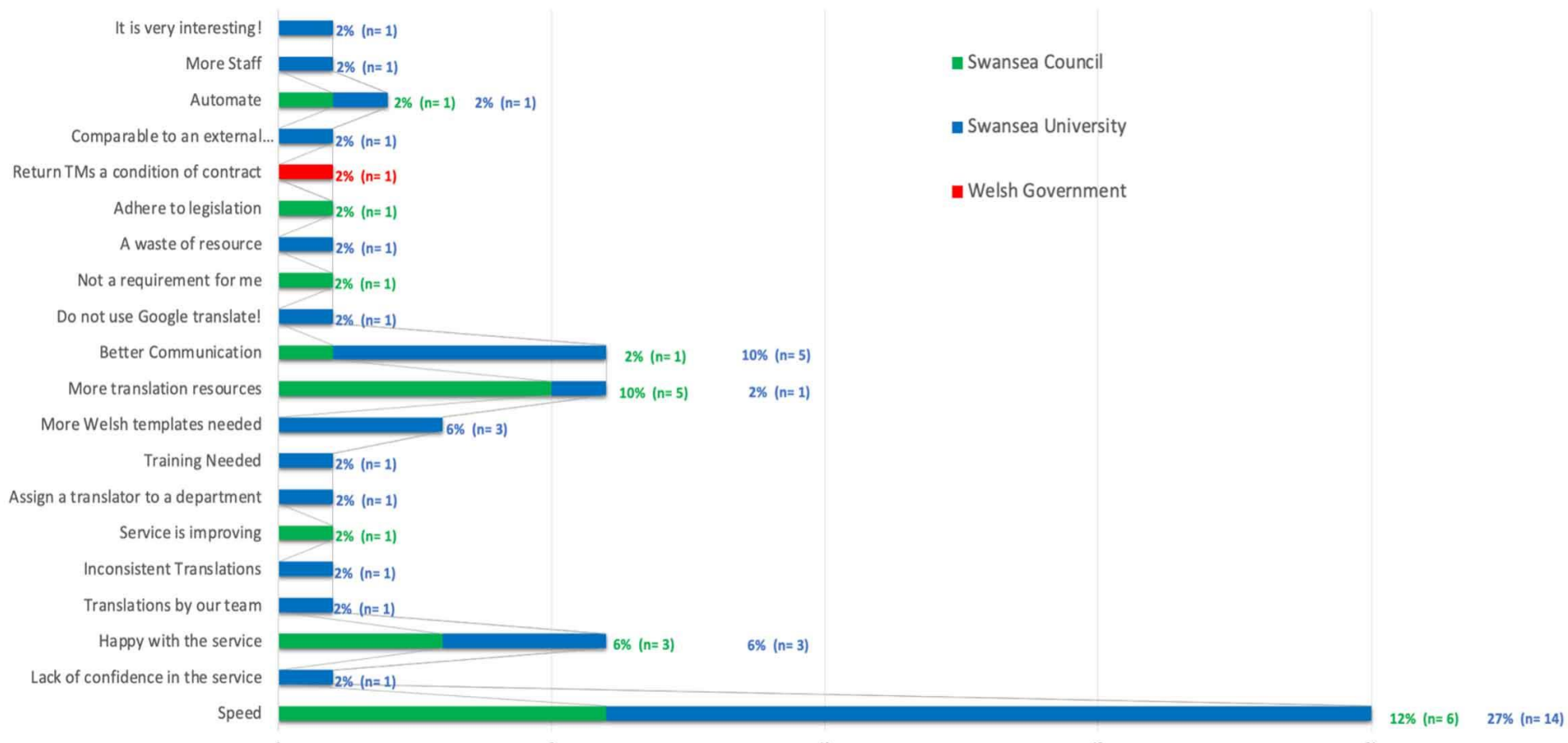
suggestion for more translation resources, as some respondents do not specify which resource but allude to the need for more staff to cope with the increasing demand for translation requests.

Table 5. 11 Categorised comments about Welsh translations in the workplace

Category	Explanation
Speed	Faster Turnaround times requested
Lack of confidence in the service	There is a lack of confidence in the translation service
Happy with the service	The respondents state that they are happy with the Welsh service
Translations by our team	The respondent stated that translations are carried out by their team rather than using the internal translation services
Inconsistent Translations	The respondent stated that numerous translators (as opposed to one) were used to complete translations, resulting in inconsistent translation choices
Service is improving	The respondent signified that the service is improving
Assign a translator to a department	The respondents suggested that they would benefit from having a designated Welsh translator in their department
Training Needed	More training required
More Welsh templates needed	Respondents have requested more 'stock' translations to refer to
More translation resources	Respondents suggest that more translation resources are available, including additional translators
Better Communication	The respondent(s) felt that there was a need for better communication
Do not use Google translate!	The respondent made a request for non-Welsh speakers not to use Google translate, as they had come across incorrect translations and "awfully translated Welsh tweets".
Not a requirement for me	Respondents explain that they have not come across a requirement for Welsh translation services.
A waste of resource	One respondent took advantage of the opportunity to express how they feel that "we are using a lot of resources for a small audience".
Adhere to legislation	The respondent simply stated that the organisation should simply adhere to the legislation
Return TMs as a condition of the contract	The Welsh Government respondent stated, "Public sector organisations contracting out translation need to make returning the translation memories a condition of contract."
Comparable to an external translation service	The respondent stated that the translation service should be comparable to an external service
Automate	The respondent(s) would like the system to be automated
More Staff	The respondent(s) felt that the translation team needed additional staff
it is very interesting!	This respondent simply stated that the service is very interesting.

Figure 5. 48 below charts the responses by category to visually highlight the responses for discussion.

Figure 5. 48 Do you have any further comments about Welsh translations in your workplace.



The most popular response for both Swansea University and Swansea Council concerns the speed of the service, i.e. turnover of 27% (n= 14) from Swansea University and 12% (n= 6) from Swansea Council. 2% (n= 1) of respondents from Swansea Council asked for better communication, as opposed to 10% (n= 5) from Swansea University. 2% (n= 1) of the respondents from Swansea University and 10% (n= 5) from Swansea Council suggested that more translation resources should be available, including additional staff to cope with the workload. 6% (n= 3) from Swansea Council and Swansea University confirmed they were happy with the service.

The rest of the categories had the same result with 2% (n= 1), such as *more staff, automate, comparable to an external translation company, a waste of resources, not a requirement, do not use Google translate, training needed, assign a translator to a department, inconsistent translations, translations by our team and lack of confidence in the service*. The Welsh Government respondent (2%, n= 1) commented, “Public sector organisations contracting out translation need to make returning the translation memories a condition of the contract” (ID 90: Internal Translation Survey). This will be discussed in Chapter 6 and is a pertinent comment as it suggests that when the public sector outsources documents for translation, they do not claim ownership of TM created during translation. The ramifications of this occurring in large quantities across the public sector will also be discussed in Chapter 6.

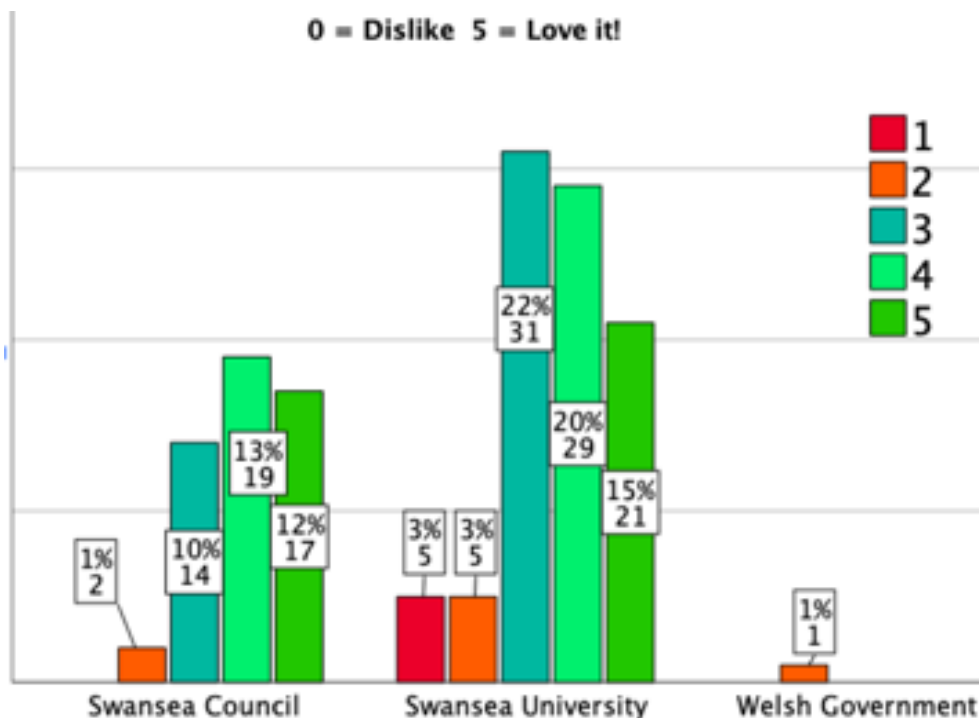
5.3.1.4.2 SENTIMENT

This sub-category asks staff about how they ‘feel’ about Welsh translations. A positive response would provide evidence to support a positive impact and vice versa. It is an important function of this thesis to understand the sentiment of staff and the users of the systems in place to judge the impact of the technological turn on staff in the public sector in Wales.

5.3.1.4.2.1 “THANK YOU FOR COMPLETING THIS SURVEY; YOUR RESPONSE IS GREATLY APPRECIATED; PLEASE RATE HOW YOU FEEL ABOUT WELSH TRANSLATIONS RIGHT NOW! 0 = DISLIKE, 10 = LOVE IT!”

This study wanted to gather staff sentiment regarding their in-house Welsh translations and compare the results between organisations, and the results indicate an overall positive response. 99% (n= 144) of respondents participated in this question. The results are shown in Figure 5. 49 below.

Figure 5. 49 Please rate how you feel about how you feel about Welsh translations right now!



The results show that 27% (n= 38) of respondents selected option 5 (Love it), 12% from Swansea Council (n= 17) and 15% (n= 21) from Swansea University. 33% (n= 48) selected option 4, which was made up of 13% (n= 19) from Swansea Council and 20% (n= 29) from Swansea University, followed by 32% (n= 45), 10% (n= 14) from Swansea Council, and 22% (n= 31) from Swansea University who selected option 3, 5% (n= 8), 1% (n= 2) from Swansea Council, 3% (n= 5) from Swansea University and 1% (n= 1) from the Welsh Government selected option 2, and 3% (n= 5) from Swansea University selected option 0 (zero). What is very interesting here is that the overall scores seem positive once again. However, another result is apparent when the data is analysed by organisation. In this case, respondents from Swansea University seem to opt for more negative options than Swansea Council; the response from the Welsh Government is also pertinent as it demonstrates a negative opinion toward the Welsh language translations.

5.3.2 INTERNAL TRANSLATION SERVICE SURVEY

Responses to the Internal Translation Service Survey questions were received and collated in March 2021. To organise the data, each survey question is divided into one of four categories, colour coded and then sub-categorised as shown below in Table 5. 12. The qualitative and quantitative results are presented at the beginning of each category, following a list of categorised questions.

Table 5. 12 Translation Unit/Services Survey: A breakdown of categories in this survey

NO.	CATEGORY TITLE	SUB-CATEGORY DESCRIPTION
5.3.2.1	Background, Qualifications and Expertise of the Respondents	Demographics
		Linguistic Competence
		Welsh Language Proficiency
		Workplace
5.3.2.2	Technological Competence and Tools in the Workplace Setting	CAT tools
		Machine Translation
		Technological impact on workflow
		Translation Management Tools (also known as Systems)
		Translation Technology Tools
5.3.2.3	Translation Workflow Process, including Functionality, Quality, Training and Sentiment	Workflow
		Training
		Sentiment
		Quality
5.3.2.4	The Future of the Translator and the Industry	Technology
		Sentiment

5.3.2.1 BACKGROUND, QUALIFICATIONS AND EXPERIENCE

This category assesses each respondent's skill set, educational background, and linguistic competence levels, focusing on the Welsh language. This section aims to gain insight and an understanding of each respondent's background, linguistic competence (primarily as a professional translator providing translation services for their organisation), and organisational role. Initially, the Demographics are discussed; followed by Table 5. 13, which looks at Linguistic Competence, Welsh Language Proficiency, and the Workplace.

A total of 11 respondents completed this survey, and all (100%, n= 11) were valid participants, taking an average of twenty-one minutes and fifty-seven⁵⁷ seconds to complete. It was anticipated that the survey would take approximately five minutes to complete, and the respondent was made aware of the anticipated timescale before beginning the survey. An assumption can be made that the respondents took their time to consider their answers to the questions, which is the same outcome with all three surveys. The answers may be assumed to be considered credible and well thought out.

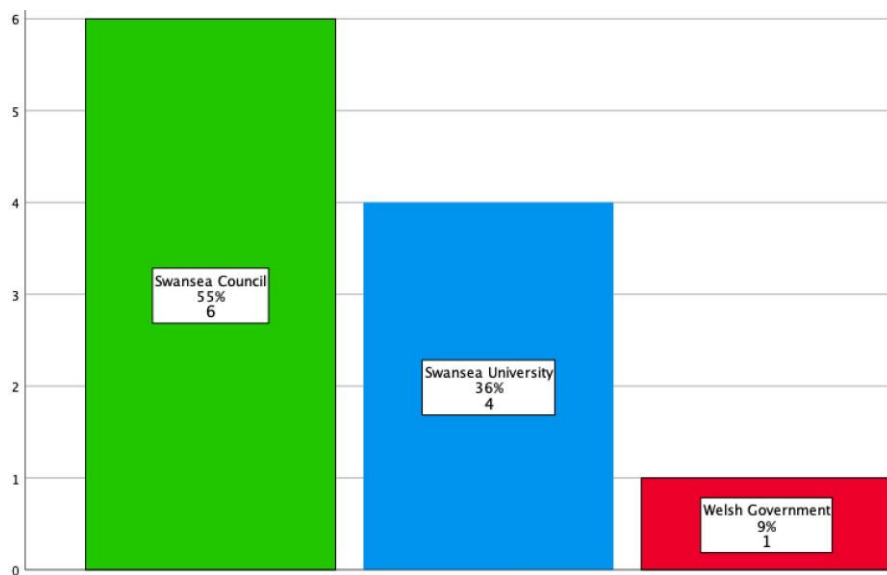
The breakdown between organisations is as follows: Swansea Council⁵⁸: 55% (n= 6), Swansea University: 36% (n= 4) and Welsh Government: 9% (n= 1) and unless otherwise stated, 100% of the respondents participated in each question.

More than half, 55% (n= 6) of the respondents opted to read and complete the survey in Welsh, and the remaining 45% (n= 5) selected English as their language of choice. Below are the combined overall results from the Internal Translation Unit/Services Survey.

5.3.2.1.1 DEMOGRAPHICS

As shown in Figure 5. 50 below, all respondents claimed to be Welsh nationals. The results confirm that 55% (n= 6) were selected to complete the survey in *Welsh*, 45% (n= 5) were from Swansea Council, and the other 9% (n= 1) were from the Welsh Government. Out of the remaining 45% (n= 9), respondents chose *English* as their preferred language choice, 9% (n= 1) were from Swansea Council, and 36% (n= 4) were from Swansea University.

Figure 5. 50 Number of respondents participating by organisation.



82% (n= 9) of the respondents were *female*, based on 55% (n= 6) from Swansea Council and 27% (n= 3) from Swansea University. 18% were *male*, 9% (n= 1) were from Swansea University, 9% (n= 1) were from the Welsh Government, and zero were from Swansea Council. Out of all the respondents, 72% (n= 8) of the respondents stated they were *Translators*, 36% (n= 4) from Swansea Council, 36% (n= 4) from Swansea University, 18% (n= 2) from Swansea Council classed themselves as *Senior Translators* and 9% (n= 1) from the Welsh Government selected *n/a*.

When asked about their academic backgrounds to understand whether the respondents had looked to specialise in their studies, the most common academic background was *Linguistics*, with 64% (n= 7). The rest of the specialisms included

Education, Engineering and Translation Studies, each selected by 9% (n= 1) of the respondent. One respondent stated *ic*, which was not a recognised background, possibly due to a typing error.

Overall, the marginally higher number of respondents (36%, n= 4) were aged between 25–34 years old, followed by the 35-44 age range (27%, n= 3) and then the 45–54 years old (18%, n= 2) followed by the older age groups 55-64 (18%, n= 2).

Overall, the study noted that 55% (n= 6) claimed their highest level of education is a *Bachelor's degree with honours*, with 36% (n= 4) from Swansea Council and 18% (n= 2) from Swansea University, followed by 27% (n= 3) who state they have Master's degrees, 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University. 9% (n= 1) from Swansea University have a Doctoral degree, and 9% (n= 1) from the Welsh Government have a non-honours bachelor's degree.

5.3.2.1.2 LINGUISTIC COMPETENCE

This section evaluates the respondents' linguistic competence, focusing primarily on their native language abilities and confidence in their linguistic ability in the workplace. This section focuses on Welsh language competence levels and linguistic proficiency combined with technological knowledge that may not be fully explored (or utilised to its full potential) inside the organisation. Table 5. 13 shows the overall combined results from the *Linguistic Competence*, *Welsh Language Proficiency*, and *Workplace* sections of the survey, which will follow a discussion on each section.

Table 5. 13 Linguistic competence, Welsh language proficiency and the Workplace

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO BACKGROUND & EXPERIENCE (LINGUISTIC COMPETENCE)										
Linguistic Competence, Welsh Language Proficiency and The Workplace										
Translation Unit Survey		SC		SU		WG		Total		
Survey question numbers		n	%	n	%	n	%	n		
Q		Total Number of Respondents =							6 55% 4 36% 1 9% 11 100%	
5	What are your native languages	English	0	0%	1	9%	0	0	1	9%
		English;Welsh	4	36%	3	27%	0	0	7	64%
		Welsh	2	18%	0	0%	1	9%	3	27%
		Total	6	55%	4	36%	1	9%	11	100%
10	How long have you worked as a professional translator	1 to 2 years	1	9%	0	0%	0	0%	1	9%
		1 year or less	0	0%	1	9%	1	9%	2	18%
		2 to 4 years	3	27%	0	0%	0	0%	3	27%
		More than 4 years	2	18%	3	27%	0	0%	5	45%
		Total	6	55%	4	36%	1	9%	11	100%
13	Do you have qualifications in Translation e.g., BA Translation, MA Translation etc.?	Founding member of the Association of Welsh Translators and Interpreters	1	9%	0	0%	0	0%	1	9%
		MA Professional Translator, BA Welsh	1	9%	0	0%	0	0%	1	9%
		No	3	27%	3	27%	1	9%	7	64%
		Translation Certificate	0	0%	1	9%	0	0%	1	9%
		Translators' Association Wales - English to Welsh Foundation Exam	1	9%	0	0%	0	0%	1	9%
Total	6	55%	4	36%	100%	9%	0	9%		
14	Are you a translation specialist?	No	6	55%	4	36%	1	9%	11	100%
15	You answered yes, what is your specialism?	No respondent answered 'yes'								
6	Working Language Pairs	English<>Welsh	6	55%	4	36%	1	9%	11	100%
		Total	6	55%	4	36%	1	9%	11	100%
12	What Grade is your job classification?	Grade 3	1	9%	0	0%	0	0%	1	9%
		Grade 6	1	9%	0	0%	0	0%	1	9%
		Grade 7	4	36%	3	27%	0	0%	7	64%
		Grade 9	0	0%	1	9%	0	0%	1	9%
		SEO	0	0%	0	0%	1	9%	1	9%
		TOTAL	6	55%	4	36%	1	9%	11	100%
9	How long have you worked at your current workplace/organisation?	1 to 2 years	1	9%	0	0%	1	9%	2	18%
		1 year or less	0	0%	1	9%	0	0%	1	9%
		2 to 4 years	3	27%	2	18%	0	0%	5	45%
		More than 4 years	2	18%	1	9%	0	0%	3	27%
		TOTAL	6	55%	4	36%	1	9%	11	100%
17	How many hours a week do you work on average at your current workplace?	0-16 hours	0	0%	0	0%	1	9%	1	9%
		32-40 hours	5	45%	4	36%	0	0%	9	82%
		40+ hours	1	9%	0	0%	0	0%	1	9%
		TOTAL	6	55%	4	36%	1	9%	11	100%
18	How often do you feel stressed at work in a typical week? 0 = Never 10 = All the time	1	1	9%	1	9%	0	0%	2	18%
		3	0	0%	0	0%	1	9%	1	9%
		5	0	0%	1	9%	0	0%	1	9%
		6	1	9%	2	18%	0	0%	3	27%
		7	1	9%	0	0%	0	0%	1	9%
		8	1	9%	0	0%	0	0%	1	9%
		9	2	18%	0	0%	0	0%	2	18%
		TOTAL	6	55%	4	36%	1	9%	11	100%
19	What do you think could be the main cause of stress in your workplace?	I think it is all just about right!	1	9%	2	18%	1	9%	4	36%
		Too much expected of you	1	9%	0	0%	0	0%	1	9%
		Too much to do	2	18%	1	9%	0	0%	3	27%
		Lack of staff, lack of support, too much work and not enough time, an unfortunate attitude to the Welsh language	1	9%	0	0%	0	0%	1	9%
		Not enough staff, no support from the authority, lack of respect for the Welsh language, lack of resources to train inexperienced staff, too much work - not enough time, unreasonable return dates, lack of comprehensive ICT resources to help with the work translation	1	9%	0	0%	0	0%	1	9%
		Working from home and technology problems	0	0	1	9%	0	0%	1	9%
TOTAL	6	55%	4	36%	1	9%	11	100%		

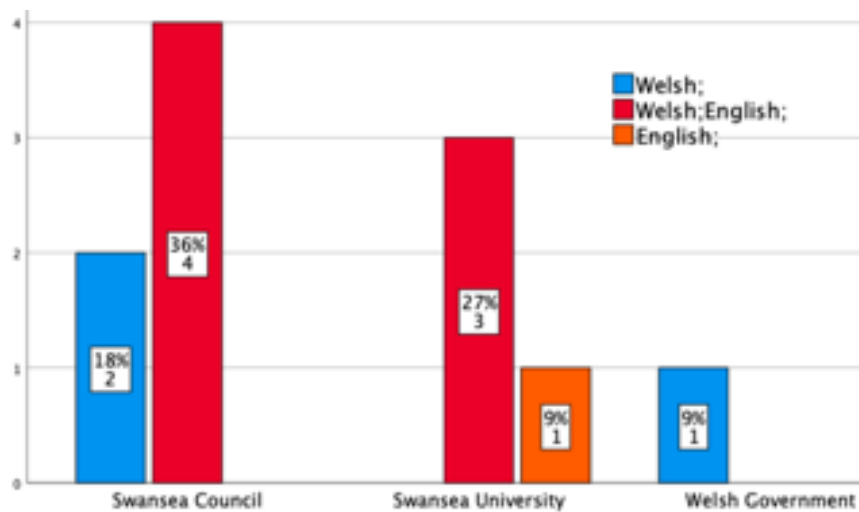
The following section discusses the results from eleven questions in Table 5. 13, five related to the respondent's linguistic ability, one regarding their working language pairs

and the final five aim to understand any workplace stress levels, their position and length of service in their employer’s organisation. Understanding the answers to these questions helps to build a profile of the respondents and an understanding of their working environment.

5.3.2.1.2.1 “WHAT IS (ARE) YOUR NATIVE LANGUAGE(S)?”

To understand the native languages of the respondents, they were asked to select from the pre-coded list such as *Welsh*, *English*, and *other* (any other language could be typed instead). The results are shown in Figure 5. 51.

Figure 5. 51 What is (are) your native language(s)?

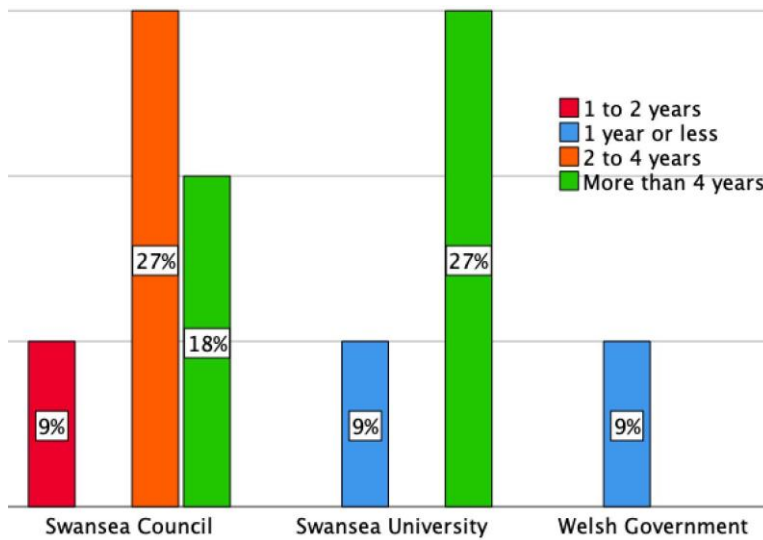


The majority, 63% (n= 7), consider themselves Welsh and English native speakers, which was made up of 36% (n= 4) respondents in Swansea Council and 27% (n= 3) from Swansea University. 27% (n= 3) chose their native language as Welsh only, which was made up of 18% (n= 2) from Swansea Council and 9% (n= 1) from the Welsh Government and Swansea University claimed they are English only, which is notable as all respondents stated in a previous question that their nationalities were Welsh. All participants at Swansea University classed themselves as translators.

5.3.2.1.2.2 “HOW LONG HAVE YOU WORKED AS A PROFESSIONAL TRANSLATOR?
(INCLUDING FREELANCE)”

To fully comprehend the experience of the in-house translators, the respondents were asked to confirm how long they had worked as professional translators (which included working as freelance translators); the results are shown in Figure 5. 52. The respondents were presented with a pre-coded response in a dropdown menu. The options were: *1 year or less, 1 to 2 years, 2 to 4 years, and more than 4 years.*

Figure 5. 52 How long have you worked as a professional translator? (Including freelance)

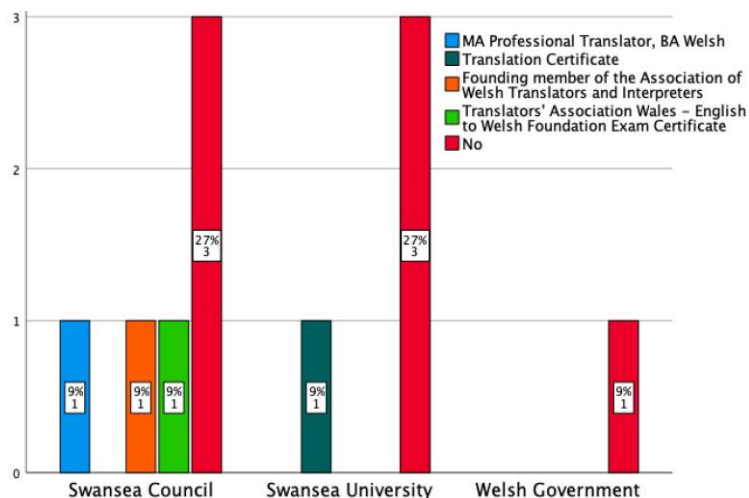


A total of 45% (n= 5) confirmed they had worked as a professional translator for more than 4 years, 18% (n= 2) from Swansea Council and 27% (n= 3) from Swansea University. 27% (n= 3) from Swansea Council selected 2 to 4 years, 18% (n= 2) selected 1 year or less, 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government, and finally, 9% (n= 1) from Swansea Council chose 1 to 2 years.

5.3.2.1.2.3 “DO YOU HAVE QUALIFICATIONS IN TRANSLATION, E.G., BA TRANSLATION, MA TRANSLATION ETC.? IF SO, PLEASE EXPLAIN”

This study aims to gather data on the respondent’s translation-related qualifications. They were asked about their qualifications and then wrote what they were. The results are shown in Figure 5. 53 below.

Figure 5. 53 Do you have qualifications in Translation, e.g., BA Translation, MA Translation etc.?



Overall, the majority said no, 27% (n= 3) from Swansea Council, 27% (n= 3) from Swansea University and 9% (n= 1). This amount totals 55% (n= 7). The only respondent claiming to have translation-related qualifications in Swansea University totals 9% (n= 1); the individual stated they have a translation certificate. 9% (n= 1) of respondents claimed to be a Founding member of the Association of Welsh Translators and Interpreters.⁵⁹ Another 9% (n= 1) stated they had qualified from the Translators’ Association Wales with an English to Welsh Foundation Exam Certificate.

5.3.2.1.2.4 “ARE YOU A TRANSLATION SPECIALIST IN ANY PARTICULAR SUBJECT?”

Respondents were asked to confirm any specialism they may have. They were presented with a dropdown list containing *yes* or *no*. Subsequently, the next question asked the respondents to clarify their specialism, which did not apply as all responses were negative to this question. All respondents (100%, n= 11) selected *no*.

5.3.2.1.2.5 “WHAT IS YOUR SPECIALISM? MEDICAL, LEGAL, TECHNICAL, LITERATURE, PUBLIC SECTOR/GOVERNMENT, OTHER”

Since 100% answered No to having a specialism, this question cannot be answered as it seeks clarification on the respondent’s specialisms.

5.3.2.1.3 WELSH LANGUAGE PROFICIENCY

This section aims to understand the Welsh language skills of each respondent. Given that all the participants are translators (cy<>en), the level of expertise is expected to be high, particularly in Welsh and English.

5.3.2.1.3.1 “WHAT ARE YOUR WORKING LANGUAGE PAIRS?”

All participants were asked to confirm their working language pairs and were presented with a list of language combinations such as English <> Welsh English <> French English <> German English <> Polish English <> Spanish. It was anticipated that all respondents would select English <> Welsh, which was the case for 100% of the respondents.

5.3.2.1.4 WORKPLACE

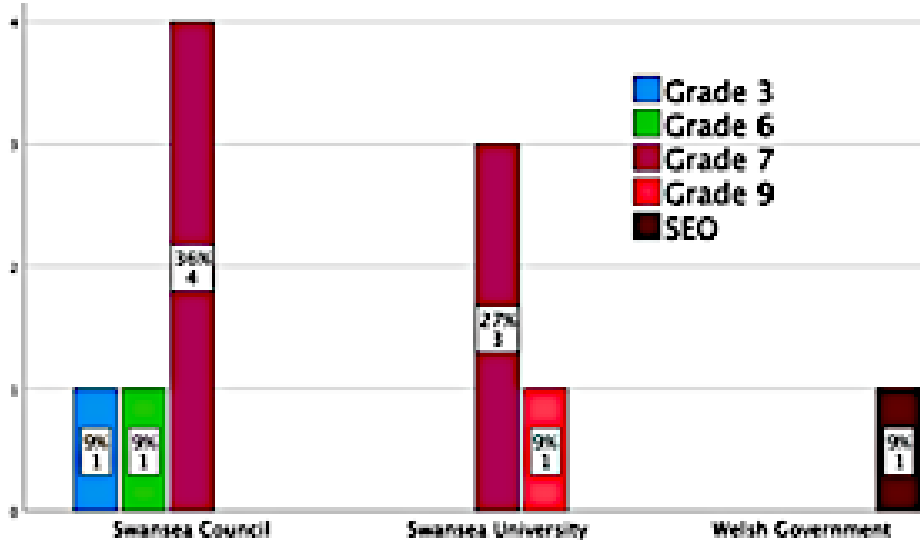
To understand the sentiment within each translation department/service, staff are explicitly asked whether they feel stressed and what may be the cause (if any) of stress, based on their own opinion. The questions in this category look at job classifications/grades, which are not equal across the organisations, even though they all pertain to the Welsh public sector. Also, this study looks at the experience of each respondent in the workplace and their work patterns.

5.3.2.1.4.1 “WHAT GRADE IS YOUR JOB CLASSIFICATION?”

Job classifications in the public sector reflect the hierarchy within an organisation. The higher the level, the more senior the position at work.

This question aims to learn about Swansea University, Swansea Council, and the Welsh Government’s job grading parameters. Typically, this is associated with remuneration, the higher the grade, the larger the salary. The respondent from the Welsh Government did not confirm her status in line with the grading system, as *SEO* was provided instead. Rather than discard this as an outlier, a decision was made to leave the option, including it in the results chart, as shown below in Figure 5. 54.

Figure 5. 54 What grade is your job classification?



As explained in the previous survey, which contained the same question, the grading system is published on each organisation’s website (Swansea University,⁶⁰ Swansea Council,⁶¹ and the Welsh Government⁶²).

Notably, the grading/bands are not comparable. For example, a Grade 7 staff member in Swansea University would receive between £30,497 to £36,382 per annum, whilst a Grade 7 in Swansea Council would receive between £25,481 to £28,672 per annum. The equivalent of Grade 7 in Swansea University is between Grades 8 and 9 in Swansea Council. The Welsh Government banding scheme is

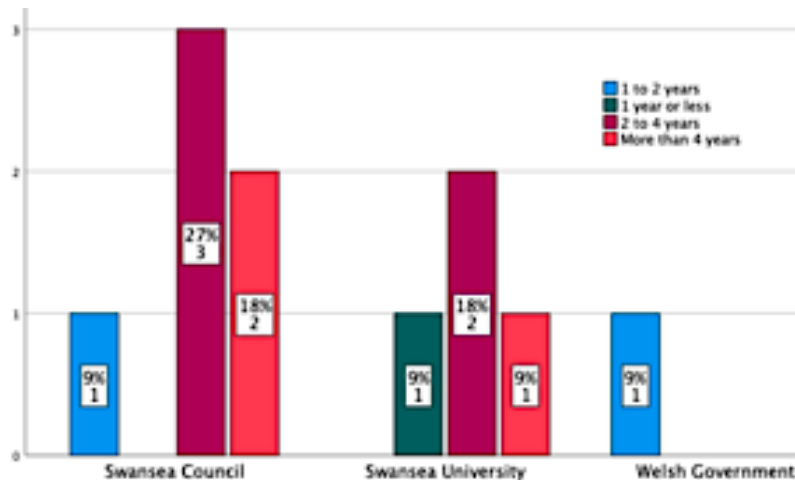
different, as the Grade 7 range in Swansea University would be classed under the Management Band 2 (£30,600 to £37,410).

Considering how much an individual is paid in a calendar year would allow researchers to compute how much a person’s time is worth. If a person takes 10 minutes to complete this survey, there is a cost implication if it is conducted during work hours. This aspect is essential to this study as the cost for higher-grade staff is far greater than for example, a new and inexperienced staff member. Overall, 63% of staff were on Band 7, Swansea Council with 36% (n= 4) Swansea University with 27% (n= 3). 9% (n= 1) of the Swansea University respondents selected Grade 9, and 9% (n= 1) selected Grade 3 and 6. As explained above, 9% (n= 1) of individuals from the Welsh Government selected SEO.

5.3.2.1.4.2 “HOW LONG HAVE YOU BEEN WORKING FOR THE ORGANISATION?”

Each respondent’s years of service may indicate their experience within their organisation. The results of this question, as shown in Figure 5. 55.

Figure 5. 55 How long have you been working for the organisation?

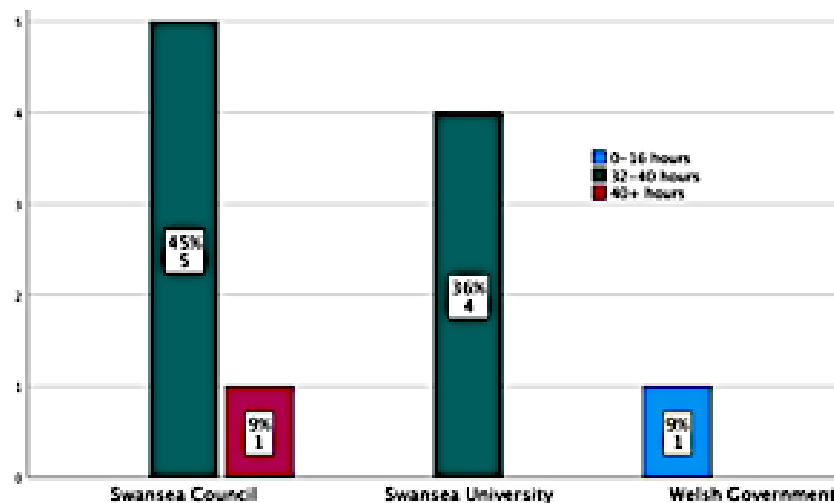


The most significant majority for Swansea Council and Swansea University is 2 to 4 years, with Swansea Council at 27% (n= 3) and Swansea University at 18% (n= 2). Secondly, in Swansea Council, 18% (n= 2) claimed to have worked *more than 4 years* instead of 9% (n= 1) in Swansea University. 9% (n= 1) from both Swansea Council and the Welsh Government selected 1 to 2 years, and only 9% (n= 1) respondents selected 1 year or less, and they were from Swansea University.

5.3.2.1.4.3 “HOW MANY HOURS A WEEK DO YOU WORK ON AVERAGE AT YOUR CURRENT WORKPLACE?”

The number of hours worked each week by individual respondents is used in this study to understand the degree of manpower in each organisation. The results of this question, as shown in Figure 5. 56.

Figure 5. 56 How many hours a week do you work on average at your current workplace?



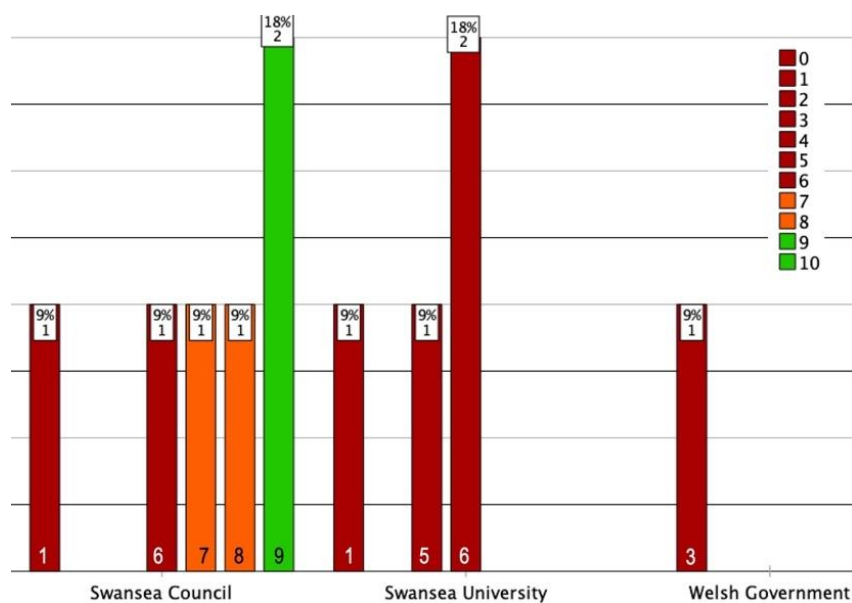
The bar graph shows that an overwhelming majority (81%, n= 9) work 32-40 hours weekly. By organisation, 45% (n= 5) are from Swansea Council, and 36% (n= 4) are from Swansea University. Only one person (9%, n= 1) from Swansea Council claims to work 40+ hours per week, and the 9% (n= 1) individual respondent from the Welsh Government works between 0-16 hours per week.

5.3.2.1.4.4 “HOW OFTEN DO YOU FEEL STRESSED AT WORK IN A TYPICAL WEEK?”

This question addresses the pressure on staff in the workplace and focuses on their perceived stress levels, and the following question addresses any reasons (if any) for their stress levels. It may be considered that a stressed workforce may not necessarily be the most productive or responsive to change; therefore, understanding the sentiment surrounding how staff feel in the workplace will allow this study to gauge a consensus on how the staff ‘feel’ in their working environment.

The respondents were asked to select from a scale between 0 – 10 to describe how often they felt stressed at work in a typical week. It was explained that 0 = *Never* and 10 = *All the time*. The idea is to get an idea of stress levels that the staff believe represent their working world. Initially, the idea was to use the Net Promoter Score scale as used previously (see section 4.4.3.2); however, the software picked up the 0-6 as Detractor answers but calculated the responses in reverse. It suggested that answers 9-10 were promoter answers when they should have indicated Detractor responses. Therefore, it was decided to simply analyse the bar chart, and the results are shown in Figure 5. 57.

Figure 5. 57 How often do you feel stressed at work in a typical week?

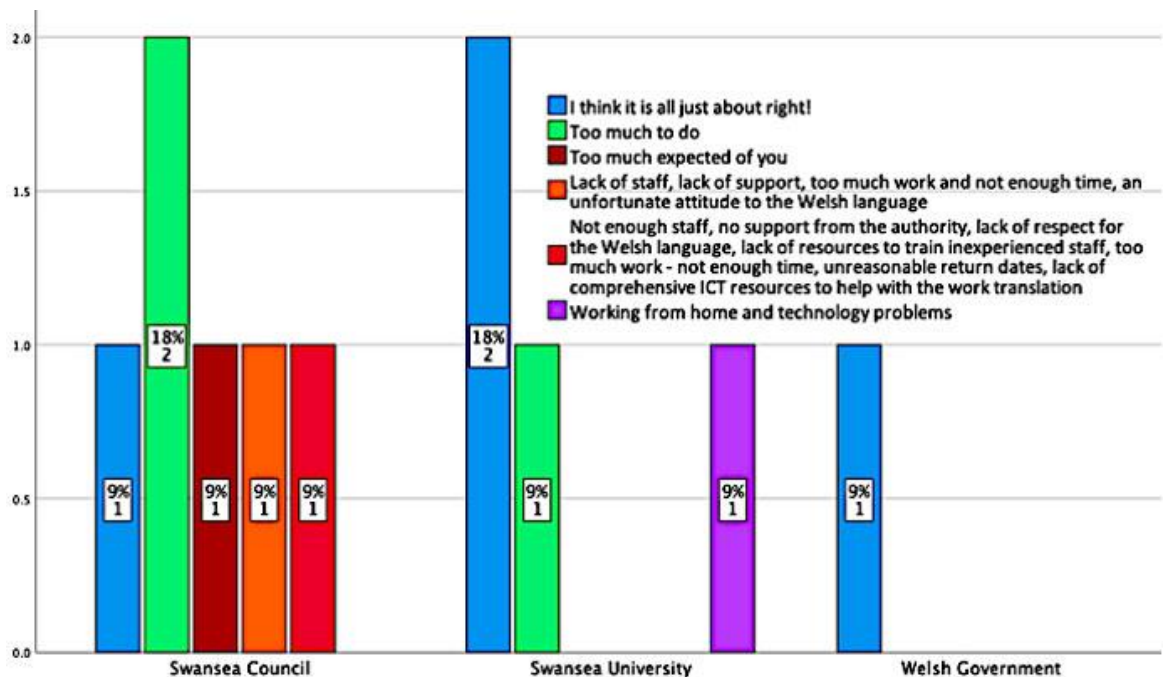


Overall, when looking at the figures, the most common choice with 27% (n= 3) selected *option 6*, 9% (n= 1) from Swansea Council and 18% (n= 2) from Swansea Council. The following most popular answer was *option 1*, with 18% (n= 2), 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea University. 18% (n= 2) from Swansea Council selected *option 9*, and the rest of the respondents were all unique in their choices; 9% (n= 1) from the Welsh Government selected *option 3*, 9% (n= 1) from Swansea University and 9% (n= 1) from Swansea Council selected *option 9*.

5.3.2.1.4.5 “WHAT DO YOU THINK COULD BE THE MAIN CAUSE OF STRESS IN YOUR WORKPLACE?”

Following the previous question, “How often do you feel stressed at work”, there was clear evidence that some felt stressed at work. This question asks those who felt any stress level to explain what they believe could be the root cause. All respondents were provided with a pre-coded list of potential answers and could select multiple responses if they wanted to. The answers were both negative and positive on purpose, so the respondent could portray how they felt. If they wanted to provide a written response, they could do this by selecting *other*. The results are shown in Figure 5. 58.

Figure 5. 58 What do you think could be the main cause of stress in your workplace?



Overall, 36% (n= 4) stated that they think it is all *just about right*, with 18% (n= 2) from Swansea Council and 18% (n= 2) from Swansea University. However, 27% (n= 3) stated the contrary, that there was *too much to do* (Swansea Council 18% (n= 2) and Swansea University 9% n= 1) and 9% (n= 1) from Swansea Council stated that *too much was expected of you*. The remainder of the results came from Swansea Council and comprised 9% (n= 1) of individual answers, but it was clear that the respondents wanted to express their opinion. 9% (n= 1) stated they had issues

working from home and technology. The final two respondents said: "lack of staff, lack of support, too much work and not enough time, an unfortunate attitude to the Welsh language" and "not enough staff, no support from the authority, lack of respect for the Welsh language, lack of resources to train inexperienced staff, too much work - not enough time, unreasonable return dates, lack of comprehensive ICT resources to help with the work translation" (ID:11 from Swansea Council).

5.3.2.2 TECHNOLOGICAL COMPETENCE AND TOOLS IN THE WORKPLACE SETTING

Questions from this survey have been divided into one of five categories and subcategories. As this survey is directed toward translation technology staff, nineteen questions apply to this category covering all subcategories. For clarity, all category options are shown in Table 5. 14 below, showing the various shades in each subcategory which highlight the different topics being analysed within this category, for example (and in this case): under Technological Competence and Tools in the Workplace Setting, there are:

A: CAT Tools, B: Machine Translation, C: Technological Impact on workflows and D: Training and E: Translation Management Tools (also known as Systems).

5.3.2.2.1 CAT TOOLS

This sub-heading looks specifically at the sentiment surrounding the usage of specific CAT tools in organisations. The results encompass a variety of topics related to technology in the workplace, which is a significant focus of this research. Understanding the respondents' ideas, preferences, habits at work would provide essential information, and evidence to develop any conclusions or hypotheses. Table 5. 14 shows the overall combined results from the translation service survey on technological competence and tools in a workplace setting:

Table 5. 14 Results from the Translation Unit/Services Survey: Technological Competence and Tools in a Workplace Setting (1 of 2 pages)

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO TECHNOLOGICAL COMPETENCE AND TOOLS IN A WORKPLACE SETTING																																																			
CAT tools, Machine Translation, Technological Impact on workflow, Training, Translation Management and Technology Tools																																																			
Translation Unit Survey					SC		SU		WG		Total																																								
Survey questions + numbers					n	%	n	%	n	%	n	%																																							
Q					Total Number of Respondents =							6	0	4	1	1	0	11	100%																																
21	How do you feel about CAT Tools such as SDL Trados, Systran, Memsource etc. when completing your translations?	Don't like much	0	0%	0	0%	1	9%	1	9%	1	9%																																							
		I like it a lot	2	18%	1	9%	0	0%	3	27%																																									
		It's a complete lifesaver	2	18%	3	27%	0	0%	5	45%																																									
		It's okay	1	9%	0	0%	0	0%	1	9%																																									
		n/a	1	9%	0	0%	0	0%	1	9%																																									
		TOTAL	6	55%	4	36%	1	9%	11	100%																																									
21	How do you feel about Machine Translation such as Google Translate, Microsoft Translator etc. when completing your translations?	Don't like at all	0	0%	2	18%	0	0%	2	18%																																									
		Don't like much	1	9%	1	9%	0	0%	2	18%																																									
		I like it	2	18%	0	0%	1	9%	3	27%																																									
		It's okay	3	27%	0	0%	0	0%	3	27%																																									
		n/a	0	0%	1	9%	0	0%	1	9%																																									
		TOTAL	6	55%	4	36%	1	9%	11	100%																																									
25	Have you ever used Machine Translation to translate content and then post edit the text?	No	0	0%	3	27%	0	0%	3	27%																																									
		Yes	6	55%	1	9%	1	9%	8	73%																																									
TOTAL		6	55%	4	36%	1	9%	11	100%																																										
26	How often do you USE the following Machine Translation tools before post-editing ? Google Translate, Microsoft Translator, Wordbee, Yandex, Amazon Translate, Bing Translator																																																		
		<table border="1"> <thead> <tr> <th></th> <th>Weekly</th> <th>Annually</th> <th>Never</th> </tr> </thead> <tbody> <tr> <td>Google</td> <td>12.50%</td> <td>25%</td> <td>62.5%</td> </tr> <tr> <td>Microsoft Translator</td> <td>75%</td> <td></td> <td>25%</td> </tr> <tr> <td>Yandex</td> <td></td> <td></td> <td>100%</td> </tr> <tr> <td>Amazon Translate</td> <td></td> <td></td> <td>100%</td> </tr> <tr> <td>Bing</td> <td></td> <td></td> <td>100%</td> </tr> </tbody> </table>											Weekly	Annually	Never	Google	12.50%	25%	62.5%	Microsoft Translator	75%		25%	Yandex			100%	Amazon Translate			100%	Bing			100%																
			Weekly	Annually	Never																																														
		Google	12.50%	25%	62.5%																																														
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		Yandex			100%																																														
Amazon Translate			100%																																																
Bing			100%																																																
<p>Which Machine Translation tool do you trust more? Amazon Translate, Bing Translator, Google Translate, Microsoft Translator, Yandex, Wordbee</p>																																																			
<table border="1"> <thead> <tr> <th>Rank</th> <th>Options</th> <th>1st choice</th> <th>2nd choice</th> <th>3rd choice</th> <th>4th choice</th> <th>5th choice</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Google Translate</td> <td>50%</td> <td>37.5%</td> <td>12.5%</td> <td>12.5%</td> <td>12.5%</td> </tr> <tr> <td>2</td> <td>Microsoft Translator</td> <td>50%</td> <td>25%</td> <td>12.5%</td> <td>12.5%</td> <td>12.5%</td> </tr> <tr> <td>3</td> <td>Amazon Translate</td> <td></td> <td>25%</td> <td>37.5%</td> <td>12.5%</td> <td>12.5%</td> </tr> <tr> <td>4</td> <td>Bing Translator</td> <td></td> <td>25%</td> <td>75%</td> <td>25%</td> <td>12.5%</td> </tr> <tr> <td>5</td> <td>Yandex</td> <td></td> <td></td> <td></td> <td></td> <td>88%</td> </tr> </tbody> </table>										Rank	Options	1st choice	2nd choice	3rd choice	4th choice	5th choice	1	Google Translate	50%	37.5%	12.5%	12.5%	12.5%	2	Microsoft Translator	50%	25%	12.5%	12.5%	12.5%	3	Amazon Translate		25%	37.5%	12.5%	12.5%	4	Bing Translator		25%	75%	25%	12.5%	5	Yandex					88%
Rank	Options	1st choice	2nd choice	3rd choice	4th choice	5th choice																																													
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2	Microsoft Translator	50%	25%	12.5%	12.5%	12.5%																																													
3	Amazon Translate		25%	37.5%	12.5%	12.5%																																													
4	Bing Translator		25%	75%	25%	12.5%																																													
5	Yandex					88%																																													
<p>Do you think translation technology makes translating more difficult or easier? 0 = Difficult 10 = Easier</p>																																																			
29		3	1	9%	0	0%	0	0%	1	9%																																									
		5	1	9%	0	0%	0	0%	1	9%																																									
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		10	1	9%	0	0%	1	9%	2	18%																																									
TOTAL		6	55%	4	36%	1	9%	11	100%																																										
35	Do you have any comments about the use of technology in the translation industry? Do comment freely, your response is anonymous.	The qualitative data from this question is shown after these tables.																																																	
30	How much do you think use of translation technology has impacted the translation process in your organisation?	4	1	9%	0	0%	0	0%	1	9%																																									
		5	1	9%	0	0%	0	0%	1	9%																																									
		6	1	9%	0	0%	0	0%	1	9%																																									
		7	0	0%	1	9%	0	0%	1	9%																																									
		8	1	9%	1	9%	1	9%	3	27%																																									
		9	1	9%	2	18%	0	0%	3	27%																																									
10	1	9%	0	0%	0	0%	1	9%																																											
TOTAL		6	55%	4	36%	1	9%	11	100%																																										
31	How much do you think use of translation technology speeds up the translation process ?	3	1	9%	0	0%	0	0%	1	9%																																									
		6	1	9%	1	9%	0	0%	2	18%																																									
		7	2	18%	0	0%	1	9%	3	27%																																									
		8	1	9%	1	9%	0	0%	2	18%																																									
		9	0	0%	1	9%	0	0%	1	9%																																									
		10	1	9%	1	9%	0	0%	2	18%																																									
TOTAL		6	55%	4	36%	1	9%	11	100%																																										
38	How much do you think using translation technology improves the quality of your translations?	0	1	9%	0	0%	0	0%	1	9%																																									
		2	1	9%	0	0%	1	9%	2	18%																																									
		3	1	9%	0	0%	0	0%	1	9%																																									
		5	1	9%	2	18%	0	0%	3	27%																																									
		7	2	18%	0	0%	0	0%	2	18%																																									
		8	0	0%	1	9%	0	0%	1	9%																																									
9	0	0%	1	9%	0	0%	1	9%																																											
TOTAL		6	55%	4	36%	1	9%	11	100%																																										
41	Do you ever translate without using technology (such as CAT Tools or Translation Management Tools)?	Never	1	9%	0	0%	0	0%	1	9%																																									
		Often	2	18%	0	0%	0	0%	2	18%																																									
		Rarely	1	9%	2	18%	0	0%	3	27%																																									
		Sometimes	2	18%	2	18%	1	9%	5	45%																																									
		TOTAL	6	55%	4	36%	1	9%	11	100%																																									
		A linguist in the department		2	18%	0	0%	0	0%	2	18%																																								

Table 5. 14 ctd. (2 of 2 pages)

42	Who oversees the technology in your department?	A linguist in the department	2	18%	0	0%	0	0%	2	18%																																																																																																																																				
		Amrywiaeth (A variety)	0	0%	0	0%	1	9%	1	9%																																																																																																																																				
		Cyfeithydd sy'n deall y dechnoleg! (A translator who understands the technology)	1	9%	0	0%	0	0%	1	9%																																																																																																																																				
		Don't know	0	0%	1	9%	0	0%	1	9%																																																																																																																																				
		IT department	0	0%	1	9%	0	0%	1	9%																																																																																																																																				
		Technician (IT professional) with no linguistic skills	3	27%	2	18%	0	0%	5	45%																																																																																																																																				
		TOTAL	6	55%	4	36%	1	9%	11	100%																																																																																																																																				
21	How do you feel about Translation Management Tools such as Wordbee, Smartcat, Smartling etc. when completing your translations?	It's okay	1	9%	0	0%	0	0%	1	9%																																																																																																																																				
		n/a	5	45%	4	36%	1	9%	10	91%																																																																																																																																				
		TOTAL	6	55%	4	36%	1	9%	11	100%																																																																																																																																				
20	What are your thoughts about using translation technology? 1 = it's awful 10 = It's fantastic	2	0	0%	1	9%	1	9%	1	9%																																																																																																																																				
		6	2	18%	0	0%	0	0%	2	18%																																																																																																																																				
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		9	0	0%	1	9%	0	0%	1	9%																																																																																																																																				
		TOTAL	6	55%	1	9%	1	9%	11	100%																																																																																																																																				
22	Which translation tools to you use in the workplace today?	Déjà Vu;	1	9%	4	1%	0	0%	5	45%																																																																																																																																				
		Déjà Vu; Microsoft Translator	5	45%	0	0%	1	9%	6	55%																																																																																																																																				
		TOTAL	6	55%	4	36%	1	9%	11	100%																																																																																																																																				
23	Do you have experience working with these translation tools?																																																																																																																																													
<table border="1"> <thead> <tr> <th>Rank</th> <th>Options</th> <th>1st choice</th> <th>2nd choice</th> <th>3rd choice</th> <th>4th choice</th> <th>5th choice</th> <th>6th choice</th> <th>7th choice</th> <th>8th choice</th> <th>9th choice</th> <th>10th choice</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Déjà Vu</td> <td>100%</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Google Translate</td> <td></td> <td>36.4%</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>MemoQ</td> <td></td> <td></td> <td>45.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Microsoft Translator</td> <td></td> <td></td> <td></td> <td>9.1%</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>Memsource</td> <td></td> <td></td> <td></td> <td></td> <td>45.5%</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>OmegaT</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>9.1%</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>SDL Passolo</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>9.1%</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>SDL Trados Studio</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>72.7%</td> <td></td> <td></td> </tr> <tr> <td>9</td> <td>Systran</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>90.90%</td> <td></td> </tr> <tr> <td>10</td> <td>Wordbee</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>9.1%</td> </tr> </tbody> </table>											Rank	Options	1st choice	2nd choice	3rd choice	4th choice	5th choice	6th choice	7th choice	8th choice	9th choice	10th choice	1	Déjà Vu	100%										2	Google Translate		36.4%									3	MemoQ			45.5								4	Microsoft Translator				9.1%							5	Memsource					45.5%						6	OmegaT						9.1%					7	SDL Passolo							9.1%				8	SDL Trados Studio								72.7%			9	Systran									90.90%		10	Wordbee										9.1%
Rank	Options	1st choice	2nd choice	3rd choice	4th choice	5th choice	6th choice	7th choice	8th choice	9th choice	10th choice																																																																																																																																			
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24	Why do you like your preferred tool?	The qualitative data from this question is shown after these tables																																																																																																																																												
	Would you TRUST the following technology when translating?	<table border="1"> <thead> <tr> <th>Tool</th> <th>Definitely Not</th> <th>Probably Not</th> <th>Possibly</th> <th>Probably</th> <th>Definitely</th> <th>Never heard of it</th> </tr> </thead> <tbody> <tr> <td>Déjà Vu</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>87.5%</td> <td>12.5%</td> </tr> <tr> <td>Google Translate</td> <td>12.5%</td> <td>37.5%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>47.5%</td> </tr> <tr> <td>MemoQ</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> <tr> <td>Memsource</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> <tr> <td>Microsoft Translator</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> <tr> <td>OmegaT</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> <tr> <td>SDL Passolo</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> <tr> <td>SDL Trados Studio</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> <tr> <td>Systran</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> <tr> <td>Wordbee</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td> <td>0%</td> </tr> </tbody> </table>										Tool	Definitely Not	Probably Not	Possibly	Probably	Definitely	Never heard of it	Déjà Vu	0%	0%	0%	0%	87.5%	12.5%	Google Translate	12.5%	37.5%	0%	0%	0%	47.5%	MemoQ	0%	0%	0%	0%	100%	0%	Memsource	0%	0%	0%	0%	100%	0%	Microsoft Translator	0%	0%	0%	0%	100%	0%	OmegaT	0%	0%	0%	0%	100%	0%	SDL Passolo	0%	0%	0%	0%	100%	0%	SDL Trados Studio	0%	0%	0%	0%	100%	0%	Systran	0%	0%	0%	0%	100%	0%	Wordbee	0%	0%	0%	0%	100%	0%																																																						
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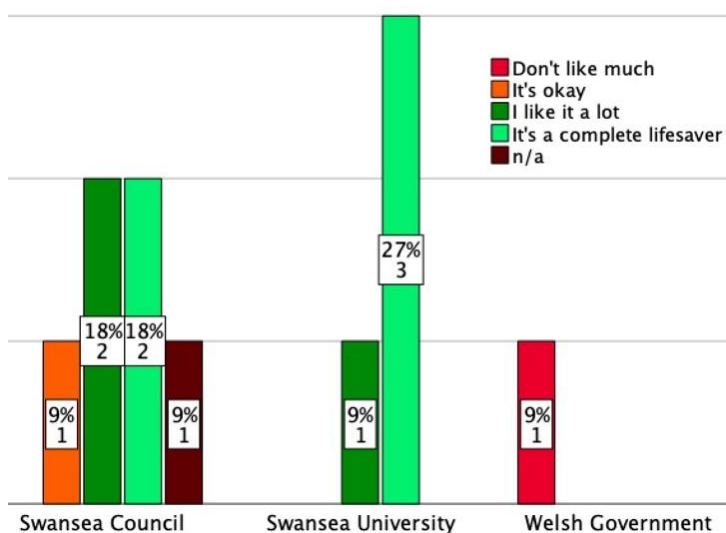
This section is particularly significant since it addresses questions about technology and its use, such as CAT tools, MT, and translation management. Preferences and how different tools have impacted their productivity are also covered, as well as which tools they trust and why. Training is also necessary, and the questions in this segment are designed to provide an understanding of existing processes in each

organisation and, in addition, how their systems are maintained.

5.3.2.2.1.1 “HOW DO YOU FEEL ABOUT CAT TOOLS SUCH AS TRADOS, SYSTRAN, MEMSOURCE ETC., WHEN COMPLETING YOUR TRANSLATIONS?”

This is one of three technology-related questions under this question, and the results are shown in Figure 5. 59.

Figure 5. 59 How do you feel about CAT Tools such as Trados, Systran, Memsource etc., when completing your translations?



The respondents were asked to select an option they agreed with from a Likert scale. They could choose from the options: *Don't like at all*, *Don't like much*, *It's okay*, *I like it*, *I like it a lot*, *It's a complete lifesaver*, and *n/a*.

45% (n= 5) stated that this technology is a *complete lifesaver*. 27% (n= 3) were from Swansea University, and 18% (n= 2) were from Swansea Council. 18% (n= 2) from Swansea Council also confirmed that they *like it a lot*, along with 9% (n= 1) from Swansea University also stated that they *like it a lot*. Only 9% (n= 1) from Swansea Council claimed *it's okay*, and 9% (n= 1) selected *n/a*. Interestingly, 9% (n= 1) of the Welsh Government stated that they *don't like much*.

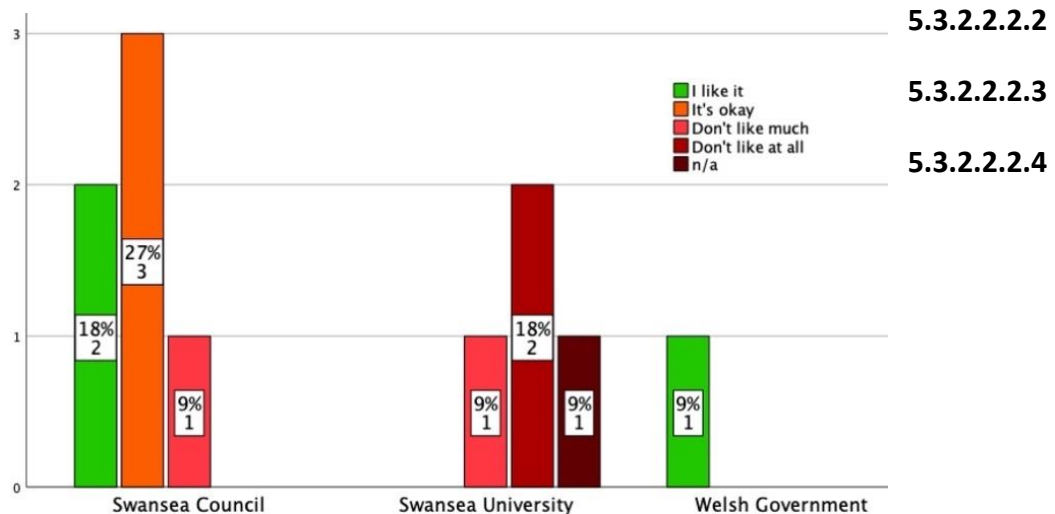
5.3.2.2.2 MACHINE TRANSLATION (MT)

As one of the subcategories, MT plays a vital role in the translation industry. This section looks to understand how MT is used in the three organisations, and whether technological improvements have aided or hindered their internal workflows. As stated in section 4.4.3.2, Bing Translator and Microsoft Translator are depicted as separate entities in this study, despite the fact that they are essentially the same tool and are still referred to as Bing by some translators. Nevertheless, Bing Translator now refers to the Microsoft Translator-powered translation portal. However, despite the potential for confusion, it was decided to include both as MT tools, as excluding one could result in translators who are still familiar with Bing as an MT tool omitting it from their response.

5.3.2.2.2.1 “HOW DO YOU FEEL ABOUT MACHINE TRANSLATION, SUCH AS GOOGLE TRANSLATE, MICROSOFT TRANSLATOR ETC., WHEN COMPLETING YOUR TRANSLATIONS?”

This question aimed to understand whether the respondents had ever used MT and, if so, what their opinion was. The results are shown in Figure 5. 60.

Figure 5. 60 How do you feel about Machine Translation such as Google Translate, Microsoft Translator etc., when completing your translations?



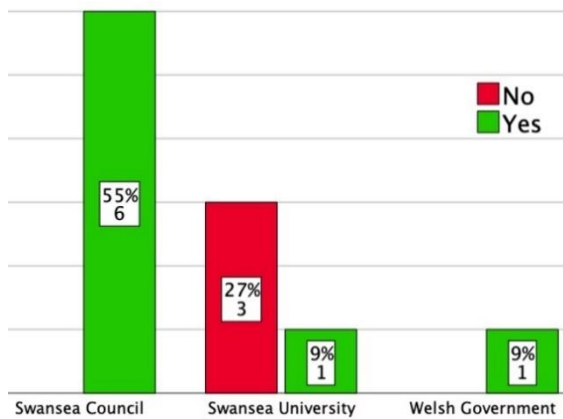
Overall, 27% (n= 3), 18% (n= 2) from Swansea Council, and 9% (n= 1) from the Welsh Government stated *I like it*, and another 27% (n= 3) from Swansea Council selected *It's okay*; therefore 54% (n= 6) gave a positive response. 18% (n= 2) from

Swansea Council selected *Don't like it at all*, another 18% (n= 2), 9% (n= 1) from Swansea Council, and 9% (n= 1) from Swansea University selected *Don't like much*; therefore 36% (n= 4) gave a negative response. 9% (n= 1) selected *n/a*.

5.3.2.2.2.5 “HAVE YOU EVER USED MACHINE TRANSLATION TO TRANSLATE CONTENT AND THEN POST-EDIT THE TEXT?”

To understand the usage of MT in the organisations, the respondents were asked whether they had ever used MT to translate content and then post-edit the text, and the results are shown below in Figure 5. 61. They were provided with two pre-coded options, *yes* or *no*. As expected, 73% (n= 8) said *yes*, but 27% (n= 3) said *no*.

Figure 5. 61 Have you ever used machine translation to translate content and then post-edit the text?



The breakdown between organisations is simply that 55% (n= 6) of respondents from Swansea Council stated *yes*; in Swansea University, 9% (n= 1) stated *yes*, and 27% (n= 3) respondents selected *no*. The 9% (n= 1) respondent from the Welsh Government confirmed with *yes* that they have used MT to translate content and post-edit the text.

5.3.2.2.2.6 “HOW OFTEN DO YOU USE THE FOLLOWING MACHINE TRANSLATION TOOLS BEFORE POST-EDITING? GOOGLE TRANSLATE, MICROSOFT TRANSLATOR, WORDBEE, YANDEX, AMAZON TRANSLATE, BING TRANSLATOR”

This question aims to understand which MT Tools are more commonly used (if any) before post-editing a document. Respondents were presented with a list of translation tools (listed in the question) and asked to select their usage, whether they used the tools: daily, weekly, monthly, 3 monthly, annually or never, from a list on a Likert scale. The results show that the respondents selected ‘Never’ for Yandex, Amazon Translate and Bing Translator, and the only MT used by all three organisations is Google Translate and Microsoft Translator. Google Translate: 45% (n= 5) from Swansea Council stated that they never use Google Translate, and 9% (n= 1) from Swansea Council claimed they use it weekly. From Swansea Council and the Welsh Government, only 9% (n= 1) used it annually.

Microsoft Translator: 45% (n= 5) from Swansea Council claimed they use Microsoft Translator weekly, no one from Swansea University said they use it, and 9% (n= 1) from the Welsh Government stated they use it weekly.

5.3.2.2.2.7 “WHICH MACHINE TRANSLATION TOOL DO YOU TRUST MORE? AMAZON TRANSLATE, BING TRANSLATOR, GOOGLE TRANSLATE, MICROSOFT TRANSLATOR, YANDEX, WORDBEE”

This question aims to understand which MT tools are the most trusted by the respondents. They were asked to rank their preferred tools in order of importance and presented with a list. Looking at the results overall, 50% of all respondents selected Google Translate as their first choice and 50% selected Microsoft Translator as their first choice; these were the anticipated results.

In Swansea Council, the split was the same, with 50% (n= 3) selecting Google Translate and 50% (n= 3) selecting Microsoft Translator as their first choice. In Swansea University, only 9% (n= 1) responded and chose Google as their top choice, followed by Amazon, Bing, Yandex and Microsoft Translator was their last choice. This is particularly noteworthy because the Welsh Government use

Microsoft Translator as their principal MT service. The 9% (n= 1) of individuals from the Welsh Government selected Microsoft Translator as their first choice, followed by Google, Bing, Amazon and Yandex.

Remarkably, overall, the second choice: Amazon Translate, ranks the same as Google Translate at 37.5%, and Microsoft Translator is only 25%, whilst Bing is the third choice at 75% and Amazon at 25%. Yandex is overwhelmingly the last choice, with 88% in fifth place, placing it at the bottom.

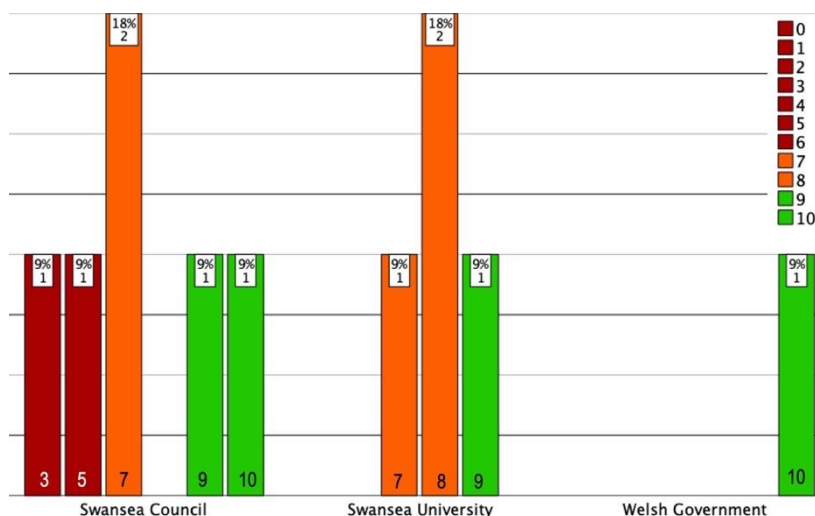
5.3.2.2.3 TECHNOLOGICAL IMPACT ON WORKFLOW

This category looks even deeper into the technological tools and how they are used and maintained in a workplace setting.

5.3.2.2.3.1 “DO YOU THINK TRANSLATION TECHNOLOGY MAKES TRANSLATING MORE DIFFICULT OR EASIER?”

This question examines whether the respondents think translation technology makes translating more difficult or easier. A precise level of confidence in the technology (from its users) is key to understanding the usefulness and efficacy of the technology available to them. For this question, respondents were asked to score their opinions (in this case, the level of difficulty), resulting in a Net Promoter Score (NPS), as explained in Chapter 4 (section 4.4.3.2) of **18**, which is a positive score. The results are shown in Figure 5. 62 below.

Figure 5. 62 Do you think translation technology makes translating more difficult or easier?



The highest score of 27% (n= 3), 18% (n= 2) from Swansea Council, and 9% (n= 1) from Swansea University selected *option 7*, which is classed as a Passive response. This is followed by 18% (n= 2) from Swansea Council, who selected *option 8*. Overall, 18% (n= 2) selected *option 10*, the highest possible score, which consisted of 9% (n= 1) from the Welsh Government and 9% (n= 1) from Swansea Council. Another 18% (n= 2) selected *option 9*, 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea University. Finally, the last respondents (both from Swansea Council) selected detractor (negative) responses; 9% (n= 1) selected *option 5*, and 9% (n= 1) selected *option 3*.

5.3.2.2.3.2 “DO YOU HAVE ANY COMMENTS ABOUT THE USE OF TECHNOLOGY IN THE TRANSLATION INDUSTRY?”

64% (n= 7) of the total (n= 11) respondents participated in this question. A summary of the responses in seven comments about the use of technology in the translation industry was the following (separated by organisation):

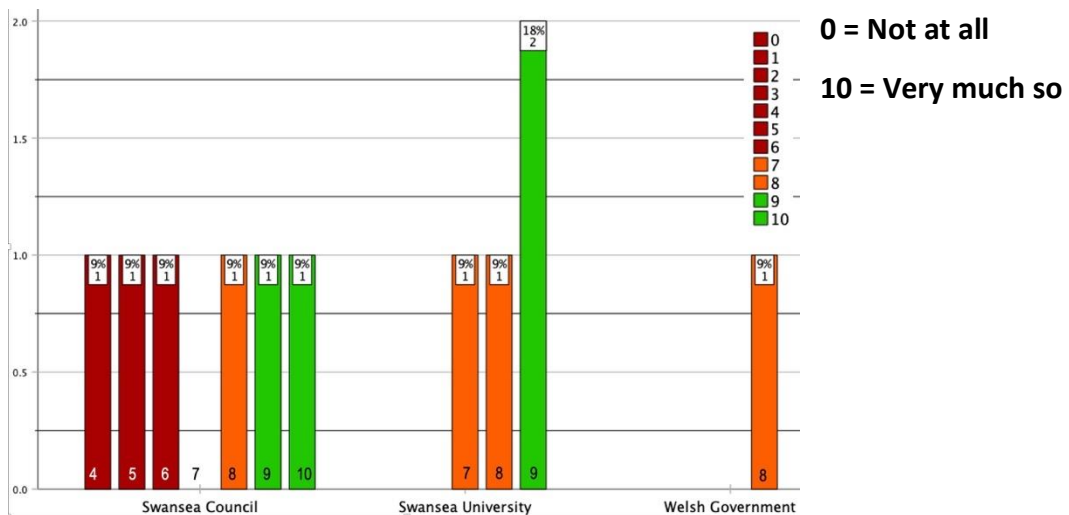
Swansea Council	<ol style="list-style-type: none"> 1. Technology is appreciated, particularly TMs, as they help with turnaround times, as the workload is increasing <i>daily</i> 2. Proofreading needs to be carried out with careful editing by an experienced translator 3. The concern is that technology does not help with in-house styles, the target audience, and any creative language 4. The systems need to be controlled by the translation staff
Swansea University	<ol style="list-style-type: none"> 5. Technology is appreciated, particularly TMs and DVX, although they only use the basic system as there is no time to train 6. The TMs are helpful, but the output from MT can be 'robotic', making some resistant to using MT and PE
Welsh Government	<ol style="list-style-type: none"> 7. Technical problems with the software often make it far more trouble than it's worth

5.3.2.2.3.3 “HOW MUCH DO YOU THINK THE USE OF TRANSLATION TECHNOLOGY HAS IMPACTED THE TRANSLATION PROCESS IN YOUR ORGANISATION?”

This question looks explicitly to understand whether the respondents believe that translation technology has impacted the translation process in their workplace and to what extent – with the answers shown in Figure 5. 63. The significance of this question cannot be underestimated, as the impact of technology is a key factor in answering the research question and sub-questions.

For this question, respondents were asked to score their opinions (in this case, the level of impact), resulting in a Net Promoter Score (NPS), as explained in Chapter 3 (section 4.4.3.2) of **9**, a positive result.

Figure 5. 63 How much do you think the use of translation technology has impacted the translation process in your organisation?

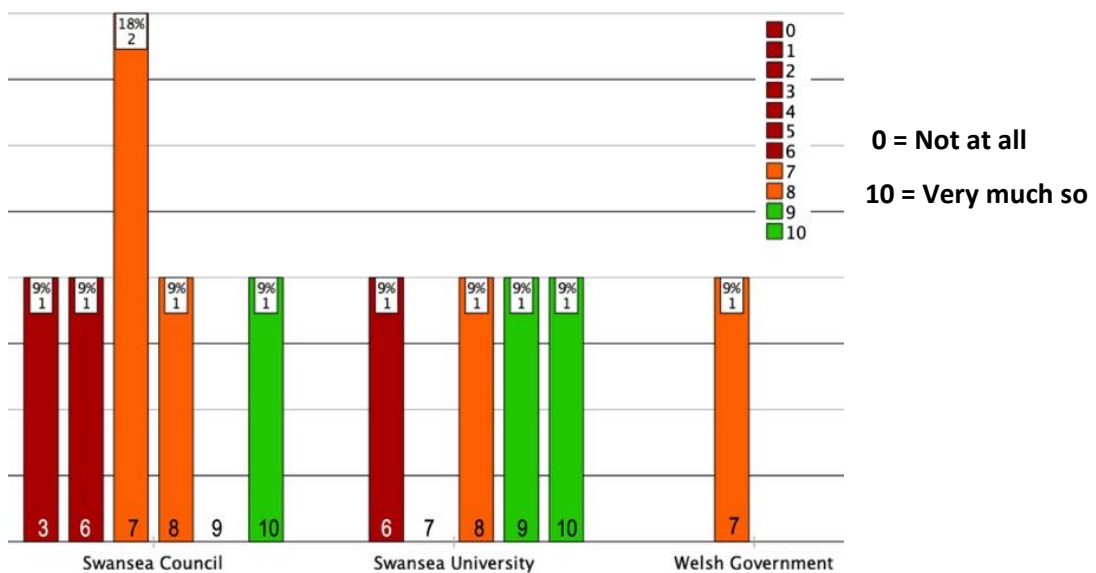


Overall, when looking at the responses, 36% (n= 4) selected Promoter responses, 27% (n= 3) selected *option 9*, which consisted of 18% (n= 2) from Swansea University and 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea Council selected *option 10*. 36% (n= 4) also selected a Passive response, with 27% (n= 3), 9% (n= 1) from Swansea Council, 9% (n= 1) from Swansea University and another 9% (n= 1) from the Welsh Government selected *option 8*. The remaining results were Detractor responses, all from Swansea Council, with 9% (n= 1) selecting *option 4*, 9% (n= 1) selecting *option 5* and 9% (n= 1) selecting *option 6*.

“HOW MUCH DO YOU THINK THE USE OF TRANSLATION TECHNOLOGY SPEEDS UP THE TRANSLATION PROCESS?”

It is common knowledge in the translation industry that speed is of considerable importance in a translation environment, as evidenced by the qualitative remarks during this study. This question aims to understand whether the technology users believe that the translation technology they use speeds up their workflow, and an overview of the results from this question is shown in Figure 5. 64.

Figure 5. 64 How much do you think the use of translation technology speeds up the translation process?

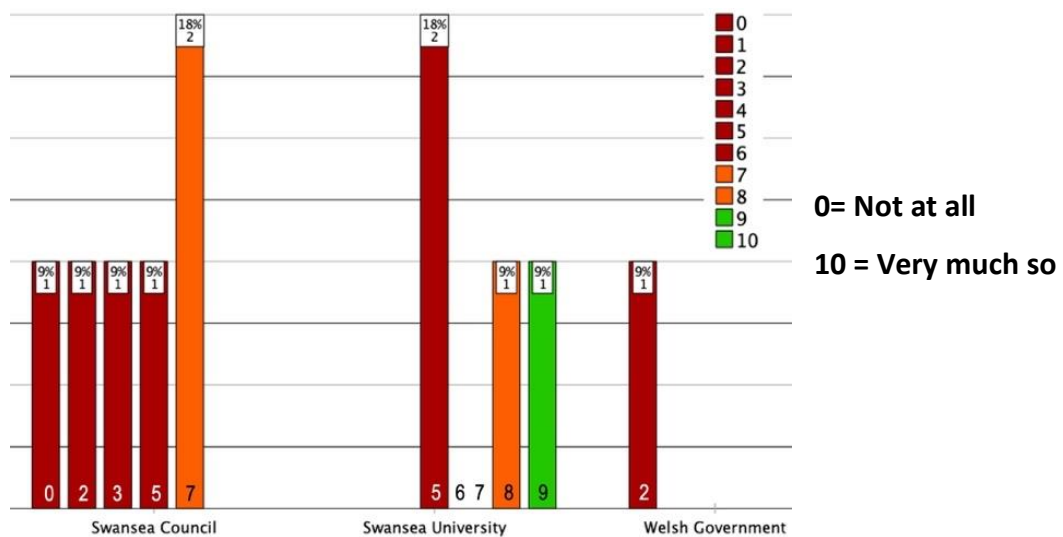


Overall, the results are spread out, with 11 respondents providing 10 different responses. The most popular option selected was option 7, a passive response with 27% (n= 3) respondents, 18% (n= 2) from Swansea Council and 9% (n= 1) from the Welsh Government. Following this, 18% (n= 2), 9% (n= 1) from Swansea Council, and 9% (n= 1) from Swansea University chose *option 10*. 18% (n= 2) chose *option 8*, 1% (n= 1) from Swansea Council and 1% (n= 1) from Swansea University, and 1% (n= 1) respondent from Swansea University selected option 9. The remainder consisted of 18% (n= 2), 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea University who selected option 6 and finally, 9% (n= 1) from Swansea Council selected option 3.

“HOW MUCH DO YOU THINK USING TRANSLATION TECHNOLOGY IMPROVES THE QUALITY OF YOUR TRANSLATIONS?”

Following on from looking at speed, one translation element is often non-negotiable, particularly for any content destined for the public domain. This question covers the significant factor of translation which is the quality. The question is whether the respondents believe that translation technology improves the quality of their translations. The results from this question are shown in the bar chart below (Figure 5. 65), where there appears to be more detractor (negative) answers than positive (promoter) or passive ones.

Figure 5. 65 How much do you think the use of translation technology has impacted the translation process in your organisation?

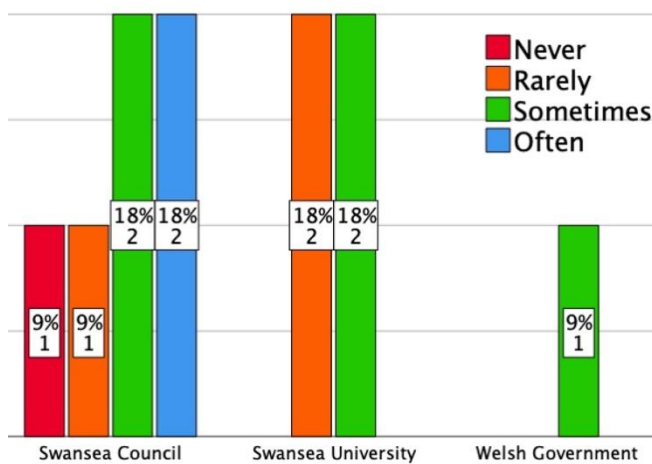


The highest total number of responses was for *option 5*, with 27% (n= 3) respondents, 9% (n= 1) from Swansea Council and 18% (n= 2) from Swansea University. 18% (n= 2) of respondents selected *option 2*, 9% (n= 1) from Swansea Council and the other from the Welsh Government. Next, 18% (n= 2) of respondents from Swansea Council selected *option 7*, and the remainder were all individual responses. 9% (n= 1) from Swansea University selected *option 9*, 9% (n= 1) from Swansea University selected *option 8*. 9% (n= 1) selected *option 0* (zero), and 9% (n= 1) selected *option 3*. The remainder consisted of detractor answers, all from Swansea Council.

5.3.2.2.3.4 “DO YOU EVER TRANSLATE WITHOUT USING TECHNOLOGY (SUCH AS CAT TOOLS OR TRANSLATION MANAGEMENT TOOLS – OR KNOWN AS TRANSLATION MANAGEMENT SYSTEMS)?”

The respondents were asked whether they translated content without using specific translation technology to understand their reliance on technology and whether there was a clear positive or negative response. They were presented with pre-coded answers: *never, often, rarely, and sometimes*. The results are shown in Figure 5. 66.

Figure 5. 66 Do you ever translate without using technology?

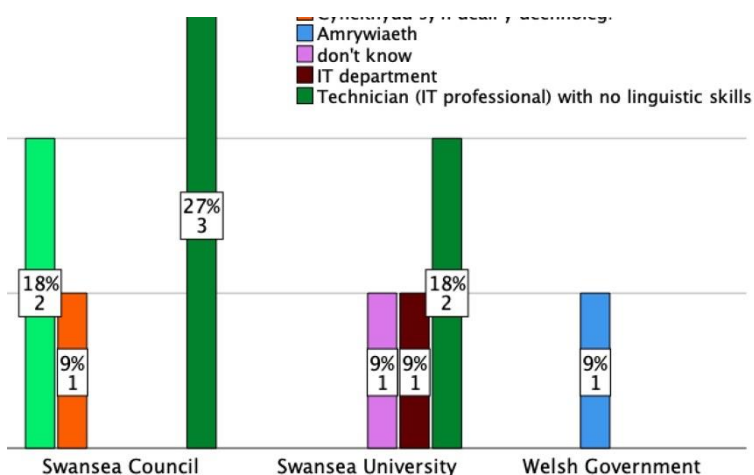


Overall, the majority, 46% (n= 5), selected *sometimes*, 18% (n= 2) from Swansea Council, 18% (n= 2) from Swansea University and 9% (n= 1) from the Welsh Government. 18% (n= 2) from Swansea Council selected often, and 9% (n= 1) from Swansea Council selected Never. 27% (n= 3) selected *Rarely*, 9% (n= 1) from Swansea Council and 18% (n= 2) from Swansea University. This response holds considerable insight and will be examined in detail in Chapter 6. It raises an intriguing question: If organisations are utilising translation memories (TMs), what circumstances might lead to situations where TMs are not employed?

5.3.2.2.3.5 “WHO OVERSEES THE TECHNOLOGY IN YOUR DEPARTMENT?”

This question aims to understand who is involved in upgrading and managing the translation technology that assists translation services. This is particularly important to understand whether any upgrades or potential technological changes would be passed on, leading to staff training, and updating. The results are shown in Figure 5. 67.

Figure 5. 67 Who oversees the technology in your department?



A total of 46% (n= 5) respondents, 27% (n= 3) from Swansea Council and 18% (n= 2) from Swansea University selected a Technician (IT professional) with no linguistic skills, followed by 18% (n= 2) from Swansea Council who claimed the person who oversees the technology in the department is a linguist in the department. The rest are all individuals with 9% (n= 1), who stated it was someone in the IT Department (Swansea University), another selected don't know (Swansea University), the respondent from the Welsh Government stated, *Amrywiaeth* (A variety) and finally, *ieithydd sy'n deall y dechnoleg!* (A translator who understands the technology) from Swansea Council.

5.3.2.2.4 TRANSLATION MANAGEMENT TOOLS

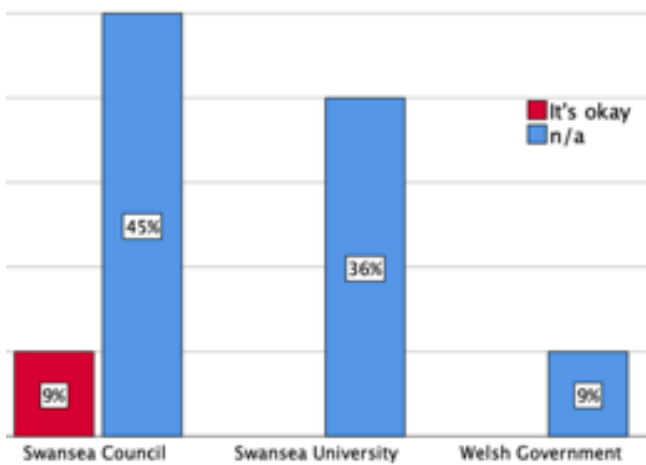
As explained in section 1.3.3, Translation Management Tools offer integrated solutions to their users. Even though it provides a platform from which a translation workflow process can be managed. There is a cost implication, and this category

intends to understand whether respondents (currently working in the public sector) have a working knowledge or at least an understanding of this technology, which is not new to the marketplace but has advanced considerably in recent years.

5.3.2.2.4.1 “HOW DO YOU FEEL ABOUT TRANSLATION MANAGEMENT TOOLS (OR SYSTEMS) SUCH AS WORDBEE, SMARTCAT, SMARTLING ETC., WHEN COMPLETING YOUR TRANSLATIONS?”

This question was designed to understand whether the respondents had used Translation Management Tools and, if so, their opinion of them. The results were very conclusive; 91% (n= 10) respondents selected *n/a*, and only 9% (n= 1) from Swansea Council, selected *it’s okay*. The results are shown below in Figure 5. 68.

Figure 5. 68 How do you feel about Translation Management Tools (or known as systems) such as Wordbee, Smartcat, Smartling etc. When completing your translations?



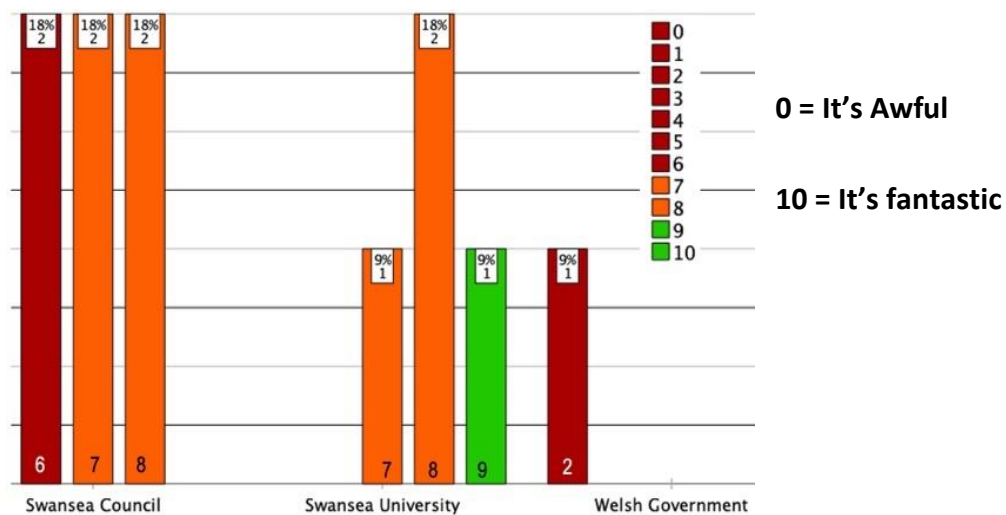
5.3.2.2.5 TRANSLATION TECHNOLOGY TOOLS

The key to this study is how translation technology is used and whether it is trusted and managed. This section questions the respondents on their experience and why they prefer some tools. The aim is to understand the respondents’ preferences as they use the systems daily and would have a good working knowledge of the tools.

5.3.2.2.5.1 “WHAT ARE YOUR THOUGHTS ABOUT USING TRANSLATION TECHNOLOGY?”

This question aims to measure the positive and negative responses concerning using technology. Respondents were asked to disclose their thoughts about their use of translation technology. The results are shown in Figure 5. 69 below.

Figure 5. 69 What are your thoughts about using translation technology?

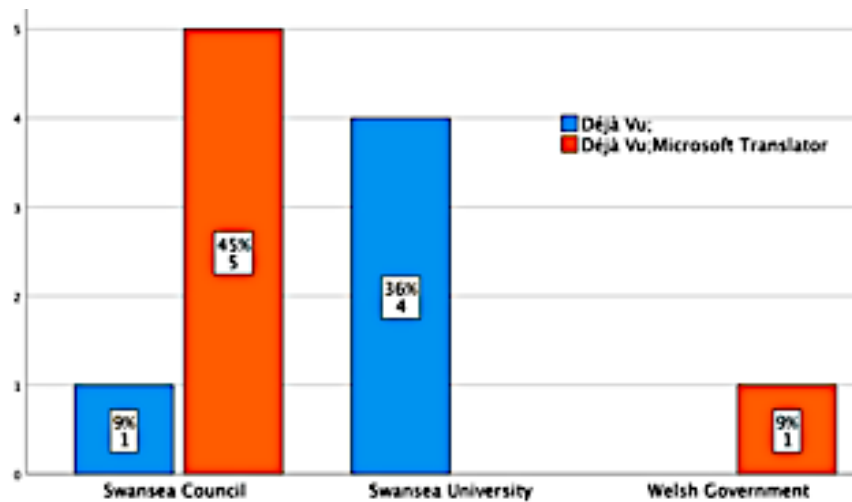


Overall, the highest quantity of respondents, 36% (n= 4), selected *option 8*, 18% (n= 2) from Swansea Council and 18% (n= 2) from Swansea University. 27% (n= 3) selected *option 7*, 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University. 18% (n= 2) from Swansea Council selected option 6 (a detractor answer), and 9% (n= 1) from the Welsh Government selected option 2. The remaining option, selected by Swansea University, was option 9, with 9% (n= 1) of a positive response.

5.3.2.2.5.2 “WHICH TRANSLATION TECHNOLOGY TOOLS DO YOU USE IN THE WORKPLACE TODAY?”

To understand which translation technology is being used in each organisation, the respondents were supplied with a list of potential tools to select from commonly used translation technology such as *DéjàVu*, *Google Translate*, *MemoQ*, *Memsources*, *Microsoft Translator*, *OmegaT*, *Passolo*, *Systran*, *Trados* and *Wordbee* and were able to select multiple options. The results are shown below in Figure 5. 70.

Figure 5. 70 Which translation technology tools do you use in the workplace today?

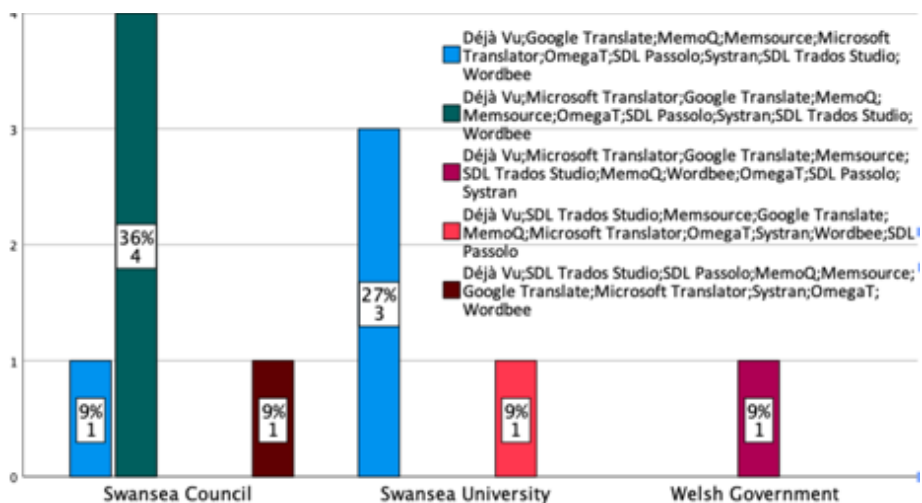


Overall, the participants selected only two types of translation technology for all three organisations. 45% (n= 5) of the respondents selected *DéjàVu*, 36% (n= 4) from Swansea University and 9% (n= 1) from Swansea Council, and the remainder (54% n= 6) selected both *DéjàVu* and *Microsoft Translator*. 45% (n= 5) were from Swansea Council, and 9% (n= 1) was from the Welsh Government.

5.3.2.2.5.3 “DO YOU HAVE EXPERIENCE WORKING WITH THESE TRANSLATION TOOLS?”

This question aims to go further into each organisation and learn more about the many types of translation tools that respondents have used in the past up to the present day, as shown in Figure 5. 71 below:

Figure 5. 71 Do you have experience working with these translation tools?



The respondents were asked to rank the following translation technology tools in order of preference: *DéjàVu*, *Google Translate*, *MemoQ*, *Memsourc*e, *Microsoft Translator*, *OmegaT*, *Passolo*, *Systran*, *Trados* and *Wordbee*. As shown below, the most popular technology overall is 1. *DéjàVu*, followed by 2. *Google Translate*, and 3. *MemoQ*, then 4. *Microsoft Translator*, 5. *Memsourc*e, 6. *OmegaT*, 7. *Passolo*, 8. *Trados*, 9. *Systran* and 10. *Wordbee*.

When looking at the results by organisation, Figure 5. 71 shows that the majority in Swansea Council (36%, n= 4) concur with *DéjàVu* ranking first, with the second most popular answer being *Microsoft Translator*, then *Google Translate*. At Swansea University, *DéjàVu* is again the most popular tool with 27% (n= 3); the second is *Google Translate*, followed by *MemoQ*, *Memsourc*e and then *Microsoft Translator*. Only 9% (n= 1) of the respondents from Swansea University and 9% (n= 1) included *Trados* as their second choice. The 9% (n= 1) of Welsh government respondent predictably ranked *DéjàVu* as number one, followed by *Microsoft Translator*, then *Google Translate*. This answer was expected as the organisation uses *DéjàVu* in

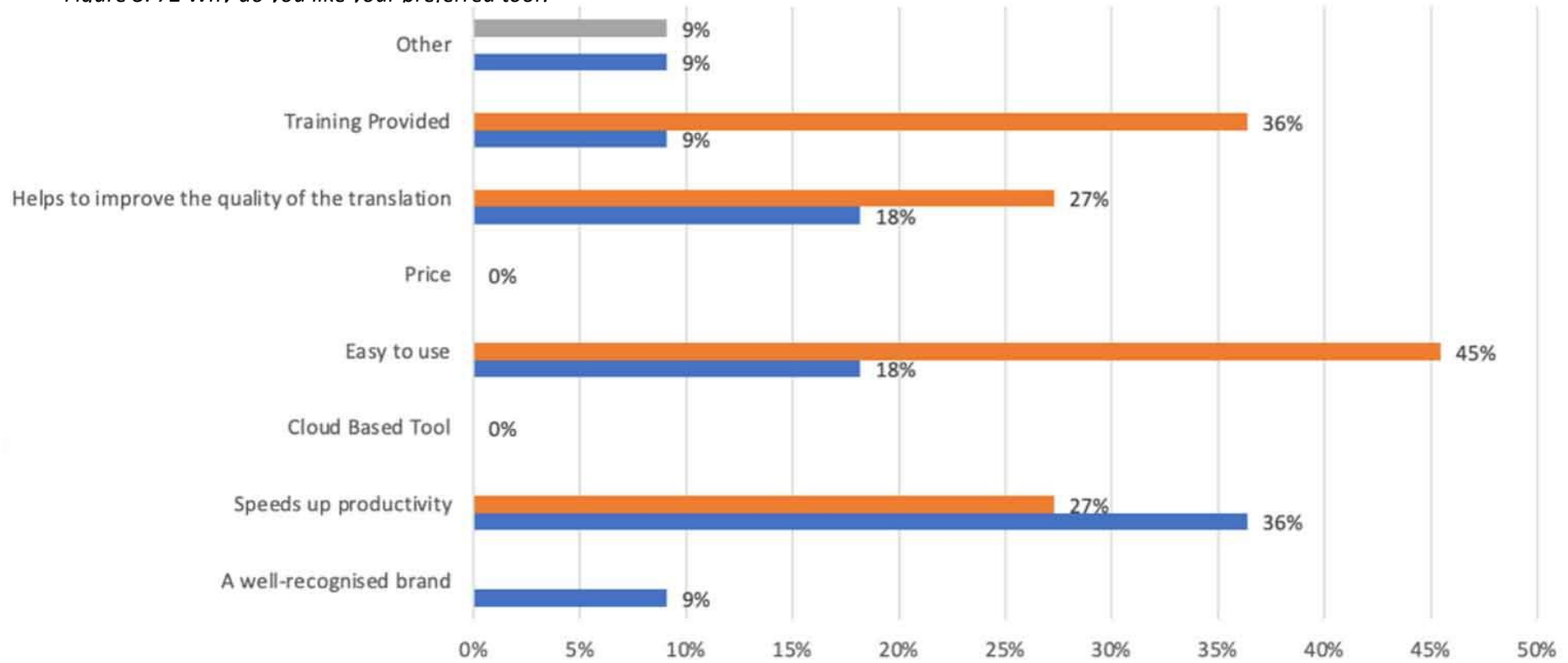
their everyday workflow (as with Swansea University and Swansea Council), and the Welsh Government also has close connections with *Microsoft Translator*.

5.3.2.2.5.4 “WHY DO YOU LIKE YOUR PREFERRED TOOL?”

To understand why the respondents liked their preferred tool, they were presented with a pre-coded list of eight potential answers (shown below) from which they could select multiple choices. The results are shown below in Figure 5. 72.

The most popular choice selected as a reason for liking their preferred tools was that it *Speeds up productivity*, with a total of 63% (n= 7); this was split by 36% (n= 4) from Swansea University and 27% (n= 3) from Swansea Council. With equal totals, it was *Easy to use*, with 63% (n= 7) of respondents, 45% (n= 5) from Swansea Council and 18% (n= 2) from Swansea University. 45% (n= 5) selected *Helps to improve the quality of the translation*, with 18% n= 2 from Swansea University and 27% (n= 3) from Swansea Council. With *Training provided*, there was a total of 45% (n= 5), 36% (n= 4) from Swansea Council and 9% (n= 1) from Swansea University. Only 9% (n= 1) of respondents from Swansea Council chose *A well-recognised brand* as a reason for liking their preferred tools. No (zero) respondents selected *Cloud-Based Tool* nor *Price*, which was noteworthy but possibly because the staff are not necessarily involved in the financial decision-making or implementation of the tools they use in the workplace.

Figure 5. 72 Why do you like your preferred tool?



	A well-recognized brand	Speeds up productivity	Cloud Based Tool	Easy to use	Price	Helps to improve the quality of the translation	Training Provided	Other
■ WG	0%	0%	0%	0%	0%	0%	0%	9%
■ sc	0%	27%	0%	45%	0%	27%	36%	0%
■ SU	9%	36%	0%	18%	0%	18%	9%	9%

Only 18% (n= 2) of respondents selected *other*, and 9% (n= 1) were from the Welsh Government, who simply stated they *didn't understand the question*. However, the other respondent (9% n= 1) from Swansea University stated that *it uses our own previous work so that we can rely on the quality*. This is an interesting response as it refers to translation memory usage. This respondent also selected *speeds up productivity* and *helps to improve the quality of the translation*, and when they were asked a previous question about the tools they preferred, their first choice was *DéjàVu* and their second choice was *Google Translate*, although they claim to have never used MT to translate content.

5.3.2.2.5.5 “WOULD YOU TRUST THE FOLLOWING TECHNOLOGY WHEN TRANSLATING?”

Because three respondents elected not to respond to this question, the percentage results are based on eight respondents who participated rather than eleven respondents in this survey. The most trusted resources are *DéjàVu*, *Google Translate* and *Microsoft Translator* and the results are as follows:

- **DéjàVu:** The results from this question show that *DéjàVu* is the most popular translation technology according to the respondents. 88%⁶³ (n= 7) claimed they *Definitely* would trust it, 75% (n= 6) from Swansea Council and 13% (n= 1) from the Welsh Government. The remaining 13% (n= 1) from Swansea Council selected *Possibly*.
- **Google Translate:** Google Translate: is the second most popular technology, with 25% (n= 2) selecting *Possibly*, 25% (n= 2), 13% (n= 1) from Swansea Council and 13% (n= 1) from the Welsh Government. 38% (n= 3) opting for *Probably not*, 26% (n= 2) from Swansea Council and 13% (n= 1) from Swansea University. 13% (n= 1) from Swansea Council selected *Definitely Not*.
- **MemoQ:** 89% (n= 7) claimed they had *Never heard of it*, which was made up of 63% (n= 5) from Swansea Council and 13% (n= 1) from the Welsh Government. 13% (n= 1) from Swansea University and 13% (n= 1) from Swansea Council stated *Probably*.

- **Memsorce:** Once again, 76% (n= 6) claimed they had *Never heard of it*, 50% (n= 5) from Swansea Council and 13% (n= 1) from both Swansea University and the Welsh Government. 13% (n= 1) from Swansea Council stated both *Definitely* and *Possibly*.
- **Microsoft Translator:** 50% (n= 4) stated that they would *Possibly* trust this resource, 38% (n= 3) from Swansea Council and 13% (n= 1) from Swansea University. 38% (n= 3) from Swansea Council claimed *Probably not*, and 13% (n= 1) from the Welsh Government said they had *Never heard of it*.
- **Passolo:** The response regarding this resource was negative. 76% (n= 6) stated that they had *never heard of it*, 50% (n= 4) from Swansea Council, and 13% (n= 1) from Swansea University and the Welsh Government. 13% (n= 1) from Swansea Council stated *Definitely Not*, and only 13% (n= 1) from Swansea Council stated they would *Definitely* trust the resource.
- **Trados:** 63% (n= 5) claimed they had *Never heard of it*, 50% (n= 4) from Swansea Council and 13% (n= 1) from the Welsh Government. 26% (n= 2) selected that they would *Possibly* trust the resource, 13% (n= 1) from Swansea Council and 13% (n= 1) from Swansea University and 13% (n= 1) from Swansea Council said they *Definitely* would trust it.
- **OmegaT, Systran And Wordbee:** 100% (n= 8) claimed they had *never heard of it* when responding to these three translation resources.

5.3.2.3 TRANSLATION WORKFLOW PROCESS: FUNCTIONALITY, QUALITY, TRAINING AND SENTIMENT

5.3.2.3.1 WORKFLOW

Table 5. 15 below looks at the translation workflow in each organisation from the perspective of the staff who carry out the Welsh translation services and how (or whether) they are used effectively, and their impact in a public sector Welsh translation setting.

Table 5. 15 Results from the Translation Unit/Services Survey: Translation Workflow

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO THE TRANSLATION WORKFLOW PROCESS												
Training		Sentiment		Quality		Delivery						
Translation Unit Survey				SC	SU	WG	Total					
Survey questions + numbers				n	%	n	%	n	%			
Q	Total Number of Respondents =			6	55%	4	36%	1	9%	11	100%	
34	How likely are you to deliver a translation on time?			5								
	0 = Not at all likely			6	1	9%	0	0%	0	0%	2	18%
	10 = Extremely likely			7	3	27%	1	9%	0	0%	4	36%
				8	2	18%	1	9%	0	0%	3	27%
	TOTAL			9	0	0%	0	0%	1	9%	1	9%
32	How is the translation workflow carried out in your workplace?			The qualitative data from this question is shown after these tables.								
33	What is the lead time on any translation you receive?			1 - 2 days	2	18%	0	0%	0	0%	2	18%
				2 - 3 days	2	18%	1	9%	0	0%	3	27%
				3 - 5 days	2	18%	0	0%	0	0%	2	18%
				I have no idea	0	0%	1	9%	1	9%	2	18%
				We don't have a lead time	0	0%	2	18%	0	0%	2	18%
TOTAL				6	55%	4	36%	1	9%	11	100%	
41	Do you always use a proofreader?			Always	6	55%	3	27%	0	0%	9	82%
				Often	0	0%	1	9%	0	0%	1	9%
				Sometimes	0	0%	0	0%	1	9%	1	9%
	TOTAL				6	55%	4	27%	1	0%	11	100%
	I always meet expected turnaround times			Agree	2	18%	2	18%	0	0%	4	36%
				Disagree	3	27%	0	0%	0	0%	3	27%
				Neither Agree nor Disagree	1	9%	2	18%	1	9%	4	36%
	TOTAL				6	55%	4	36%	1	9%	11	100%
	We are trained on matters of Cyber Security and kept up to date			Agree	1	9%	2	18%	1	9%	4	36%
				Disagree	2	18%	1	9%	0	0%	3	27%
				n/a	0	0%	1	9%	0	0%	1	9%
				Neither Agree nor Disagree	2	18%	0	0%	0	0%	2	18%
	TOTAL				6	55%	4	36%	1	9%	11	100%
	We are trained on Intellectual Property			Agree	0	0%	0	0%	1	9%	1	9%
				Disagree	3	27%	2	18%	0	0%	5	45%
				n/a	0	0%	1	9%	0	0%	1	9%
				Neither Agree nor Disagree	2	18%	1	9%	0	0%	3	27%
	TOTAL				6	55%	4	36%	1	9%	11	100%
	We have been trained on the Welsh Standard and know how to comply with it			Agree	2	18%	1	9%	1	9%	4	36%
				Disagree	3	27%	1	9%	0	0%	4	36%
				Neither Agree nor Disagree	0	0%	1	9%	0	0%	1	9%
				Strongly Agree	0	0%	1	9%	0	0%	1	9%
	TOTAL				7	64%	4	36%	1	9%	12	109%
43	I feel overwhelmed by my workload			Agree	3	27%	1	9%	0	0%	4	36%
				Disagree	0	0%	0	0%	1	9%	1	9%
				Neither Agree nor Disagree	1	9%	2	18%	0	0%	3	27%
				Strongly Agree	1	9%	0	0%	0	0%	1	9%
	TOTAL				6	55%	4	36%	1	9%	11	100%
	The Welsh Standard makes everything so much more difficult			Disagree	2	18%	1	9%	1	9%	4	36%
				n/a	0	0%	1	9%	0	0%	1	9%
				Neither Agree nor Disagree	2	18%	2	18%	0	0%	4	36%
	TOTAL				6	55%	4	36%	1	9%	11	100%

Table 5. 15 Ctd. Results from the Translation Unit/Services Survey: Translation Workflow

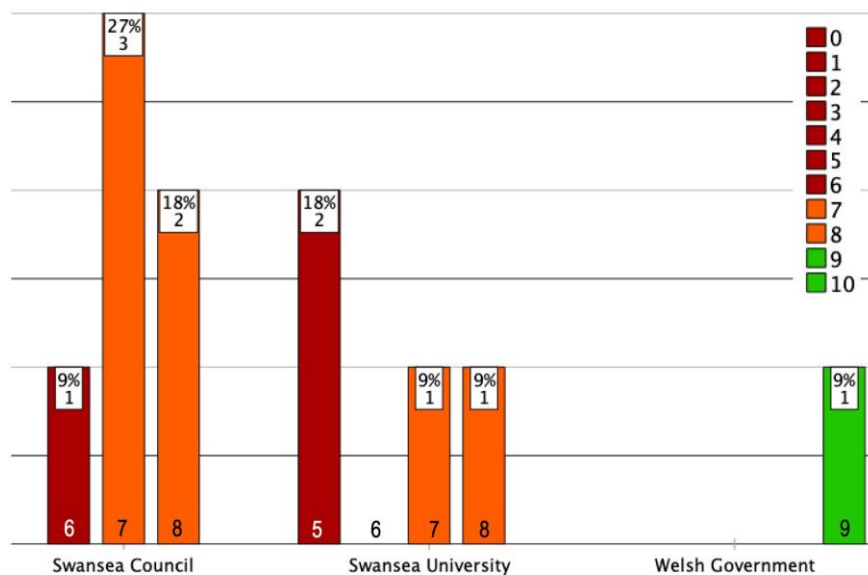
	I have too much work to do	Agree	3	27%	1	9%	0	0%	4	36%
		Disagree	1	9%	1	9%	0	0%	2	18%
		Neither Agree nor Disagree	0	0%	1	9%	1	9%	2	18%
		Strongly Agree	2	18%	1	9%	0	0%	3	27%
		TOTAL	6	55%	4	36%	1	9%	11	100%
	I have too little work to do	Disagree	3	27%	2	18%	0	0%	5	45%
		Neither Agree nor Disagree	0	0%	1	9%	1	9%	2	18%
		Strongly Agree	3	27%	1	9%	0	0%	4	36%
		TOTAL	6	55%	3	27%	1	9%	11	100%
	My work is respected and valued by others	Agree	0	0%	1	9%	0	0%	1	9%
		Disagree	2	18%	0	0%	0	0%	2	18%
		Neither Agree nor Disagree	2	18%	2	18%	0	0%	4	36%
		Strongly Agree	0	0%	1	9%	1	9%	2	18%
		Strongly Disagree	2	18%	0	0%	0	0%	2	18%
		TOTAL	6	55%	4	36%	1	9%	11	100%
39	Is there a Quality Control Standard such as an International Standard (ISO 17100:2015) in place or an equivalent	I have no idea	5	45%	4	36%	1	9%	10	91%
		Maybe	1	9%	0	0%	0	0%	1	9%
		TOTAL	1	55%	4	36%	1	9%	1	100%
40	How do you measure the quality of each translation completed? Are there any specific checks in place?	The qualitative data from this question is shown after these tables.								
41	Do you always quality check before sending a document back?	Always	6	55%	3	27%	1	9%	10	91%
		Sometimes	0	0%	1	9%	0	0%	1	9%
		TOTAL	6	55%	4	36%	1	9%	11	100%
43	Each of our translations are quality checked	Agree	0	0%	2	18%	1	9%	3	27%
		n/a	1	9%	0	0%	0	0%	1	9%
		Strongly Agree	5	45%	2	18%	0	0%	7	64%
		TOTAL	6	55%	4	36%	1	9%	11	100%

This table looks at three elements of the translation workflow from both a qualitative and quantitative method. It not only looks at how the workflow is carried out but also the performance and expectations of the service. Training is again a key aspect; however, in this case, it refers to training regarding processes, such as legislative requirements. The section on sentiment questions the respondents on their workload and how others respond to their work, and the quality element is also questioned to understand what measures are in place and how quality is maintained.

5.3.2.3.1.1 “HOW LIKELY ARE YOU TO DELIVER A TRANSLATION ON TIME?”

This question looks at the likelihood that completed translations within each organisation’s internal translation service are returned to the originator, meeting all expectations regarding timescales and turnaround times, as shown in Figure 5. 73 below.

Figure 5. 73 How likely are you to deliver a translation on time?



0 = Not at all likely 10 = Extremely likely

For this question, respondents were asked to score their opinions (in this case, their level of likelihood), resulting in a Net Promoter Score (NPS) as explained in section 4.4.3.2) of **-18**, which is a negative score. Overall, there is a slim indication that translations will likely be delivered on time. 63% (n= 7) selected passive answers, 36% (n= 4) selected *option 7*, 27% (n= 3) from Swansea Council and 9% (n= 1) from Swansea University. 27% (n= 3), 18% (n= 2) from Swansea Council, and 9% (n= 1) from Swansea University selected *option 8*. 18% (n= 2) from Swansea University selected *option 5*, and 9% (n= 1) from Swansea Council selected *option 6*. Both *options 5* and *6* are negative responses. The 1% (n= 1) response from the Welsh Government was the only positive response, as they selected *option 9*.

5.3.2.3.1.2 “HOW IS THE TRANSLATION WORKFLOW CARRIED OUT IN YOUR WORKPLACE?”

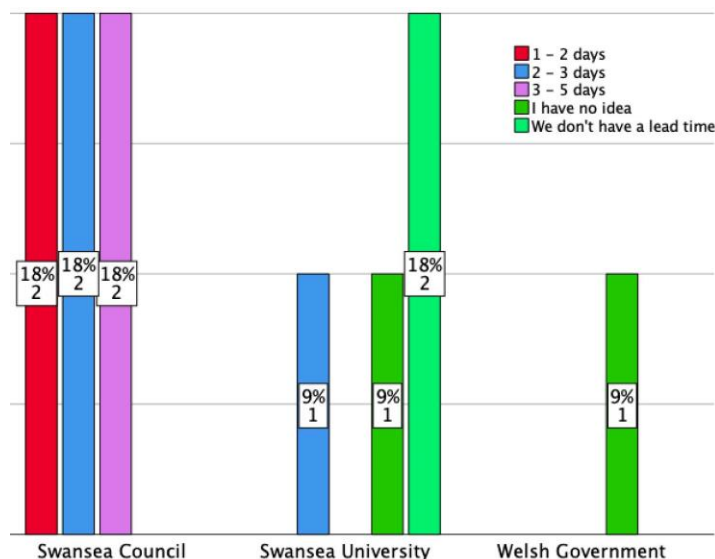
Some of the answers to the question were submitted in Welsh by five respondents from Swansea Council (ID: 2, 3, 9, 10 and 11). The results were translated for gist and were suitable for this analysis.

The respondent from the Welsh Government did not supply a workflow during the survey; however, a questionnaire (see Appendix 17) was submitted to the Translation Unit/Services department in the Welsh Government, and a response was supplied (see Appendix 20) and discussed in Chapter 6.

5.3.2.3.1.3 “WHAT IS THE LEAD TIME ON ANY TRANSLATION YOU RECEIVE?”

Under the sub-category ‘Workflow’, this question was designed to understand whether the respondents agreed on any lead times set roles as translators for their public sector organisations. Do note that the same question was asked in the Staff Quiz/Staff Survey in section 5.3.1.3.4, under ‘Delivery,’ to understand the viewpoint of the translation service users rather than the translators themselves in this question. Respondents were asked to select from a list of nine pre-coded options, which represented the lead time on any translation request, and the results are shown in Figure 5. 74 below.

Figure 5. 74 What is the lead time on any translation you receive?



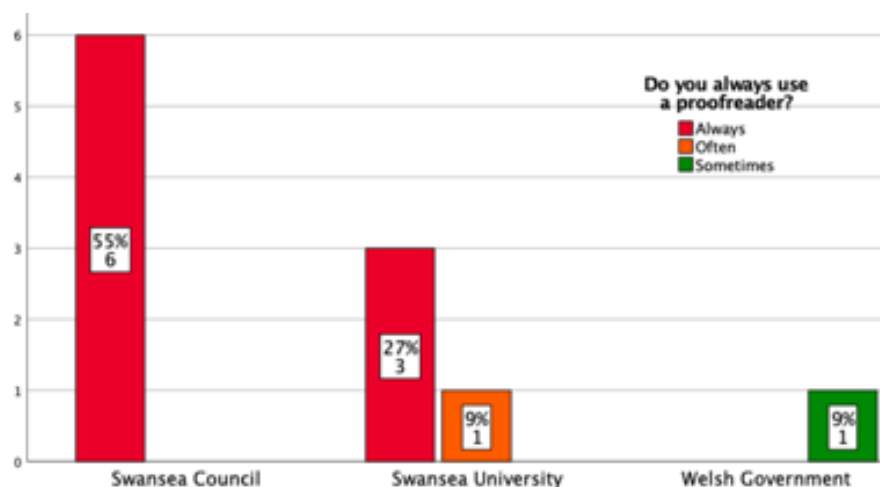
As shown in Figure 5. 74, overall, 27% (n= 3) respondents, 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University stated *2-3 days* as the lead time on translation requests. However, 18% (n= 2) from Swansea Council selected *1-2 days*, and the same amount from Swansea Council also selected *3-5 days*. 18% (n= 2) from Swansea University selected we don't have a lead time, and finally, 18% (n= 2) selected *I have no idea*, 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government. These results are noteworthy due to the inconsistencies in each organisation and the ability to compare results with the data from the Staff Quiz/Staff Survey (5.3.1); these will be discussed further in Chapter 6.

5.3.2.3.1.4 “DO YOU ALWAYS USE A PROOFREADER?”

For clarification, a proofreader in the context of this study refers to a second translator who checks the ST and the TT intending to improve the translation.

This question aimed to understand more about the workflow within the organisation. Even though the workflow was supplied (as shown in the previous question: How is the translation workflow carried out in your workplace), asking a direct question such as this question acted as a type of cross-examination. The respondents were asked to select their answers from a list of pre-coded answers such as: *Never - Rarely - Often - Sometimes – Always*. The results are shown in Figure 5. 75.

Figure 5. 75 Do you always use a proofreader?



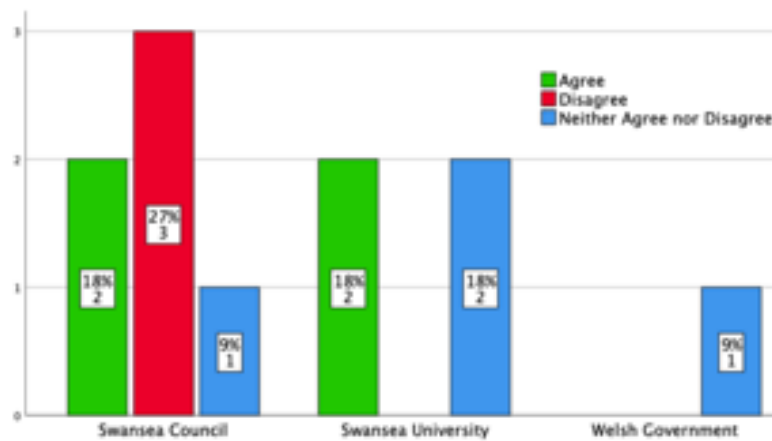
Overall, 82% (n= 9) stated that they *always* use a proofreader, 55% (n= 6) from Swansea Council and 27% (n= 3) from Swansea University. The remaining two respondents, 9% (n= 1) from Swansea University, stated *often*, and 9% (n= 1) from the Welsh Government stated *sometimes*.

5.3.2.3.1.5 “I ALWAYS MEET EXPECTED TURNAROUND TIMES”

Even though this question is similar to previous questions, such as questions in this section regarding lead times and delivery of translations, the aim is to delve deeper into the expectations of the recipients of the translators, i.e. the end of the workflow/the final step in the process.

Using a Likert scale, as shown in Figure 5. 76, respondents were asked to select an answer from the following list: *strongly disagree*, *disagree*, *neither agree nor disagree*, *agree*, *strongly agree* and *n/a*.

Figure 5. 76 I always meet expected turnaround times.



Overall, 36% (n= 4), 18% (n= 2) from Swansea Council and 18% (n= 2) from Swansea University *agree* that they always meet expected turnaround times; however, 36% (n= 4) selected *neither agree nor disagree*, with 9% (n= 1) from Swansea Council, 18% (n= 2) from Swansea University and 9% (n= 1) from the Welsh Government. The remaining 27% (n= 3) from Swansea Council selected *disagree*. These results will be discussed further in Chapter 5 and compared with data from similar questions surrounding turnaround times, delivery, and workflow.

5.3.2.3.2 TRAINING

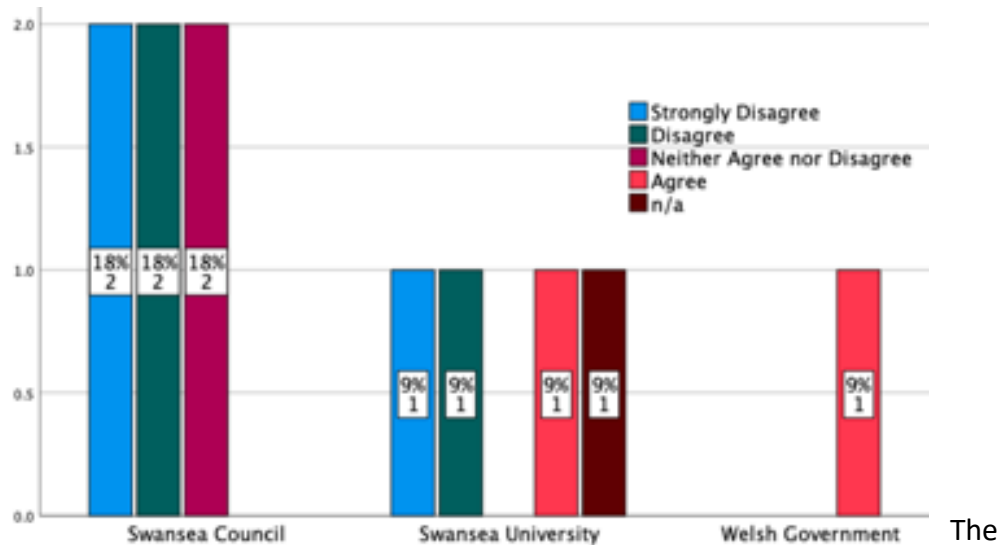
With any industry that has faced (or is facing) development and, more importantly, technological advances, training is one section of any organisation that would be required to facilitate change and ensure that staff are trained or kept up to date with the latest technology, rules, and regulations or perhaps, legislation. The questions in this section aim to understand whether staff have sufficient knowledge of current matters of concern which may affect the role of a translator in an organisation, such as *Cyber Security, Intellectual Property, The Welsh-Standard, and Quality Control*. This section also looks at the opinions and sentiments of the respondent and how they 'feel' about aspects surrounding these topics.

With the seemingly constant upgrading of systems and technological improvements, it may be assumed that training would become necessary for translators working in a fast-paced environment. This subcategory aims to obtain insight into the training habits of each organisation and understand if or whether there is a system in place for upgrades and updates of their translation technology.

5.3.2.3.2.1 "WE RECEIVE REGULAR TRAINING TO KEEP US UP TO DATE WITH TECHNOLOGY"

Respondents were asked to confirm whether they received regular training to keep them up to date with technology. The results are displayed in Figure 5. 77 below, where 100% participated in this question.

Figure 5. 77 We receive regular training to keep us up to date with technology.



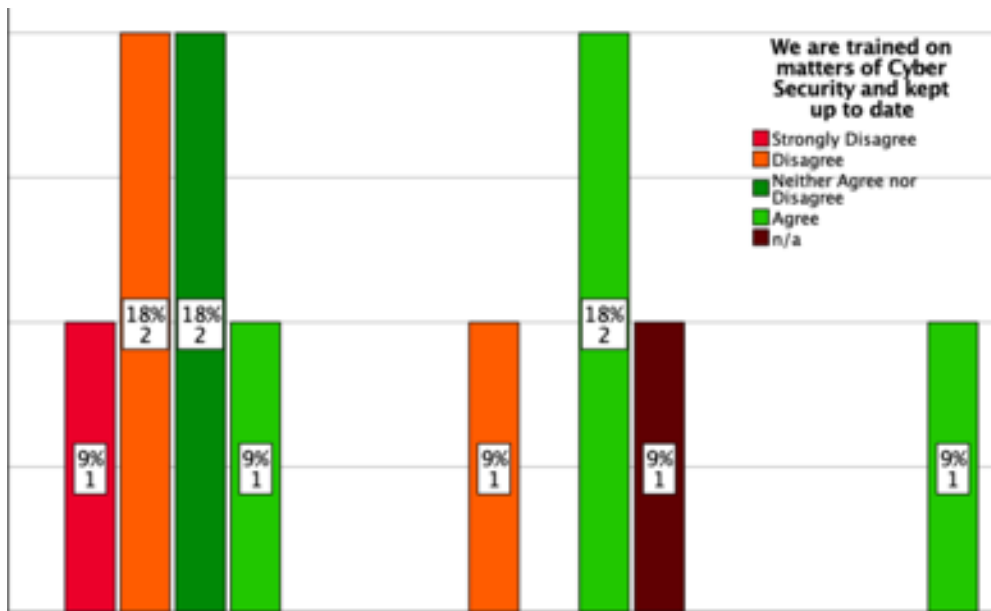
The respondents were asked to answer the question by selecting an option from a Likert scale. Overall, 27% (n= 3), 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University stated that they *strongly disagreed*. Similarly, 27% (n= 3), 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University stated that they *disagreed* with the statement; therefore, 54% (n= 6) *disagreed* with the statement. 18% (n= 2) from Swansea Council chose *neither agree nor disagree*, 18% (n= 2) selected *agree*, 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government.

5.3.2.3.2.2 “WE ARE TRAINED ON MATTERS OF CYBER SECURITY AND KEPT UP TO DATE”

The topic of Cyber Security, data leaks etc., often being a well-discussed matter of concern in the public and private sectors. This question aims to understand whether the respondents have received any training. As a consequence, they would understand what is expected of them in the workplace, particularly as they handle important, often sensitive documentation, which could contain private information, embargoed documentation, or even financially sensitive data.

Using a Likert scale, the results are shown in Figure 5. 78, where 100% participated in this question.

Figure 5. 78 We are trained on matters of Cyber Security and kept up to date.

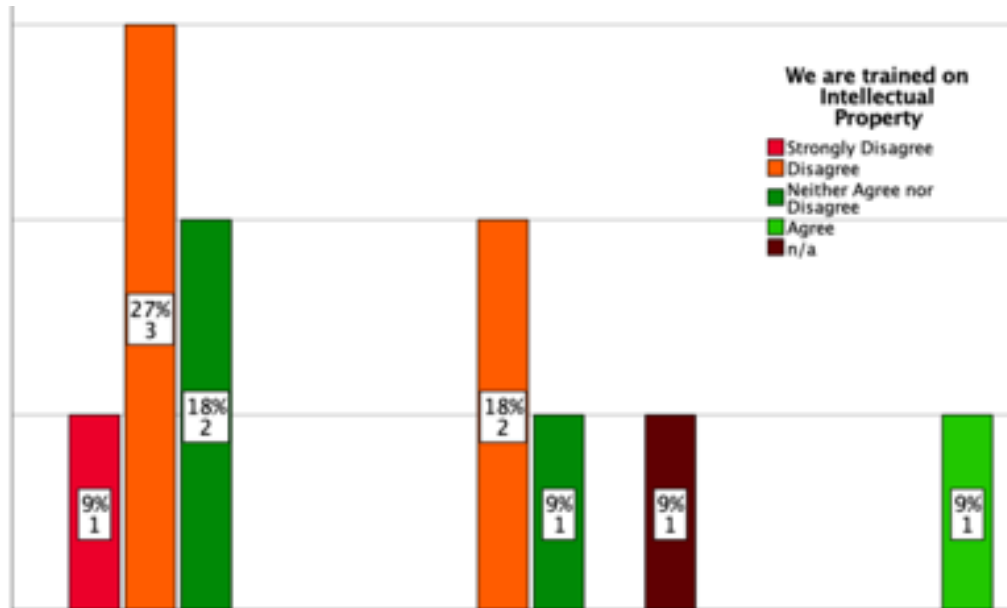


Overall, 36% (n= 4) *agree* that they have been trained on matters of Cyber Security. However, 9% (n= 1) from Swansea Council, 18% (n= 2) from Swansea University and 9% (n= 1) from the Welsh Government. Conversely, 27% (n= 3), 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University *disagree* with the statement. 18% (n= 2) from Swansea Council *neither agree nor disagree*, 9% (n= 1) *strongly disagree* and 9% (n= 1) from Swansea Council selected *n/a*.

5.3.2.3.2.3 “WE ARE TRAINED ON INTELLECTUAL PROPERTY”

As above in the previous question, the same Likert scale was used to understand training, but, in this case, this question addresses the equally important topic of intellectual property. As shown in Figure 5. 79, where 100% participated in this question using a Likert scale, respondents were asked to select an answer from the following list: *strongly disagree*, *disagree*, *neither agree nor disagree*, *agree*, *strongly agree* and *n/a*.

Figure 5. 79 We are trained on Intellectual Property

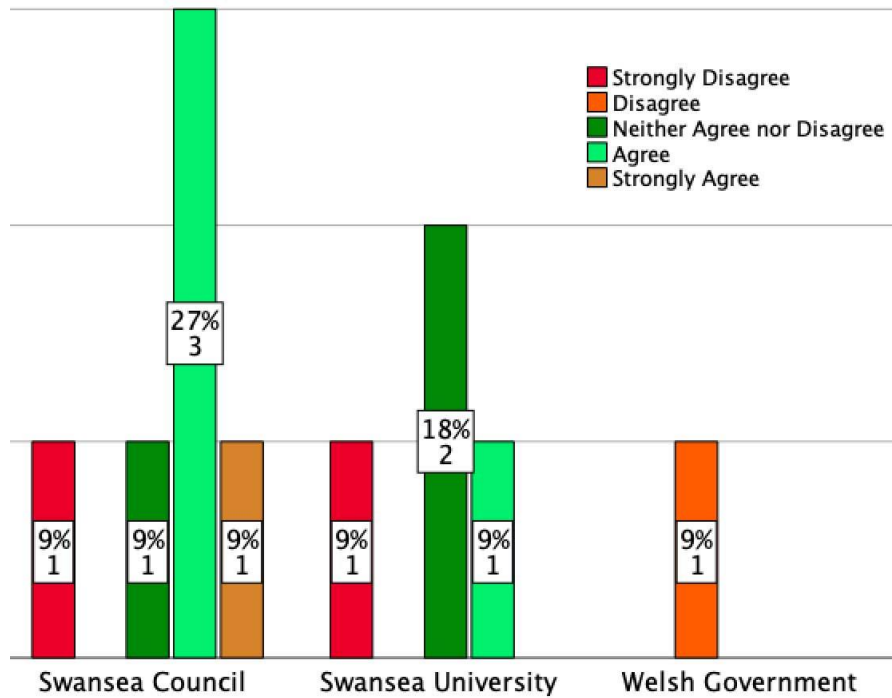


Overall, 45% (n= 5) of respondents *disagree*, 27% (n= 3) from Swansea Council and 18% (n= 2) from Swansea University. 27% (n= 3), 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University *neither agree nor disagree* with the statement. 9% (n= 1) selected *strongly agree*, and the same amount, 9% (n= 1) from the Welsh Government chose to *agree*. 9% (n= 1) from Swansea University chose *n/a*.

“WE HAVE BEEN TRAINED ON THE WELSH STANDARD AND KNOW HOW TO COMPLY WITH IT”

This question aimed to understand if the respondents have been trained in the Welsh Language Standards (2015-2018) and know how to comply. The results are shown in Figure 5. 80, where 100% participated in this question. A full explanation of the standard is shown in section 2.6.

Figure 5. 80 We have been trained on the Welsh Standard and know how to comply with it.



Overall,

36% (n= 4), 18% (n= 2) from Swansea Council and 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government selected that they *agree* with the statement. 36% (n= 4), 27% (n= 3) from Swansea Council and 9% (n= 1) from Swansea University chose to *disagree*. However, 9% (n= 1) from Swansea Council chose to *strongly disagree*, whilst 9% (n= 1) from Swansea University chose to strongly agree. 9% (n= 1) from Swansea University also selected *neither agree nor disagree*.

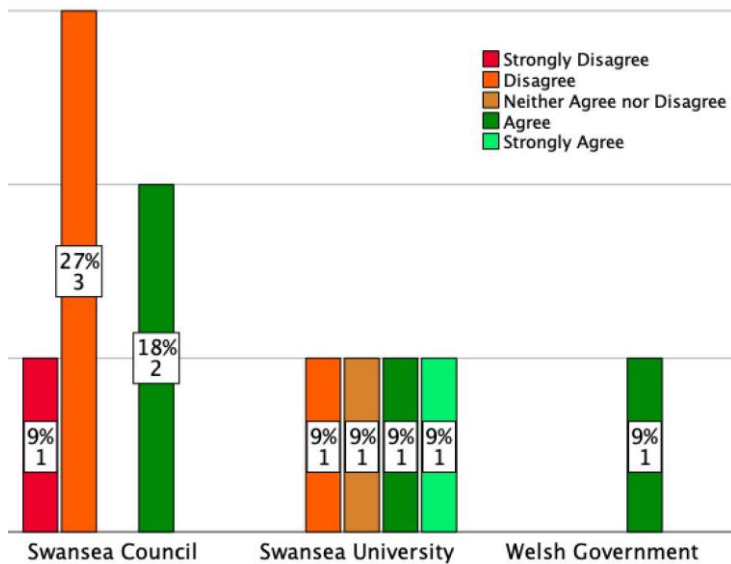
5.3.2.3.3 SENTIMENT

5.3.2.3.3.1 "I FEEL OVERWHELMED BY MY WORKLOAD"

As with the previous three questions, this question follows the same process with a Likert scale, except the idea behind this question was to find out how the respondents felt about their workload. The question was strategically placed amongst a group of questions but designed to understand the sentiment, given that the respondent was previously asked about the Welsh Language Standard and considering the potential additional workload they may currently need to work

Figure 5. 81 I feel overwhelmed by my workload.

with. The results are shown in Figure 5. 81, where 100% participated in this question.

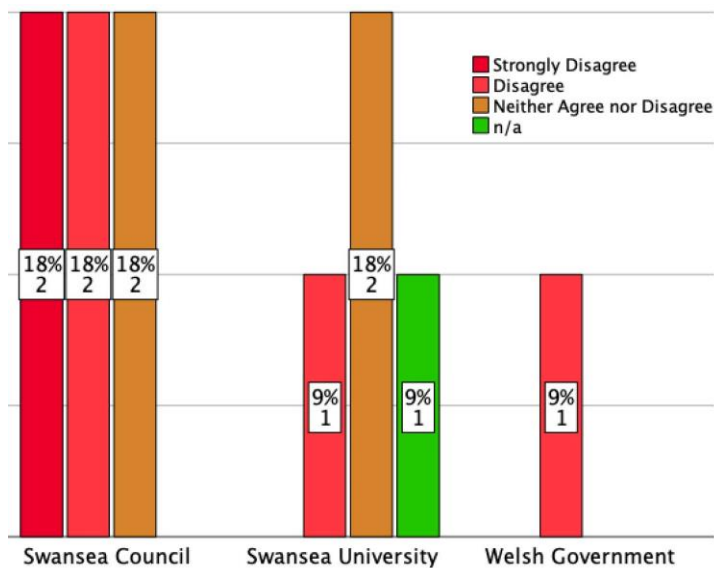


Overall, 36% (n= 4) *agree* with the statement that they feel overwhelmed by their workload, 27% (n= 3) from Swansea Council, and 9% (n= 1) from Swansea University. 27% (n= 3), 9% (n= 1) from Swansea Council and 18% (n= 2) from Swansea University *neither agree nor disagree* and 18% (n= 2), 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea University *strongly disagree*. 9% (n= 1) of the Welsh Government *disagree* with the statement, and 9% (n= 1) *strongly agree*.

5.3.2.3.3.2 “THE WELSH STANDARDS MAKES EVERYTHING SO MUCH MORE DIFFICULT”

As with the previous questions, this question follows the same process with a Likert scale, except the idea behind this question was to understand whether the respondents felt that the Welsh Language Standard makes everything so much more difficult. The results are shown in Figure 5. 82, where 100% participated in this question.

Figure 5. 82 The Welsh Language Standard makes everything so much more difficult.



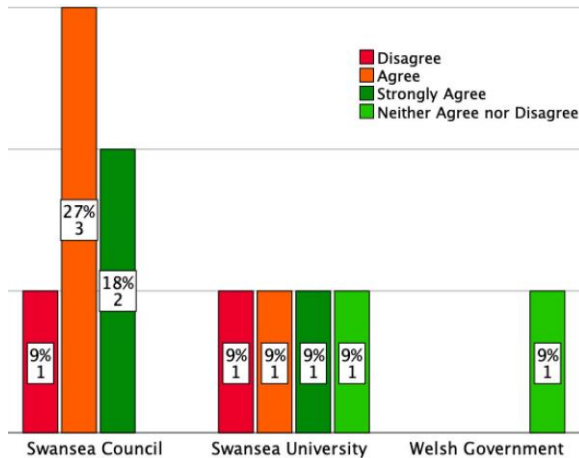
Overall, 36% (n= 4) selected

disagree, 18% (n= 2) from Swansea Council, 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government, and 18% (n= 2) from Swansea Council selected *strongly disagree*. 36% (n= 4) chose *neither agree nor disagree*, 18% (n= 2) from Swansea Council and 18% (n= 2) from Swansea University. The remainder, 9% (n= 1) from Swansea Council, selected *n/a*.

5.3.2.3.3.3 “I HAVE TOO MUCH WORK TO DO”

This question aimed to understand whether the respondents had *too much work to do*, as shown in Figure 5. 83, where 100% participated in this question.

Figure 5. 83 I have too much work to do.

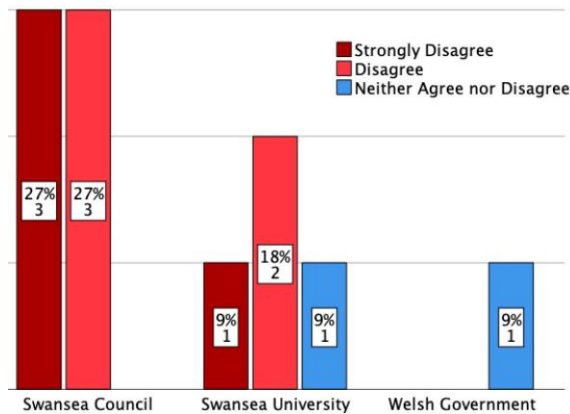


Overall, 36% (n= 4) selected *agree*, 27% (n= 3) from Swansea Council and 9% (n= 1) from Swansea University. 27% (n= 3), 18% (n= 2) from Swansea Council, and 9% (n= 1) from Swansea University selected *strongly agree* (therefore, a total of 63% (n= 7) *agree* with the statement that they have too much work to do). 18% (n= 2) selected *disagree*, 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea University. 18% (n= 2) opted for *neither agree nor disagree*, 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government.

5.3.2.3.3.4 “I HAVE TOO LITTLE WORK TO DO”

As with the previous questions, this question follows the same process with a Likert scale, except the idea behind this question was to understand whether the respondents simply *have too little work to do*, the opposite as shown above (“I have too much work to do”). The results are shown in Figure 5. 84, where 100% participated in this question.

Figure 5. 84 I have too little work to do.

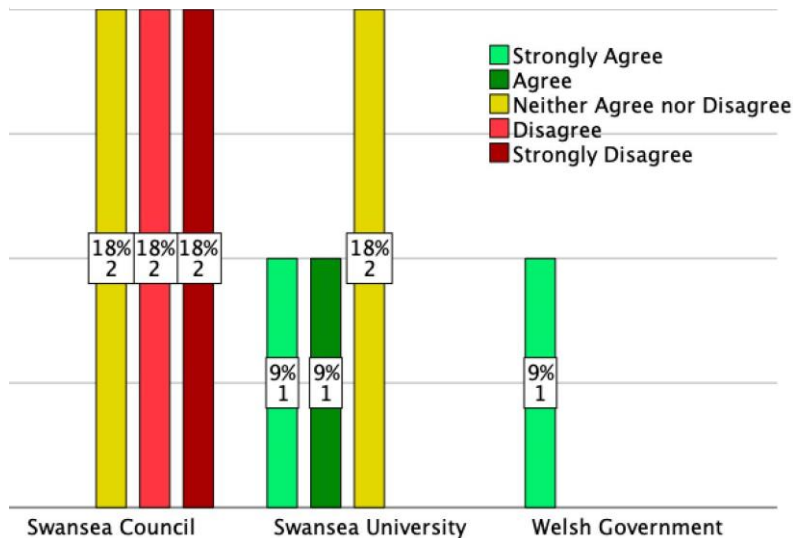


Overall, it is evident to see the negative responses to this question. 45% (n= 5), 27% (n= 3) from Swansea Council and 18% (n= 2) from Swansea University *disagree* with the statement. 36% (n= 4), 27% (n= 3) from Swansea Council and 9% (n= 1) from Swansea University *strongly disagree*. 18% (n= 2) *neither agree nor disagree*, with 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government.

5.3.2.3.3.5 “MY WORK IS RESPECTED AND VALUED BY OTHERS”

This question aimed to understand whether the respondents believe their work is respected and valued by others, as shown in Figure 5. 85, where 100% participated in this question.

Figure 5. 85 My work is respected and valued by others.



Overall, the results are spread out across the scale. 36% (n= 4) *neither agree nor disagree*, with 18% (n= 2) from Swansea Council and 18% (n= 2) from Swansea University. 18% (n= 2) *strongly agree*, 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea University. 18% (n= 2) from Swansea Council *disagree*, and 18% (n= 2) from Swansea Council *strongly disagree*.

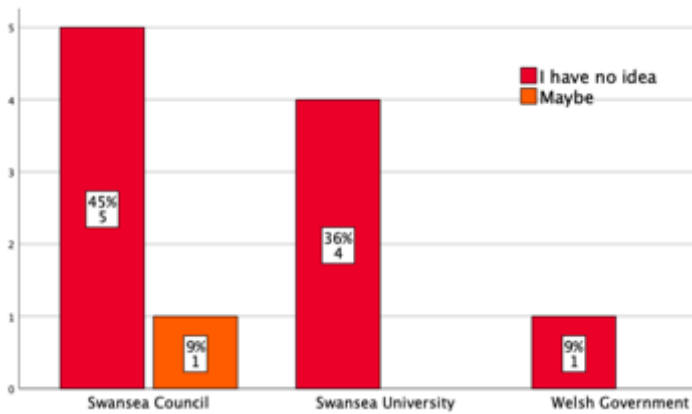
5.3.2.3.4 QUALITY

5.3.2.3.4.1 “IS THERE A QUALITY CONTROL STANDARD SUCH AS AN INTERNATIONAL STANDARD (ISO 17100:2015) IN PLACE OR AN EQUIVALENT (SPECIFICALLY FOR THE PUBLIC SECTOR IN WALES)?”

This question aims to understand whether there is a quality control measure in place in the organisation, explicitly applying to their workflow. The respondents were given a dropdown list with three pre-coded responses: *yes*, *no*, or *maybe*.

They were also given the option to select *other* and write their response. The results are shown in Figure 5. 86 below, where 100% participated in this question.

Figure 5. 86 Is there a Quality Control Standard such as an International Standard (ISO 17100:2015) in place or an equivalent?



Overall, 91% (n= 10) selected *I have no idea*, 45% (n= 5) from Swansea Council, 36% (n= 4) from Swansea University and 9% (n= 1) from the Welsh Government. 9% (n= 1) from Swansea Council selected *Maybe*.

5.3.2.3.4.2 “HOW DO YOU MEASURE THE QUALITY OF EACH TRANSLATION COMPLETED? ARE THERE ANY SPECIFIC CHECKS IN PLACE?”

This qualitative question aimed to understand further how translation quality is checked and whether there are any specific processes in place. Overall, 9% (n= 1) stated they would *talk to a colleague*, and 9% (n= 1) stated *no checks*. 18% (n= 2) claim that they *quality check their own* translations, and 27% (n= 3) stated that their translation is checked with *in-house style*. The most popular answer, with 36% (n= 4), is where the respondents state that their translations are checked/proofread by a senior translator. 27% (n= 3) stated that their translations are *Internally proofread*, and 9% (n= 1) mentioned an *Accuracy check* and a *Terminology check*.

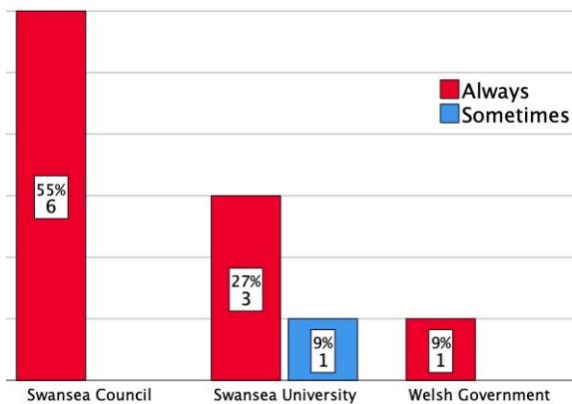
When looking by organisation to check for any differences:

- **Swansea Council:** 9% (n= 1) stated they would *talk to a colleague*, 9% (n= 1) stated that there are no checks at all, 9% (n= 1) stated that they *quality check their own translation*, and 18% (n= 2) stated that their translation is checked with *In-house style*. 18% (n= 2) stated that their *translations are checked/proofread by a senior translator*, and 9% (n= 1) stated that their translations are *Internally proofread*.
- **Swansea University:** 9% (n= 1) stated they *quality check their own translations*, and 9% (n= 1) stated that their translation is *checked with in-house style*. 9% (n= 1) also stated that accuracy and terminology checks are carried out. 18% (n= 2) stated that their translations are *checked/proofread by a senior translator*, and 9% (n= 1) stated that their translations are *Internally proofread*.
- **Welsh Government:** The 9% (n= 1) respondent from the Welsh Government commented that the translation of the survey into Welsh needed *quality checking*. Nothing was mentioned about their own work.

5.3.2.3.4.3 “DO YOU ALWAYS QUALITY CHECK BEFORE SENDING A DOCUMENT BACK?”

This question aims to understand whether a quality check occurs in the translation workflow process before sending a translation back to the originator, as shown in Figure 5. 87, where 100% participated in this question.

Figure 5. 87 Do you always quality check before sending a document back?

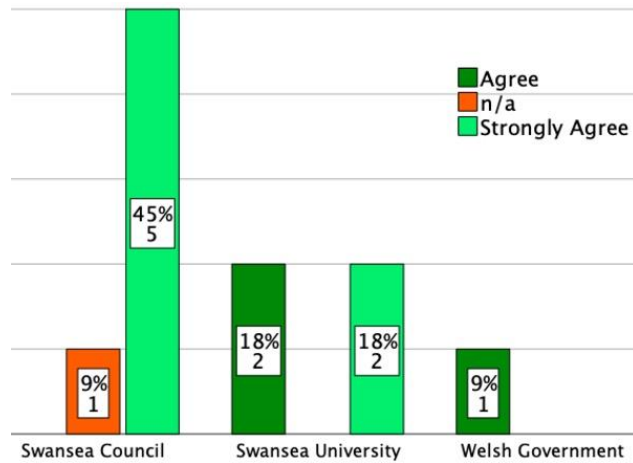


Overall, the results were conclusive, with 91% (n= 10) selected *always*, 55% (n= 6) from Swansea Council, 27% (n= 3) from Swansea University and 9% (n= 1) from the Welsh Government 9% (n= 1) from Swansea University selected *sometimes*.

5.3.2.3.4.4 “EACH OF OUR TRANSLATIONS ARE QUALITY CHECKED”

This question aimed to understand whether each translation is quality checked. The results are shown in Figure 5. 88, where 100% participated in this question.

Figure 5. 88 Each of our translations are quality checked.



Overall, 64% (n= 7) *strongly agree*, 45% (n= 5) from Swansea Council and 18% (n= 2) from Swansea University. 27% (n= 3) *agree*, 18% (n= 2) from Swansea University and 9% (n= 1) from the Welsh Government. 9% (n= 1) respondent selected *n/a*, from Swansea Council.

5.3.2.4 THE FUTURE OF THE TRANSLATION INDUSTRY

This table aimed to provide an understanding of how the respondents viewed technology and translation technology. In addition, it looks at the respondents' sentiment in an industry increasingly driven by technology.

Below in Table 5. 16 are the results from the Translation Unit Survey: the Future of the Industry. In all cases, 100% of the respondents participated in all questions unless otherwise stated.

Table 5. 16 The Future of the Industry

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO THE FUTURE OF THE TRANSLATION INDUSTRY									
		Transslator		Technology		Sentiment			
Translation Unit Survey		SC		SU		WG		Total	
Survey questions + numbers		n	%	n	%	n	%	n	
Q	Total Number of Respondents =	6	0	4	1	1	0	11 100%	
36	How do you feel about being a translator and the future? Are you worried, excited or confused?								
	The future of the translation industry	Neither worried nor excited	0	0%	4	36%	1	9%	5 45%
		Slightly excited	3	27%	0	0%	0	0%	3 27%
		Slightly Worried	3	27%	0	0%	0	0%	3 27%
		TOTAL	6	55%	4	36%	1	9%	11 100%
	About machines taking over translating content	Neither worried nor excited	1	9%	3	27%	1	9%	5 45%
		Slightly Worried	2	18%	0	0%	0	0%	2 18%
		Very worried	3	27%	1	9%	0	0%	4 36%
		TOTAL	6	55%	4	36%	1	9%	11 100%
	Being translator in ten years' time	Neither worried nor excited	0	0%	3	27%	1	9%	4 36%
		Slightly excited	4	36%	0	0%	0	0%	4 36%
		Slightly worried	1	9%	0	0%	0	0%	1 9%
		Very excited	0	0%	1	9%	0	0%	1 9%
		Very worried	1	9%	0	0%	0	0%	1 9%
		TOTAL	6	55%	4	36%	1	9%	11 100%
	About the role of a translator changing	Neither worried nor excited	2	18%	2	18%	0	0%	4 36%
		Slightly excited	1	9%	0	0%	0	0%	1 9%
		Slightly Worried	2	18%	1	9%	1	9%	4 36%
		Very excited	0	0%	1	9%	0	0%	1 9%
		Very worried	1	9%	0	0%	0	0%	1 9%
TOTAL		6	55%	4%	0%	1	9%	11 100%	
37	Imagine we are now in 2035, describe a translator's job and how it may differ from today.	The qualitative data from this question is shown after these tables.							
44	Do you think that combining resources such as generic Translation Memories and Termbases with other public sector organisations would be helpful?	Maybe	3	27%	2	18%	0	0%	5 45%
		No	0	0%	0	0%	1	9%	1 9%
		Yes	3	27%	2	18%	0	0%	5 45%
		TOTAL	6	55%	4	36%	1	9%	11 100%
45	Would you be willing to take part in a focus group to give your opinions about technology in the translation industry?	Maybe	1	9%	1	9%	0	0%	2 18%
		No	2	18%	3	27%	1	9%	6 55%
		Yes	3	27%	0	0%	0	0%	3 27%
		TOTAL	6	55%	4	36%	1	9%	11 100%
47	Thank you for completing this survey, your response is greatly appreciated. Please rate how you feel about the translation industry right now :-) 1 star =dislike. 5 stars = love it!	3	2	18%	2	18%	0	0%	4 36%
		4	4	36%	2	18%	1	9%	7 64%
		TOTAL	6	55%	4	36%	1	9%	11 100%

This section looks at the future of the translation industry and the respondent's role in ten years. How they envisage a translator's role will look in 2035 and seeks to understand the respondents' sentiment. Understanding how the respondents visualise the future may be helpful in areas such as in-house training, student training, etc. From the perspective of this study, to see how respondents envisage a change in their workplace and how the translation industry is evolving, how they are looking to adapt, and what is the perception of translators concerning their roles as technology improves and MT becomes more prominent?

5.3.2.4.1 SENTIMENT

This section looks at how the respondent feels about technology and MT and its effect on their profession in the future. It questions how they envisage the short- and long-term future. The options for the Likert scales used in this section are the following:

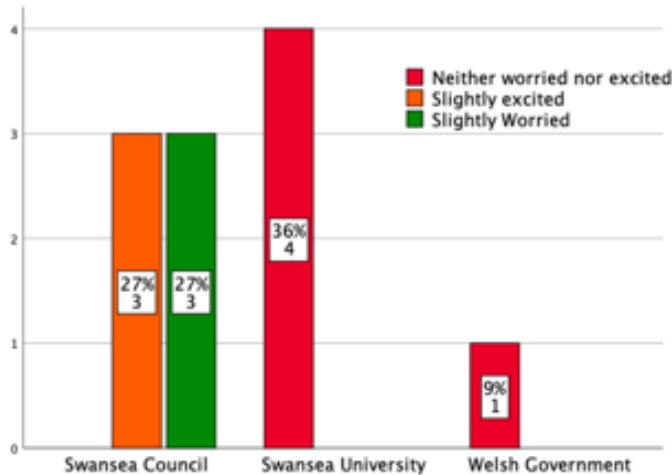
- Very worried
- Slightly Worried
- Neither worried nor excited
- Slightly excited
- Very excited
- I am confused

5.3.2.4.1.1

“HOW DO YOU FEEL ABOUT THE FUTURE OF THE TRANSLATION
INDUSTRY? ARE YOU WORRIED, EXCITED, OR CONFUSED?”

Respondents were asked to clarify their sentiments about the future of the translation industry, a contentious issue in the translation industry. This question aimed to learn about their perspectives across organisations, and the results are shown in Figure 5. 89 below.

Figure 5. 89 How do you feel about the future of the translation industry? Are you worried, excited, or confused?

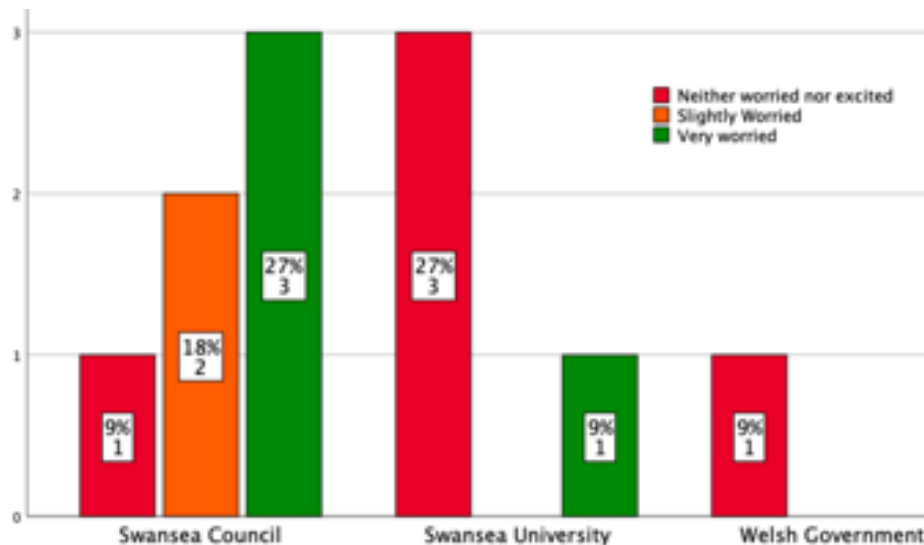


Overall, 45% (n= 5), 36% from Swansea University and 9% (n= 1) from the Welsh Government stated they were *neither worried nor excited*. 27% (n= 3) from Swansea Council were *slightly worried*, and 27% (n= 3) from Swansea Council were *slightly excited*.

5.3.2.4.1.2 “HOW DO YOU FEEL ABOUT MACHINES TAKING OVER TRANSLATING CONTENT?”

Respondents were asked to explain their sentiment regarding how ‘*machines are taking over*’ translating content, a pertinent subject in the translation industry. This question aimed to understand their opinions across the organisations, and the results are shown in Figure 5. 90 below.

Figure 5. 90 How do you feel about machines taking over translating content?

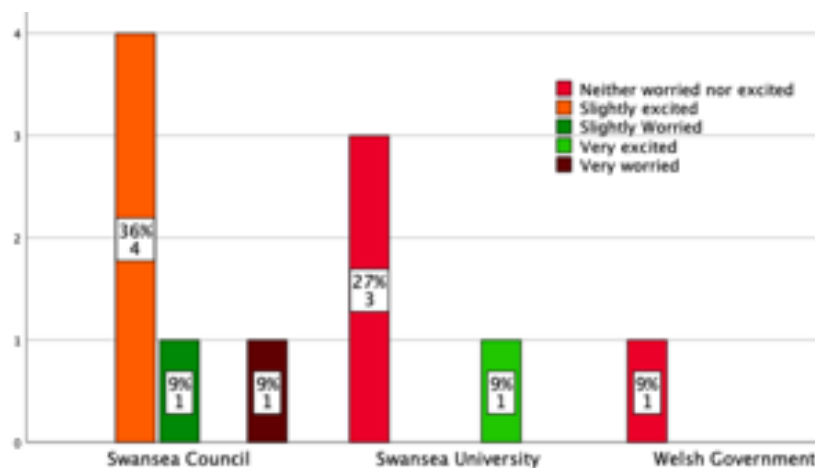


Overall, 45% (n= 5) stated that they were *neither worried nor excited*, 27% (n= 3) from Swansea University, 9% (n= 1) from Swansea Council and 9% (n= 1) from the Welsh Government. Next, 36% (n= 4), 27% (n= 3) from Swansea Council and 9% (n= 1) from Swansea Council claimed to be *very worried*, and 18% (n= 2) from Swansea Council were *slightly worried*. What is remarkable and will be discussed in Chapter 6 is that none of the translators responded positively to machines taking over translating content.

5.3.2.4.1.3 “HOW DO YOU FEEL ABOUT BEING A TRANSLATOR IN TEN YEARS”

Respondents were asked to clarify their sentiments about being a translator in ten years. This question aimed to understand how the translators believe the industry is heading and the sentiment surrounding these thoughts across each organisation. The results are shown in Figure 5. 91 below.

Figure 5. 91 How do you feel about being translator in ten years?

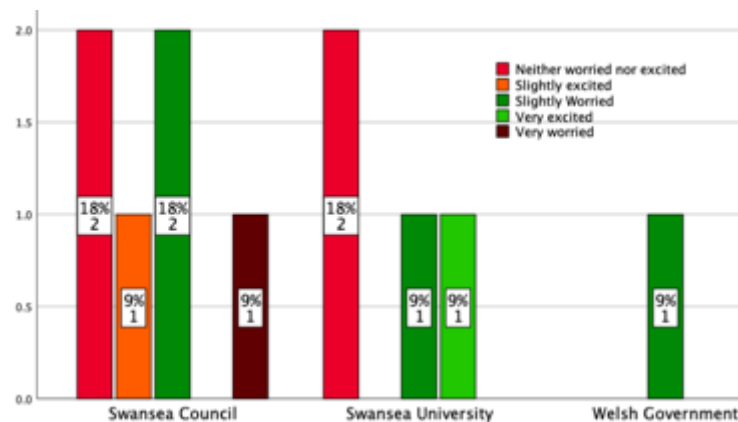


36% (n= 4) from Swansea Council claimed to be *slightly excited* about being a translator in ten years. 36% (n= 4), 27% from Swansea University, and 9% (n= 1) from the Welsh Government are *neither worried nor excited*. 9% (n= 1) from Swansea Council selected *slightly worried*, and another 9% (n= 1) chose *very worried*.

5.3.2.4.1.4 “HOW DO YOU FEEL ABOUT THE ROLE OF A TRANSLATOR CHANGING?”

Respondents were asked to clarify their sentiments about ‘*the role of a translator changing*’. This question aimed to understand the sentiment surrounding the translators participating in this study and how they believe their role will adapt, particularly with the impact of technology in mind. The results are shown in Figure 5. 92 below.

Figure 5. 92 How do you feel about the role of a translator changing?



Overall, 36% (n= 4), 18% (n= 2) from Swansea Council and 18% (n= 2) from Swansea University stated that they were *neither worried nor excited*. 36% (n= 4), 18% (n= 2) from Swansea Council, 9% (n= 1) from Swansea University and 9% (n= 1) from the Welsh Government were *slightly worried*. 9% (n= 1) from Swansea Council were *slightly excited*, 9% (n= 1) from Swansea Council were *very excited*, and 9% (n= 1) from Swansea Council were *very worried*.

5.3.2.4.1.5 “IMAGINE WE ARE NOW IN 2035, DESCRIBE A TRANSLATOR’S JOB AND HOW IT MAY DIFFER FROM TODAY”

The purpose of this question is to ask respondents to think about how they anticipate the role of a translator will change in 2035 compared to today. With recent technological advancements, this could be a sensitive topic; however, gathering data on how respondents envision their role of adapting due to technological advances will help understand their expectations and any potential training requirements to adapt to a changing environment.

Machine Translation Post-Editing (MTPE)

100% (n= 11) of the respondents from the Translation Unit/Services Survey commented on the prospect of a translator’s role becoming more of a post-editing one in the future, and one stated that they *would find this way of working soul-destroying* (ID 1: Swansea University). They believe that MT will vastly improve and that technology, such as MT and CAT tools, will become more important than human translation skills. It was even suggested that MT might *replace humans entirely*. With technology continually advancing *day to day*, this will become a significant aspect in 2035 due to the volume of content that will require translation. One respondent remarked *I don’t think the benefits of increased output outweigh the loss of creativity*, and another stated that *translation skills will be lost, and the language without idioms, phrases, proverbs and so on will be poorer* (ID 2: Swansea Council).

Even though the professional translator’s responses in the Translation Unit/Services Survey acknowledged the impending impact of technology, comments made on the BA/MA Student Survey were even more specific, signifying that they are potentially even more aware of technological advancements:

I think that in the future, there will be even more use of MTs and that the time required by translators to carry out translations will be significantly reduced. I also think that prices will be lowered. Similarly, I think the market will be even more competitive, and this will affect new translators and those with little experience.

(ID 14: BA/MA Student Survey)

Another respondent from the BA/MA Student Survey indicated again how the role would be reduced and reduced in remuneration; however, individual believes there will still be some opportunities in large organisations for a traditional translator.

As opposed to now (2021), translators will likely be fixing the minor errors in the TT produced by machine translators. It'll be less work and also be lower pay. If highly skilled and lucky, may still be employed by a large company/institution to translate in the traditional way (in the way we translate today). This will be high payed [sic] but there won't be many opportunities to get this job.

(ID: 37: BA/MA Student Survey)

A DECLINE IN THE NEED FOR TRANSLATION SKILLS

When looking at the results precisely from the Translation Unit/Services Survey, one respondent stated they would either *look for a new career or focus on a more niche area of expertise where MT is not going to be as appropriate* (ID 5: Swansea University) and provide specialist translation, all due to the *more dependency on translator machines and less on human skill* (ID 8: Swansea University). It was suggested that it is a serious issue that machine translation (MT) will not go far enough in the future to translate wordplay, style, and context. Human translators will continue to be needed to *interpret the meaning* (ID 10: Swansea Council). According to one respondent, *quality control*, rather than translation, is *much more dangerous to the sector than technology* (ID 4: Welsh Government). However, one noteworthy point was made regarding interpreters and how there will still be a need as 'robots' cannot interpret the context (ID 9: Swansea Council).

Compliance

One respondent commented positively about compliance with the Welsh Language Standards 2015-2018, stating that they anticipate technology would improve compliance. (ID: 9 Translation Unit/Services Survey)

5.3.2.4.2 TECHNOLOGY

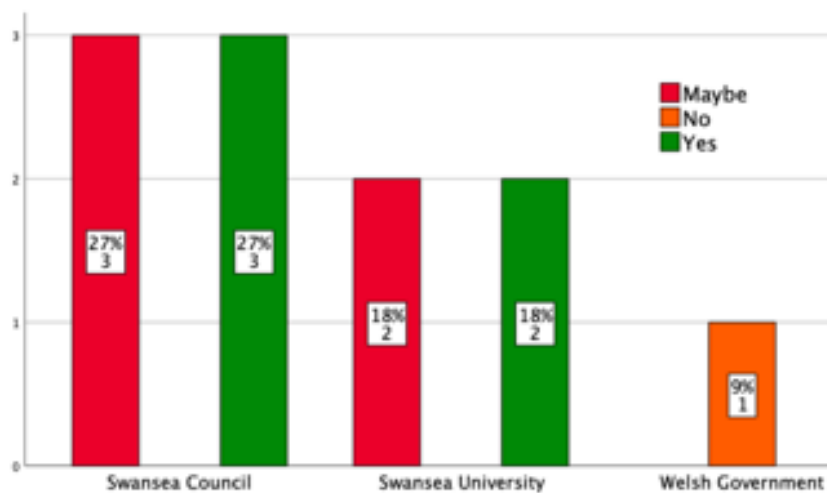
This section looks at the translation technology used in the workflow and asks the respondents' opinions.

5.3.2.4.2.1 "DO YOU THINK THAT COMBINING RESOURCES SUCH AS GENERIC TRANSLATION MEMORIES AND TERMBASES WITH OTHER PUBLIC SECTOR ORGANISATIONS WOULD BE HELPFUL?"

This question aimed to understand the translators' opinions working in each organisation, who understand the technology available to them and its potential.

The results are shown in Figure 5. 93 below.

Figure 5. 93 Do you think that combining resources such as generic Translation Memories and termbases with other public sector organisations would be helpful?

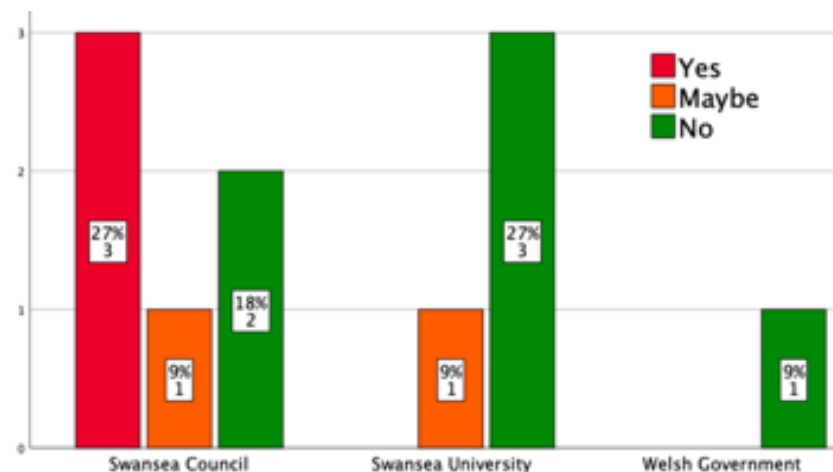


The respondents were asked the above question and provided a pre-coded dropdown: *yes*, *no*, and *maybe*. Overall, 45% (n= 5) stated *yes*, 27% (n= 3) from Swansea Council and 18% (n= 2) from Swansea University and 45% (n= 5) also selected *maybe*, 27% (n= 3) from Swansea Council and 18% (n= 2) from Swansea University. Only 9% (n= 1) of the Welsh Government selected *no*.

5.3.2.4.2.2 “WOULD YOU BE WILLING TO TAKE PART IN A FOCUS GROUP TO GIVE YOUR OPINION ABOUT TECHNOLOGY IN THE TRANSLATION INDUSTRY?”

Many respondents have differing viewpoints and appear to wish to convey their thoughts on this topic, as the outcomes of this study show (particularly in the qualitative remarks). This study intends to gather more up-to-date information and clarify any points of interest due to the findings by giving employees inside each organisation an opportunity to contribute. The results are shown in Figure 5. 94 below.

Figure 5. 94 Would you be willing to take part in a focus group?

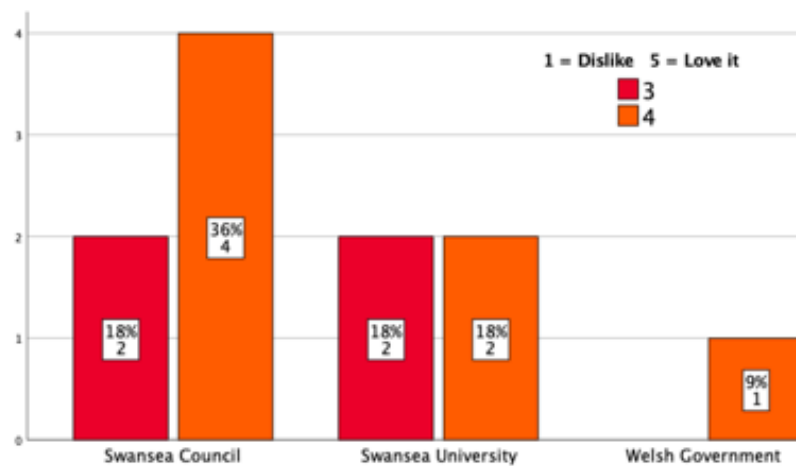


This question, which asks if the respondents would be willing to participate in a focus group to voice their opinions, received a relatively positive response overall. Out of 11 respondents, there was a 100% response rate. However, 55% (n= 6) members of staff selected *no*, 18% (n= 2) from Swansea Council, 27% (n= 3) from Swansea University and 9% (n= 1) from the Welsh Government. 18% (n= 2) selected *maybe*, 9% (n= 1) from Swansea Council and 9% (n= 1) from Swansea University, and the remaining 27% (n= 3) from Swansea Council selected *yes*. Therefore, 45% (n= 5) of respondents appeared interested in participating in a focus group.

5.3.2.4.2.3 “PLEASE RATE HOW YOU FEEL ABOUT WELSH TRANSLATIONS RIGHT NOW! 0 = DISLIKE 5 = LOVE IT!”

This study aimed to collect data to determine whether there was a consensus across the public sector or whether each organisation had differing opinions. This question aimed to obtain a sense of how respondents felt about Welsh translations at the time of completing the survey. One star signified *dislike*, and five stars meant they *loved it*. The results are shown in Figure 5. 95 below.

Figure 5. 95 Rate how you feel about Welsh translations.



As shown in Figure 5. 95, there is a significant quantity of positive responses. In total, 100% (n= 11) of respondents participated, and the participants selected only two options. 64% (n= 7) of respondents selected *option 4*, 36% (n= 4) from Swansea Council, 18% (n= 2) from Swansea University and 9% (n= 1) from the Welsh Government. The remaining 36% (n= 4) who selected *option 3* consisted of 18% (n= 2) from Swansea Council and 18% (n= 2) from Swansea University.

5.3.3 BA & MA STUDENT SURVEY

Responses to the BA & MA Student Survey questions were received and collated between March 2021 and November 2021. Forty-two respondents completed the Survey, and all responses were valid. It can be assumed that all forty-two respondents answered all questions in each section unless otherwise stated.

The respondents took an average of sixteen minutes and one⁶⁴ second to complete the survey. It was anticipated that the survey would take approximately five minutes to complete, and the respondent was made aware of the anticipated timescale before beginning the survey. An assumption can be made that the respondents took their time to consider their answers to the questions (as opposed to a respondent clicking sporadically without much thought or consideration to the answers given), signifying that the answers can be considered credible and well thought out. To organise the data, each survey question is divided into one of four categories, colour coded and then sub-categorised, as shown in Table 5. 17. Qualitative and quantitative results are presented in the sections below at the beginning of each category.

Table 5. 17 BA & MA Survey: A Breakdown of Categories in this Survey

NO.	CATEGORY TITLE	SUB-CATEGORY DESCRIPTION
5.3.3.1	Background, Qualifications and Expertise of the Respondents	Demographics
		Linguistic Competence
5.3.3.2	Technological Competence and Tools in the Workplace Setting	CAT tools
		Machine Translation
		Technological impact on workflow
		Translation Management Tools (also known as Systems)
		Translation Technology Tools
5.3.3.3	The Future of the Translator and the Industry	Technology
		Sentiment

5.3.3.1 BACKGROUND, QUALIFICATIONS AND EXPERIENCE

This category looks at each respondent's skill set, demographics, educational background, and linguistic competency levels. The goal is to gain insight and an understanding of each respondent, their linguistic competencies, and their position within their organisation. The sub-categories cover the *Demographics* of the individual taking part in the survey, then *Linguistic Competence*.

5.3.3.1.1 DEMOGRAPHICS

100% (n= 42) of the respondents completed the survey in *English* only, with 81% (n= 34) being *female* and 19% (n= 8) being *male*. 48% (n= 20) were aged between 18-24 years old, followed by 45% (n= 29) from the 25-34 age range, 11% (n= 17) between 35-44 and finally, 5% (n= 2) from the 45–54-year-old group.

26% (n= 11) claimed to have *English Nationality*, 19% (n= 8) stated they were *Welsh*, followed by 17% (n= 7) who stated that they were *Mediterranean and Middle Eastern*. 12% (n= 5) were *Western European*, and 10% (n= 4) were *Eastern European*. Then, 10% (n= 4) claimed to be of *Asian* nationality, and the rest, *China, Scottish and Spanish*, all had 10% (n= 1) individual, each representing their nations.

When questioned about the course they studied as a BA or MA student, 55% (n= 23) stated they were part of *MA (Masters) degrees* and 7% (n= 3) associated themselves with *BA (Bachelor's) degrees*. 4% (n= 2) of respondents claimed to be registered on *PhD schemes*, with one of those linked to a *university in Hong Kong*. For the rest of the results, 31% (n= 13) did not define their course in enough detail to define it any further.

5.3.3.1.2 LINGUISTIC COMPETENCE

Following the Demographics category, this section evaluates the respondents' Linguistic Competence, focusing on their expertise and professional experience. Table 5. 18 shows the results from the Background and Experience section of the survey, followed by a discussion.

Table 5. 18 Results from the BA/MA Student Survey: Background, & Experience

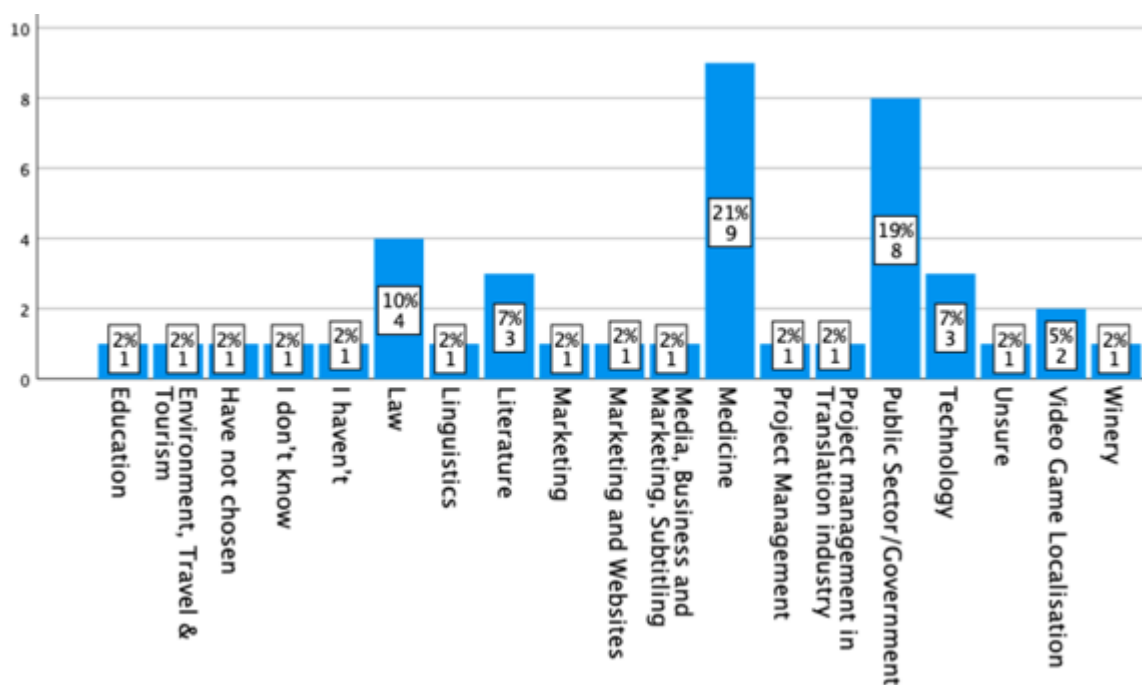
RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO BACKGROUND & EXPERIENCE			
Linguistic Competence			
BA/MA Student Survey			
Survey question numbers		n	%
Q	Total Number of Respondents	42	100%
7	Have you chosen a sector to specialise in?	Education	1 2%
		Environment, Travel & Tourism	1 2%
		Have not chosen	1 2%
		I don't know	1 2%
		I haven't	1 2%
		Law	4 10%
		Linguistics	1 2%
		Literature	3 7%
		Marketing	1 2%
		Marketing and Websites	1 2%
		Media, Business and Marketing, Subtitling	1 2%
		Medicine	9 21%
		Project Management	1 2%
		Project management in Translation industry	1 2%
		Public Sector/Government	8 19%
		Technology	3 7%
		Unsure	1 2%
		Video Game Localisation	1 2%
		Video Game Localisation	1 2%
Winery	1 2%		
	TOTAL	42	100%
8	Have you carried out any 'professional translation' work yet (as in you have been paid for your translation) ?	No	25 60%
		Yes	17 40%
		TOTAL	42 100%
9	If you said 'yes' to number 8 how much professional translation experience do you have?	0-1 years	8 19%
		1-2 years	7 17%
		2-5 years	1 2%
		5-10 years	1 2%
		Other	25 60%
		TOTAL	42 100%

This sub-category looks at the specifics of the respondent’s experience in professional translation. It aims to understand whether the individual has specialist experience and whether they have experience working as a translator, and if so, how much.

5.3.3.1.2.1 “HAVE YOU CHOSEN A SECTOR YOU WOULD LIKE TO SPECIALISE IN?”

This question aimed to understand whether the respondents had chosen a specific sector to specialise in or were undecided. The respondents were presented with a list (as a rough guide), including *Medicine, Law, Technology, Literature, and Public sector/Government*. They had an opportunity to select *other* and add an alternative sector. The results were collated and shown in Figure 5. 96.

Figure 5. 96 Have you chosen a sector you would like to specialise in?



Out of the 15 different sectors (with some overlapping), the most popular choice of the sector was Medicine with 21% (n= 9) respondents, followed by 19% (n= 8) who chose the *Public sector/Government*. 10% (n= 4) chose *Law*, 7% (n= 3) chose *Literature* and the same quantity chose *Technology*. 5% (n= 2) notably selected *Video Games*; the rest comprised individual responses. 2% (n= 1) of respondents selected *Winery, Project Management in the translation industry, Project*

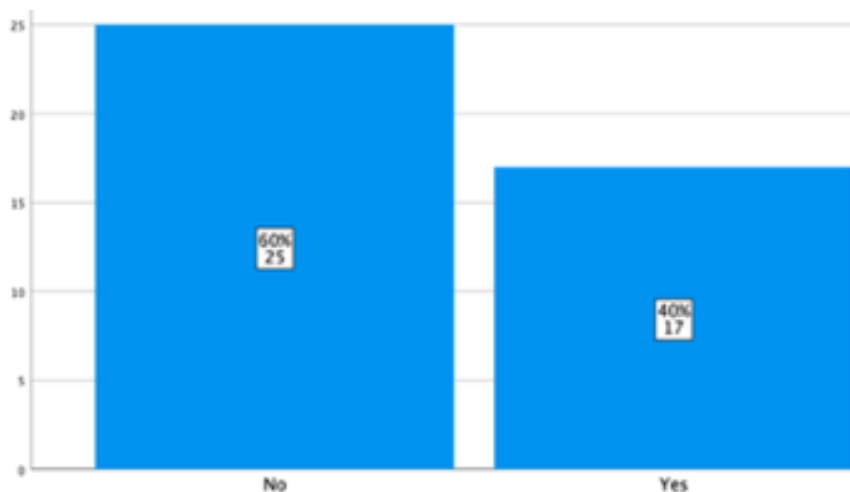
Management, Media, Business, Marketing and Subtitling, Marketing and Websites, Marketing, Linguistics, Environment Travel and Tourism and Education.

The remainder consisted of those individuals (2%, n= 1) who did not define a sector but stated *Unsure; I haven't, I don't know and have not chosen.*

“HAVE YOU CARRIED OUT ANY ‘PROFESSIONAL TRANSLATION’ WORK YET (AS IN YOU HAVE BEEN PAID FOR YOUR TRANSLATION)?”

This question aimed to understand whether the respondents have any professional experience. The respondents were asked to select either *yes* or *no* from a dropdown menu with pre-coded results. If they chose *yes*, they would proceed to the next question (9); if not (*no*), they would pass to question 10. As shown in Figure 5. 97 below, the responses show a 20% difference in the results, with the figures rounded up for clarity, 60% (n= 25) selected *no*, and 40% (n= 17) selected *yes* for professional translation work.

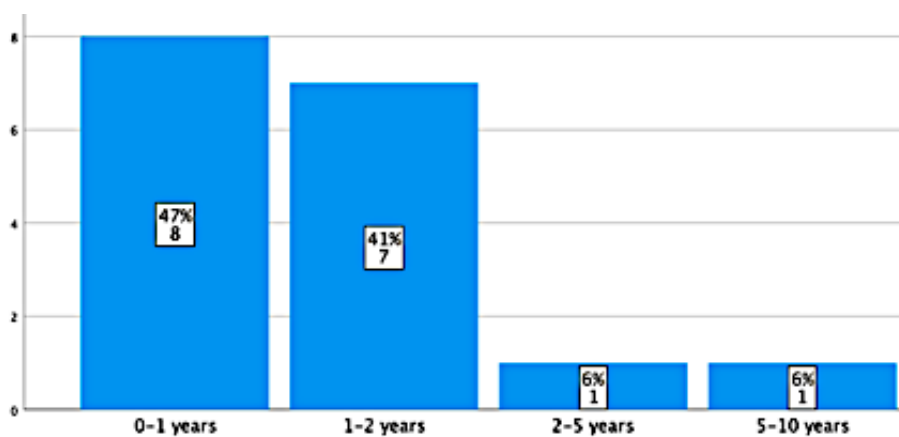
Figure 5. 97 Have you carried out any ‘professional translation’ work yet? n’ work yet?



5.3.3.1.2.2 “IF YOU SAID ‘YES’ TO NUMBER 8, HOW MUCH PROFESSIONAL TRANSLATION EXPERIENCE DO YOU HAVE?”

This question aims to gather further data regarding the professional translation experience of the respondents. Of those who selected *yes* in question 8, when asked how much professional translation experience they had, 40% (n= 17) out of all the respondents participated in this question and therefore, the results were achieved by calculating the percentage based on the n= 17 respondents only (as opposed to all respondents) to demonstrate a more accurate result. The results from this question are shown in Figure 5. 98 below and in the full results table.

Figure 5. 98 If you said yes to number 8, how much professional translation experience do you have?



The respondents were presented with a dropdown menu and a list of pre-coded answers to select from. The options were: *0-1 years*, *1-2 years*, *2-5 years*, *5-10 years*, and *more than 10 years*. Most respondents, 47% (n= 8), selected *0-1 year*, meaning they had less than one year’s experience as a professional translator. Next, 41% (n= 7) selected *1-2 years* and the remaining n= 2 respondents (6%, n= 1) selected *2-5 years* and *5-10 years*.

5.3.3.2 TECHNOLOGICAL COMPETENCE AND TOOLS IN THE WORKPLACE SETTING

Questions from this survey have been divided into five categories and several subcategories. As this survey is directed toward BA/MA Students, nineteen questions apply to this category covering all subcategories. For clarity, all categories are shown in Table 5. 19 below, showing the various shades in each subcategory which highlight the different topics being analysed; for example (and in this case): under **Technological Competence and Tools in the Workplace Setting**, there are:

A: CAT tools, **B:** Machine Translation, **C:** Technological Impact on workflows and **D:** Training and **E:** Translation Management Tools (or known as Systems)

Table 5. 19 Technological competence and tools in a workplace setting: Translation tools and Translation Management Tools. Page 1 of 5

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO TECHNOLOGICAL COMPETETENCE AND TOOLS IN A WORKPLACE SETTING																																																																																																																									
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Q	Total Number of Respondents =							11	100%																																																																																																																
11	Will you use CAT Tools such as SDL Trados, Systran, Memsource etc. when completing your translations?						Can't work without it!	6	14%																																																																																																																
							Definitely will use	26	62%																																																																																																																
							Maybe will use	1	2%																																																																																																																
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11	Will you use Machine Translation such as Google Translate, Microsoft Translator etc. when completing your translations?						Can't work without it!	2	5%																																																																																																																
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							Maybe will use	14	33%																																																																																																																
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							Probably won't use	9	21%																																																																																																																
							TOTAL	42	100%																																																																																																																
13	Have you ever used Machine Translation to translate content and then post edit the text?						No	6	14%																																																																																																																
							Yes	36	86%																																																																																																																
							TOTAL	42	100%																																																																																																																
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Monthly	9	21%	Monthly	3	7%	Never	32	76%																																																																																																																	
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16	Which machine translation tool do you trust more? Amazon Translate, Bing Translator, Google Translate, Microsoft Translator, Yandex, Wordbee																																																																																																																								
<table border="1"> <thead> <tr> <th>Rank</th> <th>Options</th> <th>1st choice</th> <th>%</th> <th>2nd choice</th> <th>%</th> <th>3rd choice</th> <th>%</th> <th>4th choice</th> <th>%</th> <th>5th choice</th> <th>%</th> <th>6th choice</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Google Translate</td> <td>69</td> <td></td> <td>14.3</td> <td></td> <td>2.4</td> <td></td> <td>4.8</td> <td></td> <td>4.8</td> <td></td> <td>9.5</td> <td></td> </tr> <tr> <td>2</td> <td>Microsoft Translator</td> <td>19</td> <td></td> <td>42.9</td> <td></td> <td>21.4</td> <td></td> <td>14.3</td> <td></td> <td>14.3</td> <td></td> <td>2.4</td> <td></td> </tr> <tr> <td>3</td> <td>Amazon Translate</td> <td>4.8</td> <td></td> <td>9.5</td> <td></td> <td>33.3</td> <td></td> <td>31</td> <td></td> <td>31</td> <td></td> <td>2.4</td> <td></td> </tr> <tr> <td>4</td> <td>Bing Translator</td> <td>2.4</td> <td></td> <td>21.4</td> <td></td> <td>4.8</td> <td></td> <td>2.4</td> <td></td> <td>2.4</td> <td></td> <td>9.5</td> <td></td> </tr> <tr> <td>5</td> <td>Yandex</td> <td>4.8</td> <td></td> <td>7.1</td> <td></td> <td>71.4</td> <td></td> <td>71.4</td> <td></td> <td>9.5</td> <td></td> <td>64.3</td> <td></td> </tr> <tr> <td>6</td> <td>Wordbee</td> <td>4.8</td> <td></td> <td>4.8</td> <td></td> <td>4.8</td> <td></td> <td>4.8</td> <td></td> <td>4.8</td> <td></td> <td>4.8</td> <td></td> </tr> <tr> <td colspan="2">Total</td> <td>100%</td> <td></td> <td>100%</td> <td></td> <td>100%</td> <td></td> <td>100%</td> <td></td> <td>100%</td> <td></td> <td>100%</td> <td></td> </tr> </tbody> </table>										Rank	Options	1 st choice	%	2 nd choice	%	3 rd choice	%	4 th choice	%	5 th choice	%	6 th choice	%	1	Google Translate	69		14.3		2.4		4.8		4.8		9.5		2	Microsoft Translator	19		42.9		21.4		14.3		14.3		2.4		3	Amazon Translate	4.8		9.5		33.3		31		31		2.4		4	Bing Translator	2.4		21.4		4.8		2.4		2.4		9.5		5	Yandex	4.8		7.1		71.4		71.4		9.5		64.3		6	Wordbee	4.8		4.8		4.8		4.8		4.8		4.8		Total		100%		100%		100%		100%		100%		100%	
Rank	Options	1 st choice	%	2 nd choice	%	3 rd choice	%	4 th choice	%	5 th choice	%	6 th choice	%																																																																																																												
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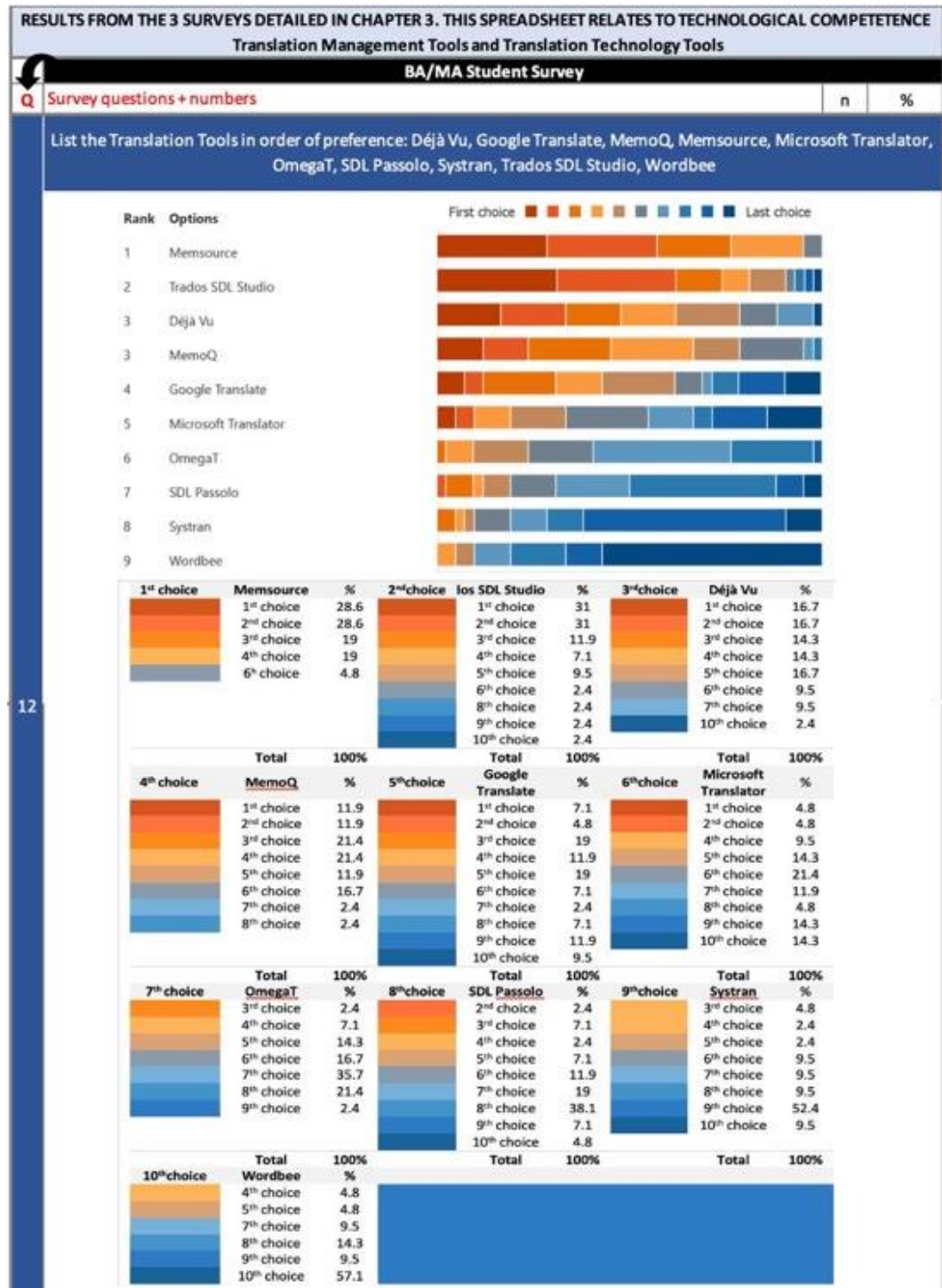
Ctd. Table 5. 19 Results from the Translation Unit/Services Survey: Technological Competence and Tools in a workplace setting: Machine Translation Page 2 of 5.

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO TECHNOLOGICAL COMPETENCE AND TOOLS IN A WORKPLACE SETTING																																																																																			
Translation Management Tools and Translation Technology Tools																																																																																			
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17	Why do you like your favourite tool?																																																																																		
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	1	Easy to use	[Bar chart showing preference distribution]																																																																																
	2	A well recognised brand	[Bar chart showing preference distribution]																																																																																
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	5	Training Provided	[Bar chart showing preference distribution]																																																																																
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	7	I hate them, something always...	[Bar chart showing preference distribution]																																																																																
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18	Do you think translation technology makes translating more difficult or easier? 0 = Difficult 10 = Easier	0	1	2%																																																																															
		3	1	2%																																																																															
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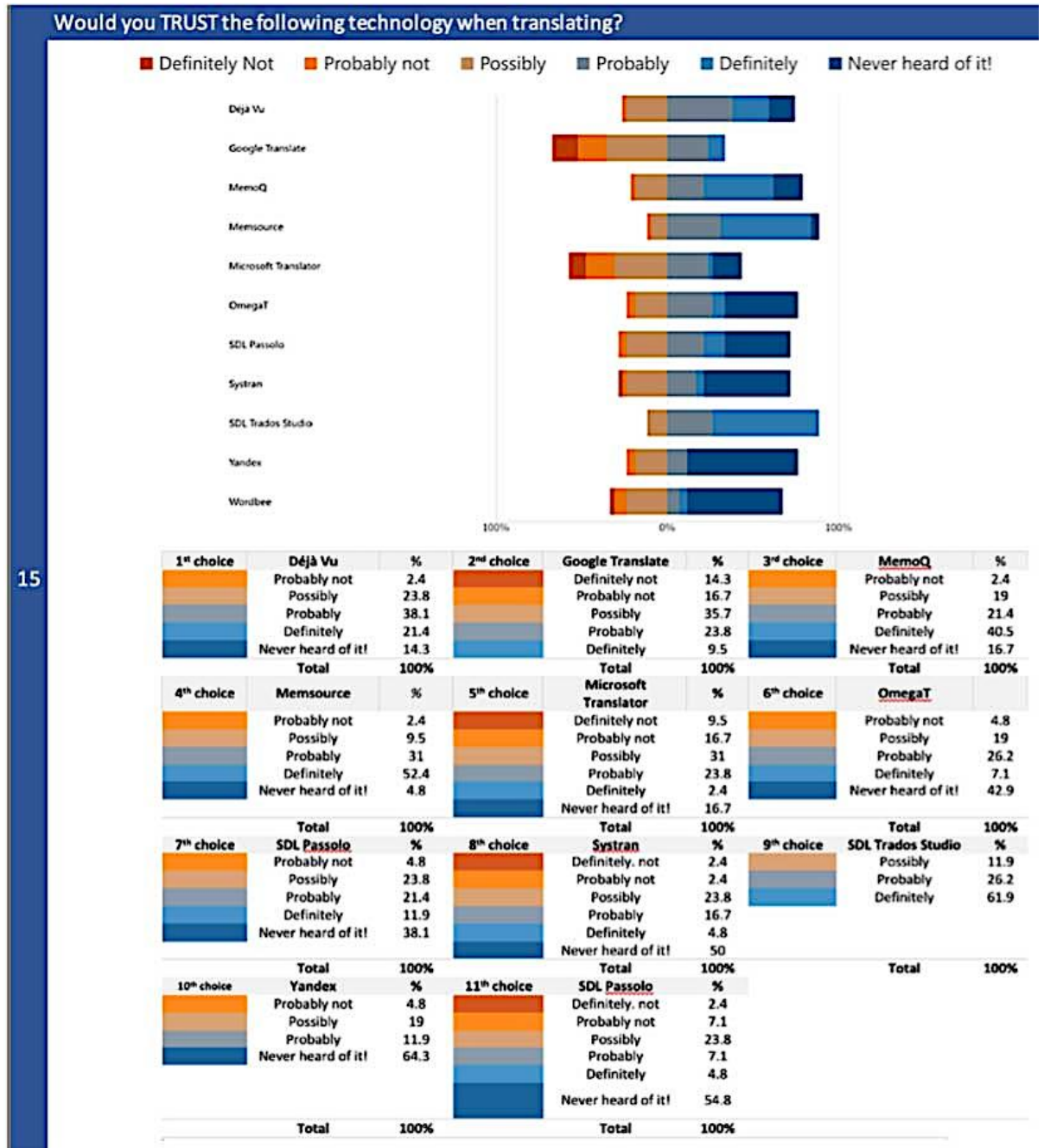
Ctd. Table 5. 19 Results from the Translation Unit Services Survey: Machine Translation: Technological Competence and Tools in a Workplace Setting. Page 3 of 5.

19	How much do you think translation technology helps the translation process? 0 = Difficult 10 = Easier	3	1	2%
		5	1	2%
		6	3	7%
		7	8	19%
		8	14	33%
		9	8	19%
		10	7	17%
TOTAL		42	100%	
22	Do you have any comments about the use of technology in the translation industry? Do comment freely, your response is anonymous	The qualitative data from this question is shown after these tables.		
23	If there was one thing you could change about technology in the translation industry, what would it be?	The qualitative data from this question is shown after these tables.		
11	Will you use Translation Management Tools such as Wordbee, Smartcat, Smartling etc. when completing your translations? (11)	Can't work without it!	1	2%
		Definitely will use	4	10%
		Maybe will use	11	26%
		NA	3	7%
		Probably will use	9	21%
		Probably won't use	11	26%
		Won't use	3	7%
		Total	42	100%
10	What are your thoughts about using translation technology?	Can't work without it!	1	2%
		Definitely will use	4	10%
		Maybe will use	11	26%
		NA	3	7%
		Probably will use	9	21%
		Probably won't use	11	26%
		Won't use	3	7%
		Total	42	100%

Ctd. Table 5. 19 Results from the Translation Unit/Services Survey: Machine Translation: technological Competence and Tools in a workplace setting. Page 4 of 5.



Ctd. Table 5. 19 Results from the Translation Unit/Services Survey: Machine Translation: technological Competence and Tools in a workplace setting. Page 5 of 5.



15

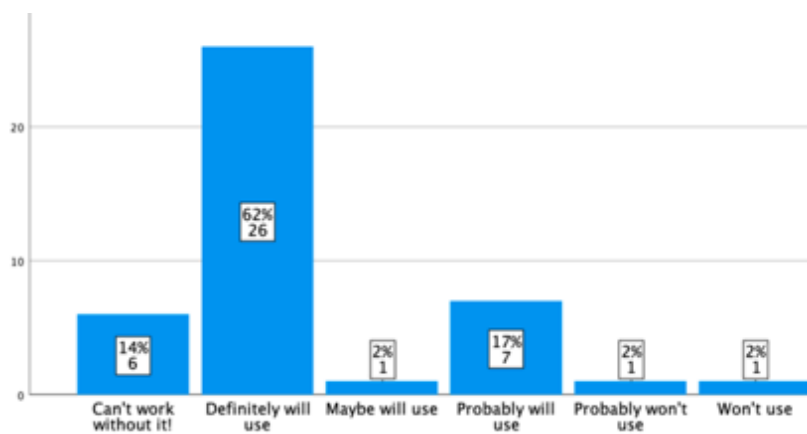
5.3.3.2.1 CAT TOOLS

This sub-heading looks specifically at the sentiment surrounding the usage of specific CAT tools in organisations.

5.3.3.2.1.1 “WILL YOU USE CAT TOOLS SUCH AS TRADOS, SYSTRAN, MEMSOURCE ETC., WHEN COMPLETING YOUR TRANSLATIONS?”

This question aims to understand whether the respondents would use CAT tools, as listed in the question. The results are shown in Figure 5. 99 below.

Figure 5. 99 Will you use CAT tools such as Trados, Systran, Memsource etc. when completing your translations?



The response was very positive, in favour of using the tools. 62% (n= 26) selected that they *definitely will use it*, followed by 17% (n= 7) who *probably will use* and 14% (n= 6) claimed they *can't work without it*. From the more negative standpoint but in the minority, 2% (n= 1) stated they *maybe will use*, and the same amount also claimed they *probably won't use* and *won't use*. Therefore 93% (n= 39) gave a positive response, and the rest were less than supportive of using CAT tools.

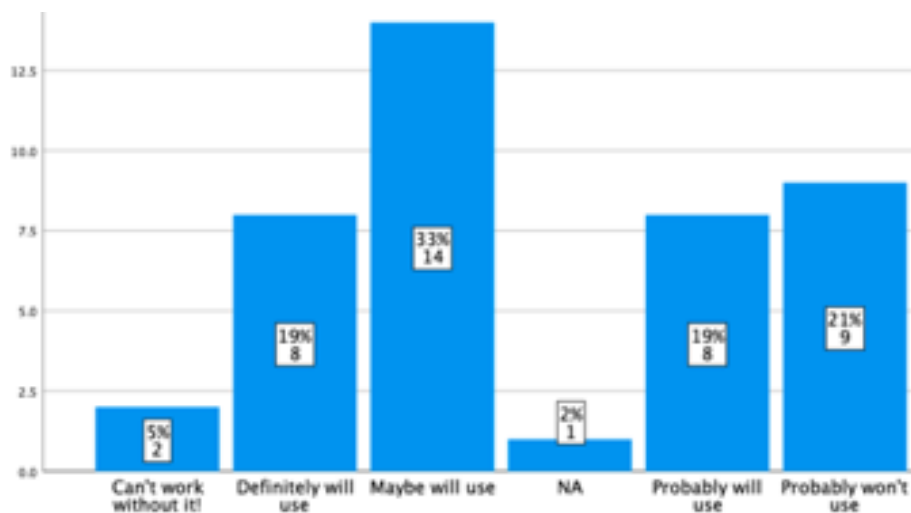
5.3.3.2.2 MACHINE TRANSLATION

As one of the subcategories, MT plays a vital role in the translation industry. This section looks to understand whether the respondents use MT, which tool they trust the most and the frequency of usage. The full table of results is shown in Table 5. 19 above.

5.3.3.2.2.1 “WILL YOU USE MACHINE TRANSLATION, SUCH AS GOOGLE TRANSLATE, MICROSOFT TRANSLATOR ETC., WHEN COMPLETING YOUR TRANSLATIONS?”

This question aims to understand whether the respondents would use MT, such as Google Translate, Microsoft Translator etc., to translate their content. The results are shown in Figure 5. 100 below.

Figure 5. 100 Will you use Machine Translation such as Google Translate, Microsoft Translator etc. when completing your translations?

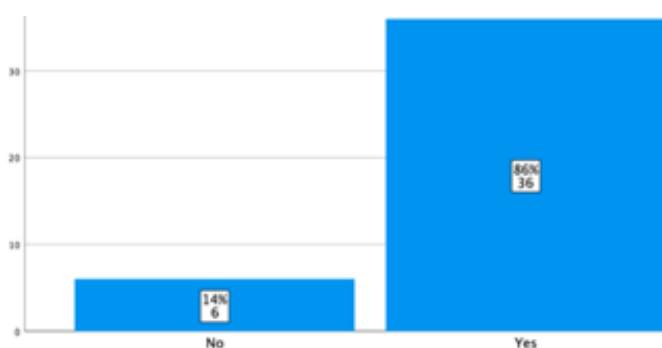


Many respondents were relatively positive, with 33%, n= 14 who selected *maybe will use*, 19% (n= 8) stating that they *probably will use*, 5% (n= 2) *couldn't live without it*, and 19% stating they *definitely will use*. The only negative response was from 21% (n= 9), who selected *probably won't use*, and 2% (n= 1), who selected *n/a*. This totals 76% (n= 32) who favour using MT before post-editing content.

5.3.3.2.2.2 “HAVE YOU EVER USED MACHINE TRANSLATION TO TRANSLATE CONTENT AND THEN POST-EDIT THE TEXT?”

To understand the usage of MT by the respondents, they were asked whether they had ever used MT to translate content and then post-edit the text. The results are shown in Figure 5. 101 below.

Figure 5. 101 Have you ever used Machine Translation to translate content and then post-edit the text?



5.3.3.2.2.3 “HOW OFTEN DO YOU USE THE FOLLOWING MT TOOLS BEFORE POST-EDITING?”

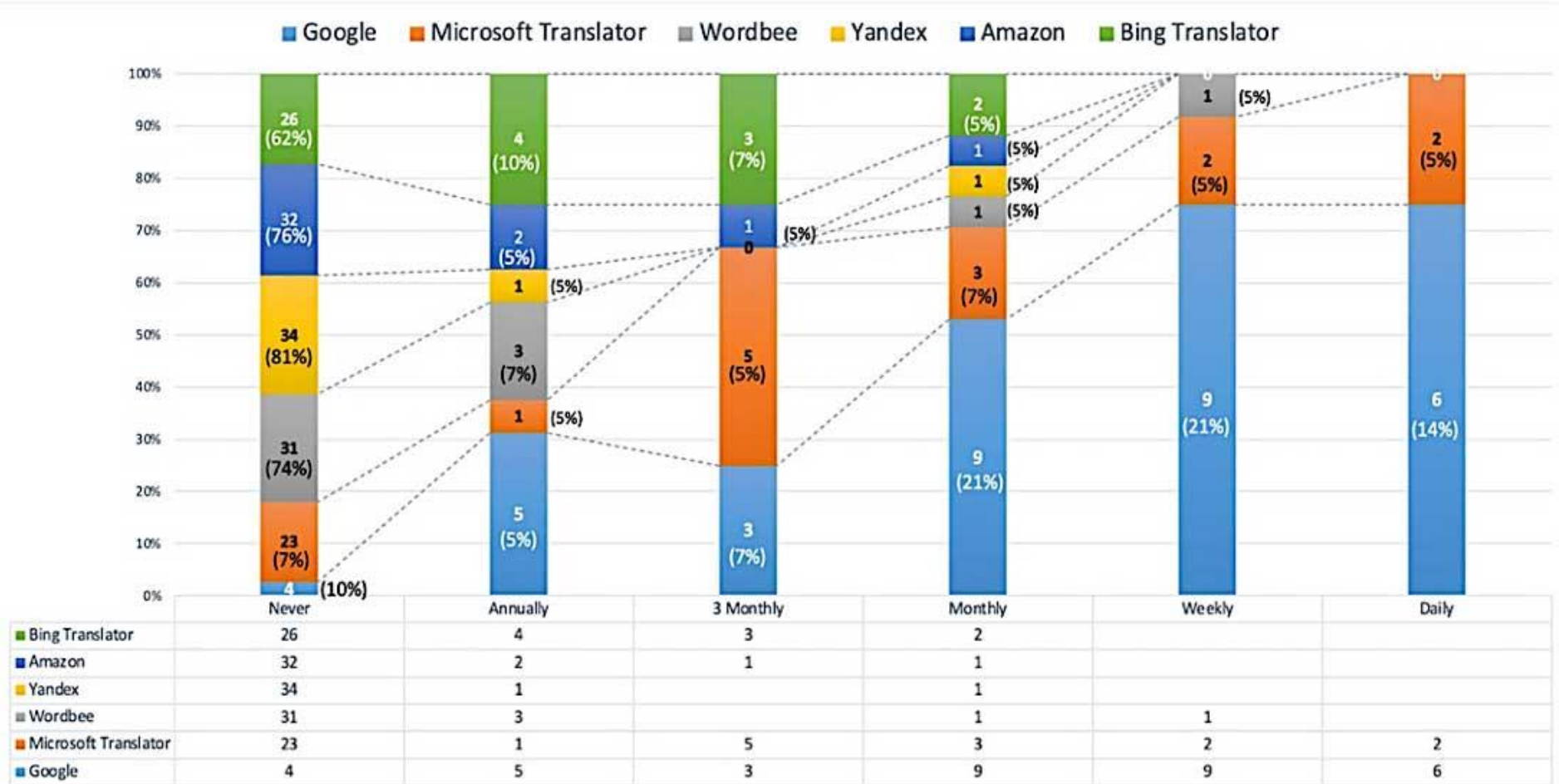
(Google Translate, Microsoft Translator, Wordbee, Yandex, Amazon Translate, Bing Translator)

This question aims to understand which MT tool is used and how often.

Respondents were provided with a list of MT tools, including a Translation Management Tool (as it has an integrated MT facility), to choose from, such as: *Google Translate, Microsoft Translator, Amazon, Wordbee, Yandex and Bing Translator*. The respondents were asked to select the frequency they use the tools, such as *Daily, Weekly, Monthly, 3 Monthly, Annually and Never*, and the results were collated for analysis. The results were tabulated and then shown in the stacked bar chart below (Figure 5. 102) to highlight the tools with the highest and lowest frequency of use.

The most frequently used tool is Google Translate, with 14% (n= 6) respondents claiming to use the tool *Daily* and 21% (n= 9) selecting *Weekly*. 21% (n= 9) also selected *monthly*, and only 10% (n= 4) selected *Never*. The next most frequently used is Microsoft Translator, with 5% (n= 2) selecting *Daily* and *Weekly* usage, 7% (n= 3) choosing *Monthly* and 5% (n= 5) selecting *Annually*. Following on from Microsoft Translator, Bing Translator appears to be the next most used tool in the list, followed by Amazon, Yandex and Wordbee.

Figure 5. 102 How often do you use the following Machine Translation tools before post-editing?



As explained before, Figure 5. 102 provides a visual representation in a stacked bar chart to clearly illustrate the frequency of use and the popularity of the five MT tools before translation. The intermittent lines that join the columns together show the variance in usage; for example, 5% (n= 5) of respondents use Google *annually*, but 21% (n= 9) use it *weekly and monthly*.

5.3.3.2.2.4 “WHICH MACHINE TRANSLATION TOOL DO YOU TRUST MORE? AMAZON TRANSLATE, BING TRANSLATOR, GOOGLE TRANSLATE, MICROSOFT TRANSLATOR, YANDEX, OR WORDBEE”

This question aims to understand which MT tools are trusted more. The respondents were given a list of five MT options and asked to rank them in order of importance. Microsoft forms then calculated the preferences and placed the results in order as follows:

- | | |
|--------------------------------|---------------------------|
| 1. <i>Google Translate</i> | 4. <i>Bing Translator</i> |
| 2. <i>Microsoft Translator</i> | 5. <i>Yandex</i> |
| 3. <i>Amazon Translate</i> | 6. <i>Wordbee</i> |

Google Translate was first, with 69% selecting it as their first choice regarding trust. Secondly, *Microsoft Translator* was chosen, as 42.9% selected this tool as their second choice. Next, 33.3% of the respondents selected *Amazon Translate* as their third choice. The following preferred choice is *Bing Translator*, with 33.3% as their third choice and 31% as their fourth choice. *Yandex* was placed in fifth position with 71.4%; finally, *Wordbee* was the sixth choice with 64.3%.

5.3.3.2.3 TECHNOLOGICAL IMPACT ON WORKFLOW

5.3.3.2.3.1 “WHY DO YOU LIKE YOUR FAVOURITE TOOL?”

This question aims to understand why the respondents like their favourite tool. Seven pre-coded answers were supplied, and respondents were asked to rank them in order of importance. The full results are shown in the main table, Table 5. 19. Microsoft forms ranked the results in order of importance as follows:

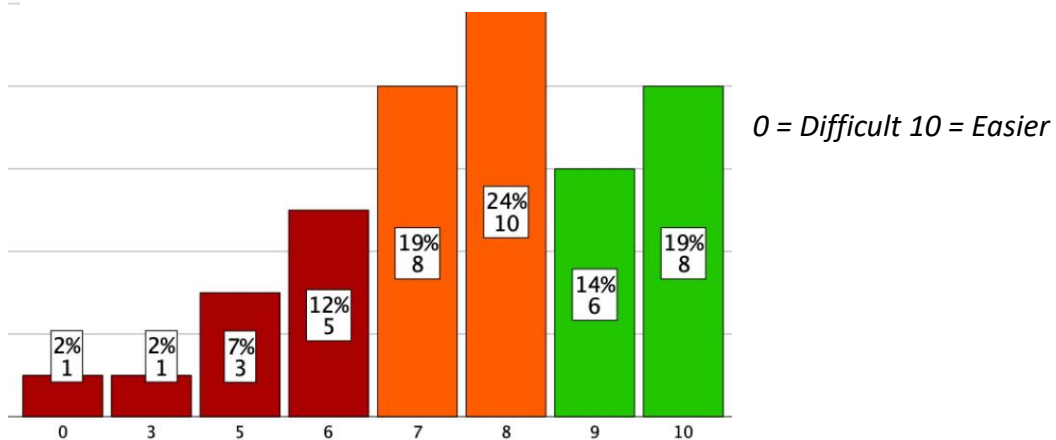
- | | | |
|-------------------------------|--------------------------------|---|
| 1. Easy to use. | 4. Price | 7. I hate them;
something always
goes wrong |
| 2. A well-recognised
brand | 5. Training provided. | |
| 3. Cloud-based tool | 6. I don't like them
at all | |

Ease of use was unsurprisingly the first choice, with 45.2% selecting this option. 23.5% selected *A well-recognised brand*. A cloud-based tool was third and most popular, with 16.7% selecting it as their first choice. 7.1% selected *Price*, the fourth most popular and the fifth was *training provided* with 4.8%. Finally, 2.4% selected *I don't like them at all*, and the same amount selected *I hate them; something always goes wrong*.

5.3.3.2.3.2 "DO YOU THINK TRANSLATION TECHNOLOGY MAKES TRANSLATING MORE DIFFICULT OR EASIER?"

For this question, respondents were asked to score their opinions in this case, the level of difficulty (0 = Difficult. 10 = Easier), resulting in a Net Promoter Score (NPS) as explained in Chapter 4 (section 4.4.3.2) of 9, a positive score. The results are shown below in Figure 5. 103.

Figure 5. 103 Do you think translation technology makes translating more difficult or easier?

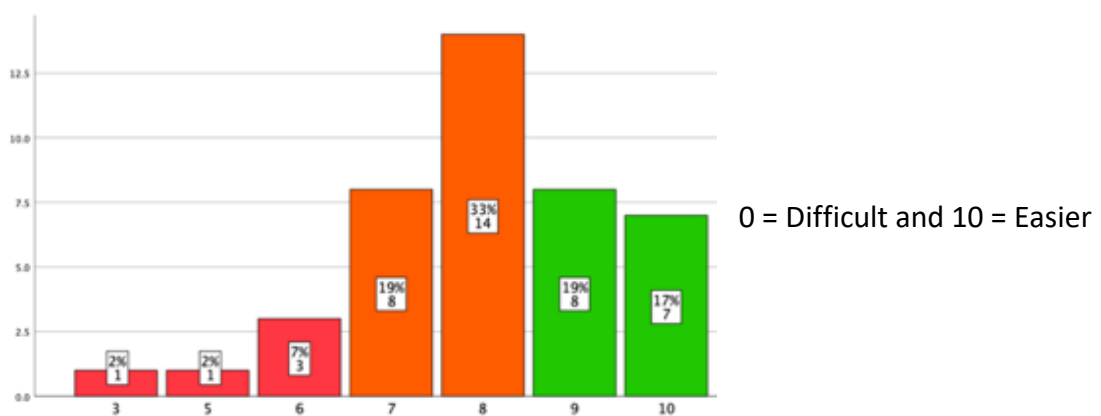


As shown above, 33% (n= 15) in total chose a *Promoter* (positive) response, 19% (n= 8) selected 10, and 14% (n= 6) selected 9. 45% (n= 18) chose a *Passive* score, 24% (n= 10) selected option 8 and 19% selected option 7. The rest (23% n= 10) chose *Detractor* (negative) answers, 7% (n= 3) selected option 5, 2% (n= 1) selected option 3 and the same amount selected option 0.

HOW MUCH DO YOU THINK TRANSLATION TECHNOLOGY HELPS THE TRANSLATION PROCESS?

This question looks specifically at whether the respondents think translation technology helps the translation process, and the results are presented in Figure 5. 104. They were asked to score their opinions (in this case, the level of difficulty), resulting in a Net Promoter Score (NPS) of 9, a positive score.

Figure 5. 104 How much do you think translation technology helps the translation process?



When looking at the results, there is quite a wide distribution of positive responses across the scoring chart. The majority selected *Passive* responses, with 33% (n= 14) selecting option 8 and 19% (n= 8) selecting option 7. The following choices were *Promoter* responses, with 17% (n= 7) selecting the highest score and 19% (n= 8) selecting option 9. The remainder selected *Detractor* responses, 7% (n= 3) selected option 6, 2% (n= 1) selected option 5, and 2% (n= 1) selected option 3.

5.3.3.2.3.3 “DO YOU HAVE ANY COMMENTS ABOUT THE USE OF TECHNOLOGY IN THE TRANSLATION INDUSTRY? DO COMMENT FREELY; YOUR RESPONSE IS ANONYMOUS”

This qualitative question aimed to understand the sentiment surrounding the use of technology in the translation industry. In order to understand and quantify the responses fully, they first needed to be categorised. The answers were split into segments for example, if one comment contains more than one relevant point and

then placed into the next category. There are three main headings: A. Current, B. Positive Future and C. Negative Future, and they will be discussed in alphabetical order.

A. Current Categories:

1. Workflow 2. Reliability 3. Training 4. Remuneration

1. An overwhelming majority stated that the technology speeds up the process; however, the same number of comments also stated that the tools are very useful or helpful. The need for post-editing was also a popular remark, but not always in a positive sense. One respondent understood that MT and CAT tools were part of the workflow; however, they felt the need to mention that *creativity* needed to be maintained. There were a couple of comments about cost efficiency and how using technology means that organisations simply reduce costs by using it as part of their workflow process.
2. There were four significant comments regarding reliability. The respondents questioned its reliability, stating that *technology isn't very accurate*, that MT can cause confusion and potential overconfidence in its output, and can make the translator's role more difficult.
3. There is an acknowledgement for more training, and some enjoy that aspect; however, there is a different pressure to learn more and more technology as it advances. However, not only learning how to use the tools but also an expectation of becoming efficient.
4. In recent years, particularly in the interpreting side of the profession, rates have been a great matter for discussion; however, translators are concerned that technology is driving rates downward in these comments. Repetitions in content and TM are key factors.

Positive Future

The consensus among the respondents is that technology can help achieve better translation accuracy. Not only accuracy is impacted but also productivity, making their jobs easier. A pertinent comment was made, "*Translators need technology as much as technology needs translators*". According to some respondents, the quantity of content required for translation has increased, and technology is

needed to cope with the workload. However, one respondent mentioned that they believed MT suits technical translations but not creative work. A couple of comments stated that technology *won't replace humans*, and they are braced for change and are moving forward, happy to incorporate the technology into their workflow processes.

Negative Future

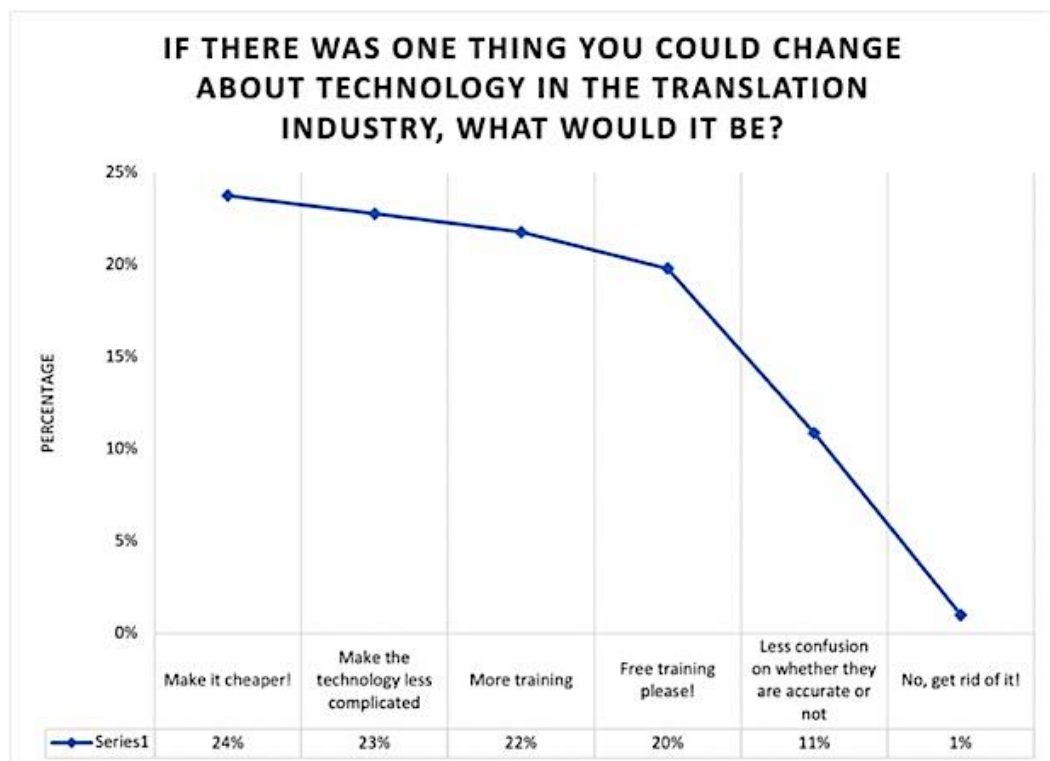
One main concern of the respondents is their skill set and what is (or will be expected of them). They claim that technology means fewer linguistic skills will be needed, skills may stagnate, and there will be (or currently is) an emphasis on technology over linguistic tools. Some respondents find that some *tools* are hard to learn, and others find them *overwhelming*. Another comment stated that they believe that translators *rely too much on translation tools*, that creativity needs to be maintained, and that CAT is unsuitable for literature. One respondent believes that CAT tools devalue the profession. Some comments raise concerns that AI will make *human translation obsolete*, and there would be no need for official translators; they are saddened that their profession is being threatened, and in the light of becoming a potential *post-editor* rather than a translator, one respondent felt that translators would leave the profession and another is *irritated* as they do not like being forced to use the same tools as Language Service Providers in order to work, often with cost implications. Even though there are positive comments, some believe that the technological advances are mainly due to organisations wanting to make more profit through time-saving; however, as another respondent stated, translators will have to work alongside the technology and adapt.

5.3.3.2.3.4 “IF THERE WAS ONE THING YOU COULD CHANGE ABOUT TECHNOLOGY IN THE TRANSLATION INDUSTRY, WHAT WOULD IT BE?”

This question aims to understand what the respondents would like to change about technology in the translation industry if they could, and the results are shown in Figure 5. 105 below.

Figure 5. 105 If there was one thing you could change about technology in the translation industry, what would it be?

Rather than using an open question, it was decided to pre-code the answers, providing responses which address different potential avenues for change. The idea



is to gather data related to areas of the industry that the translators believe need improvement, enhancement, or a better understanding. The respondents were able to select more than one option from the following list:

- more training
- less confusion on whether they are accurate or not.
- make the technology less complicated.
- free training, please!
- make it cheaper!
- no, get rid of it!

The results were calculated by documenting each response from each respondent, then totalling the amounts per option and creating a percentage based on these responses. In total, there were n= 101 selections from 42 respondents. 24% of the answers claimed the respondents wanted to *Make it cheaper*, followed by 23% who wanted to *make the technology less complicated*. 22% of the answers asked for *more training*, and 20% wanted *free training*. Notably, 11% of the answers want *less confusion on whether they are accurate*, and 1% selected *No to get rid of it*.

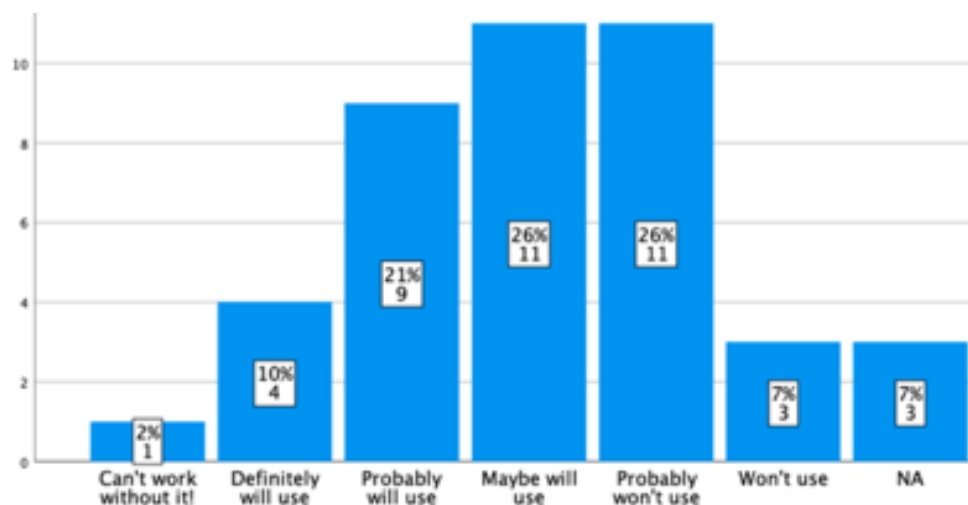
5.3.3.2.4 TRANSLATION MANAGEMENT TOOLS (ALSO KNOWN AS SYSTEMS)

5.3.3.2.4.1 “WILL YOU USE TRANSLATION MANAGEMENT TOOLS (OR KNOWN AS SYSTEMS) SUCH AS WORDBEE, SMARTCAT, SMARTLING ETC., WHEN COMPLETING YOUR TRANSLATIONS?”

This question aims to understand the respondents’ awareness of Translation Management Tools and whether they would use them. The results, shown below in Figure. 106, derive from a Likert scale and a list of potential answers to choose from, as shown below:

- *Won’t use, probably won’t use, maybe will use, probably will use, definitely will use, can’t work without it.*

Figure 5. 106 Will you use Translation Management Tools (also known as systems) such as Wordbee, Smartcat, Smartling etc. when completing your translation?



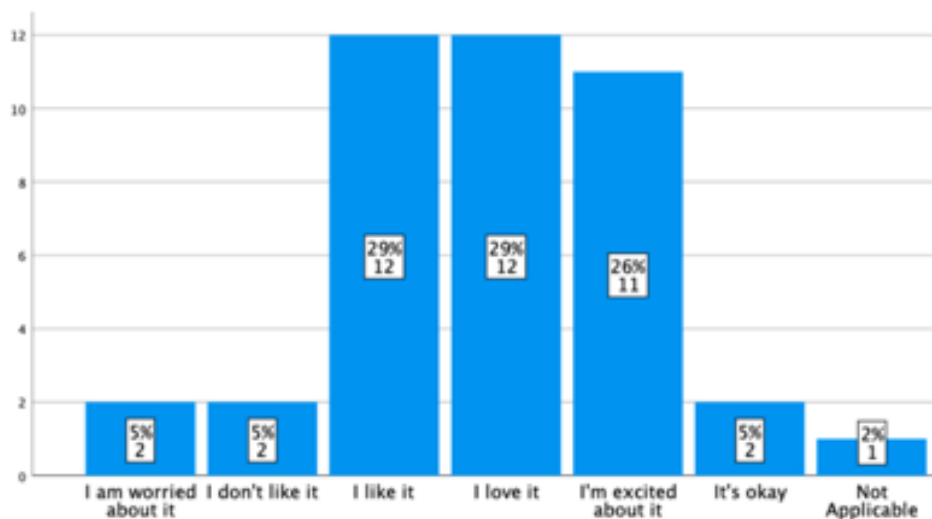
The response was positive, with 59% (n= 25) in favour and 34% (n= 14) against. There is a level of understanding of the Translation Management Tools 26% (n= 11) selected that *maybe* they would use them, 21% (n= 9) stated they *probably* would use them, 10% (n= 4) *definitely will use* them, and 2% (n= 1) stated that they *can't work without it*. For those who are not in favour, 26% (n= 11) stated that they *probably won't use*, 7% (n= 3) stated they *won't use*, and 7% (n= 3) selected *n/a*.

5.3.3.2.5 TRANSLATION TECHNOLOGY TOOLS

5.3.3.2.5.1 "WHAT ARE YOUR THOUGHTS ABOUT USING TRANSLATION TECHNOLOGY?"

This question aims to measure the positive and negative responses using the technology. Respondents were asked to disclose their thoughts about their use of translation technology. The results are shown in Figure 5. 107 below.

Figure 5. 107 What are your thoughts about using translation technology?



The results were highly favourable regarding the use of translation technology. 29% (n= 12) selected *I like it*, and an equal amount selected *I love it*. 26% (n= 11) chose *I'm excited about it*, and 5% (n= 2) selected *It's okay*. Only 5% (n= 2) chose *I'm worried about it*, and another 5% (n= 2) chose *I don't like it*. 2% (n= 1) selected *not applicable*.

5.3.3.2.5.2 “LIST THE TRANSLATION TOOLS IN ORDER OF PREFERENCE: DÉJÀVU,
GOOGLE TRANSLATE, MEMOQ, MEMSOURCE, MICROSOFT
TRANSLATOR, OMEGAT, PASSOLO, SYSTRAN, TRADOS, WORDBEE”

This question aims to understand which translation technology is preferred by the respondents. The respondents were asked to rank their most preferred technology in order, and the results are detailed below, suggesting that Memsorce is the most popular technology, whereby 28.6% of the respondents chose this tool as their first and second choice. The second choice was Trados, whose first and second choices totalled 31%; however, not all the respondents agreed, with some selecting Trados as their eighth, ninth, and 10th choice. Even though *DVX3* was the third choice overall, with 14.3%, 16.7% of respondents did choose it as their first and second choice. *MemoQ* was fourth, with 21.4% selecting it as their third and fourth choice. Google Translate was the fifth preferred choice, with 19%; however, 19% also selected this tool as their third choice. Microsoft Translator was the sixth choice, with a preference score of 21.4%, followed by *OmegaT* in the seventh position with 35.7%. *Passolo* was the eighth choice with 38.1, Systran was the ninth choice with 52.4%, and Wordbee was the tenth choice, with 57% choosing this tool as their least preferred.

5.3.3.2.5.3 “WOULD YOU TRUST THE FOLLOWING TECHNOLOGY WHEN
TRANSLATING?”

This question aims to understand which translation technology is trusted more by the respondents. The respondents were asked to rank their most trusted technology in order of preference, and the results are detailed below.

The three most trusted resources are **1. DéjàVu, 2. Google Translate, and 3.**

MemoQ as follows:

1. **1st Choice: DÉJÀVU:** The results from this question, as displayed in the main table of responses, show that DéjàVu is the most popular translation technology according to the respondents. 21% (n= 9) selected they *Definitely* would trust it, 38% (n= 16) selected *Probably*, 24% (n= 10) stated 'Possibly', 2% (n= 1) selected *Probably not*, and 14% (n= 6), 'never heard of it.'
2. **2nd Choice: GOOGLE TRANSLATE:** This is the second most popular technology, with 36% (n= 15) selecting *Possibly*, 24% (n= 10) choosing *Probably*, and 10% (n= 4) selecting *Definitely*, then 17% (n= 7) opting for *Probably not* and 14% (n= 6) selecting *Definitely not*.
3. **3rd Choice: MEMOQ:** 40% (n= 17) selected *Definitely*, 21% (n= 9) selected *Probably*, 19% (n= 8) selected *Possibly*. Then 2% (n= 1) selected *Probably not*, and 17% (n= 7) had *never heard of it*.
4. **4th Choice: MICROSOFT TRANSLATOR:** 31% (n= 13) selected *Possibly*, 24% (n= 10) selected *Probably*, 2% (n= 1) selected *Definitely*. Then 17% (n= 7) selected *Probably not*, 10% (n= 4) selected *Definitely not*, and 17% (n= 7) had *never heard of it*.
5. **5th Choice: OMEGAT:** 26% (n= 11) selected *Probably*, 19% (n= 8) selected *Possibly*, and 7% (n= 3) selected *Definitely*. Then 2% (n= 1) selected *Probably not*, and 43% (n= 18) had *Never heard of it*,
6. **6th Choice: PASSOLO:** 24% (n= 10) selected *Possibly*, 21% (n= 9) selected *Probably*, 12% (n= 5) selected *Definitely* and then 5% (n= 2) selected *Probably not*. Then 38% (n= 16) selected '*ever heard of it*'.
7. **7th Choice: TRADOS:** 62% (n= 26) stated *Definitely*, 12% (n= 5) selected *Possibly*, and 26% (n= 11) selected *Probably*.
8. **8th Choice: YANDEX:** 19% (n= 8) selected *Possibly*, 12% (n= 5) selected *Probably*, 5% (n= 2) selected *Probably not* and then 64% (n= 27) selected *Never heard of it*.
9. **9th Choice: WORDBEE:** 24% (n= 10) selected *Possibly*, 7% (n= 3) selected *Probably*, 5% (n= 2) selected *Definitely* and then 7% (n= 3) selected *Probably Not*, 2% (n= 1) selected *Definitely not*, and 55% (n= 23) *Never heard of it*.

5.3.3.3 THE FUTURE OF THE INDUSTRY

This section aims to understand how translators visualise their futures and their expectations. Table 5. 20 represents the industry's future and seeks to understand the respondents' sentiments. As explained previously, with the undisputed increase in technology in the translation industry, the future may look different through the eyes of new translators. Displayed in Table 5. 20 are the results from the BA/MA Student Survey: The future of the translation industry respondents from the future they had anticipated.

Table 5. 20 The future of the translation industry (BA & MA Survey)

RESULTS FROM THE 3 SURVEYS DETAILED IN CHAPTER 3. THIS SPREADSHEET RELATES TO THE FUTURE OF THE TRANSLATION INDUSTRY			
Translator and Technology			
BA/MA Student Survey			
Survey questions + numbers		n	%
Q		Total Number of Respondents =	11 100%
5	Have you decided what you would like to do once you have finished your BA/MA?	Freelance Translator	9 21%
		I don't know, not a clue!	13 31%
		In-House Translator	11 26%
		Interpreter	5 12%
		Project Manager at an agency	4 10%
		TOTAL	42 100%
20	How do you feel about being a translator and the future? Are you worried, excited or confused?		
	The future of the translation industry	Neither worried nor excited	2 5%
		Slightly excited	10 24%
		Slightly Worried	15 36%
		Very excited	12 29%
		Very worried	3 7%
		TOTAL	42 100%
	Machines taking over translating content	Neither worried nor excited	16 38%
		Slightly excited	2 5%
		Slightly Worried	11 26%
		Very worried	13 31%
		TOTAL	42 100%
	A translator in ten years' time	Neither worried nor excited	12 29%
		Slightly excited	6 14%
		Slightly Worried	17 41%
		Very excited	5 12%
		Very worried	2 5%
		TOTAL	42 100%
	The role of a translator changing	Neither worried nor excited	8 19%
		Slightly excited	10 24%
Slightly Worried		17 41%	
Very excited		2 5%	
Very worried		5 12%	
TOTAL		42 100%	
21	Imagine we are now in 2035, describe a translator's job and how it may differ from today.	The qualitative data from this question is shown after these tables.	
24	Would you be willing to take part in a focus group to give your opinion about technology in the translation industry?	No	30 71%
		Yes	12 29%
		TOTAL	42 100%
26	Thank you for completing this survey, your response is greatly appreciated. Please rate how you feel about the translation industry right now :-). 1 star =dislike. 5 stars = love it!	2	2 5%
		3	6 14%
		4	12 29%
		5	22 52%
		TOTAL	42 100%

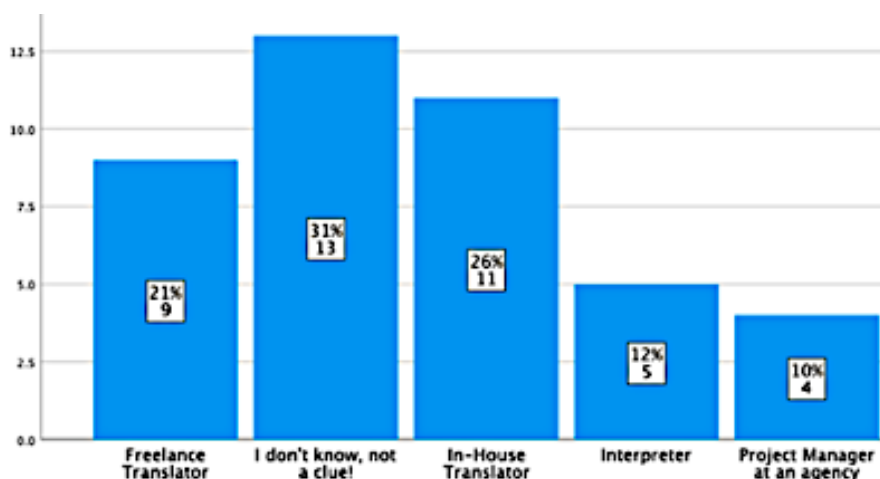
As with previous surveys, this section investigates how the respondents view the role of a translator concerning technology and how it may differ. It also looks at the individual's future and the industry's future.

5.3.3.3.1 SENTIMENT

5.3.3.3.1.1 "HAVE YOU DECIDED WHAT YOU WOULD LIKE TO DO ONCE YOU HAVE FINISHED YOUR BA/MA"

To understand the participants' ambitions, they were asked to disclose which professional role they would choose after finishing their academic studies. The results are shown in Figure 5. 108 below.

Figure 5. 108 Have you decided what you would like to do once you have finished your BA/MA



The respondents were asked to select from a list of choices and were able to add another option if they preferred:

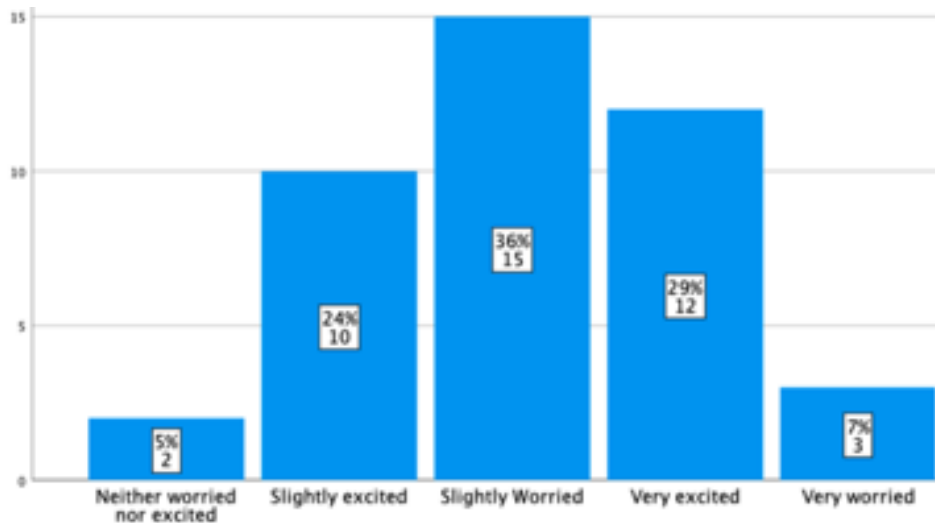
- Interpreter
- Freelance Translator
- In-house Translator
- Project Manager at an agency
- I don't know, not a clue.

As shown in Figure 5. 108, remarkably, the highest response was 31% (n= 13), who chose, *I don't know, not a clue!*, followed by 26% (n= 11) who selected *In-House Translator*. Next, 21% (n= 9) chose a *Freelance Translator*, followed by 12% (n= 5) who chose to be an *Interpreter*. Finally, 10% (n= 4) selected to work as *Project Managers at an agency*. It was not anticipated that the highest quantity chose they did not know what they were going to do once they completed their studies.

5.3.3.3.1.2 “HOW DO YOU FEEL ABOUT THE FUTURE OF THE TRANSLATION INDUSTRY?”

Respondents were asked to clarify how they felt about the future of the translation industry. The results are shown in Figure 5. 109.

Figure 5. 109 The future of the translation industry



On a Likert scale, respondents were asked to choose their preferred choice from a list of options regarding how they felt about the future of the translation industry. The choices were as follows:

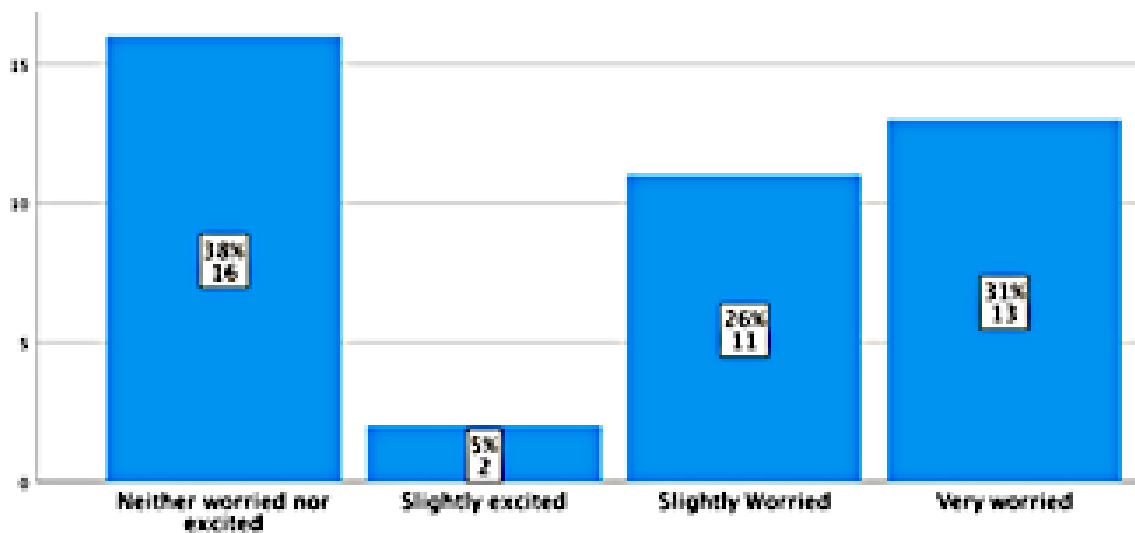
- Very worried
- Slightly worried
- Neither worried nor excited
- Slightly excited
- Very excited
- I am confused.

The majority, 36% (n= 15), stated that they were *slightly worried*, followed by 29% (n= 12) who were *very excited*, 24% (n= 10) were *slightly excited*, and the remaining two options, 7% (n= 3) stated they were *very worried* and 5% (n= 2) were *Neither worried nor excited*.

5.3.3.3.1.3 “HOW DO YOU FEEL ABOUT MACHINES TAKING OVER TRANSLATING CONTENT?”

Respondents were asked to explain how they felt about machines taking over translating content, a widely discussed subject in the translation industry. This question aimed to understand their opinions; the results are shown in Figure 5. 110. The respondents were asked to select their opinion from a range of answers on a Likert scale. The options were the same as in the previous question.

Figure 5. 110 How do you feel about machines taking over translating content?

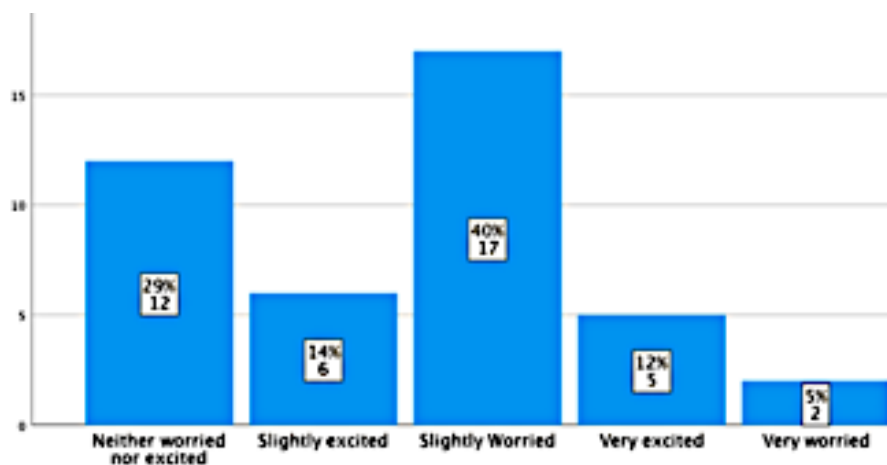


38% (n= 16) stated that they were *neither worried nor excited*. 31% (n= 13) were *very worried*, and 26% (n= 11) were *slightly worried*. The remaining 5% (n= 2) were *slightly excited*.

5.3.3.3.1.4 “HOW DO YOU FEEL ABOUT BEING A TRANSLATOR IN TEN YEARS?”

Respondents were asked to clarify their feelings about *being a translator in ten years*. This question aims to ask the respondent to look to the future (in this case, ten years ahead) and envisage what the role of a translator would entail and how they felt about it. The results are shown in Figure 5. 111.

Figure 5. 111 How do you feel about being a translator in ten years' time?

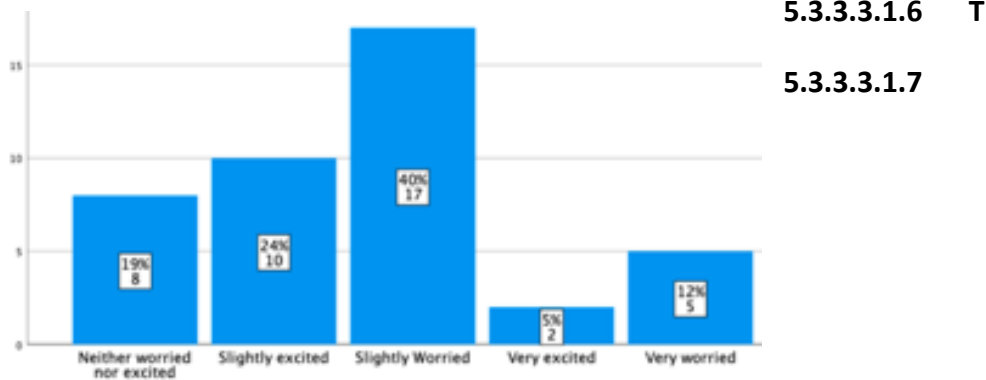


Overall, 41% (n= 17) stated that they were *slightly worried*, 29% (n= 12) were *Neither worried nor excited*, 14% (n= 6) were *slightly excited*, 12% (n= 5) were *very excited*, and 5% (n= 2) were *very worried*. This question indicates a more negative response overall, with the majority feeling *slightly worried*, and will be discussed in Chapter 6.

5.3.3.3.1.5 “HOW DO YOU FEEL ABOUT THE ROLE OF A TRANSLATOR CHANGING?”

Respondents were asked to clarify their sentiments about ‘the role of a translator changing’. The results are shown in Figure 5. 112 below.

Figure 5. 112 How do you feel about the role of a translator changing?



The most responses, 41% (n= 17) stated that they were *slightly worried*, 24% (n= 10) were *slightly excited*, 19% (n= 8) were *neither worried nor not excited*, 12% (n= 5) were *very worried*, and 5% were *very excited*.

5.3.3.3.1.8 “IMAGINE WE ARE NOW IN 2035, DESCRIBE A TRANSLATOR’S JOB AND HOW IT MAY DIFFER FROM TODAY”

The objective of this question is to ask respondents to consider how they believe the role of a translator will change in 2035 compared to today. With recent technological advancements, this may be a sensitive issue; however, gathering information on how respondents visualise their role adapting due to technological advancements will allow us to manage expectations and any potential training needs to adapt to a changing environment.

Post-editing

The most popular comment from the respondents was regarding post-editing and that *Most of the translator's job will be carried out by MT or CAT tools, and the human intervention will be dramatically reduced*. A suggestion was that there would be no human translations nor post-editing requirements as the translation task would be carried out only by MT, and the technology would be *perfected*. The requirement for a professional translator would be non-existent. However, many stated that there would be a need for transcreation, roles that require revision of cultural references and literary translation.

Machine translation vs human translation

Some comments are more positive regarding the role of a professional translator, stating that MT will never replace human translation, but the necessity will reduce. Human translators will still be needed for *common/background knowledge and context* and specialist or confidential translations that would not belong in a shared TM or termbase. Another suggestion was that human translators would become experts in a different sense; their knowledge of language and culture could be used to assist in developing applications and technology. Due to difficulties with character counting, it was stated that subtitling would still rely significantly on human intervention, even in 2035.

There is little doubt amongst the respondents that MT will expand; some suggest, however, that it will be used solely for simple, technical, and non-specialist requirements as it struggles to comprehend nuances. Others suggest that it will become more specialised and domain-focused, with sectors such as law and medicine benefiting from the development of translation technologies. One comment stated:

The machines will not only be able to translate the text accurately; the target text will read as if it were originally written in the target language. Clients will be able to make specific style requests that the AI will implement.

(ID: 33 BA/MA Student Survey)

Even if the above statement is partially true, respondents believe that pricing will be affected, costs will reduce to the consumer and translator rates will be reduced as the human element becomes less involved in the workflow process. Although, the role of a Project Manager may well be retained as a post-editor.

It is also considered that turnaround times will be *much faster*, and timings will be more *optimised* – one respondent was very positive and described the process as *faster and easier, being more fun*.

One of the significant differences between today and 2035 was explained by one respondent who stated that translators would need *good technology skills (working with computers, being able to comprehend new programs quickly etc.) as opposed to having a passion for languages and good language skills* and another respondent commented on their *fear that the reliance on technology will take away from the authentic feeling of translation*—a common thought amongst the respondents.

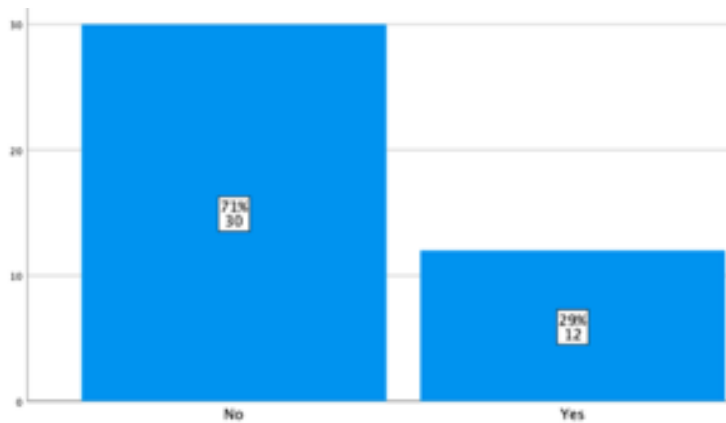
Regarding the roles available to translators, it was suggested that larger organisations may still need to employ traditional translators, but they would be highly paid, but very few positions are available.

Another suggestion is that TMs and termbases will become more advanced and shared and more staff training. There would be more domain-specific applications and more Translation Management Tools. The existence of more AI will be prevalent in all aspects, and even CAT tools will become more client-facing rather than directed toward the translator. However, one of the significant concerns of translators is how these technological advancements, the incorporation of AI, and the reduction in cost and rates will affect the role of a translator. One respondent stated it would *take a toll on the overall number of translators*.

5.3.3.3.1.9 “WOULD YOU BE WILLING TO TAKE PART IN A FOCUS GROUP TO GIVE YOUR OPINION ABOUT TECHNOLOGY IN THE TRANSLATION INDUSTRY?”

As the survey results reveal, many respondents have opposing perspectives and want to share their thoughts on the subject (particularly in the qualitative remarks). By allowing individuals inside each organisation to contribute, this study aims to acquire more up-to-date information and clarify any areas of interest that arise from the findings. The results are shown in Figure 5. 113.

Figure 5. 113 Would you be willing to take part in a focus group?

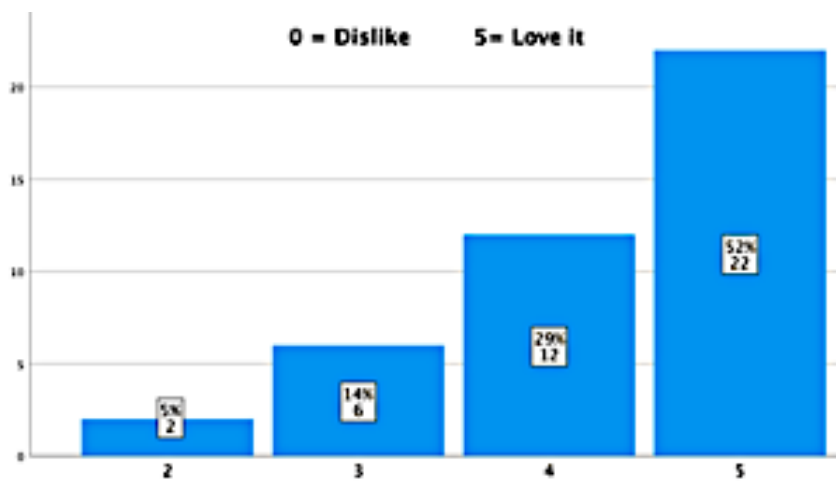


The response to this question, which asks if respondents would be willing to join a focus group to express their ideas, was positive. Out of 42 respondents, there was a 100% response rate. However, 71% (n= 30) selected *no*, and 29% (n= 12) selected *yes*.

5.3.3.3.1.10 “PLEASE RATE HOW YOU FEEL ABOUT WELSH TRANSLATIONS RIGHT NOW!”

This question aimed to understand how respondents felt about Welsh translations at the time. The respondents were asked to rate from one star to five, and the results are shown in Figure 5. 114, showing a significant quantity of positive responses. One star signified *dislike*, and five stars meant they *love it*.

Figure 5. 114 Please rate how you feel about Welsh translations right now.



In total, 100% (n= 42) respondents took part, and 52% (n= 22) selected option 5 (*Love it*), 29% (n= 12) selected option 4, 14% (n= 6) selected option 3, and 5% (n= 2) selected option 2.

5.4 RESULTS FROM THE SUPPLEMENTARY QUESTIONNAIRE

In October 2021, it became clear that even though the Welsh Government participated in the TM comparison part of this study, they had chosen not to distribute the surveys. This meant that some fundamental questions related to the research question still required a response, mainly from the Translation Unit/Services staff, regarding their internal translation workflow procedures and organisational. A questionnaire containing nine questions was devised and emailed to the three Translation Unit/Services staff in Swansea Council, Swansea University, and the Welsh Government, asking if they could answer just a few more questions. This was also an opportunity for them to expand on previous responses; however, only the Welsh Government was asked to clarify their internal translation workflow, as Swansea Council and Swansea University had already supplied sufficient data via the surveys. The Questionnaire is shown in Appendix 17.

5.4.1 SUMMARY OF ANSWERS TO THE QUESTIONNAIRE

Out of the three respondents approached, 100% (n= 3) replied to the Questionnaire, and all questions were answered in full and, in many cases, in considerable detail. Below is a summary of the answers provided:

1. HOW MANY STAFF MEMBERS WORK IN YOUR TRANSLATION DEPARTMENT?

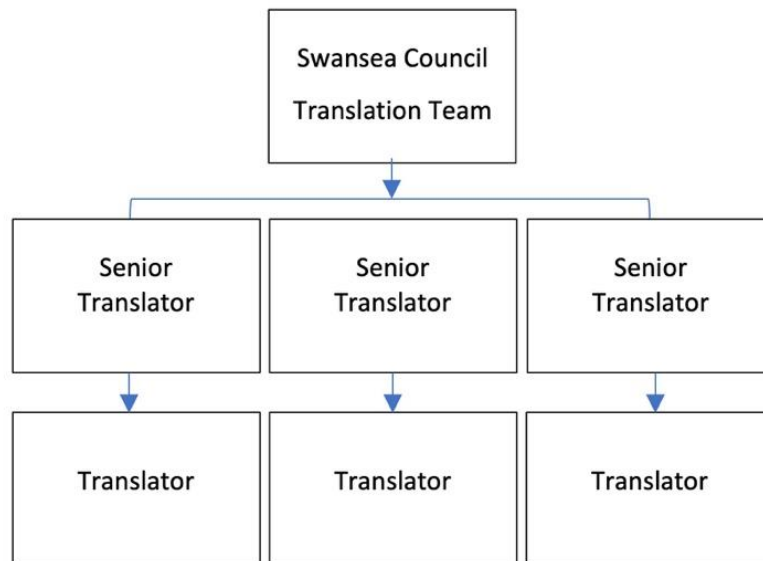
- **Swansea Council:** It was confirmed by Swansea Council that the staff members consist of 6 staff members employed jointly by Swansea Council and Neath Port Talbot Council (Neath Port Talbot pays the salaries of 1.5 members of the unit). All six staff members work 37 hours a week.
- **Swansea University:** It was confirmed by Swansea University that three full-time (37 hours) and two part-time (18 hours). 7 members of staff, 5 full-time, 1 x term time contract, 1 x 0.6 full-time employees work in their Translation Department.
- **Welsh Government:** The response from the Welsh Government confirmed the breakdown of the Welsh Government Translation Service staff,

excluding vacancies, as of 1st November 2021, when the response was sent is: 37 full-time and 14 part-time staff.

2. DO YOU HAVE AN ORGANISATIONAL STRUCTURE FOR YOUR TRANSLATION DEPARTMENT? IF NOT, CAN YOU EXPLAIN THE STRUCTURE OF YOUR DEPARTMENT?

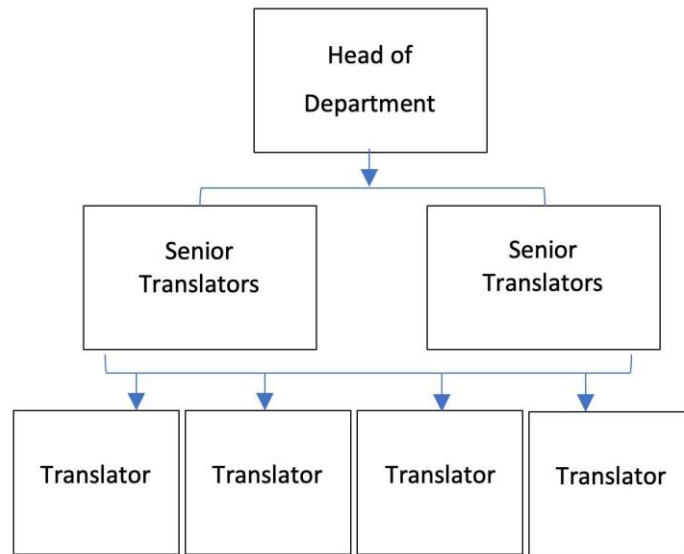
Swansea Council: As shown in Figure 5. 115, the response was that there used to be up to fourteen members of staff, including a manager and an office manager who used to process their internal inbox and job requests; however, over the last three years various staff members left, and the council did not fill the positions. Therefore, their staffing structure as of November 2021 consisted of three 'senior' translators (all in honorarium positions since June 2019) and three translators. The senior translators proofread all documents produced within the unit. All six-unit members take turns to manage the internal inbox, and the translators must process each request on top of their daily duties.

Figure 5. 115 Swansea Council Translation Services Organisational Chart



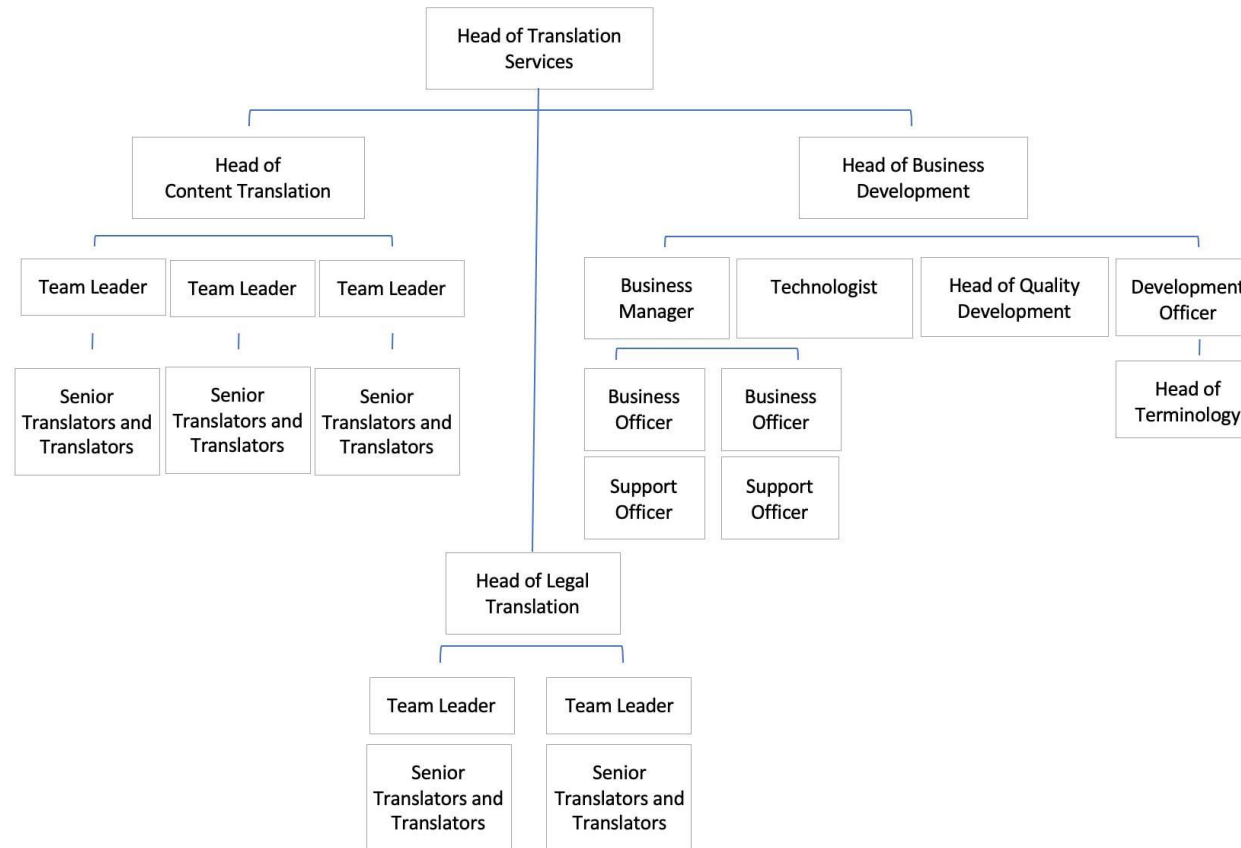
Swansea University confirmed that their structure consisted of one Head of Department, two Senior Translators and four translators, as shown in Figure 5. 116 below:

Figure 5. 116 Swansea University Translation Services Organisational Chart



The Welsh Government Organisation chart is shown below in Figure 5. 117:

Figure 5. 117 The Welsh Government Translation Services Organisational Chart



3. DO YOU OUTSOURCE TRANSLATIONS, PROOFREADING AND OR POST-EDITING WORK?

- **Swansea Council:** Swansea Council has been outsourcing documents containing over ten thousand words since 2016 since the departure of a manager and senior members of staff, particularly those required within a tight timeframe. They encourage clients to review their deadlines before we outsource, but due to consultation deadlines, many documents are needed urgently; therefore, they use a local translation company.
- **Swansea University:** The university sends work externally due to timescales and a lack of resources internally to undertake the work.
- **Welsh Government:** The Welsh Government Translation Service outsources translations to supplement in-house capacity via the NPS Translation and Simultaneous Interpretation Framework Agreement (NPS-PS-0078-17).⁶⁵ The Framework Agreement allows outsourcing proofreading and post-editing work; however, the Translation Service rarely uses this facility.

Other areas of the Welsh Government can commission translations directly via the NPS Framework Agreement. Some departments may also outsource translation work outside the Framework Agreement as part of a broader procurement process where the end product includes documentation available to the public.

4. WHICH LANGUAGES DO YOU OUTSOURCE?

- **Swansea Council:** English > Welsh
- **Swansea University:** English > Welsh
- **Welsh Government:** English<>Welsh

5. ROUGHLY WHAT PROPORTION OF YOUR TRANSLATIONS ARE OUTSOURCED?

- **Swansea Council:** 25%
- **Swansea University:** Anything with an unachievable deadline is outsourced. As an example, they claim to outsource, on average, 1-2 documents a week. This can range from anything between 6,000 to 50,000 words.
- **Welsh Government:** Welsh Government Translation Service outsourced 35% of its work in the 2020/21 financial year. This figure can vary greatly from month to month and depends on the requirement to support in-house capacity. As of November 2019 (seven months into the financial year), that financial year (alone), there had been 4,171 transactions booked to the translation nominal on the Welsh Government's finance system (the nominal describes the category of expenditure).

6. WHEN A NEW MEMBER OF STAFF BEGINS WORK IN YOUR DEPARTMENT, DO THEY COMPLETE AN INDUCTION? IS THERE AN INDUCTION BOOKLET/GUIDE RELATED SPECIFICALLY TO YOUR TRANSLATION DEPARTMENT? IF SO, WOULD YOU SEND ME A COPY FOR MY RECORDS?

- **Swansea Council:** There used to be a thorough induction process, but they have had no new staff members in some time. They stated that they do not have the capacity to train a new staff member from the 'trainee' level.
- **Swansea University:** A new staff member follows the University induction course, and then the individual is mentored by a senior member of the team.
- **Welsh Government:** Every new member of staff joining the Welsh Government completes a corporate induction course and receives a physical programme and video (a Pre-starter information pack). They also get invited to attend Welcome events and access a network of colleagues via Teams.

In addition, the Welsh Government Translation Service provides a series of presentations for new starters joining the Translation Service. These overview various aspects of the service's responsibilities and functions and

usually occur during the first two weeks. The Translation Service handbook, provided to all new starters, is tailored to the specific job role.

7. ARE THERE ANY SKILLS YOU SPECIFICALLY LOOK FOR AS AN IN-HOUSE TRANSLATOR? IF SO, ARE THERE ANY NEW SKILL SETS THAT ARE BECOMING MORE DESIRED FROM POTENTIAL APPLICANTS?

- **Swansea Council:** There is a preference for a member of *Cymdeithas Cyfieithwyr Cymru* (the association of Welsh translators and interpreters), as it sets a standard within the unit as the qualification is obtained by sitting several translation exams (3 members in the unit at present, all of which are senior translators). They look for attention to detail / the ability to research extensively and apply that to documents / the ability to adapt to a variety of audiences from document to document / someone with a background in linguistics and translation is always a desired skill / someone with excellent Welsh-speaking and writing skills (we also offer an in-house interpreting service) / good level of technical competence with regards to using CAT tools / Word / Outlook / Adobe on a daily basis/ ability to work alone as well as part of a team, to a high standard at all times / the ability to work under pressure whilst also ensuring consistency.
- **Swansea University:** Being able to use a translation software memory, and simultaneous translation skills.
- **Welsh Government:** n/a.

8. DO YOU DISTRIBUTE INFORMATION TO THE STAFF SO THEY COMPLY WITH THE WELSH STANDARDS? FOR EXAMPLE, INSTRUCTIONS ON WHEN THEY NEED TO ASK FOR A TRANSLATION AND HOW. IF SO, WOULD YOU SEND THE INFORMATION TO ME?

- **Swansea Council:** In the past, the council has employed staff to monitor and ensure the Welsh Standards are being adhered to; therefore, this does not fall on the shoulders of the unit. If the unit received an enquiry with regards to the Standards, we would forward this to the relevant officer.
- **Swansea University:** This is available on the Staff Intranet
- **Welsh Government:** Information is provided to all staff, stating that the Welsh Government has a statutory duty to provide many internal and external services in Welsh and that consideration should be given when it is appropriate and essential to provide services through another language or accessibility format. More detailed guidance is provided on the staff intranet regarding the specific requirements of the Welsh Language Standards in terms of services, policy-making and operational matters. The Welsh Language Standards Team, established at the beginning of 2015, leads this work, and provides advice and guidance as necessary.

9. I NEED TO UNDERSTAND YOUR TRANSLATION WORKFLOW PROCEDURE. FOR EXAMPLE, WHEN YOU RECEIVE A TRANSLATION REQUEST THROUGH TO SENDING THE TRANSLATION BACK TO THE ORIGINATOR. DO YOU HAVE ANYTHING YOU COULD SEND?

- **Welsh Government:** Guidance is provided on the Welsh Government’s intranet pages on how to commission an English to Welsh or Welsh to English professional translation through the Translation Service and on commissioning work directly via the NPS Framework Agreement in certain circumstances. However, the following (Figure 5. 118) is the workflow described by the Translation Service response to this Questionnaire:

Figure 5. 118 Welsh Government Workflow (simplified)



*At this stage, a decision is made on whether to deal with the request internally or outsource, depending on the work’s nature, size, and timescale. The specific details were not supplied. It was also noted that (as of November 2021) the Translation Service was procuring a TM and termbase solution via Sell2Wales. The specification included a workflow system as a desirable service, which would lead to streamlining of the process.

6 CHAPTER 6: DISCUSSION OF RESULTS

6.1 INTRODUCTION

The main objective of this chapter is to discuss the key findings from Chapter Five and propose recommendations and solutions related to the issues identified through the evaluation processes conducted for this thesis. The evaluation focused on three stakeholder groups: public sector personnel who request translations, professional translators who complete the translations, and BA/MA translation students who were enrolled during the study or had recently graduated.

Each step of the evaluation process revealed issues that could be perceived as obstacles hindering the progress of the technological turn and diminishing its impact on the internal translation workflow procedures. To ensure the validity of the evaluations presented in this thesis, two focus group meetings were organised to gather additional qualitative data from each organisation. One focus group took place at Swansea Council, while the other was held at Swansea University (the Welsh Government opted not to participate). The data collected from these focus groups will be incorporated into the relevant sections.

The first section of this chapter will address the sub-research questions and the main research question, emphasising key issues that need to be addressed based on the evaluation process and the insights gained from the focus groups.

Subsequently, the following section will offer solutions and recommendations for further research and development, categorised according to the three stakeholder groups.

6.2 TRANSLATION WORKFLOWS IN THE ORGANISATIONS

6.2.1 RESEARCH QUESTION 1.1

What are the Current Translation Workflows in the Public sector in Wales?

This study evaluates professional translation workflows in Swansea Council, Swansea University, and the Welsh Government. In order to answer the main and sub-research questions, it is necessary to identify the steps involved in each organisation's workflow, from receipt of the originator's ST to delivery of the TT. The respondents from the Translation Unit/Service Survey were asked to explain their current translation workflow process, of which six were from Swansea Council, three from Swansea University, and as the Welsh Government did not participate in this survey, information was obtained via a request under the Freedom of Information Act. The total number of respondents participating was lower than expected, particularly regarding the Welsh Government. The lack of detailed information meant that only a generalised illustration of each workflow could be created, as shown in Figure 6. 1 (Swansea Council), Figure 6. 2 (Swansea University), and Figure 6. 3 (Welsh Government). When looking at the data supplied by the respondents from the Translation Survey/Unit, variations in the descriptions provided of the steps involved in the workflow process were enough to create some confusion; for example, in the case of Swansea Council, entering work in Excel and sending translations to TMs were steps that were taken even though not all respondents mentioned it. Therefore, it was determined that the steps shown in Figures 6. 1, 6. 2, and 6. 3 provided a fair representation of each organisation's current workflow process. It may be assumed that other public sector organisations would have a very similar structure.

Figure 6. 1 Generic Translation Workflow at Swansea Council



Figure 6. 2 Generic Translation Workflow at Swansea University

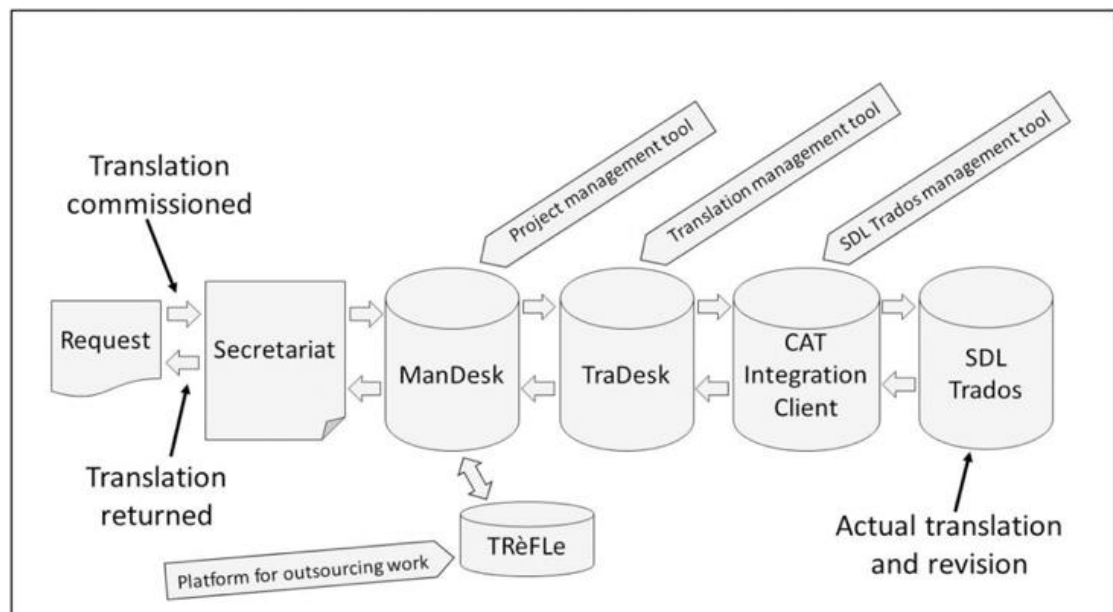


Figure 6. 3 Generic Translation Workflow at the Welsh Government



The next step is to consider the macro level depicted in Figure 6. 4 below, which illustrates a generic workflow process from a much larger (multilingual) institutional setting, DGT, described by Fernández-Parra (2020, p. 115). In this model, the workflow steps follow a similar pattern to Figures 6. 1, 6. 2 and 6. 3, so it will be examined to identify any apparent disparities or fundamental steps which could be missing in the workflows from the organisations in this study.

Figure 6. 4 Generic translation workflow at the DGT (Fernández-Parra, 2020, p. 115)



This evaluation will aid in answering the research questions and be a valuable resource for the conclusions and any recommendations for improving existing systems in the Welsh public sector.

6.2.1.1.1 A COMPARISON OF TRANSLATION WORKFLOW PROCESSES BETWEEN THE THREE ORGANISATIONS

Ambiguity in Translation Requests

When requesting a translation from Swansea Council and Swansea University, more respondents (47%) selected the option to *upload* their documents than any other option. However, Swansea University has eight different methods for requesting a translation. In contrast, Swansea Council has two (*email* and *uploading*), the Welsh Government has one (*via an online translation request form*), and the DGT (for example) also has one (*an upload to e-Poetry*). This uncertainty at Swansea University is frustrating for the requester and the translation service providers, as documents will arrive from numerous sources. However, the ST could arrive at the same destination if the systems are configured to do so, but the process needs to be clear, trackable, and transparent from the outset to avoid confusion. To add to the ambiguity at the start of the process, comments made in the Staff Quiz/Staff Survey referred to the respondent's challenges in submitting documents for translation, the method in which they are provided, and communication (or lack of) regarding what happens next, including any traceability. This first comment by a respondent from Swansea Council is undoubtedly very informative for this study, demonstrating a breakdown in communication between the respondent and the translation service. The respondent was annoyed that they must prepare the text for translation; however, the focus group meetings highlighted that this is unavoidable and necessary to progress the translation through the in-house technology (see below). They see it as an extra (and often unnecessary) hassle on top of their work, which makes it harder for them to meet their obligations:

The fact you have to unformat large documents and illustrations is very frustrating at times. I have had 11,000 words of Word text back with little indication of what is what. As a basic Welsh speaker, I have had to count paragraphs to work out where to put figures. Because the translation unit

requires all text for illustrations to be in Word, it more than doubles the time it takes me to reformat documents; I find this process very time-consuming, and it affects my ability to meet deadlines. It would be useful if you could pre-warn the service of large pieces to text and deadlines; however, this option is not offered, making it a very reactive process and hard to plan for translation time in the development and publication of a document; this has impacted deadlines of consultations going out etc.

(Staff Quiz/Staff Survey: ID 105, Swansea Council)

This respondent from Swansea University was also displeased as they had no idea when the translation would be completed, disrupting their workflow. Seemingly, there is no liaison between the respondent and the Translation Unit/Service provider:

When uploading a new document for translation, there is no information as to how long a translation might take or how busy the team is [...] you just have to guess a date for the return by date. If the date you have entered is unrealistic, it would be good to be alerted to this so that you can plan accordingly instead of waiting for it to turn up at some point.

(Staff Quiz/Staff Survey: ID 151, Swansea University)

This respondent from Swansea University is frustrated because their workload is being disrupted due to a lack of communication between themselves and the Translation Unit/Service. When asked what they would like to improve with the translation workflow, one respondent stated: “Be faster and get an alert when it is done or if it will be delayed” (Staff Quiz/Staff Survey: ID4, Swansea University). A comment from the following two respondents in Swansea University demonstrates how confused the respondents were from the offset, making them more hesitant to use the system in the future: “The process was unclear, and the e-mail address to send a copy to was hard to find” (Staff Survey: ID15, Swansea University) and “[I don’t know] how I would go about requesting a translation” (Staff Quiz/Staff Survey: ID69, Swansea University).

This response from Swansea University is similar to the comment made by Staff Quiz/Staff Survey: ID 151, Swansea University above. The statement “hit and hope” describes how the respondent visualises the workflow process, almost as if it is

down to chance whether the work gets translated. Again, in this case, a lack of communication between the respondent and the Translation Unit/Service has undoubtedly been the cause of the frustration, in the respondent's opinion.

Improve the form for long translations - currently, it's terrible. There are not enough fields to provide any kind of context for the translation team, and there is no confirmation beyond what is shown on the page that the request has been submitted, so I feel like it's a bit of 'hit and hope' in terms of whether the submission has gone through.

(Staff Quiz/Staff Survey: ID 43, Swansea University)

These comments were mainly from Swansea University respondents; however, it is worth noting that more respondents were participating in the study from Swansea University than Swansea Council, as explained previously.

Participants in the focus group were asked to clarify if they had any concerns about receiving translation requests and formatting to gather more qualitative data, but in this instance, from the translator's perspective. Both Swansea Council and Swansea University acknowledged that they have challenges and frustrations "every single day" and that basic instructions for staff to follow to request a translation are regularly disregarded, such as "Word only documents, no .jpg, scanned images, pdfs, or excel". They are routinely issued with documents in an incorrect format. The translators are then criticised for being awkward by requesting that the documents are re-formatted and resent for translation.

Both organisations emphasised that they only use the most basic version of their CAT software (DVX3), which does not support file formats other than Microsoft Word. The focus group confirmed they still used the basic version, that there was a lack of training in both organisations and how they could benefit from 'refresher' training annually.

Another consideration discussed in the focus groups that impact the workflow process is when documents are received for translation without regard for the time needed to translate the content; both focus groups explained that it is often significantly underestimated and an "afterthought". Swansea Council provided an

example of a 5,000 document that had arrived with a date set for printing without considering the translation timescale. Swansea University discussed a 30,000-word document that had appeared via Sharepoint that day for translation without any instructions or supporting documentation.

It was also explained that in both Swansea Council and Swansea University, when a document (for example, a poster) requires translating, the English content is generally created first, followed by the design element. Subsequently, the Welsh translation can be challenging regarding character counts and spatial limitations, as most content translated from English tends to be longer. The translators believe there is a lack of planning before sending documents for translation. The translators receive the documents already designed, populated with the English text, and then must work around them. Frequently, large documents are received by the translators without prior instructions or other supporting resources, which would aid the translation process and would also help the translator to make informed and critical decisions such as ensuring the style of the TT is directed toward the anticipated target audience, and that the correct terminology is used. In addition, when translations are sent to the Translation Unit/Services at Swansea University, priority must be given to Human Resources, which can frustrate customers who require a fast turnaround, but the translators must prioritise according to legislation. Staff undoubtedly see their own translations as a priority, which is for them.

All these factors significantly impact the workflow and waste valuable time with discussions. All that is needed is better communication in this instance and a better understanding of the limitations of the systems.

6.2.1.2 PREPARATION OF REQUEST, POST RECEIPT/PRE-PROCESSING TRANSLATION

Swansea Council

According to the qualitative information Swansea Council and University provided, the document enters the workflow once the request has been received. In the case

of the Swansea Council, there are different responses to this step in the process. Two respondents out of eleven stated that the request was entered onto an Excel spreadsheet, with one claiming in addition that this was the point when the decision was made whether to send the document through Microsoft Translate for example, 'if it is very long' (Translation Unit/Services Survey, ID 11: Swansea Council). The rest of the respondents did not mention Excel or MT. However, one respondent (Translation Unit/Services Survey, ID 10: Swansea Council) chose to go straight to 'Distribute to [the] translator or send to [the Application Programming Interface] API process',⁶⁶ which can be assumed to be the step which involves using MT. However, this is not clear. There was no mention of any pre-processing stage.

Swansea University

As with Swansea Council, once the translation has been received at Swansea University, the next step is where the work is given directly to the translator, with no pre-translation processing and this was the consistent answer from all four respondents. The only variance is when two translators stated that the work is assigned to a translator and the other two noted that the translators choose the work they will translate. The respondent (Translation Unit/Services Survey, ID 7: Swansea University) stated that "internal translators' ear-mark documents to work on individually".

Welsh Government

Once a document has been received by the translation service of the Welsh Government, it is "centrally received" and "assessed". Although it is not explained exactly how the document is assessed at this stage, the response indicated that the copy would be sent for internal or external translation depending on the "size and timescale of the work".

A salient observation is that there is no pre-translation processing preparation. Staff members (not translators) were required to prepare their documents themselves before translation, following the translator's instructions for example, whether they accept pdf files or not.

The DGT

Conversely, the pre-translation preparation of a request at the DGT is somewhat different to the other organisations and far more effort is made. According to Fernández-Parra (2020, p. 115), it passes through several necessary steps before the workflow reaches any consideration for distribution to translators.

Interestingly, upon receipt, the request is immediately and automatically processed through EURAMIS (a TM tool) to pick up any pre-translated content. This is a very logical point in the workflow process. For example, while Swansea Council is adding their request to an Excel document, and Swansea University is sending the translation to the translator (or MT), the DGT considers the word count as important. The organisation works out precisely what needs translating and what is in the TMs, having been translated previously. Whether the Welsh Government does check the document for TMs at this stage is unknown and not explained in the response.

Whilst the TMs are being checked, as a much larger concern, the DGT has a pre-processing team, which carries out background administration work, such as collecting and preparing any reference material to assist the translator, thus allowing the translator to concentrate on the translation element. It is noteworthy that at this stage, the translator still does not have the document to hand, as the next stage in the process is when the documents are passed to the "Secretariat", also known as "workflow assistants" (Fernández-Parra, 2020, p. 116). They will confirm the timescale/delivery estimate or expectation and other more refined details, such as whether the ST might be restricted to a certain number of characters for a website or design template or whether the text style needs to be geared toward a specialist audience. This step is just as important as any other to ensure the document is treated correctly and that all parties understand precisely what is happening with their translation request. This step seems to be missing from the Swansea Council, Swansea University, and potentially the Welsh Government's workflows studied in this thesis. A notable aspect of the Secretariat is that they support the translator, as a type of Project Manager who prepares the

more administrative tasks, liaising with the originator without translating the content. As shown in Figure 6. 4 above, the translator who will translate the text is unaware of the work behind the scenes.

Once all the background work has been completed, the Secretariat will pass the baton on to the next stage, the ManDesk (Manager's Desk). This is where the translation becomes available on the TraDesk (Translator's Desk), a Translation Management Tool. Any translations that need to be outsourced to freelancers or agencies are facilitated through the TRèfle platform. The flexibility of the interfaces at the DGT is very suited to the translation workflow process, enabling translators to pick and choose jobs, which undoubtedly contributes to "positive motivation", as Mossop (2014, p. 587) suggests regarding translating content that interests the translator.

Moreover, Fernández-Parra (2020, p. 126) also mentions in her article that translators from the DGT often translate texts from their specialist fields, which once again is a positive motivator. All the translators who completed the Swansea University and Swansea Council Translation Unit/Services Survey stated they did not have a specialism in any subject, although it may be assumed that they would have considerable expertise in local or national government terminology (Swansea Council and the Welsh Government) and education (Swansea University respondents). However, the translators in training and recently qualified translators who took part in the BA/MA Student Survey selected fifteen different sectors of specialisms, the top three being medicine, public sector/government, and law.

6.2.1.3 THE WORKFLOW PROCESS FROM RECEIPT OF THE TRANSLATION TO THE DELIVERY OF THE TARGET TEXT (TT)

Swansea Council

Once again, this part of the process does contain variations in the responses provided. 67% (n= 4) of six respondents state the translator simply "translates the work". Another says that the "translator translates the work or reviews the API output" (presumably the MT output), and one is more specific by explaining that

the “translator translates the work or edits it if it has been through Microsoft translate”. Three respondents stated that the work is then passed to the “senior translator for proofreading” (one was identified as temporary), and two said “a proofreader”. The Translation Unit/Services Survey supports this, as 100% of the respondents confirmed that they always use a proofreader. Once a translation is received back from a translator, there is undoubtedly an internal quality check carried out at Swansea Council unless the translation is outsourced, as it is assumed that the translations would not require any additional work, so there are no proofreading or quality checks in this case. The onus is on the organisation that supplies the translation to ensure it has reached the required quality standard. 100% of the respondents confirmed they *always* quality-check translations. However, it is unclear what is checked, other than errors, formatting, and other changes, and whether the work *is tidied up* before being sent back to the customer. Two respondents stated that the translation was *sent to the TMs*. It is unknown whether there was an update to any management tool, such as the Excel spreadsheet. The use of a CAT tool was also unclear from the survey. However, the response was mixed when respondents were asked whether they ever translated without using technology such as a CAT tool. Still, only one respondent selected *never*, two stated *often*, an additional two said *sometimes*, and one stated *rarely*. Therefore, there is a high probability that CAT tools are not used very often during the translation workflow, which is a surprising result. Contrary to this, during the focus group meetings, both Swansea Council and Swansea University stated that they always use their CAT tool (DVX3) unless the content is less than 100 words, in Swansea Council’s case.

Swansea University

All four translators who participated in the Translation Unit/Services Survey described a simple process. When explaining the workflow, once the translator has received the document for translation, two (50%) of the respondents made clear their use of the CAT tool at that stage. This matched the responses to a direct question in the survey about whether they translated without using CAT tools; two

respondents selected *sometimes*, and two chose *rarely*, as with Swansea Council, CAT tools are not always used in the workflow as expected. Only one stated that they exported the .rtf file to Word to quality-check the translation, whilst the rest simply sent the document for proofreading. This concurred with the survey results when the respondents were asked if they always use a proofreader; two stated *always*, one said *often*, and one respondent from Swansea University mentioned the document being *sent back to [the] translator for corrections*. When describing the workflow process in an open question in the survey, they all confirmed they use proofreaders. Only two (50%) of the four respondents referred to the use of a CAT tool (DVX3), and two (50%) mentioned quality checks which almost tallied with the results from the survey when asked if they always quality check their work; two stated *always*, and one said *sometimes*. The final step was to send back the completed TT.

Welsh Government

Given the limited information provided by the Welsh Government, all that was supplied was the statement: *The completed translation is saved, recorded, and returned to the customer via email* (see Appendix 20). However, according to the single respondent in the survey, translations are *always* quality checked, *sometimes* translations are carried out without using technology such as CAT tools, and a proofreader is only used *sometimes*. This single viewpoint cannot represent the entire translation service; however, this confirms comments made in the Swansea Council focus group meeting when it was explained that CAT tools were not always used.

The DGT

Fernández-Parra (2020, p. 117) explains that the following stages in the workflow at the DGT are again part of a tightly controlled process. The translator at this stage is armed with the translation request and any documentation that will assist them in their translation of the content, such as information gathered from the originator who made the translation request, making sure the document language targets the

correct audience by using the correct style, tone, and register—a textbook translation in the making. As the translation service at the DGT is multilingual, and assuming the translator is unsure how to translate a segment, they could access other languages to see how other translators have solved the segment previously, which could be an excellent and helpful tool, mainly where there are ambiguities in the text. Once the translator has accepted the translation via ManDesk or TraDesk, they start the process through the CAT Integration Client (a Translation Management Tool that links the DGT systems with Trados). This is where TMs can be uploaded, and the translation carried out.

Revisions are carried out via any of the three platforms: the CAT Integration Client, ManDesk, or TraDesk. The Secretariat will conduct final checks and return the request to the original sender. Again, what is also noteworthy is the flexibility to cater for different eventualities. Fernández-Parra (2020, p. 116) also explained how ‘hot lines’ are available for short translations needed within 24 hours and how longer translations are treated differently and are managed more carefully by a workflow manager. It appears that all aspects of an efficient workflow are covered. All technology is used to its full capability, complete with staff who are thoroughly trained and conversant with its potential, thus creating an efficient, well-managed workplace and a workflow whereby everyone knows what is expected of them and how to manage their part of the workflow process.

Even though one may question the viability of comparing the large scale of the DGT and its multilingual element against small teams of translators in the Welsh public sector, given the correct tools and systems, the DGT could be seen as a model for Wales and Welsh language provision as a whole.

Efficiency and Productivity: Comparisons

The survey findings indicated that Swansea Council provides faster translation turnaround times than Swansea University. However, even though Swansea Council may be quicker, their respondents stated that translation technology does not make it easier, although Swansea University claimed it does. A potential reason for

this was discussed in the focus group. It may be due to Swansea Council using Microsoft Translator, which was brought in by a member of staff who had previously worked for the Welsh Government but is overly complicated to use alongside the Council's current translation systems without being part of an integrated process. Swansea Council also noted that necessary technology fixes are not prioritised, leaving them waiting months for systems to be repaired. More staff at Swansea University than in Swansea Council acknowledged that translation technology speeds up the translation process, improves the translation quality, and favours translation technology. This may seem contradictory, as Swansea Council's turnaround time is much faster than Swansea University's. However, even though translation staff at Swansea Council are more likely to deliver a translation on time than at Swansea University, they are more overwhelmed by their workload. They also claim to have too much work, and others do not value or respect their work. This was highlighted in the focus group for both Swansea Council and Swansea University, where they appeared frustrated by issues with technology, formatting issues and unreasonable deadline requests, as discussed in section 6.2.1.1.1.

Notably, translators from Swansea Council are more concerned about machines taking over their roles as translators in the next ten years. By contrast, staff at Swansea University are not worried about the future role of a translator. Swansea Council and Swansea University confirmed that they liked CAT tools but occasionally translated without technology. More translators in Swansea Council like (and have used) MT than Swansea University. This was slightly contradicted in the focus groups as all attendees confirmed using CAT tools for each translation, apart from Swansea Council, where documents of 100 words or under are translated without CAT tools. However, there is a chance that the responses from the survey were more accurate than those from the focus groups, as they were given in confidence without their colleagues present.

6.2.1.4 SUMMARY OF WORKFLOWS

What is evident when examining the workflows in Swansea Council and Swansea University is that each step is disrupted by uncomplicated but essential procedures

which are potentially the reason for the overwhelming request by staff in the staff survey for a faster, automated, and clear process, which could be addressed simply. Communication between the originator of the translation and the translators at Swansea University and Swansea Council is often sporadic. This is frequently a frustrating experience as neither party regularly meets the other's expectations in terms of guaranteeing turnaround times or formatting the ST, which results in either the originator outsourcing the translation or doing it themselves (without any knowledge of translation, resulting in embarrassing errors that reflect poorly on the translation unit), or continuing with the internal translation service.

On the one hand, the translators are often overwhelmed by their workload, facing unrealistic deadlines resulting in them outsourcing documents that the translation team do not have time to consider, often the result of poor planning and management. On the other hand, customers frequently send incorrectly formatted documents that cannot be uploaded to the organisation's basic level CAT tool to begin the translation process or documents prepared and designed with English as the only language of consideration, leaving limited space for translation. Customers often expect their documents to be translated according to their deadlines, adding excessive pressure to an already overburdened translation service. Usually, translation requests are submitted without explanation, making the translation more complicated and less manageable than necessary due to the lack of information and communication.

The translators emphasised the significance of training, particularly in relation to technology. Currently, both Swansea Council and Swansea University lack any form of technology training. The existing technology is outdated, and there is a lack of awareness about certain skills that could enhance the translators' work. However, the focus groups have revealed that new translators, upon joining their teams, uncover more efficient ways to utilise the in-house CAT tool that were previously unknown.

As explained in section 6.2.1.2, even though the DGT is a much larger organisation (and multilingual, not bilingual), it is instructive to look at the scaled-down, basic

model and identify the main steps taken during the translation process, which are methodical, sensible, logical and involve just a few more players in the process than those in smaller public sector organisations. This study was unable to examine the entire workflow in the Welsh Government. However, it was mentioned in the Swansea Council focus group that following an internship as a translator; they had observed that CAT tools were not always used as some translators prefer a more 'old-fashioned' method which does not use technology. However, it is anticipated that there are indeed steps within other larger organisations' processes that would benefit all public sector translation workflows in Wales, not only from an efficiency and productivity viewpoint but also from a social perspective, drawing on Mossop (2014) once again, and his guide to the motivation of translators in the public sector.

6.3 WELSH LANGUAGE COMPETENCE IN THE WORKPLACE

6.3.1 RESEARCH QUESTION 1.2

To what extent do employees contribute to Welsh-language workplace communications, and how may this affect the internal translation workflow process?

When Welsh-speaking staff are employed in the public sector in Wales, it is assumed they add linguistic value (however basic or advanced) to the workforce by contributing to internal Welsh language communications between their colleagues and external stakeholders in speaking, writing, reading, and listening in Welsh, as part of their everyday work commitments. However, the findings from this study, and confirmed during the focus group meetings, clearly identify staff members with an ‘ability’ to communicate in Welsh but who choose not to do so, adding more pressure to an already overwhelmed translation service (in Swansea Council, Swansea University, and the Welsh Government), where in many cases, employees bypass the workflow altogether by directly outsourcing their Welsh language translations. This was acknowledged in the focus group meeting, where Swansea Council explained how the translators see translations on signage that they have not translated, such as:

Whatever goes out into the public - the onus comes back on us, even when we know we have not done a poor translation, for example, Bay Studios in Swansea. We are criticised if there’s anything wrong with it, and we often find we don’t get thanks for the good things we do.

(Focus Group Meeting: Swansea Council – Survey ID: 120).

For example, the Welsh Government outsourced 35% of its translation work in the 2020/21 financial year. A translator from Swansea University stated in their response to question three on the Questionnaire (see Appendix 19), “The university [outsources Welsh translation] work due to limited timescales and lack of resources internally to undertake the work. The unit itself doesn’t send [translations] externally”. However, this was contradicted in the focus group meeting, where it was confirmed that translations are outsourced from the translation unit/service

and by internal staff, often without the knowledge of the professional translators (Swansea Council and Swansea University). According to the translators, this happens regularly, mainly if the translation is part of a funded project, which they find frustrating. There is no control over the translations, often leading to embarrassing consequences such as incorrect signage, posters, or information. The blame for these errors is laid on the translator's shoulders. The ramifications of relying so heavily on outsourcing content cannot be ignored or underestimated in terms of cost, quality, and consistency of language. Outsourcing large volumes of Welsh translations from the public sector to the commercial industry would undermine the purpose of nurturing a Welsh-speaking workforce that has been purposefully recruited due to their language capabilities. (For more information on Welsh-speaking employees who prefer to speak English only, which was raised during focus group meetings, see section 6.3.1.4).

It would be impossible to control any outsourced content from a linguistic standpoint, as it would not be presumptuous to assume that the requests are made by non-Welsh-speaking staff who cannot review the content for accuracy, in-house styles, and preferred terminological choices. Security and confidentiality are additional factors to consider when outsourcing translations, as cloud-based systems, are notorious for cyberattacks and data breaches, and organisations often take precautions only after such an occurrence. Lastly, it is unlikely that any outsourced request would be returned with a completed TM file; hence, the organisation would not only pay more for outsourced documents, but they would also not be able to reuse the translations in the future, a vital and time-saving advantage of a well-stocked TM database. Therefore, any public sector organisation in Wales needs to capitalise on utilising their Welsh language communicators' skills, an essential commodity for any public sector organisation in Wales, regardless of size. Staff would benefit from significant Welsh language communication support to contribute effectively to the translation workflow process, enabling even the basic-level speakers to translate their emails and correspondence quickly, effortlessly, and potentially automatically. In contrast, a public sector organisation with no Welsh-speaking staff or staff who predominantly choose not to utilise their

language abilities would rely solely on the Translation Unit/Service provided by their organisation and outsource to the private sector to comply with Welsh language policies, as shown in section 2.4.

During the focus group meeting, Swansea Council described how a client altered a word in a promotional piece without the translators' authorisation. When questioned, the translators said that the word the client used, although technically acceptable, was inconsistent with the council's house style. This word is part of a predetermined phrase; therefore, changing it ad-hoc would disrupt the region's linguistic continuity. The consumer's disregard exemplifies Mossop's (2014, p. 586) findings for the translators' advice, which was another demotivator for the translation team.

6.3.1.1 WELSH LANGUAGE COMMUNICATORS IN THE THREE ORGANISATIONS

Surprisingly, only 1% (n= 2) of the 146 respondents who participated in the Staff Survey chose to complete the survey in Welsh, while the remaining 99% (n= 144) chose English. It was anticipated that more respondents would prefer to answer the survey in Welsh, given that 13% (n= 19) classed themselves as native Welsh speakers; an additional 4% (n= 6) were native English speakers with Welsh language skills, and overall, 63% (n= 91) of the respondents classed themselves as Welsh nationals. Therefore, at some point in their schooling, they were more than likely exposed to the Welsh language and would be capable of the most basic level of Welsh. The high percentage of Welsh nationals may indicate that staff members have some Welsh language abilities beyond basic greetings that may be revived and improved but choose not to; this is discussed in more detail in section 6.3.1. This study seeks to determine if, why, and where this is the case. Any level of Welsh language proficiency would significantly contribute to the internal workflow process and compliance with Welsh language policy (as described in section 2.4).

6.3.1.2 WELSH LANGUAGE (NON-NATIVE) SPEAKERS

Considering the high proportion of respondents in the Staff Survey (Swansea Council, Swansea University, and the Welsh Government) who identified as Welsh nationals, it was anticipated that the survey would reveal staff members with some basic to intermediate Welsh language skills (acquired via family or education in Wales) that were not being utilised in the workplace. What was unexpected from the results was the extent of the potential to increase the workforce's language proficiency. The findings confirm the scope of current Welsh language communication abilities, which remain underutilised in the workplace.

It should be noted, however, that not every individual with some Welsh language skills would be able to use them in the workplace for a variety of reasons, including a lack of confidence and embarrassment about making mistakes, as well as the possibility of adding an insurmountable amount of translation work to their already burgeoning workload. To determine why a staff member would choose not to use their language abilities, they were asked about their confidence and whether they translated their content. The results were higher than expected, with 42% (n= 61) of all staff (evenly distributed across Swansea University and Swansea Council) confirming that they lack confidence in their [Welsh] writing skills, and 17% (n= 25) acknowledged that they not only lack confidence in their [Welsh] writing skills but they cannot write in Welsh as they are embarrassed to use it for work purposes. Some of the responses could be explained by the newly recruited staff or working part-time hours (spending less time in a bilingual environment). However, this was not the case, as 84% (n= 21) of these respondents have worked for their organisations for more than four years, and 92% (n= 23) are full-time employees. Intriguingly, 68% (n= 17) of the same group of respondents stated that they use the Welsh translation service to translate their content, 52% (n= 13) over the last three months, and 36% (n= 9) said that the procedure slowed down their workflow. If these staff members' Welsh language skills were developed and used alongside modern translation technology, including TMs, integrated automation and NMT, the support they could contribute to the translation staff and the workflow would

be significant. This would positively impact the professional translation workflow using existing tools and increase their confidence in managing their content in Welsh.

In the Welsh Government's (2020b, p. 13) policy document, *Cymraeg. It Belongs To Us All*, the following is stated:

Our Translation Service provides an invaluable service to the Welsh Government, and our obligations and ambitions about the Welsh language would not be met without it. However, having a service of this kind means the Welsh language can be compartmentalised rather than mainstreamed. The specialist skills we have could be used, at least partly, to facilitate more use of Welsh by others across the organisation.

To increase our use of the Welsh language in the workplace, we will focus on developing new ways to assist people in producing bilingual text. Our intention is to make it easier to use the Welsh language and to produce relevant Welsh language material without always necessarily having to send work to translation services. This may involve, for example, the Translation Service providing more editorial services and fewer translation services.

We will also look at emerging translation technology and automation to ensure that all our translation activity – both internal and outsourced – is undertaken in the most efficient way possible.

To gather further qualitative data, discussions were held in focus groups at Swansea Council and Swansea University regarding (non-translation) staff empowerment, enabling them to translate and contribute to the workflow. Both Swansea Council and Swansea University staff had reservations about whether it would be a good idea; the consensus was that it might be effective but only if the general staff carried out the translations solely for internal use. One participant from Swansea Council stated:

I think that's where we fall down all the time. I don't want to put the message out to encourage staff to translate; we've got enough problems as it is, and the Welsh Commissioner's complaints are going up and up because somebody just sent something to Google translate. We are seeing Google translate and things, and you think, why have you done that? You know the team is so good at coming back with the short translations; plus, we've tried to help a bit by putting translation banks, you know, for quick tweets and things like that, already onto staff net, which we, we want to expand so general staff can get hold of it, apart from the translation memories. Translation memory banks themselves are getting augmented, which will be

fantastic. But yeah, generally, what does everybody else think? You know that we are not having great results from the staff doing their own translations.

(Focus Group Meeting: Swansea Council – Survey ID: 120)

6.3.1.3 HOW CAN AN ORGANISATION BENEFIT FROM A BILINGUAL WORKFORCE IF ITS BILINGUAL STAFF CHOOSE TO BE MONOLINGUAL?

Staff employed based on their language ability and included in their organisation's statistics to demonstrate a healthy bilingual workforce in the public sector may lead to a misleading impression. Out of the 17% (n= 25) of staff who claim to be able to communicate in Welsh in the organisations, this study aims to understand to what extent their language skills benefit the workplace, as it may be assumed that those with language skills who are working in a bilingual environment would have a significant opportunity to use them. It is already evident in the results that some staff have some Welsh language skills but choose not to use them, mainly due to a lack of confidence. If these Welsh language skills are not used as presumed, the consequence would add more pressure on the Translation Unit/Services workflow.

However, the qualitative data unsurprisingly revealed a preference from some respondents from Swansea University who 'prefer to seek assistance from Welsh-speaking colleagues' (Staff Survey: ID, 40) and 'usually any content that needs to be translated is done so by Welsh-speaking colleagues' (Staff Survey: ID, 46). Even though this is a positive contribution to the workflow process, it must be determined how much it would impact the Welsh-speaking colleague's workload, making their daily responsibilities unmanageable and potentially stressful. It is also a possible reason why some Welsh speakers choose not to use their language abilities in the workplace. Non-native speakers have been discussed previously in this chapter; nevertheless, native speakers who do not use their competencies may have an even more significant impact on the efficiency of the Welsh language translation process if they do not use their skills, and, as a result, this necessitates

further discussion and analysis. This part of the study seeks to identify the behaviours of native Welsh speakers and whether a problem exists.

Surprisingly, out of the 25 respondents who claim to be Welsh native language communicators, the first telling result confirmed that 32% (n= 8) of Welsh speakers lack confidence in their Welsh writing skills, and 24% (n= 6) consider that their Welsh is not good enough for work. These results are concerning, as they indicate that many staff are native Welsh speakers but do not have enough confidence to use their skills in the workplace. Only 11% translate their own content, and only 12% try. Therefore, only a fraction of the staff members with native Welsh language skills use them in the workplace. This will increase reliance on the Welsh translation workflow, leading to further outsourcing, additional costs, and less control of the Welsh language being circulated within the public sector, not to mention the loss of the opportunity to store TM data for future re-use.

6.3.1.4 COMPARING WELSH LANGUAGE COMMUNICATIONS IN THE HOME AND THE WORKPLACE

This study aims to determine if any circumstances may prevent an individual from using their Welsh language skills in the workplace and whether this happens. Additionally, the surveys analysed the respondents' speaking, writing, reading, and listening abilities at work and home to identify any disparities; for instance, if a person speaks Welsh at home but chooses not to do so at work. Again, this will emphasise the potential to expand Welsh language support inside the organisation and enhance the workflow for Welsh language translation. When a new employee joins the public sector in Wales, the internal Human Resources department records their language proficiency, allowing the organisation to compile Welsh language statistics based on this information. These statistics are used to evaluate the Welsh language proficiency of the workforce across the public sector. If a staff member chooses not to use their Welsh language skills at work, the translation workflow is less supported, and further pressure is placed on professional translators. When comparing the data regarding speaking, writing, reading, and listening skills in the

workplace and at home, several noteworthy outcomes were identified and highlighted in yellow in Table 6.1:

Table 6. 1 Variance in Speaking, Writing, Reading and Listening in the Home and the Workplace

Welsh language communication in the HOME				Welsh language communication in the WORKPLACE			
Speaking HOME	Writing HOME	Reading HOME	Listening HOME	Speaking Workplace	Writing Workplace	Reading Workplace	Listening Workplace
Low	Low	Low	Low	Not at all	Not at all	Not at all	Not at all
Low	Low	Low	Low				
Fluent	Moderate	High	Fluent	Fluent	High	High	Fluent
Low	Low	Low	Not at all	Not at all	Not at all	Not at all	Not at all
High	Moderate	Moderate	High	High	High	High	High

Out of the 51% (n= 24) of respondents who answered the questions in this section, 79% (n= 19) selected the same options for both the *Home* and *Workplace* scenarios, indicating no differences in their Welsh language communication between home and their workplace. However, out of the remaining respondents (as shown in Table 6.1), 20% (n= 5) demonstrated a significant difference and variation in language usage between the workplace and the home. The highlighted (yellow) cells indicated where the variance between home and the workplace occurred. Three out of the five respondents do not communicate in Welsh as much at work as at home; conversely, two communicate slightly more in Welsh in the workplace than at home. What is notable about the results is that whenever the respondents selected the option *fluent*, this answer was consistent as there were no differences between the workplace or home results. Table 6.2 illustrates this in the first column, showing no difference in fluency levels in communication. Still, it is imperative to observe that most variances occur with the *low* option (low-level competence), followed by *not at all* and *other*.

Table 6. 2 Number of variances between Welsh language communications at home and in the workplace

	Fluent	High	Moderate	Low	Not at all	Other	Total
Speaking	0	0	0	3	2	1	6
Writing	0	2	2	3	2	1	10
Reading	0	1	1	3	2	1	8
Listening	0	0	0	3	4	1	8
Total	0	3	3	12	10	4	32

A plausible explanation, given the results already discussed in this chapter, may be due to a lack of confidence in their Welsh language skills. Therefore, those who consider themselves *fluent* have confidence in their communication abilities in Welsh. Therefore, there are no differences between home and the workplace. This is further supported by evaluating the totals by type of communication rather than ability (e.g., *fluent*, *high*, *moderate*), and we can see that writing shows the most variance. Writing is commonly regarded as the most challenging form of communication since it is visible and subject to critique.

These results demonstrate that some respondents chose not to utilise their Welsh language abilities in the workplace, primarily due to a lack of confidence and embarrassment. These respondents are essential to unlocking additional Welsh language support in the public sector. They could contribute to the translation workflow process only if they have enough support, adequate time to complete the additional translation workload, and the essential equipment. The results demonstrate that the quantity of native Welsh language communicators in the public sector is not a reliable indicator of the staff's level of active Welsh language communication. The design of Welsh language policies assumes that public sector organisations employ Welsh speakers who will use their language skills at any opportunity in the workplace. However, this falls apart when employees' lack of confidence in their Welsh communication abilities (including native speakers) discourages them from contributing to the translation workflow. Those who class themselves as *fluent* are undoubtedly more than willing to support the workflow, but potentially to the detriment of their workload. Therefore, any contribution to the Welsh translation workflow depends on whether they have time to complete the task. This has meant that far more pressure has been placed on the translation units/services, resulting in an overload of work, and delayed or uncertain timeliness. Staff do not know whether their requests for translations have been received nor when they will be returned, as this is not tracked in any automated fashion in Swansea University and Swansea Council. What is surprising is the amount of translation work that is outsourced, invariably, in some cases, without entering the workflow itself. However, to estimate the potential quantity of

outsourced translation work based on the responses to the questionnaire. Between April 1 and October 2021, there were 4,171 translations completed by the Welsh Government; therefore, if 35% of translation work is outsourced, then 35% of 4,171 equals 1,460 translations, which were potentially outsourced in six months (50%) of the fiscal year (2,920 per annum). It would be instructive to gather actual data on the quantities of outsourced documents in public sector organisations and what happens to the TM data from the outsourced documents.

6.3.1.5 WELSH LANGUAGE STANDARDS 2015-2018 TRAINING

Translation Unit/Services Survey

Regarding the Welsh Language Standards between 2015–2018, 45% (n= 5) of the eleven translators had received training, and none believed that the Welsh Language Standards made their jobs more difficult. Only 45% stated they had received training, which is disappointing, but the Standards’ comment that their roles have not been made more difficult was a pleasant surprise. To gather further qualitative data to support these findings, respondents from the focus groups were asked how the Standards were received when they were implemented. The implementation disconcerted neither Swansea Council nor Swansea University, which confirmed the original findings. Swansea Council remarked on the helpfulness of the Welsh Officer, who was always available to assist with implementing the Standards. Swansea Council indicated that introducing the Standards would have been a more significant “shock” to other local authorities as their websites had to be fully translated into Welsh to ensure compliance. However, Swansea Council stated that complaints to the Welsh Commissioner about their use of the Welsh language are rising. However, some complaints included an instance where a member of the general public lodged a formal complaint because a tool on the council’s website worked fractionally faster in English than in Welsh.

Swansea University stated that the “average Welsh speaker welcomed it”; “Welsh language campaigners felt that they weren’t going far enough and public sector

staff saw it as a step too far” and that views were “divided”. Also, there was a discussion about Swansea University’s initial concern about the cost of implementing the standards. However, they found that many instructions contained in the Standards were already being carried out, so implementing them was “not such a burden”. What was notable was the significant educational task regarding staff.

Staff Survey

The results related to the Staff Survey are primarily different from those collected from the Translation Unit/Services Survey, as the former were only asked whether they had been trained on matters related to the Welsh Language Standards 2015-2018 (see section 2.6). The response seemed more negative overall, with 46% stating *no* and 12% selecting *maybe*. When comparing the results of the respondents in each organisation, Swansea University seemed to be more positive, with 60% of its respondents selecting *yes* or *maybe*, whilst, in Swansea Council, only 38% of its respondents chose *yes* or *maybe*, signifying that more staff from Swansea University believed they had received the training than Swansea Council. The respondent from the Welsh Government selected *no*, which was surprising, primarily because they had worked for the Welsh Government for more than four years.

Three respondents, two from Swansea University and one from Swansea Council (including an Event Coordinator), stated, *what’s that?* When asked whether they had received any training regarding the Welsh Language Standards. None of the three respondents were Welsh speakers. Given the underwhelming response to the 2015–2018 Welsh Language Standards, it is worthwhile to examine the topics of staff motivation and staff sentiment. The research conducted by Mossop (2014) focuses on staff motivation (or de-motivation) in an institutional setting. Mossop offers a case study of the motivation of Canadian French translators at the Canadian Translation Bureau, whose carefully crafted translations may not ever be read: "I did not even know whether my translation was going to be read. Had the source text been sent for translation simply because someone thought an English

version should be available 'in case' someone wanted to read it?" (Mossop, 2014, p. 585). Similarly, the Welsh translators from Swansea University, interviewed as part of the focus group stated that some completed translations "don't see the light of day". For example, "some job descriptions are very long and highly technical, where no one will read them. Then some could do with being translated but don't come under the Standards". Mossop (2014, p. 587) identified the issue of unread or unused translations as demotivating for the translator. Similarly, regarding technology, Mossop explains that the greater the TM matches in a document that needs to be translated, the less creative work is required for the translation and the translator, who "would be editing those sentences rather than composing my own; my control over how I perform the translation task would be reduced" (Mossop, 2014, p. 584).

6.4 TECHNOLOGICAL COMPETENCE AND TRANSLATION TOOLS IN THE WORKPLACE

This section presents answers to two research questions, research questions 1.3 (section 6.4.1) and 1.4 (section. 6.4.2). Question 1.3 asks the respondents: Which translation technology tools are the most trusted and preferred by the organisations, and why? Furthermore, 1.4 questions how workflow-relevant tools, systems, legislation, and personnel are updated to benefit from the most recent technological advances and Welsh language policy. Section 6.4.2.1. deals with cyber security and data breach awareness, and section 6.4.2.2 deals with intellectual property and monetisation of TMs.

6.4.1 RESEARCH QUESTION 1.3

Which translation technology tools are the most trusted and preferred by the organisations, and why?

By evaluating the results of the Translation Unit/Services Survey, understanding which tools are preferred and trusted indicates which tools they are familiar with and, more importantly, which ones they are unfamiliar with. However, given the probability that staff do not have any input into the choice of translation tools used in the workplace, it is not surprising that there are differing opinions. Bowker (2019, p. 105) suggests that if the respondents trust and are experienced in all the functions of the most recent tools and paradigm shifts, it may be inferred that they (and, by extension, the translation workflow in their organisation) have been considerably impacted by the technological turn, which in turn will influence the translation workflow. In contrast, if the respondents have not been brought up to speed or are unfamiliar with the most recent technology, it may be assumed that the technological turn is yet to have a significant impact. Therefore, the outcome of this question is fundamental to any recommendations from this study and will be discussed further in section 6.7. Considering the above, and in answer to these sub-questions, an understanding of how the translators relate to using technology is essential because if they are not happy using it, there may be a lack of expertise, and the motivation to use the systems to their full capacity would be low. It is noteworthy but unsurprising that the Welsh Government acknowledges the benefit of using the translation technology to its full extent, as explained succinctly by M. Prys when discussing *Cymraeg 2050: A Million Welsh Speakers*. Prys states that:

The Welsh Government describes the need for a ‘modern and responsive translation profession which makes the full benefit of the latest technology, and language resources (dictionaries, terminologies, and corpora) [...]’. The ‘latest technology’ here can be understood primarily as an allusion to translation memory and machine translation technology, two innovations that have the potential to substantially extend the productivity of a single human translator.

(M. Prys, 2021, p. 108)

According to Screen (2016a, p. 7), the likely reason behind the motive of the Welsh Government to use all technology to its full extent is that the use of technology in translation not only speeds up the translation process but also significantly increases productivity and therefore plays a "major role in the process of revitalising Welsh in Wales", in line with Welsh language policy in Wales by the Welsh Government (2017) and their goal of one million Welsh speakers by 2050. Therefore, it seems to be in the interest of all staff to ensure that the technology is used to its full potential. When the respondents were asked to provide their opinions regarding translation technology, more respondents from Swansea University than those from Swansea Council found that it made translating easier, significantly, and positively impacting their workflow, and improving speed and quality. The results showed that most translators like translation technology tools except for one respondent from the Welsh Government.

The findings also confirmed that Swansea Council and the Welsh Government use the CAT tool DVX3 and Microsoft Translator (machine translation) in the workplace. However, Swansea University only uses the CAT tool DVX3 (without the additional MT tool Microsoft Translator). The reason for this was discussed in the focus group meeting with Swansea Council translators; a previously employed line manager brought Microsoft Translator to the Translation Unit at Swansea Council. However, the respondents appeared hesitant to use it, deeming it over-complicated, insinuating that it is more of a hindrance than a help. The respondents stated that they were experienced in and trusted DVX3, followed by Google Translate, MemoQ, and Microsoft Translator (in that order).

None of the respondents knew what Translation Management Tools were, which was confirmed in the focus group. This could be the case because most participants have worked for their organisation for at least two years, full-time, apart from the respondent from the Welsh Government, who was part-time. Essentially, they were given a set of translation tools to work with that were chosen for the translator (rather than by the translator). The tools used (DVX3 and Microsoft Translator) seem to be a welcome addition to the workflow. All translation staff appreciate CAT

tools, and DVX3 is a popular choice, with the highest proportion claiming that CAT tools are a lifesaver. The qualitative responses also confirmed their appreciation by stating that “CAT tools are most useful when it comes to accessing the memory to speed things up and ensure consistency” (ID 2: Translation Unit/Services, Swansea University). Respondent ID:1 from Swansea Council confirmed that they “like using DVX3”; another stated: “DVX3 is an excellent tool for a translation team” (ID: 5, from Swansea University) but acknowledged that it is dependent on “the quality of the human input”. However, surprisingly given the survey results, some comments were less than favourable, such as that the systems “require(s) a fair bit of faffing”, which indicated a level of frustration, and ID: 6 from the Welsh Government stated: “Technical problems with the software make it more trouble than it’s worth”. However, one concern regarding the usage of translation technology is, once again, whether any frustrations or negativities may be due to the translators not being able to fully appreciate the tools they are working with, notably as they confirmed that there is no time for training.

Moreover, one respondent expressed concern about a non-linguist updating the systems. As explained in section 1.3.1, DVX3 is the most recent version of the CAT tool DVX3, developed by Atril. According to the company that owns the DVX3 software, Atril Solutions, between March 2014 and March 2022, there have been fifteen minor updates to DVX3. It is unknown at this stage whether all updates have been implemented in each organisation, which is discussed further in section 6.5.

However, based on the results indicating a lack of translation technology training, there is a significant possibility that the translators would not be aware of the updates or be prepared to utilise them even if the systems had been upgraded. This suggests that the staff may not be using the translation tools to their full potential and, as a result, may not see the full benefits of the technology. In addition, as shown in section 5.3.3.2.1, there is a high probability that translation staff do not use the CAT tools technology as often as anticipated during the translation workflow. The lack of use could be due to the short length of the translation requests and possibly, the translator preferring to translate from scratch, finding it

to be faster and more straightforward. However, this is not how the workflow process is intended to operate and would result in a less efficient system with fewer TMs than expected. Therefore, it is questionable whether the translators use the tools as intended, given a distinct lack of staff training (see section 6.4.1). If they are not using the tools to their fullest extent, they have based their opinions on a basic level of the technology rather than an up-to-date version.

To gather further qualitative data to understand the results in more detail, during the focus group, both Swansea Council and Swansea University confirmed in July 2022 that they still use the same technology as reported in this research, including the DVX3 CAT tool; therefore, no changes have been made. However, due to the requirement for remote working during the COVID-19 pandemic, part of the system needed to be accessed remotely so staff could continue to work from home. Sixteen TMs were extracted from the Council server, categorised, and placed in the Microsoft Teams cloud for easy, remote access. Nevertheless, staff did experience technical difficulties, and for one year, the translators were not working from a live TM. This was an issue because their workload had increased due to communications related to the COVID-19 pandemic. The TM was not fixed until December 2021, as other matters took priority. On the date of the focus group meeting with Swansea Council, there were difficulties with the alignment of text not working, meaning the TMs could be updated.

The focus group also discussed that some of the Swansea Council licences expire annually, such as DVX3 and Cysill (a Welsh language grammar and spell checker), vital tools for translators. The internal system flags them as threats and risks to the system, so there is an annoyance that every year they must justify their use.

Regarding staff training, staff from Swansea Council confirmed that they do not receive training as there is no time to do so, but as the translation team has varying skill levels, it would be a good idea to “get together and learn from each other”. Training that had taken place a while ago, which included learning shortcuts, had been forgotten, and another suggestion was that they could benefit from an annual refresher.

6.4.1.1 MACHINE TRANSLATION

A surprisingly lower number of respondents (46%) selected *yes* to using MT. There is undoubtedly a clear preference for using Google Translate and Microsoft Translator, which came out as equal regarding the regularity of use and trust. However, a higher proportion of respondents like using MT in Swansea Council than those in Swansea University, who are not as keen. A noteworthy comment from a respondent in Swansea Council was that MT was helping them with their workload as there were not enough staff, but there was a caveat that “the work needs careful editing” (ID: 3 Swansea Council). A respondent from Swansea University (ID: 4) also acknowledged the difficulties of using MT, the need for experienced linguists to check the accuracy of the output and how some pieces looked robotic. What was not clarified in the Translation Unit/Service survey was whether the respondents answered with *cy>en* in mind (as opposed to *es>en*, for example) when they answered the questions related to the MT tools. Still, it is more probable that they were referring to Welsh as they are professional Welsh language translators. The tools used by the translators in this study are governed by the means chosen by their organisation, which are DVX3 (CAT) and Microsoft Translate (machine translation). Staff are conversant with the tools but often choose not to use them. Probably, the staff do not use the systems as they were designed, as they do not receive regular training on the upgrades. Therefore, organisations can take advantage of the latest technology. This raises another question: How can the technological turn impact a translation workflow process if translators are not exposed to the latest technology and paradigm shifts, as described by Bowker (2019, p. 105)?

6.4.2 RESEARCH QUESTION 1.4

How are workflow-relevant tools, systems, legislation, and personnel updated to benefit from the most recent technological advances and Welsh language policy?

This research question refers to how staff in the public sector keep updated and fully informed of workplace changes in the translation workflow process. For example, an upgrade to a key translation tool (e.g., DVX3 CAT tool), training staff to protect their data by preventing data leaks and cyber-attacks, and the importance of understanding intellectual property regarding TMs and data ownership have led to the monetisation of translation data. Therefore, if employees cannot keep up with technological advancements, they will not feel the full impact of the technological turn. Three respondents from Swansea Council stated that the person overseeing the department's technology has linguistic skills. However, this is counteracted by another three respondents who noted that the person who controls the technology in the department has NO linguistic skills. Respondents from Swansea University also confirmed that the person who oversees the technology has no linguistic skills, and the Welsh Government claimed that various people carry out the task.

One pertinent comment from a respondent in Swansea Council stated: "It's important that the translators themselves have control over these systems rather than anyone external, e.g., whoever manages the API, a non-translator manager" (ID: 1 Translation Unit/Service Swansea Council). The importance of the individual responsible for updating the systems cannot be overstated, as seen by the findings of the Translation Unit/Service Survey, in which 45% of respondents from Swansea Council and Swansea University equally reported that CAT tools were a lifesaver, and just one responded negatively (from the Welsh Government). If the person responsible for the technology is proficient in its use and a qualified translator, they are more likely to understand what information should be sent to the translators to keep them updated than someone who just clicks an upgrade prompt. There may be significant updates that will affect the workflow that they need to be aware of. As explained in section 6.4.1, there have been fifteen updates to DVX3 (albeit

minor), the CAT tool of choice in Swansea Council, Swansea University, and the Welsh Government. It is unsure whether the upgrades were passed on or their significance explained. Even without considering upgrades, using a basic system level often indicates that there would likely be more levels to comprehend. However, with training not being a priority according to the results of the surveys, it is doubtful that any updates have been passed on to the translators. A professional translator's perspective on their usage of internal CAT tools is summed up by the following remark: "[The technology] requires a fair bit of faffing about, and I don't know any translator with enough time to train up fully in how to use them, so you end up using the most basic features only" (Translation Unit/Services Survey, ID: 5, Swansea University). This was an unexpected response given the consensus on the significance of the technology they use, as evidenced by the translators who recognise the relevance of translation tools such as CAT tools in the workplace.

According to the Welsh Government's (2018, pp. 14–16) Welsh Language Technology Action Plan and an updated version in 2021 (Welsh Government, 2021b, pp. 18–19), innovative plans in the form of 27 work packages are currently in progress, executed mainly by Bangor University (see the original Action Plan 2.9.1 and the Progress report 2.9.2). The two main packages applicable to this research are Work Packages 10 and 11. The progress report highlighted a focus on speech, translation, and AI and that many systems are being developed with public funding. The Welsh Government is thus ensuring that developments will be downloadable under an open licence whenever possible, particularly services and tools to help promote the Welsh language using technology. Most of this research is carried out by Bangor and Cardiff University's researchers, such as developing machine translation (MT) and creating automated services and AI (Welsh Government, 2021b, p. 3). This is undoubtedly a step in the right direction (particularly regarding the open licence) in harnessing technology to disseminate the Welsh language.

However, a fundamental element that seems to have been overlooked, according to the results found in this study, is that even though the prospects for new technology are impressive, existing systems are not being used to their full

potential because the users are not being adequately trained or systems updated. Swansea Council and Swansea University confirmed in the focus groups that the need for continuous improvement training and technology needs to be implemented by personnel who fully understand its purpose so that any relevant updates can be passed on to the translators. Otherwise, the public sector would engage in an infinite cycle of technological development without ever realising the benefits, this was highlighted by the Welsh Government (2018, pp. 14–15) “Were translation automation facilities for the use of human translators not to be developed, the Welsh language may not benefit from extant translation technology used for other languages, and Welsh would not be as prevalent as it could be in the linguistic landscape”. Moreover, the Welsh Language Technology and Action Plan deemed it a risk if they did not “[c]ommission, where appropriate, and work with relevant organisations to improve systems that already exist and disseminate their use” (ibid.).

6.4.2.1 CYBER SECURITY, DATA BREACHES, AWARENESS

Regarding cyber security, as already discussed in section 1.3.5 regarding cyber-attacks and data breaches, these areas are a concern for any public sector organisation. However, ensuring the translation technology is free from threat is potentially the responsibility of another dedicated department rather than the Translation Unit/Services that participated in this study. Only 36% (four out of the eleven) translators stated they had received any cyber security training in this regard, which demonstrates a potential lack of understanding of how sought-after the data produced in translation is becoming.

6.4.2.2 INTELLECTUAL PROPERTY AND MONETISATION

The primary source of intellectual property in the translation industry is the TMs. When asked about intellectual property, only one respondent (Welsh Government) confirmed they had received training. It could be said that for a translator in the public sector, it would not be up to them to concern themselves with intellectual property matters. However, decision-makers in the public sector need to keep

abreast of what is happening to bilingual data in the industry, particularly TMs. Bowker (2002, p. 122) identified the value of this data back in 2002 and recognised the TM as a "valuable resource". Dormehl (2016, p. 156) commented that if "data is the oil of the digital economy, then we need to place a proper valuation on it". TAUS (see section 1.3.6) is a prime example of putting a price on bilingual translation corpora; the ownership of TM data is still unresolved, who is the owner the translator or the translation buyer, as questioned by Moorkens and Lewis (2019a, p. 478). A pertinent article from 2016 was written by Jaap van der Meer (see the TAUS website⁶⁷), who is described as "a language industry pioneer and visionary". *The article entitled The Future Does Not Need Translators* by Van der Meer stated:

Imagine a machine that can translate across a hundred languages and do that in real-time. No human being would ever be able to do that. The quality and accuracy of these machine translations may not always be perfect, but it is so convenient that we learn to live with it, adjust ourselves and tweak the machine where we can.

However, van de Meer's⁶⁸ latest article, released in March 2022, is titled *Machine Translation. We can do better*. In this article, he is critical of researchers. He invites "everyone involved in the translation ecosystem to come off the fence and realise the full benefits of MT" and tells translators that: "post-editing is not the end-game". The information provided in the article under the proviso of scholarly research all links back to the services offered by TAUS, which includes the questionable buying and selling of multilingual corpora.

Consequently, TMs and translations in parallel texts are purchased and resold multiple times, first via TM tools and then as training data for NMT systems, with data requirements values expanding exponentially for NMT. Generators of NMTs are not likely to infer that their translation output is based on accumulated human translation data, and neither are public sector organisations aware that translations they have commissioned and paid for are being sold and re-sold. Data selling is more likely to occur in the public sector when a translation is outsourced to another service provider, a freelancer, or a translation agency/company. As explained throughout this thesis, outsourcing is common in the public sector. Alarming,

during the focus group meetings, it was discussed how translations are carried out without the knowledge of the in-house translators, with many only discoverable through incorrect signage distributed in the city. The lack of control or knowledge of translation work carried out in the public sector not only raises concerns regarding cost implications from not using TMs, or gathering TMs from the new translation requests, but also the continuity of language and house style within the organisations as well as control of what is being said in the public domain in the organisation's name.

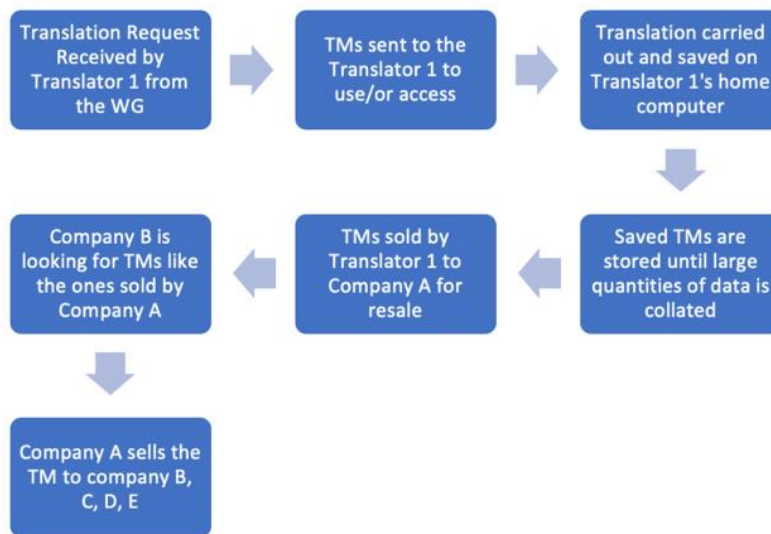
Without any legislation or means of control in place and an increasing culture of impatience and the need for speed, it is unsurprising that the translation industry has adapted to take advantage of digital consumerism, such as via on-demand digital labour platforms with the 'Uberization of Translation' as highlighted by Firat (2021, p. 48), and the monetisation of recycled translation data with TMs for example, TAUS Marketplace. This has created a money-making stream for organisations such as TAUS and any organisation or freelancer, large or small. According to the TAUS website, when the company launched the Data Marketplace, it claimed to have the 'largest collection of language data', boasting that they have more than thirty-five billion words in 600+ language pairs. Translators and anyone with data are encouraged to sell their translations, which could be harmful and unethical if sold without the permission of the organisation that commissioned the work. Still, it means the translator will have less work in the future and an additional income stream. Nicoletta Aresca (see the TAUS website: 2022⁶⁹), a translator and seller on the Data Marketplace TAUS' website page, states:

It had never occurred to me that my hard-earned solutions to thorny translation issues could one day be made available to the public, thus allowing me to share useful knowledge to colleagues and also offering me some extra reward for my past efforts.

TAUS' clients can purchase large quantities of text and create a bespoke MT for their organisation. However, selling TMs in this way and taking advantage of circumstances that arguably should be legally addressed comes with several risks. The most obvious is that the organisation (even in the public sector) would not

know if their TMs had been sold. This would result in TM data from the public sector being sold by a freelancer or agency, and there would be no way of tracing the translations back to the source. The flow chart (Figure 6. 5) shows how the data can be continuously monetised.

Figure 6. 5 An example of the workflow involved in the monetisation of translation.



This is very profitable for the commercial sector, but for the public sector, it means that translations that have been paid for are now accessible to anyone willing to pay. TAUS does claim to clean the TMs and remove confidential data. Still, this relatively new commercial entity does not appear to be anything other than a business trying to make a profit – by repeatedly selling the same digital product. At a recent Cardamom Series seminar on Language Technology and Language Revitalisation in Wales, the topic of cleaning TM data was discussed. The guest speaker D. Prys (2022), explained how they jumbled up sentences to prevent large companies from being able to take bilingual data, as their data is intentionally open-source with a permissive licence so that anyone can access it. The data is purposefully available so the Welsh language can be disseminated as widely as possible, and the translations can be re-used.

The Welsh Government could mitigate this risk by maintaining large quantities of TM data (like TAUS) from all translations performed for the public sector, including those under formal contracts with the Government, for example. They would be

extensively disseminated to promote the Welsh language, subject to some constraints regarding sensitive material. In section 6.7, solutions to this problem will be discussed.

6.5 TRANSLATION TECHNOLOGY

This section answers two research questions, question 1.5 (section 6.5.1) and question 1.6 (section 6.5.2). Question 1.5 asks the respondents: How effective is the technology used in the translation workflow according to staff who use translation services and the Welsh language translators? Question 1.6 asks the respondents whether combining resources such as generic TMs and termbases increases efficiencies, improves productivity, and decreases the cost to the public purse. Section 6.5.1.1 deals with document preparation, 6.5.1.2 language level and readability, 6.5.1.3 word count discrepancies, analyses of ST1 (6.5.1.4), ST2 (6.5.1.5) and ST3 (6.5.1.7) and provides a summary of the TM comparison main findings.

6.5.1 RESEARCH QUESTION 1.5

How effective is the technology used in the translation workflow according to staff who use translation services and the Welsh language translators?

The results from Chapter 5 indicated that even though the translation technology (DVX3) used by the translators in the workflow is outdated, it appears to be highly thought of by the translators. In the focus group meeting, Swansea Council and Swansea University confirmed this. It is also the consensus across the translation industry due to its assistance in increasing productivity, workflows, and the *pièce de resistance*, TMs, which re-use pre-translated content. The more TM data a CAT tool holds the more potential matches. The greater the matches, the easier and faster the translation process. However, the more automation impacts the translation workflow, the more translators rely on its efficiencies, and it becomes expected for the output to be accurate.

The TM comparison provided significant insight into the accuracy and reliability levels, which was unexpected and added to the finding that the technology was not

as effective as anticipated. Each organisation's Translation Unit/Services team was asked to provide an original text, as explained in further detail in 4.4.2.1. Each document was uploaded to each organisation's CAT tool (DVX3). Coincidentally, they all utilised the same CAT tool and version, simplifying the comparison process. Each organisation created an analysis sheet and an .rtf file per document using the CAT program to measure and quantify any variances for analysis. This study would like to ascertain, for instance: If ST1 (Swansea Council) were processed through the Welsh Government's DVX3, were there any differences in TM, such as an increase or decrease in segmental matches? If so, would combining TM data between public sector organisations better assist the translation workflow, speed up the translation process as less translation would be needed, and reduce costs due to less outsourcing, which would then lead to supporting the dissemination of a more consistent, quality-driven, and sector-specific Welsh language content in the public sector? This question is answered in section 6.7.

6.5.1.1 DOCUMENT PREPARATION

Upon receiving any translation request, the first step when evaluating a document for translation is to determine the number of words and the technical difficulty of the language used. For example, a complex medical or legal document of 10,000 words would require expertise in the subject matter and time to complete. Swansea Council stated in the supplementary questionnaire response (Appendix 18) under the question related to outsourcing documents for translation that a document of 10,000 words would take up to two calendar months, whilst a 100-word document could be delivered the same day if submitted by 3 pm. Therefore, the first step in the process, as explained by the Welsh Government, is that "Following an online translation request, [the request] is assessed and a decision is made on whether to deal with the request internally or to outsource it depending on the nature, size, and timescale of the work".

The Welsh Government (Appendix 18) confirmed that they outsource 35% of their ency translation work. Between April 1st, 2021, and October 1st, 2021, there were 4,171 translations outsourced. The word count was not disclosed, nor the types of

documents; for example, it was not disclosed whether there is any policy restricting the outsourcing of confidential or sensitive documentation. Swansea Council confirmed they outsource one to twoency documents per week, ranging from 6,000 to 50,000 words. In an internal report, they demonstrated that they translated 2.4 million words during 2020–21. They also mentioned that they "outsource larger documents over 10,000 words that are required within a tight timeframe". Swansea University confirmed that they "send[s] work externally due to timescales and lack of resources [and suggested that they] outsource 25% of their translation work". The word count was not disclosed.

In the focus group, outsourcing was discussed, and some significant comments were made by both Swansea Council and Swansea University, which support the research findings. Swansea Council outsources what they do not have time for in-house; Swansea University confirmed the same, although if a text has been funded externally, then it will more than likely be outsourced, and they specify that the translators need to be full members of *Cymdeithas Cyfieithwyr Cymru*⁷⁰ whose translators are required to pass tests before they are allowed to become full members. Their website explains: "All those listed on this website are fully paid-up members of *Cymdeithas Cyfieithwyr Cymru*. They have shown the appropriate level of professional competence by succeeding in the Association's examinations process, the only way to become a member". Both Swansea Council and Swansea University suggested that the same level of expertise is required to receive shared TMs (see section 6.7).

6.5.1.2 LANGUAGE LEVEL AND READABILITY

Organisations were asked to produce general language rather than technical language documents for this study, which were then analysed using the Flesch-Kincaid readability test. The results provided a grade level and a score, which indicated that none of the texts were particularly technical. ST1 and ST3 were more technical than ST2, and a translator familiar with the organisation's in-house style and who had access to working termbases would be able to create a good translation.

6.5.1.3 WORD COUNT DISCREPANCIES

The translation process begins with a word count to determine the work required to complete any translation. This study observed significant differences between the document word counts reported by Microsoft Word, Flesch-Kincaid, and the CAT tool's word-counting interface. One would expect a document with approximately 500 words to have a word count variation of a few words. If scaled to an estimated level of annual productivity, even the slightest variation in a short document would substantially impact annual costs, budgeting, and workload projections based solely on word count. ST2 and ST3 produced remarkably similar results, whereas ST1 did not. Microsoft Word and Flesch-Kincaid counted 437 words, whereas DVX3 produced the same inaccurate results for all organisations, increasing the word count by 20% (n= 107 words). Upon investigation, the ST contained a text column stating, "Do not translate this column". If the text from this column is brought into the equation, the total number of words equals the number calculated by DVX3. Therefore, the CAT tool included the entire text and disregarded the instruction not to translate the column. This disparity affects lead time and work distribution calculations and has significant cost implications. This cannot be underestimated and applies to all three organisations.

It can be assumed that this was not the only instance in which additional text was added because it is common practice for a translation service to receive documents containing data that does not need to be translated. As this data is quantifiable, creating a realistic scenario is straightforward. It provides an idea of the impact these (very simple to achieve) technological disparities may have on spending and time, both of which are in limited supply. Table 6. 3 below illustrates the cost of outsourcing one document for translation from en>cy for one week, month, and year *without* the disparity which is followed by Table 6. 4 which shows the differences for the same period but *with* the disparity.

Table 6. 3 The cost of outsourcing one document for translation from en>cy for one week to one year without the disparity:

One document only (one week)			Monthly		Annual	
Word count	Cost per word	Total cost	Word count	Total cost	Word count	Total cost
28,000	0.13p	£3,640	121,333	£15,773	1,456,000	£189,200

As Swansea Council disclosed, they outsource 1-2 documents per week containing between 6,000 and 50,000 words, so an average of these word counts (28,000 words) will be used to illustrate the cost implications of the disparity. The potential cost implication for outsourcing the translations to an external translation company was 0.13p per word, based on a quotation received from Absolute Translations in the UK, not including proofreading. As a result, the cost was increased, reflecting the annual cost implications with and without the disparity to emphasise the impact of the seemingly minor error.

Table 6. 4 The cost of outsourcing one document for translation from en>cy for one week to one year with the disparity (20%):

One document only (one week)			Monthly		Annual	
Word count	Cost per word	Total cost	Word count	Total cost	Word count	Total cost
33,600	0.13p	£4,368	145,600	£18,928	1,747,200	£227,136

These results indicate that the cost of this disparity over one year would be £37,936 when outsourced. These calculations do not consider TM matches, which would speed up the translation process and reduce costs. The more TM data available, the easier and faster the translation process would be, as there would ultimately be less translation work needed. As discussed in section 6.5.1.3, the results showed that speed was the primary concern raised by staff who had requested translation services.

To add further qualitative data to confirm these findings, the respondents were asked in the focus group what happens when they receive an ST and whether they examine the document to see if there are sections that do not require translation. Not identifying content that does not require translation (such as the test in this research) would have been an oversight and not common practice. However, in both Swansea Council and Swansea University, the translators explained how they are overwhelmed with their workload, so when documents are received for translation, they are immediately uploaded to the CAT tool (DVX3). As a result, if there are instructions such as "do not translate" or large or small sections of the text that should not be translated, this is not considered, as translators constantly fight against time and deadlines.

This finding does indicate significant cost implications across the public sector in Wales. Indeed, as the TM data is not retrieved post-translation, the public sector cannot benefit from re-using previously translated content, which continuously affects future translation costs and time. This insight is essential to this research.

When asked whether they always use DVX3 for every translation (that is not outsourced), Swansea Council agreed (unless the document is under 100 words), and Swansea University also agreed to all documents. In addition, one staff member from Swansea Council stated that they had previously worked in the Welsh Government offices and that not everyone used DVX3 as many prefer to use more old-fashioned methods. This is not beneficial to the organisation as it is more difficult to control the house style of the language, and it would impact TM data as there would not be any data to upload to the TM.

6.5.1.4 ANALYSIS OF ST1: SEO FOR TRANSLATION (SWANSEA UNIVERSITY)

As shown in Appendix 1, the ST was received in an Excel format, complete with instructions to "do not translate" at the top of a column containing text. When this document was uploaded to DVX3, the software did not recognise one column that needed to be ignored or hidden from analysis and the word count. The variations in the word count were discussed in detail in the last section and are shown in Table

5. 1. The advantage of the .rtf format is that it displays the TM matches and how the content has been segmented for translation. Again, one would assume that comparing the output in this study would produce a minimal variance if any. Any differences, therefore, could be classed as significant. The first notable difference was when the DVX3 software split the ST into segments, ready to match the TMs and prepare for the translation. The segments in the .rtf for Swansea University totalled 72, while the Swansea Council and Welsh Government segments totalled 71. The possible reason is that the software recognised more content in Swansea University than the other two organisations and knew to split the segments to match the TM. However, one extra segment was detected in this instance.

When looking at the Analysis Sheet, the results were as expected. The most TM matches were found with the Swansea University TMs, and the least was with the TMs from the Welsh Government, which is curious considering the assumption that the TMs in the Welsh Government are much larger than the TMs at Swansea University or Swansea Council. The second notable difference (which was anticipated as Swansea University produced the content) was that Swansea University's TMs matched with 11% (n= 8 segments) of the text, 4% (n= 3 segments) more than the matches found in the Swansea Council TMs, and 4% (7%, n= 5 segments) more than the matches found in the Welsh Government (7%, n= 5 segments). The data on other analysis sections matched, such as identifying duplicates and guaranteed matches. More importantly, the 'Total' section also tallied between organisations, including the number of segments, which documented 71 segments by all three organisations, contrary to the output in the .rtf file, which was generated by the same system.

6.5.1.5 ANALYSIS OF ST2: WARM HOMES (SWANSEA COUNCIL)

As explained in Chapter 4, the ST was submitted as a two-page press release on headed paper in a Word document (see Appendix 2), ready to be uploaded directly into DVX3. As the header and footer were not selectable, word counting produced differences between three and seven words, as shown in Table 4. 1: Survey name by respondent type. Comparing the .rtf files created by the three organisations, the

total number of segments (33) was agreed upon across the board. As anticipated, the TMs from Swansea Council matched the largest number of segments (63%, n= 21 segments) in comparison to Swansea University with 21% (n= 7 segments) and the Welsh Government with 24% (n= 8 segments) matched. When comparing the Analysis Sheet, the results were again as anticipated. The most significant quantity of TM matches was found with the TMs from Swansea Council, and minor matches were from the Welsh Government TMs. This is a salient observation as, according to the results from the Staff Survey and the Translation Unit/Services Survey, the translation workflow at Swansea Council is faster than at Swansea University. The data regarding duplicates and guaranteed matches were all in agreement, including the Totals section, which was all the same across the organisations.

6.5.1.6 ANALYSIS OF ST3: TEST PIECE (WELSH GOVERNMENT)

As detailed in Appendix 3, the ST was a two-page Word document with Health and Social Care-related information, but it was not regarded as very technical (see Appendix 3). The word count technique revealed modest variances between two and three words.

The .rtf file from all three organisations indicated no TM matches, which was somewhat misleading given the Analysis Sheet’s results, particularly for Swansea Council and Swansea University. A significant typographical error in the text could have prevented a TM from matching with this segment: *clinca* [sic] instead of *clinical*, as shown in Figure 6. 6 below:

Figure 6. 6 Excerpt of the line from the ST3 .rtf showing the typographical error.

0000039	{00102}The role of clinca [sic] research {00103}
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As previously mentioned, it is anticipated that when a translator evaluates their document, they will discover more TMs that match their content because, presumably, the content is tailored to a recognised TA, which was the case with ST1 and ST2. However, in this instance, the Welsh Government was the only organisation not to match the content with any TMs. Swansea University and

Swansea Council matched the TMs in the 50–74% range, with Swansea Council matching two segments and Swansea University matching one. The importance of these findings is that they support the idea that combining TMs will change the workflow process by making it more likely that TMs will match, reducing the amount of work, cost, and time needed for translation.

6.5.1.7 SUMMARY OF THE TM COMPARISON MAIN FINDINGS

Significant areas of concern have been identified due to the TM comparison and warrant further discussion and research. First and foremost, the accuracy of word counting technology must be addressed, as inaccuracies would ultimately result in inaccurate costing, poor use of translation time, providing completion estimates, and stress on the workforce and the translation workflow process. When the DVX3 produced the .rtf file and segmented the Excel document differently in one organisation compared to the other two, this may appear insignificant at first; however, if the TMs are shared between organisations, the question must be raised as to whether segmentation differences could affect the matching of TMs and whether this is a concern with the configuration of the CAT tools. A professional translator with a doctorate and more than four years of experience in the Translation Unit/Services Survey made the following observation:

CAT tools are most useful when it comes to accessing the memory - to speed things up and ensure consistency, particularly for the same client/institution. That said, it also requires a fair bit of faffing about, and I don't know any translator with enough time to train up fully in how to use them, so you end up using the most basic features only. So, though it helps a lot, sometimes it's nice to keep things simple.

(ID: 5 Respondent from the Translation Unit/Services Survey - Swansea University)

This comment not only calls into question the technology of the internal systems and the use of solely the most basic functions but also staff training and development, without which no new technological advancements could be implemented, understood, or made known. How can staff benefit from the technological turn if they cannot fully utilise the systems or simply do not have access to the updated technology? Finally, the results from ST3 highlighted the

potential for combining TMs inter-institutionally. The document produced by the Welsh Government did not contain any TM matches, but it did contain a typing error that may have prevented a match. It is difficult to comprehend how the TMs from Swansea Council and Swansea University matched more content than the originator of the ST, who arguably had access to the largest bank of Welsh language TM data yet did not match one segment of text. A reason for this could be an indication that the translators do not necessarily use the technology provided for them or save the TM data when they do use it. This warrants further investigation and analysis.

6.5.2 RESEARCH QUESTION 1.6

Would combining resources such as generic TMs and termbases increase efficiencies, improve productivity and lead to a decrease in cost to the public purse?

When the Translation Unit/Services Survey respondents were asked whether it would be helpful to share resources (for example, TMs, termbases, and glossaries) with other public sector organisations, the findings were conclusive, with 90% overall stating *yes* or *maybe*. The one individual who said *no* was from the Welsh Government. If the results were calculated differently, combining *no* with *maybe*, the total would be 54%, which is made up of 45% (n= 5) who selected *maybe* and 9% (n= 1) with a *no* response. Therefore, the most predominant answer is *yes* or *maybe*. It is evident from the response that professional translators were very much in agreement on this issue. The research sub-question, in this instance, refers to the TMs in all public sector organisations and the effect that is combining all the data and allowing organisations to use previous translations would have on the public sector service. Sharing data has negative and positive consequences, including, as discussed in sections 1.3.5 and 1.3.6, the issue of cyber security and the loss of control over where data may end up.

In the Welsh Government's (2018, p. 16) Welsh Language Technology Action Plan, there is a clear goal that they need to: "Take full advantage of existing translation

memory software to assist human translators in increasing the amount of Welsh-language material in the linguistic landscape. Using translation memories alongside appropriate machine translation will be possible to share translations in real time". This statement could not be more straightforward. However, the goal they are trying to reach seems distant, mainly due to the need to train the translation staff to align with the new technologies. Not only are the translators in favour of combining resources but so is the Welsh Government. It is worth noting that a translator is naturally creative – making them part of a venture like this could be an enormous source of motivation. According to the same report, the risk of not carrying out the work stated in the Action plan is that Welsh will be less prominent in the linguistic landscape if no action is taken to create automation facilities for human translators. (p. 16).

During the focus groups, responses to questions about the Welsh Government's free online bilingual TMs were intriguing. Swansea Council and Swansea University immediately responded when asked whether they would use them with *no*. If professional translators find the TMs to be unreliable due to their inaccuracies, there is a concern that non-professionals who use these TMs for translating their content may unknowingly distribute sub-standard, inaccurate, and low-quality translations. Swansea Council stated that the documents are "*useless, linguistically incorrect, and not proofread*"; "*If we utilise them, we must include a remark for the proofreader to check the .rtf file*". Swansea University remarked: "There is likely a shortage of them because most of the work is outsourced to external suppliers". Notably, the Welsh Government (2020a, p. 18) promotes the use of their own TMs, as evidenced in the Welsh Language Technology Action Plan Progress Report, which explained that 107 TMs had been released for free use under an open licence on the *BydTermCymru* page on the Welsh Government website⁷¹ at the time the document was compiled. Translators can download and reuse these TMs in their translation systems (Welsh Government, 2020a, p. 8).

When asked about sharing TMs, Swansea Council and Swansea University were concerned about the bilingual corpora being polluted by inaccurate translations.

Swansea University stated they would like to know what they were used for and have more information on their quality. For example, if they were full members of *Cymdeithas Cyfieithwyr Cymru*, their translators must pass tests to become full members. The same level of expertise is expected to be required for outsourcing. However, when asked about outsourced content and whether the TMs are received along with the completed translations so they can be added to their in-house TMs, the answer was the same for Swansea University and Swansea Council, *no*. Swansea University stated that the TMs were supposed to be returned to them but were not. The same was true for Swansea Council.

6.6 THE FUTURE

To measure staff (including translators') opinion of the current translation workflow process, the technology used, and any future expectations, the Staff survey, Translation Unit/Services Survey, and the BA/MA Student Survey collected qualitative and quantitative responses from the respondents.

When looking at the quantitative results from the translators (Translation Unit/Services Survey), there was an apparent disparity between Swansea Council and Swansea University in terms of overall concerns and some significant differences between the translators and respondents from the BA/MA Student Survey. When the respondents were asked about MT taking over translating content, translation staff overall were far more negative than the recently qualified translators (BA/MA Student Survey). Comparing the organisations, Swansea Council staff were more worried than those at Swansea University, and the Welsh Government staff were neither anxious nor concerned.

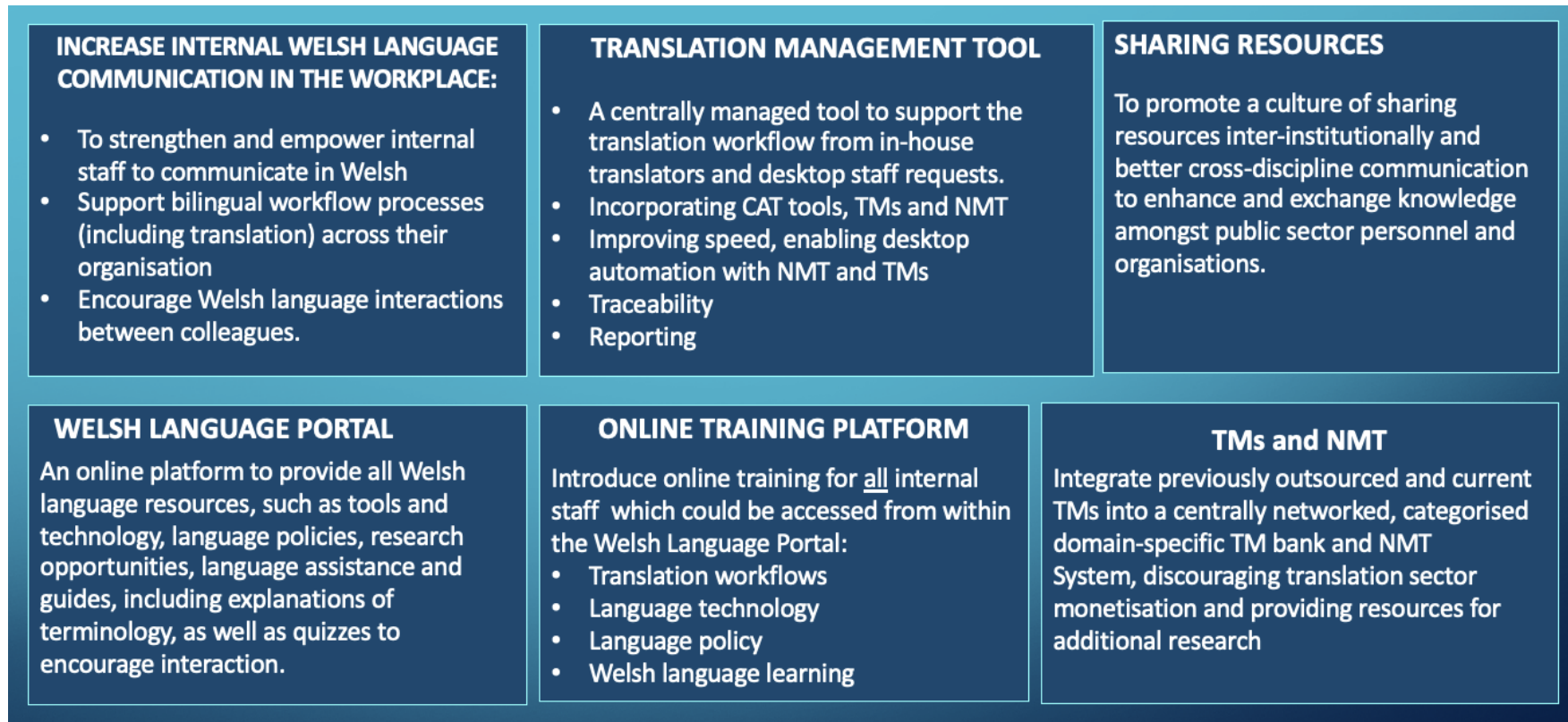
When looking at findings when the professional translators (Translation Unit/Services Survey) and the recently qualified translators (BA/MA Student Survey) were asked about being a translator in ten years, there was a significant disparity between the two surveys. The professional translators were generally positive, although Swansea Council were marginally more concerned overall. In contrast, the results from the recently qualified translators were mostly negative. A similar

response was given by the recently qualified translators when they were asked about the role of a translator changing, which was mainly negative once again. However, what was most striking was the response from the professional translators, which in this instance was very negative. Swansea Council staff were more concerned overall, but the results indicate that translators were more worried about their roles changing than how their jobs will look in the next ten years. The Welsh Government respondent also stated they were worried.

When the professional and recently qualified translators were asked how they felt about the translation industry overall, they were both similarly positive. The overwhelming response was very optimistic when the professional translators were asked directly about combining translation resources such as TMs and termbases.

When the respondents from the Staff Survey were asked to name something they would like to change regarding the translation workflow, the key findings were as expected, namely: to improve translation speed, enable automation, have better communication between staff members to manage expectations, and train staff on technology and processes. Notably, many of these key findings have already been identified as matters to be addressed in the Welsh Government's (2018) Language Technology Action Plan about translation and technology. They form part of the recommendations of this thesis, as illustrated in Figure 6. 7 below, which shows six solutions to improve the translation workflow in the public sector in Wales and to increase the impact of the technological turn.

Figure 6. 7 Six solutions to improve the translation workflow in the public sector in Wales and to increase the impact of the technological turn.



The rest of the responses were equally as, particularly one respondent's insightful comment: "Make it private, tailored to our domains and register, with post-edits being fed back to improve translation memories". However, the comments were from staff who did not understand the translation workflow process. A suggestion such as "assign a translator to a department (to help with specialist terminology)" is excellent in theory. However, in practice, the translation teams are not large enough to enable certain translators to be assigned to specific departments, and translators are required to work across an extensive range of fields within their organisations. Another suggestion was "more staff, outsourcing, and proofreading".

These suggestions are evident and quick fixes given the difficulties mentioned by staff that relate to delays in receiving translations back on time, delays in staff workflows due to lack of communication for example, but they would involve more expense through employing more staff and external assistance, and that would lead to having less control over the language and use of TMs; all when the public sector is trying to reduce costs. It is clear from the results that there is a pattern in the responses, particularly when looking at the suggestions for future improvements: speed of translation, automation, and communication at both Swansea Council and Swansea University. Indeed, some staff are happy with the service, but many appear keen to comment and be heard. Staff generally feel they cannot rely on the internal translation service as they should. This is also reflected in the translators' surveys, particularly from Swansea Council. They are overwhelmed with work and claim to feel undervalued with too much work to do. However, when looking at the responses from the translators (Translation Unit/Services Survey), there is a clear difference between Swansea Council and Swansea University. None of the respondents from Swansea University were worried or concerned about the industry's future, whilst 50% of Swansea Council translation staff were concerned. A very similar pattern was apparent across all questions related to the future. More staff from Swansea Council were concerned about the future (in ten years) than those in Swansea University, but they were more worried about the role of the translator and machines taking over their roles.

The responses from both BA/MA students and professional translators were largely consistent, especially concerning their envisioning of the translator's role in 2035 and potential differences. One translator (ID 1: Swansea University) stated that the “writing is on the wall” when referring to MT and called it “soul-destroying”. Still, the consensus in Swansea University and Swansea Council is the same: MT will play a significant part in their future roles. This assumption is confirmed when they were asked to position themselves in 2035 and how their roles may have changed. The respondent from the Welsh Government was more concerned with “the failure of people to use the translation”, which is a noteworthy comment as that would mean a lack of demand for Welsh translations. As the language is already endangered, the Welsh language would decline further and face potential extinction.

The response from the BA/MA students regarding their future roles and the future of the translation industry was particularly noteworthy. Even though the results indicate that they are better prepared for the future, as the majority of respondents have already chosen a specialisation, appear to be *au fait* with the technology used in the industry, and have selected a role type, the overall sentiment regarding the future of the translation industry was predominantly negative. Despite the BA/MA students exhibiting a heightened awareness of technological advancements, it is crucial that their education and training in translation technology tools instil them with increased confidence and readiness for the future. However, the qualitative results indicate signs of uncertainty and concern. Their students’ concerns relate to the impact of the technological turn, with the increased use of technology such as NMT, a potential decrease in the value of their work, and the realisation that, in order to work as a translator (as opposed to an MT editor), they would need to specialise and improve their skill set. Obviously, as newer translators improve their skills, specialise, and prepare for greater use of technology, the existing and more experienced translators would also need training to advance their skills in order to meet the demand for a role that is increasingly automated and technology-driven.

6.7 SOLUTIONS AND RECOMMENDATIONS

6.7.1 INTRODUCTION

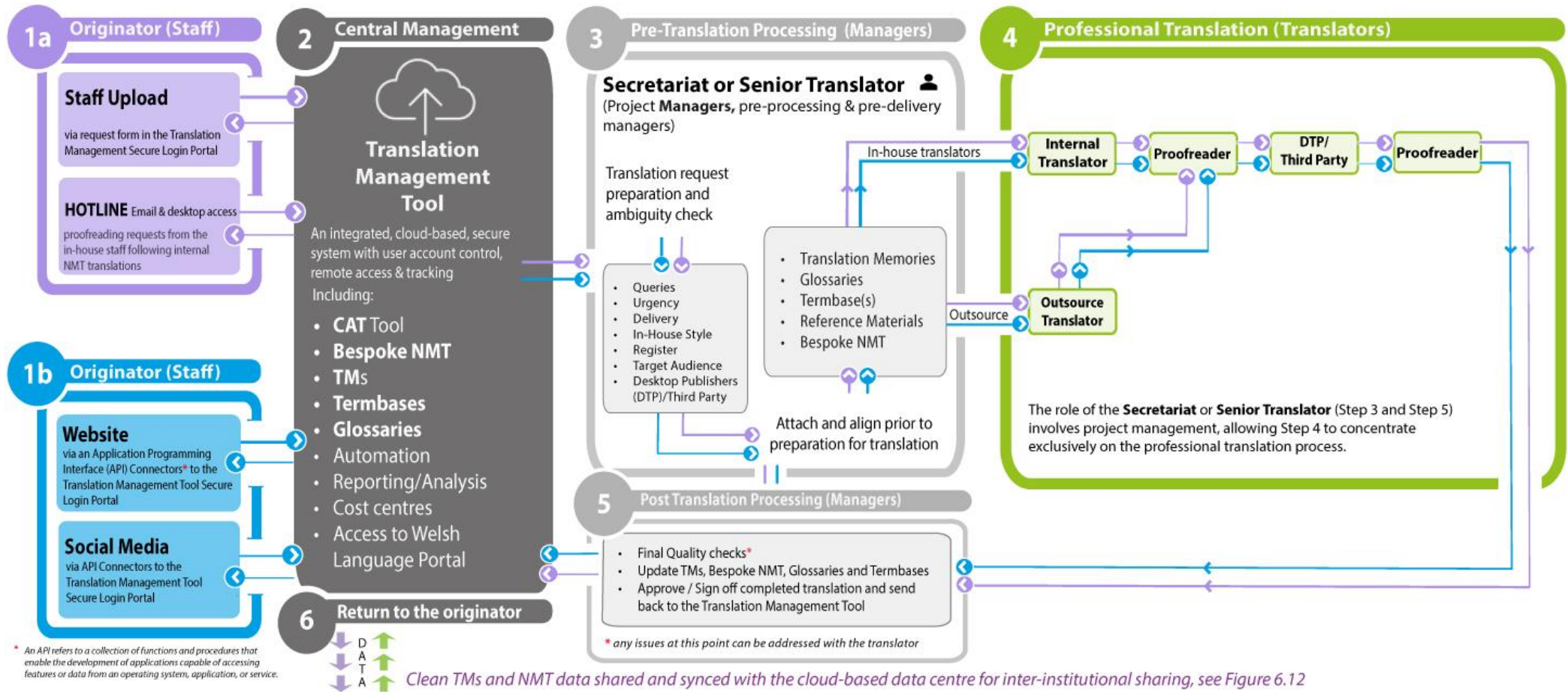
To answer the primary research question, regarding the extent to which the technological turn has had an impact on professional translation workflows in the public sector in Wales, this study found that the technological turn has not developed as rapidly nor as effectively as anticipated and therefore has not realised its full potential to impact the Welsh language translation workflows in the public sector.

Therefore, based on the results already discussed in this chapter, and as a solution for resolving the issues identified in this thesis, recommendations are provided under the following sections with each audience group: **manager** (also referred to as **management** and where a process is **managed**), translation service users (**staff**) and internal translators (**translators**) highlighted in bold.

1. Optimise the translation workflow and technology:
 - translation delivery, **management**, and planning
 - outsourcing
 - maintenance and **management** of systems
 - translation tools development
 - empowering **staff**: Desktop translations
 - central TM bank
 - bespoke NMT system
 - Welsh language portal
 - training platform
2. Inter-institutional resource sharing
3. Welsh language dissemination and language skills
 - human resource **management**
4. **Staffing** structure changes

For reference purposes, Figure 6. 8 illustrates an optimised solution for the translation workflow process, from the start of the translation process (1a and 1b) to the final delivery to the originator (6), as recommended based on the results of this study.

Figure 6. 8 Optimised Translation Workflow for the Public Sector in Wales.



* An API refers to a collection of functions and procedures that enable the development of applications capable of accessing features or data from an operating system, application, or service.

6.7.2 SOLUTIONS AND RECOMMENDATIONS FOR MANAGEMENT, STAFF AND TRANSLATORS

This study shows that public sector organisations, such as Swansea Council, Swansea University, and the Welsh Government, have continued to use outdated translation technology, such as the CAT tool (DVX3), which has not been maintained or upgraded adequately by **managers** and has not received a version upgrade since February 2014 (nine years). The **translators** have not received any formal training or refresher courses, and the **staff**, who are also untrained on the systems, cannot plan their workflows and timelines while **managing** their expectations and are frustrated by the service's lack of speed and unreliability.

To ensure that the translation workflow in the public sector takes full advantage of the technological turn and reaches its full potential, **managers** (not solely translation **managers**) must be more engaged with all **staff** and **translators**. It would be pertinent to recognise the limitations (and potential) of the current translation technology systems and workflows to identify any areas that require improvement or warrant praise. **Management** should focus on enhancing the systems' functionality, reliability, efficiency, and usability for **managers, translators, and staff**, as well as maximising the cost-effectiveness and potential of the technology used in workflow processes, with the inter-institutional sharing of data (see Figure 6. 12).

Managers must also ensure that all systems and processes are adequately maintained and kept up-to-date so that **translators** are not left with broken tools for extended periods and are suitably trained on how to use them. In addition, it is essential to encourage all non-Welsh-speaking **staff** to improve their language skills and to equip them with the necessary tools, training, and support to provide language support in Welsh via their desktops using existing technology that would enable them to access instant translations without overburdening Welsh-speaking **staff**.

Sharing and storing TM data in a data "bank" and networking with public sector organisations would facilitate the creation of a bespoke NMT system to serve the public sector, aid researchers who need copious amounts of data, and disseminate accurate Welsh language data far more effectively than in the past.

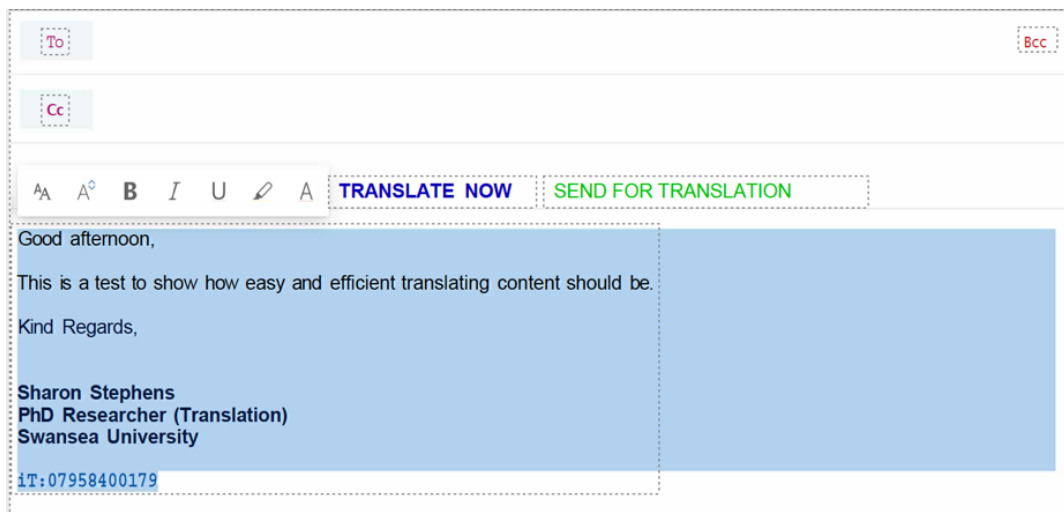
This study has determined that the current systems and procedures require **management**-implemented enhancements to enable the legally mandated bilingual service provision in the modern hybrid working environment. Implementing these recommendations and solutions would significantly impact **management** and stakeholders, allowing them to **manage** and maintain a highly efficient public service that could serve as a model for other bilingual nations.

Management may be surprised by the findings of this study, which indicate that all three organisations' current translation technologies are inefficient; for example, by producing inaccurate word counts and failing to capitalise on building and reusing previously translated content (TMs), both of which have significant financial implications. In the specific cases of Swansea Council and Swansea University, it was challenging for **staff** members to request translations due to the ambiguity surrounding the process. This ambiguity stemmed from having multiple methods available to send a document for translation, which made it difficult for **staff** to determine the most suitable and efficient way to make such requests. It is worth noting that the Welsh Government did not participate in these surveys. As a result, the recommendations are for **management** to implement a more controlled, centralised, and streamlined process (see Figure 6. 8, 1a and 1b to 6), which illustrates a process that takes full advantage of the benefits of current automated, cloud, and neural technology, which would expedite the translation process.

As shown in Figure 6. 8, the originator (**staff**) initiates the workflow (1a and 1b), by submitting their translation or proofreading request via their desktop, secure portal upload, or API/Connectors. This allows **managers, staff, translators**, and third parties to view projects, access their translation or proofreading assignment, and retrieve historical data twenty-four hours a day, seven days a week. A third-party desktop publisher, for instance, would not have the same level of access as a

manager or a **translator** as they would be simply logging in to perform their duties. The documents can be sent in almost any format, which would be a relief for **translators, staff** and **management** who have experienced processing delays with only being able to submit documents in Word format, and a request for receipt of an alternative format can be made for example, from a Word document to a .pdf version. Conveniently, each step in the process would send an alert via text or email to **staff** and **translators**, so they know where their request is situated in the workflow. The request shown in 1a and 1b works slightly differently. In 1a, the process involves uploading from the secure portal. On the other hand, in 1b, **staff** members are granted access to tools and technology on their desktops. They can generate their own translations using existing technology, such as reusing previously translated content (TMs) and benefiting from shared resources inter-institutionally. Figure 6. 9 illustrates an example of an email generated by a **staff** member who accessed the technology from their desktop software package.

Figure 6. 9 An illustration of an email, ready for translation and if necessary, proofreading by a professional translator.



6.7.2.1 OPTIMISED WORKFLOW AND TECHNOLOGY

The translation request is initiated through the Translation Management Tool in Central Management (Step 2) as soon as it is received. The Translation Management Tool is the translation workflow's central hub, storing all data and

integrating with other software. It acts as a centralised repository for Translation Memories (TMs), bespoke Neural Machine Translation (NMT), termbases, and glossaries, which are continuously saved and updated in real-time. The Translation Memory (TM) data bank is updated and enriched with each translation and correction.

The system ensures effective communication throughout the workflow by promptly alerting the staff, third-party contributors like desktop publishers (DTP), and relevant stakeholders via text message or email. This automated messaging service provides constant updates on the status of translations, keeping **staff** informed and ensuring that expectations are met. It also enables better planning by allowing **staff** to organise and schedule reliable and achievable printing and distribution dates.

Individual workflows can be created by the internal **managers** (the Secretariat or Senior **translator**) to further streamline the process, automatically assigning **translators** where applicable based on their specific areas of expertise or preferences. The system also allows for detailed specifications, such as whether a translation project requires a **translator** and a proofreader, only a proofreader, or the involvement of a third party, for example. The automation implemented in this system significantly accelerates the workflow, reducing labour-intensive tasks and ensuring that all **staff** and stakeholders are well-informed throughout the process.

Whether outsourced or internally managed, translations undergo a structured process that starts with their submission to the Translation Management Tool by **staff**. From there, they move on to the Pre-Translation Processing stage (Step 3), overseen by the Secretariat (or called a Senior **Translator**) who is considered as a central project **manager**. This meticulous approach streamlines the workflow and enhances efficiency and transparency beyond previous methods. During this stage, any uncertainties in the translation requests, such as specific delivery timelines, target audiences, preferred style, and the intended purpose of the translation, can be clarified and addressed, ensuring a more precise outcome.

This data is gathered via a submission form or a translation brief during the translation request process. Any reference materials that could be needed or details of third-party (e.g. desktop publishing) intervention are ascertained. This preparation, together with attaching and aligning the relevant technologies (TMs, glossaries, termbase(s), NMT), would significantly assist the **translators** and proofreaders, as this study has shown that their time is frequently spent on preparation tasks, such as resolving formatting issues, rather than translating or proofreading. Each translation or proofreading project is **managed** and conducted by the **translators** via a CAT tool from within the **management** system, where TMs, termbases, and relevant data are stored and retrieved, with the ability to visualise what is being translated at any given moment as with an automated online Translation Management Tool.

The ability to use all existing professional translations (TMs) and advanced neural technologies to their full potential, to embrace inter-institutional collaboration and data sharing, and to train **staff** to improve their technical expertise and Welsh language skills must become the norm for every translation workflow process across the public sector. **Managers, staff, and translators** must improve their technological skills through training, and the workflow must be better regulated, streamlined, and trackable so that all stakeholders are aware of the status of the translation at all times. These solutions should have been implemented once the Welsh language legislation was introduced, before the advancements in AI technology, however, transforming the process rapidly from now on would serve as a foundation for future system developments. In addition, the introduction of an improved, internally automated system accessible to all **staff** from their desktop would not only empower **staff** to expedite their translations, but it would also support the **translators**, facilitate the workflow, and promote a more positive and collaborative environment. Access to automated translations will not transform **staff** into *fluent* Welsh speakers overnight, but it will increase their exposure to the language, with which they will gradually become more familiar.

As bilingual services become increasingly normalised, **staff** members will experience heightened engagement and a sense of contributing to the ambitious goal of achieving one million Welsh speakers by 2050. This progress will ultimately enable residents across Wales to freely choose to live and communicate in either Cymraeg or English.

With professional **translators** handling a greater volume of in-house translations (which is possible due to an optimised workflow process) and conducting all outsourced translations through the Translation Management Tool, the internal style and quality can be more closely monitored by **management** and **translators**. This approach leads to the accumulation of more Translation Memories (TMs), enabling better utilisation of existing translations and facilitating a **well-managed**, integrated, and centralised process. As a result, continuous cost savings are achieved, and the overall solution becomes significantly more efficient, controlled, and **manageable**.

6.7.2.1.1 TRANSLATION DELIVERY/MANAGEMENT AND PLANNING

Translation delivery times are frequently difficult to predict for **translators**, not only when translation tools are not functioning properly due to a lack of **management** maintenance, but also when **staff** send unplanned translation requests for very large documents with no instructions, such as reference materials, information regarding its purpose, its intended audience, whether desktop publishing is required, or an expected delivery date, which makes the translation process challenging. Frequently, **staff** have unrealistic expectations, resulting in mistrust of the service and an inability to meet deadlines by both **translators** and **staff**.

Similarly frustrating is when documents are received by **translators** from **staff**, already designed as a leaflet in English, with a printing date set for the Welsh version, and Welsh translation **staff** have to "fit" the Welsh language into the document, often with insufficient character counts as the original designer had not anticipated that the Welsh translation would require more space.

Ideally, to optimally **manage** and plan the translation process, systems must be maintained and prioritised in the event of any issues, and **management** must implement a process in which translations are received at a clearly defined, single, unambiguous central point, where **staff** provide all supporting materials and instructions in advance, and automation implemented wherever possible to increase efficiencies and productivity. In addition, **staff** are already irritated by the fact that they can only submit requests for translation in Word format, and **translators** are equally agitated by the fact that they must constantly request that **staff** reformat documents. In addition, some **staff** members are unaware that sending a very large urgent translation request to **translators** without instructions makes the **management** of the process significantly more complicated than necessary. In addition, the systems are not cloud-based, which hinders remote or hybrid working, nor are they integrated, which would streamline and centralise the process, so any uncertainty regarding where to upload translation requests would be disregarded.

The recommended solution is for **management** to implement a system where **staff** can upload a document in any file type (Figure 6. 8, 1a) for **translators** to work on and a process that requests information prior to submission to provide **translators** with all the necessary information to complete the task. As a result, the **staff** would be aware that the translation has been received, with all the relevant information, and is in progress, as a tracking facility would allow them to monitor the translation process and plan their workload more effectively, meeting all expectations throughout a transparent and clearly defined process. This also applies to requests from the website and social media (Figure 6. 8, 1b). The only difference is the Application Programming Interface (API)⁷² connectors which receive instruction from **staff** to send their translation request through to the Translation Management Tool, without having to upload any documents. **Translators** would be able to view their translations on the website or social media to ensure suitability before publishing, saving time and increasing efficiencies.

Outsourcing translations may have benefits, especially for larger documents and when deadlines are tight; however, **managers** cannot control the current levels of outsourcing, which have resulted in increased costs and embarrassing errors due to outsourced **translators** lacking access to in-house style guides, terminologies, and glossaries and internal **staff** assigning translations to potentially under-qualified **translators**. Surprisingly, valuable TMs are not frequently retrieved from outsourced **translators**. As a result, outsourced **translators** are able to benefit from using these TMs in their future work, but not the organisation that paid for them (the public sector).

It is also important to note that when external organisations provide funding, **staff** frequently outsource translations. As previously explained, this is not controlled, as outsourcers are not necessarily qualified and do not have access to the organisation's guides. Moreover, these translations are not proofread by the in-house **translators**. However, the Translation Management Tool suggested in this thesis would alleviate a number of concerns, as even outsourced translations would be performed within the tool. This means that the content would be accurately word counted, all TMs would be retained, **translators** would have access to all reference materials, style guides, termbases, and glossaries, and **managers**, **translators**, and **staff** could track the translation from start to finish, leading to higher quality translations, quicker turnarounds and better **management** of the translation process.

By sharing Translation Memories (TMs) among institutions, as discussed in section 6.7.2.4, there would be a substantial increase in the volume of stored bilingual (TM) data. This increase in TM data would enhance productivity and reduce reliance on outsourcing translations. The financial benefits of reusing previously translated content through the shared TMs would be significant, enabling more efficient in-house **management** of translation workloads.

Currently, many public sector projects allocate budgets for outsourced translations. However, with the proposed translation process utilising in-house resources and the ability to cater for additional workloads, the public sector could charge external

providers, similar to a translation agency. This approach would create an additional revenue stream for the public sector, further optimising financial outcomes.

6.7.2.1.2 MAINTENANCE/MANAGEMENT OF SYSTEMS

This study found that for the workflow to function as an effective, continuously productive process, the existing translation technology and workflow procedures must be better maintained and **managed** by **management** in order to provide a continuous and functional service to its stakeholders. Therefore **managers** need to ensure that the technology is always up-to-date, automated where possible, capable of producing accurate output (including word counts), suitable for its intended use, and that **managers, translators** and **staff** are properly trained to access and use it. Poor communication between **staff** and **translators** was one of the most frequently cited issues in the survey results, which could easily be rectified with the Translation Management Tool, as all communication from the initial request from **staff** to delivery is conducted and stored within the software for future use.

6.7.2.1.3 IMPROVING INTERNAL WORKFLOWS (SEE FIGURE 6. 8 FOR REFERENCE)

The need for a translation solution that is not only faster and automated but also capable of accurately identifying the exact location of the translation within the workflow was outlined in Chapter 5. Therefore, it is recommended that a desk-based instant and automated translation tool be accessible to all **staff** from applications such as Microsoft Word, Microsoft Excel, Microsoft Outlook, and Adobe Acrobat. Each **staff** member would have access to a secure portal with a unique login, allowing them to view any requests they have sent to the **translators** in the past or present.

The tool links to TMs and a bespoke NMT system (built with in-house TMs) within a Translation Management Tool, allowing **staff** to translate their own internal correspondence in both English and Welsh. Each **staff** member would be able to produce ad-hoc Welsh communications with less reliance on Welsh-speaking work

colleagues or professional **translators**, allowing them to **manage** their own workloads.

When required, such as when content is destined for the public domain, **staff** would send requests for Welsh translations in any format to the internal professional **translators**. Content that has already been translated through the desktop service would be sent for proofreading, whereas untranslated content could be uploaded to the secure Translation Management Tool. It is important to note that as TMs and the bespoke NMT data bank increase, so will the accuracy of the desktop translations. If a graphic designer or typesetter is required, for example if the translation were for a poster, when the **staff** member initially requests the translation, they are prompted with a question about third party involvement and any instructions they may have such as any formatting, style guides or language. The Secretariat would communicate with the **staff** member, the **translator**/proofreader and graphic designer or type setter involved to ensure project completion, and all parties would be kept abreast of the project's status via email, text message, or the secure Translation Management Tool.

Staff who ordinarily send translation requests to the translation services team or outsource them, or simply do not translate the text, would gain assurance in the service once used, reducing the need to rely solely on translation **staff** while increasing confidence when utilising their service when necessary.

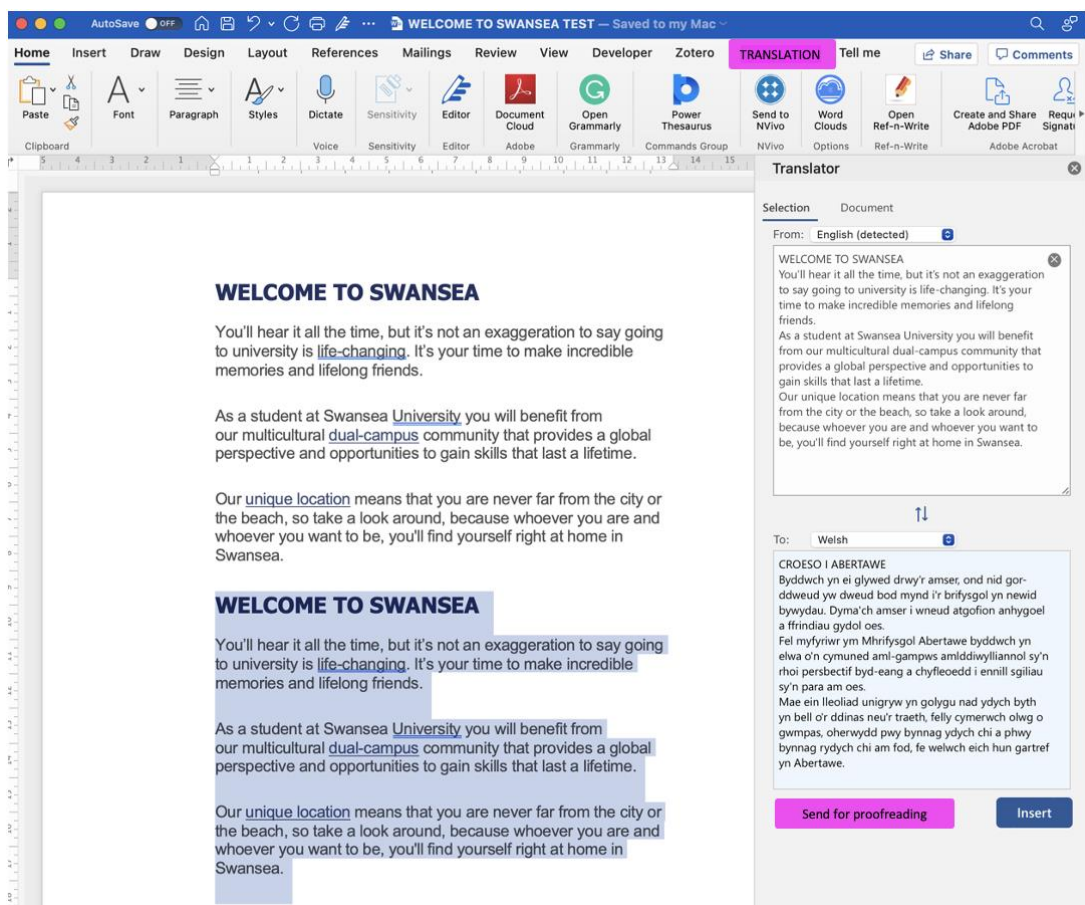
The combination of the desktop facility and the Translation Management Tool would result in a faster, more reliable, and more transparent system, allowing personnel (general **staff** and **translators**) to stay on top of their workload and **manage** expectations. No longer would formatting documents prior to translation, searching for translations, or worrying about missing a deadline be required. Figure 6. 9 depicts an email in which the **staff** member has the option to translate the text using the NMT tool along with the TMs, glossaries, and termbases.

This would be ideal for use as a translation "hotline" or a short, fast translation. Larger translations could still be performed with the desktop tool, but it is

anticipated that longer, more complex translations will either be sent to the **translators** or translated automatically and then sent back to the **translators** for proofreading. Any adjustments they make would be incorporated into the TM for future use. The ideal situation would be one in which TMs are developed to the point where accuracy is virtually assured. Figure 6. 10 illustrates how a translation request may be generated from a Microsoft Word document, with the option to send it for proofreading if necessary.

Important note: The translations displayed in Figure 6. 10 are purely for illustrative purposes and do not represent the outcomes of a custom Neural Machine Translation (NMT) system discussed in this thesis. Instead, they reflect translations produced by a standard generic machine translation system, specifically Microsoft Translator.

Figure 6. 10 An illustration of a translation carried out within a Word document.



Once again, the Welsh translation would be accessed by **staff** using NMT and TMs. To increase accurate parallel corpora, a Welsh-speaking **staff** member with sufficient Welsh language skills could update any translation, which would be saved to the TM. This would allow the next person who requests the same translation to benefit from a more accurate output and the TMs and the bespoke NMT would be updated accordingly.

If all **staff** members use this tool and the output is monitored correctly and continuously updated, the in-house professional **translators** would outsource less because they would be more efficient and productive and have more time to **manage** the in-house workflow. TMs would grow faster, more extensive data would be collected to feed the NMT, and **staff** would be able to communicate in Welsh more easily, quickly, and effectively. The ability to easily create Welsh translations would motivate **staff**, and those who are less confident Welsh speakers would feel more supported and competent. In addition, as indicated earlier, this could be implemented in all public sector organisations in Wales; hence, all TM domains could be updated constantly at scale, across the public sector, benefitting all **staff**. A new translation of a segment of previously translated content would become unnecessary and a waste of time and resources. This is illustrated in Figure 6.9 which is an example of an email generated by a **staff** member who accessed the technology from their desktop software package.

To improve the ability to input Welsh language translations into the website Content Management System (CMS), the Translation Management Tool would integrate with the website via an Application Programming Interface (API) connector for instant translations, which 'go live' on approval by a professional **translator**. The **staff** member uploads the English version to the website and presses a button to send the document to the **translators** (rather than use the TM in this case); the **translator** applies the TM and translates the content, clicks 'send', and the content automatically uploads to the website where the **translator** can quality-check and sign off electronically. It could even be set up so that when a document is uploaded to the website, a **translator** is notified of the translation

requirement. A similar process, using the same technology, could be implemented for **staff** who generate translations for social media, however care is needed for any translations which are placed in the public domain and it should be recommended that a professional **translator** proofread the output.

6.7.2.2 TRANSLATION TOOLS DEVELOPMENT

6.7.2.2.1 CREATION OF A CENTRAL TM BANK FOR THE PUBLIC SECTOR

The Open Translation Memories Project was described in section 3.2. This is in effect a first attempt at creating a Central TM Bank for Public Services. Below we discuss the elaboration of such a TM Bank, recommending one, centrally linked bilingual (cy<>en) TM Bank, organised by category and domain. This will contain retrieved existing TMs built up from historically outsourced translations, such as from WITS (Wales Interpretation and Translation Service), agencies who support the government framework agreements and freelancers, as well as current TMs from across all institutions in the Welsh public sector, including councils, education, government, healthcare, and many more. Cleaned, non-sensitive or non-confidential data would be accessible for any **staff** in the public sector to use and re-use whenever a translation is required. This would augment the dissemination of the Welsh language, eliminating the monetised re-selling of public sector bilingual corpora for profit. An agreement must be made with any outsourced translations for the return of TMs as standard, which can be added to the large TM bank from within the Welsh public sector. Further research regarding the set-up of the TM could be gathered from large organisations such as the DGT or the Canadian Translation Bureau.

This significant task would help to **manage** and organically grow a TM based on the output from professional **translators** and considerably larger amounts of data. This data could train NMT systems and aid current research projects searching for large quantities of bilingual data. As it would be accessible from every desktop with permitted access in the public sector (see section 6.7.2.1.3), it would be continuously augmented and edited by professional **translators** but **managed** by

the senior **staff** members and grow into a viable data source for both the public and private sectors while supporting and enabling further dissemination of the Welsh language. In addition, to encourage the commercial industry to translate their content and communicate in Welsh, an element of the TM bank could be made available as open-source; however, this would not be updated externally to protect the quality of the corpora.

The technology currently in use does not support a bilingual workforce and the recommendation is for **management** to upgrade to a more controlled, efficient, automated (where possible), centralised, cloud-based, and integrated solution.

This system would significantly enhance **management's** control over the systems. The **management** tool includes the following four points, each of which is followed by an explanation.

1. **Translation Management Tool:** Implementation of a centralised cloud-based, integrated Translation Management Tool with a secure login portal, accessible by all stakeholders, including third parties such as desktop publishers and typesetters.
2. **Translation Memory Bank:** Creation of a centralised, cloud-based TM data repository designed to feed the NMT system with a continuous flow of translation corpora from all public sector organisations, reducing translation costs, strengthening production efficiencies, and supporting research teams with big data. It would be accessible from within the Translation Management Tool with clean (not confidential) data available to all public sector **staff**. Using an open-source solution, a version can be made accessible to the public for increased dissemination of the Welsh language.
3. **Bespoke Neural Machine Translation:** Built with existing (and retrievable) public sector TMs and organised by domain. The system is continuously updated with new TMs from all public sector organisations and is accessible via the cloud-based Translation Management Tool and desktops.

4. **Welsh Language Portal:** For the purpose of online training and shared Welsh language resources, to increase language dissemination and facilitate one-stop-shop access.

6.7.2.2.2 BESPOKE NEURAL MACHINE TRANSLATION SYSTEM (NMT)

This study revealed that **managers** and **staff** have used MT such as Google Translate to translate their content rather than sending their translations to in-house **translators**, despite being aware of potential errors and inaccuracies. Some **translators** have access to Microsoft Translator, which is rarely used. However, regardless of how damaging this may be to any organisation, the study has highlighted the frustrations of **staff** with impending deadlines who simply want quick access to a translation. Another option for **staff** is to ask a Welsh-speaking colleague to translate for them, but this study showed how **staff** resent this addition to their workloads to such an extent that some prefer to conceal their Welsh language skills in the workplace for fear of being inundated with translation requests.

Clearly, using Google Translate or asking colleagues is not a process that should be maintained, and this study proposes a far more efficient and cost-effective solution that will lead to **staff** generating their own instant translations from their desktops, with an option to send them to **translators** to proofread when necessary, for example if the translation were destined for the public domain.

As demonstrated in research by M. Prys (2021, p. 108), a bespoke NMT system was created at a Welsh translation agency (Cymen Cyf) by using open-source software (Marian NMT) and existing TMs. Given the amount of TM data the public sector produces due to the level of internal translations and outsourcing carried out, this study proposes that the same process is carried out, using the existing and retrievable clean TM data but on a larger scale, to service the public sector.

This would create a bespoke TM data bank for the public sector and would be organised by domain. Currently, the TM system is not working as TMs are not always retained, however the optimised workflow shown in Figure 6. 8 would

ensure that all translations are carried out through the Translation Management Tool, including any outsourced projects. In section 6.7.2.4, inter-institutional resource sharing is explained which would upscale the quantity of TM data available to feed the bespoke NMT system, accessible to all **staff, managers, and translators** in the public sector. Security and confidentiality must be a consideration, however once cleaned the NMT could be made available to the public and businesses, disseminating the data on a much greater scale, helping researchers who need access to bilingual corpora and also feeding the internal **staff** hotline and desktop translations, as described in section 6.7.2.1.3.

6.7.2.2.3 WELSH LANGUAGE PORTAL

The recommendation is for the Welsh Government or the office of the Welsh Language Commissioner to establish and **manage** an online open access, Welsh language portal to consolidate and provide the latest versions of key Welsh language resources to the public sector in a centralised location.

The portal would provide **staff, managers, translators** and the general public access to various tools and translation technology (NMT and TMs), language policies and plans, research opportunities, Welsh language legislation and policies, language learning materials and examples of useful phraseology, including terminology definitions, dictionaries and quizzes to promote interaction in the Welsh language.

A key recommendation emerging from this study is to improve the accessibility of Welsh language resources and facilitate effective inter-institutional communication, fostering a culture of resource sharing. This includes sharing large TM banks and trained NMT systems. A logical step towards achieving this goal is the implementation of the Welsh Language Portal, a dedicated platform specifically tailored to the Welsh language and translation. The portal would function as a one-stop-shop for language-related resources and offer a central resource, accessible to all **staff**, including the public. Currently, Welsh language resources in Wales are scattered across various sources, making it complex, particularly for those less familiar with internet usage, to locate information. The proposed portal would

bring together all Welsh language and translation resources, thereby providing a **manageable** and easily accessible repository.

In Canada, the Translation Bureau has established a platform,⁷³ as depicted in Figure 6. 11, which serves a similar purpose to the proposed Welsh Language Portal discussed in this thesis. A notable advantage of this platform is its **management** by professional **translators**, ensuring the content's accuracy and commitment to quality.

Figure 6. 11 An example of the language portal in Canada

Resources of the Language Portal of Canada

Access free tools to improve your knowledge of English and French. Polish your writing skills with our quizzes, contribute to the Our Languages blog, and explore a selection of language-related Canadian links.



Follow:   

Services and information

[Language Navigator](#)

Find information on grammar, spelling and punctuation, and solutions for difficult points of English and French.

* Enter your keyword(s) (required)

Choose a writing tool

- Any -

Launch search 

[Official Languages Hub®](#)

Use this search tool to access a wide array of resources from the Government of Canada on various aspects of official languages.

[The Our Languages blog](#)

Read posts by language lovers and find out how you, too, can write for the Our Languages blog!

[Collection of Canadian language resources](#)

Explore links to writing resources, glossaries and dictionaries, language learning, and organizations and events.

[About the Language Portal of Canada](#)

Read a description of our main resources, learn how they're funded, and find out how to contact our team.


[TERMIUM Plus®](#)

Find the translation for words used in specific fields, in English and French.

* Enter your term(s) (required)

Refine your search

All terms

Launch search 

[Writing tools](#)

Consult our writing tools to find solutions to language problems in English and French.

[Quizzes](#)

Test your language knowledge and polish your writing skills—all while having fun.

[Become an ambassador of the Language Portal of Canada](#)

Join our community of ambassadors who are passionate about promoting and creating trusted, high-quality language resources.

[Stay up to date on Canadian language news](#)

Get the latest language news and share it with your network: follow us on social media and get updates by email.

Most requested

- [Subscribe to Our Languages newsletter](#)
- [Become an ambassador](#)
- [Glossaries and vocabularies](#)
- [Collection of resources on gender-inclusive writing](#)
- [Blog post: My English Language Journey: Learning, improving and still having fun!](#)
- [Quiz: Symbols of Canada](#)

Contributors

- [Translation Bureau](#)

This portal offers a diverse range of language-related resources, tools, and services to assist individuals in navigating language usage and adopting best practices. It functions as a free to access bilingual language portal, promoting and facilitating the use of both the English and French languages in Canada. The portal utilises language that directly engages the reader, fostering a strong sense of belonging to a vibrant bilingual language community. Individuals are encouraged to interact,

collaborate, and stay informed about language-related topics, creating an environment that promotes active participation and ongoing learning. Additionally, the platform provides downloadable marketing materials such as infographics and social media examples, further promoting its usability and dispelling any misconceptions about its functionalities. For instance, it is important to note that the platform is completely free of charge and available to everyone.⁷⁴

The resource **management** on the website includes the following features:

Language Tools:	Dictionaries, spell-checkers, grammar guides, and language games. These tools assist users in improving their language skills and ensuring accurate language usage.
Language Portal Blog:	The blog covers a wide range of language-related topics, including language learning, grammar tips, writing style, and language policies. The blog serves as a platform to share insights and updates on language usage.
Language Navigator:	The Language Navigator allows users to ask language-related questions to language experts and receive expert advice and guidance on language usage, grammar, and other language-related inquiries.
Language Resources:	Guides, style manuals, terminology databases, language publications, and language-related legislation. These resources support language learning, writing, and effective communication in English and French.
Terminology and Linguistic Services:	Term banks, translation databases, and language advice for specific domains.
Language Tools Repository:	The portal provides a repository of language tools, software, and applications that can assist users in various language-related tasks, such as translation, proofreading, and language analysis.

An adaptation of this example from Canada would indeed be an immensely valuable resource in advancing the dissemination of the Welsh language and facilitating an easy-to-access service. By making the platform open-access, individuals including **staff, translators, management**, and the general public would have convenient access to a wide range of available resources regardless of their location with internet connectivity.

The portal would serve as a comprehensive hub, enabling users to feel part of a bilingual community, access and discover resources that they may not have been

aware of previously. This includes providing links and to the latest Welsh language legislation, policies, and guidelines and resources to improve their language skills. By offering these up-to-date resources, similar to the Canadian version, the platform would play a crucial role in keeping users' knowledge of the Welsh language current and relevant and encouraging a positive community spirit.

6.7.2.2.3.1 LEVERAGING ESTABLISHED TOOLS WITHIN THE WELSH LANGUAGE PORTAL

The proposed Welsh Language Portal aims to create a comprehensive platform by integrating existing Welsh language tools and resources. One such resource is the Welsh Government's Welsh language terminology service, *BydTermCymru*⁷⁵ as discussed in section 6.5.2, a centralised platform offering diverse Welsh language terms in fields like technology, medicine, law, and finance. *BydTermCymru* plays a vital role in supporting the growth of the Welsh language by enhancing communication and enabling accurate translation within professional contexts. It would be seamlessly integrated into the Welsh Language Portal, empowering professionals to effectively utilise precise and reliable Welsh terminology.

Another valuable resource to be incorporated is the *Helo Blod*⁷⁶ website, which provides free translation services and access to essential resources such as technology links, Welsh language tools like *Cysill*⁷⁷ for spelling and grammar checking, and *Cysgeir*, an online dictionary collection.

The proposed Welsh Language Portal goes beyond existing tools by encompassing a broader range of assistance through reciprocal links to expand the repertoire of resources supporting the dissemination of the Welsh language. It would include links to Welsh language training, cultural resources, and language tools like *BydTermCymru*, developed by consortium universities in Wales. This comprehensive approach ensures a rich and diverse set of resources for users.

Furthermore, the data-sharing recommendation presented in this thesis would enhance the provision of Translation Memory (TM) data by *BydTermCymru*, and a similar approach could be applied to *Helo Blod*. Data sharing not only contributes to

current language-related research but also strengthens the overall language ecosystem. Reciprocal links between valuable resources, such as the proposed Welsh Language Portal and other relevant platforms, would expand access to materials supporting the use of Welsh. This collaboration between Welsh language tools and resources would enrich users' language experience.

In conclusion, integrating tools like *BydTermCymru* and *Helo Blod* into the Welsh Language Portal creates a comprehensive platform offering a wide range of resources to support accurate translation, language learning, and cultural engagement. The portal's inclusive approach, robust data-sharing capabilities, and interconnected network of reciprocal links ensure the easy discoverability and accessibility of free, high-quality resources, fostering the growth and preservation of the Welsh language.

By making the Translation Management Tool accessible as an open-source application within the proposed portal, the training and resources associated with it would no longer be limited to public sector **staff, translators, and management** alone. This expanded access would allow a wider range of individuals and organisations to benefit from the tools and resources available. However, it is important to note that while the public could adopt the tools for their own use, the ability to request translations would remain restricted to authorised entities.

This approach would facilitate ongoing improvements and advancements in translation technology and promote innovation and the dissemination of best practices across diverse domains. The active monitoring of contributions by the Welsh Language Commissioner would ensure adherence to quality standards. As a result, the portal would experience a dynamic and continuous evolution, benefiting from various stakeholders' collective expertise and creativity. Ultimately, this approach would greatly contribute to the growth and vitality of the Welsh language community, fostering its development and ensuring its long-term sustainability.

However, it is essential to note that TMs feed the custom NMT, so allowing anyone to upload translations of inferior quality would reduce confidence in the process as

a whole. Nevertheless, it is crucial to acknowledge that Translation Memories (TMs) serve as inputs for the custom Neural Machine Translation (NMT) system. Thus, permitting the upload of translations of substandard quality by anyone could undermine confidence in the entire translation process. Establishing a rigorous quality process is crucial to maintain control over translation quality. This process should ensure that only translations from approved **translators** are permitted into the Neural Machine Translation (NMT) system. To further enhance quality control, senior **managers** can conduct spot checks to assess translation accuracy. Additionally, all submitted translations should be traceable back to their source, enabling effective feedback and suggestions to be provided to the **translators**. Implementing such measures promotes accountability and fosters a sense of responsibility among **translators** for upholding the standards of accuracy and quality in their translations.

6.7.2.3 TRAINING PLATFORM

This study suggests introducing a remote online training platform for all public sector personnel, including **managers, translators, and staff**, that would be available via the shared Welsh Language portal, as shown in Figure 6. 12. Table 6. 5 provides a basic illustration of the proposed training platform, followed by further explanation.

As shown in Table 6. 5, the training is colour coded and split into three categories:

- 6.7.2.3.1 1. Welsh Language Training and Welsh Language Support
- 6.7.2.3.2 2. Translation Technology and Workflow Training
- 6.7.2.3.3 3. Welsh Language Legislation

Table 6. 5 Training Platform Example

Training Platform:



ONLINE VIDEO

Accessible for all from the Welsh Language Portal with cloud-based interactive training, for professional development and Welsh language support

TRAINING	MANAGERS	STAFF	TRANSLATORS
<p>1</p> <p>Welsh LANGUAGE TRAINING and Welsh language SUPPORT</p>	<ul style="list-style-type: none"> • Welsh language learning: <ul style="list-style-type: none"> ▪ <i>Beginner</i> ▪ <i>Intermediate</i> ▪ <i>Expert</i> • Implement and use training for a “Buddy” scheme for Welsh language support • ARFer Behaviour Programme 	<ul style="list-style-type: none"> • Welsh language learning: <ul style="list-style-type: none"> ▪ <i>Beginner</i> ▪ <i>Intermediate</i> ▪ <i>Expert</i> • “Buddy” scheme for Welsh language support • ARFer Behaviour Programme 	<ul style="list-style-type: none"> • Welsh language updates and assessment <ul style="list-style-type: none"> • Updates for language-related changes to the Welsh language, e.g. terminology or in-house style • Online assessments for new translators (internal and external) managed by Cymdeithas Cyfieithwyr Cymru and Higher Education Institutions
<p>2</p> <p>Translation TECHNOLOGY and WORKFLOW training</p>	<ul style="list-style-type: none"> • Workflow and technology training (management systems and process) <ul style="list-style-type: none"> ▪ <i>Reporting, generation and analysis</i> ▪ <i>Billing, invoicing and cost tracking</i> ▪ <i>Optimising translation costs</i> • Manage interfaces (API) for connectivity to existing systems (e.g. website) • Management and maintenance of internal data sharing inter-institutionally • Troubleshooting 	<ul style="list-style-type: none"> • Workflow and technology training for staff requesting translations: <ul style="list-style-type: none"> ▪ <i>Online</i> ▪ <i>Desktop</i> ▪ <i>Troubleshooting</i> • Project management and translation training • Troubleshooting 	<ul style="list-style-type: none"> • Workflow and technology training for translation staff <ul style="list-style-type: none"> ▪ <i>Terminology management and maintenance</i> ▪ <i>Translation memory management and maintenance</i> ▪ <i>Quality assurance</i> ▪ <i>Project management</i> ▪ <i>Translation workflow process training</i> ▪ <i>Project management training</i> ▪ <i>Collaborative training</i> • Third party training (e.g. DTP, typesetting) • Troubleshooting
<p>3</p> <p>Welsh Language LEGISLATION Training</p>	<ul style="list-style-type: none"> • Effective training for Managers on current Welsh language legislation, implementation, expectations and updates 	<ul style="list-style-type: none"> • Effective training for staff on current Welsh language legislation, expectations and updates 	<ul style="list-style-type: none"> • Effective training for translators on current Welsh language legislation, expectations and updates

Each category is subdivided by role: **manager**, **staff**, and **translators**, as training requirements would vary between the three groups; for instance, **staff** would not require training on **management** reporting, whereas the translation **manager** would require training to understand what information they could retrieve to monitor their productivity and how to access it. Access levels would determine which elements of internal training are available to each member of **staff**. As the recommendation pertains to the public sector in Wales as a whole, the training platform can be made readily available to all **staff**. This would also centralise the training provision, which would assist in the continuity of processes and reduce costs, as each organisation would no longer need to produce its own training provision. However, it is likely that some training would need to be developed that may not be suitable for sharing, such as for reasons of confidentiality or sensitivity. Local storage of this training information would therefore be facilitated.

6.7.2.3.1 WELSH LANGUAGE TRAINING AND WELSH LANGUAGE SUPPORT (PINK)

Table 6. 5 illustrates how **staff** and **management** can receive Welsh language training at all levels of competency. These would be delivered in an interactive format and created either through existing materials held within the public sector or by developing current tools, facilitated by the Welsh Government who could call on internal expertise, Higher Education/Universities, or externally approved training providers to compile the material for the training.

Welsh language learning

Managers and **staff** would be given access to interactive Welsh language training in the workplace, suitable for all levels of proficiency, with advanced levels tailored to domain-specific subjects, such as medicine, law and finance, so that **staff** could acquire vocabulary pertinent to their current positions.

“Buddy” scheme

As evidenced in this study, there are bilingual **staff** and **managers** who choose not to use their language skills in the workplace; however as the intention is to

empower Welsh language speakers to use their skills, a buddy system could be introduced which would encourage Welsh-speaking **staff** to interact in Welsh with less proficient speakers. This initiative aims to foster bilingual communication in the workplace without burdening Welsh-speaking **staff** or causing distractions. Instead, it serves as a positive reinforcement, highlighting the significance of using both languages. By promoting the value of bilingualism, an increase in the number of Welsh language speakers actively using Welsh in the workplace and beyond is anticipated.

Behaviour toward the Welsh language in the public sector

As highlighted in section 2.8.4, the ARFer programme and Bangor University have successfully launched a programme to change the language habits of colleagues to increase the use of the Welsh language in the public sector in Wales. This training could be provided to **managers** who oversee the training of the rest of the workforce. Existing online solutions would be accessible from within the platform and all **staff** would be required to complete the training.

Welsh language updates and assessments

This training is intended solely for the **translators** and pertains to any language elements that may have an impact on their translation work, such as terminology choices, a change in house style, or elements that fellow **translators** from other organisations believe the **translators** would benefit from understanding.

In order to ensure that any **translator** wishing to work in the public sector meets an approved standard, they will need to pass an assessment approved by the Welsh Government. The route into the process of evaluation would be conducted through the online training platform but also with the assistance of professional bodies such as *Cymdeithas Cyfieithwyr Cymru* (Association of Welsh Translators and Interpreters) as discussed in section 2.8.3, which already have an assessment process, or through current Higher Education/University courses, such as those at Bangor, Aberystwyth, Swansea, and Cardiff Universities, tailored to train **translators** who wish to work in the public sector. In addition, professional translation and

interpreting bodies also provide assessments which are already directed toward the **translator** who wishes to specialise, for example the Chartered Institute of Linguists⁷⁸ and their Diploma in Translation (DipTrans) or Certificate in Translation (CertTrans). Although the Chartered Institute of Linguists does not currently offer any provision for Welsh, there is an opportunity to suggest another language to add to their list of services.

6.7.2.3.2 TRANSLATION TECHNOLOGY AND WORKFLOW TRAINING (GREEN)

When the respondents were asked to name one element they would like to change regarding technology, the results clearly showed the need for internal training. Whether the lack of recent training has been due to the impact of a global pandemic or lack of resources, it was made clear by one respondent, whose viewpoint resonated with many more participants, that there was simply no time for training. The significance of this in such a technologically advanced environment means that if **staff** do not receive regular training on the systems they are using, they will only be trained to use the basic elements, and not reach the full potential of the technological turn.

Each of the three categories (**managers**, **staff**, and **translators**) would require training on how to use the technology and how it impacts their day-to-day workload, however each role demands a different access level.

Managers

The level of access granted to the **managers** would necessitate training on how to use and maintain the systems, how cloud-based data sharing works, and on the use of internal API connectors to the website, social media, and **staff** desktop translation systems to ensure a smooth flow of data between institutions, as well as how to generate and save TMs to feed the custom-built NMT system. To **manage** their systems, they would have access to reporting and analysis, billing and invoicing, and cost tracking, which would be useful for budgeting and identifying translation-related department expenses, calculating productivity levels to measure

efficiencies, and calculating savings from TM utilisation, increased efficiencies, and optimisations, i.e. using the full potential of the technological turn.

Training also needs to be implemented for **managers** to ensure that all translations are carried out in-house and not externally, so the **management** system will benefit from re-using previously translated content, and the bespoke NMT system would grow to support the public sector. A troubleshooting element would contain a list of potential problems that may occur in the system, and how to resolve them or escalate for assistance.

Staff

Similarly to **managers**, **staff** are granted a level of access to enable them to train on how to use the internal systems. However, **staff** will require additional training so they can understand the potential of the desktop and online translation process. Clarity is important when explaining the desktop version and educating **staff** on managing their own translations. **Staff** members need to understand the circumstances in which the desktop version should be used and when it is necessary to send a translation request to the professional **translators** through the Translation Management Tool. For instance, if the content is intended for public consumption, it would typically require professional translation through the tool. Providing clear guidelines and instructions will help **staff** make informed decisions about which approach to take based on the intended audience and purpose of the content. A troubleshooting feature would contain a list of potential problems that may occur in the system, and how to resolve them or escalate for assistance.

Translators

As with the **staff** and **managers**, **translators** have their own level of access, however their training is more complex as they play a much larger role in the translation process. They need to understand all translation-related processes, including the TM, glossaries and termbase storage, how to **manage** the terminology and how they could benefit from a shared service, and increased communication with other similar organisations. They will also be trained on how the API connectors work and

how they can access the websites to visualise the translations prior to publishing. They will also have training on desktop publishing and how **translators** can translate within applications, including Adobe InDesign and .pdf files. They would also be a troubleshooting feature as with the **staff** and **managers**; however this would be tailored more to the **translator's** role and issues they may encounter.

Managers would need access to training on translation workflow procedures from the perspectives of all stakeholders, as well as on how to access reports from the Translation Management Tool and identify which reports are useful, for example spend analysis by department (via a cost centre report), cost savings due to the use of TMs, and translation productivity levels. They could thereby report on the efficiencies of the systems and ideally evidence the reduced cost savings and increased translation productivity.

Even though it may not be a training requirement, a procedure must be implemented (therefore requiring some limited training) to ensure that Human Resource **managers** follow up with **staff** who indicate on their application forms that they can communicate in Welsh, to ensure that they do so in the workplace and their line **managers** are aware of all available linguistic resources (see 6.7.2.5.1).

Translation **managers** would require training to access similar reports to **management** as well as reports related to **translators'** performance and the use of TMs. They would also be able to measure the productivity of the translation **staff** (which could be useful for performance reviews), highlighting training needs and rewarding highly productive **staff**.

Training not only includes training **staff** to use the systems and technology correctly, but it is also needed to educate **staff** on how to comply with and support Welsh language policy and legislation in Wales. Surprisingly few **staff** claimed to know about the Welsh Language Standards (2015-2018). It may be argued that if **staff** are expected to comply with a set of workplace rules, then they need information, training, and an understanding of what is expected of them and how

they can achieve it; only then can an organisation expect to benefit from a fully functional workforce who feel valued in their workplace, which once again was a clear issue with some respondents.

6.7.2.3.3 WELSH LANGUAGE LEGISLATION (BLUE)

The training for **managers**, **staff** and **translators** would be similar as the intention would be to inform about recent Welsh language legislation and how it impacts their roles. **Managers** would be expected to implement the training, according to the guidelines from the Welsh Government and the **staff** and **translators** would be expected to complete the online training so they gain a better understanding of the legislation and what is expected of them.

To ensure a comprehensive range of training options, it is crucial to collaborate with pre-approved and experienced training providers, both internal and external. This approach ensures that training is delivered by qualified professionals who possess the necessary expertise and knowledge. The training would provide clear guidelines and instructions from a range of perspectives relative to the member of **staff's** position in the organisation e.g. a **manager**, **staff** member or **translator**. In addition, **staff** would be encouraged to provide suggestions for improvement anonymously if necessary.

This study considers how to increase the use of the Welsh language at work by gaining a better understanding of what encourages or discourages **staff** from using their skills, as well as why some individuals who can understand Welsh are reluctant to use it.

6.7.2.4 INTER-INSTITUTIONAL RESOURCE SHARING

Although there are some examples of collaboration across translation services in the public sector, for example in Conwy, Denbigh, Wrexham and Flintshire Councils⁷⁹ and Neath-Port Talbot and Swansea Councils,⁸⁰ many organisations operate their own internal translation services using their own systems, tools, and procedures. **Management** has limited control over TMs, and **staff** outsourcing is prevalent, not only because **translators** are overstretched but also because **staff**

choose not to use in-house **translators**, which frequently results in embarrassing consequences, a lack of adherence to house style, and superfluous cost increases. Regardless of the origin of any errors, **translators** are always held accountable, even if they had no way of knowing if a translation had been carried out.

The three organisations analysed in this study are **managed** in a comparable way, employ similar tools, and do not collaborate with other organisations or benefit from resource sharing, such as TM data. All organisations in the public sector should be able to draw inspiration and knowledge from other institutions, share their resources, and foster a culture of collaboration. For instance, a member of **staff** from Swansea University translating an engineering-related technical translation should be able to access TMs and termbases created by Cardiff University three years ago for a similar translation request in order to simplify and expedite their translation process, thereby increasing their efficiency and lowering their translation costs.

This current, fragmented system may have been the only option historically, but as technology has advanced considerably, **managers** should consider providing better support for **translators** and their internal **staff**, who have expressed dissatisfaction with the current service which needs a technological overhaul, to provide the expected level of service and to increase the number of Welsh language speakers. It is now possible to network the public sector by domain in order to bank all current (and retrieve previous) TMs from the public sector and create a bespoke NMT system and a central Welsh language portal dedicated to the translation service for example, encompassing technology training, language learning, access to translation tools, and easy access to up-to-date Welsh language legislation. The recommendation is therefore for **managers** to facilitate the consolidation of all language translation data into a single central, cloud-based data repository. This would significantly improve cost efficiencies, service speed, and language continuity across the Welsh public sector.

The rationale to share resources is the rising need for information/data by academics and developers and avoidance of the duplication of effort, especially in

translation. As data can be used to train NMT systems, rather than the resources being fragmented with multiple versions of the same translation resource (such as instructions, forms, and signage), the shared data will help to stabilise and disseminate correct language, especially in terms of style and uniformity in the public sector.

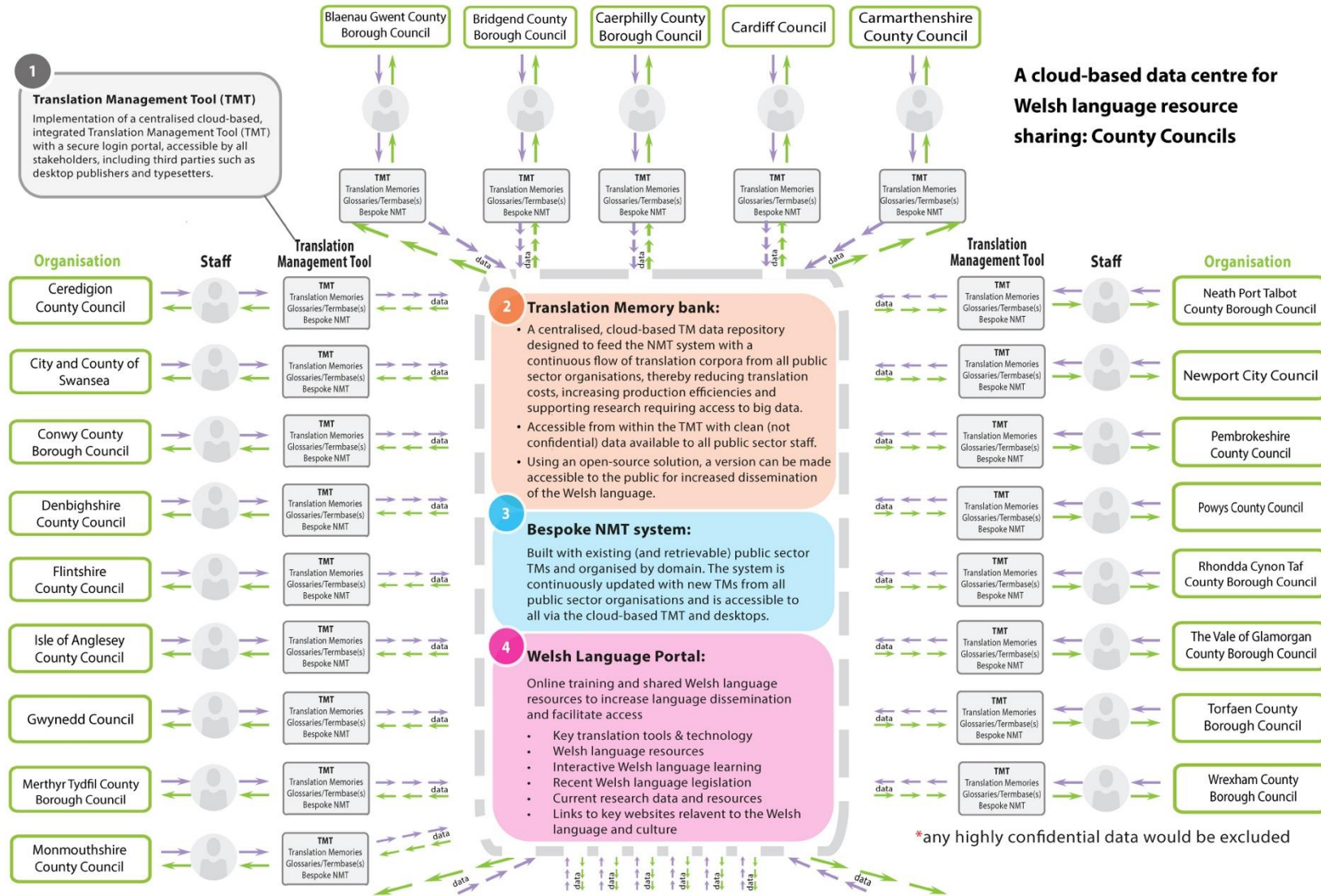
In addition, the objective is also to promote a culture of sharing resources between institutions and across disciplines to enhance knowledge exchange between public sector **staff, managers,** and organisations. Every organisation needs to improve internal and external communication to the extent that collaboration inter-institutionally in the public sector, such as sharing TMs between education and medicine, law, marketing, and science become commonplace.

Inter-institutional resource sharing would improve workflows and provide **translators** with better tools and resources to support a bilingual public sector workforce, as well as enabling **staff** to access greatly populated, bespoke NMTs from their desktops to reduce the burden on **translators,** increase system efficiencies, and reduce costs.

Considering the importance of TM data and the considerable impact sharing would have on cost efficiencies and disseminating the Welsh language, it could be considered whether the process could be enforced via the Welsh Language Commissioner. The pooling of data would change the landscape of Welsh translation in Wales and substantially reduce public spending.

A schematic of how the research sharing could be organised is shown in Figure 6. 12, using County Councils in Wales as an example:

Figure 6. 12 An illustrative schematic of a cloud-based central data bank for Welsh language resource sharing: County Councils



This example shows how local councils are connected and can share data. All public sector organisations can be linked and share data, reducing cost and increasing the dissemination of the Welsh language across Wales.

The schematic (Figure 6. 12) shows how each organisation (in a green box) processes translations (the arrows indicate the direction of data flow) using the Translation Management Tool (in a grey box and depicted as section 1), which generates TM data to be incorporated into the bespoke NMT. Additionally, glossaries and termbases are modified, and new data can be fed directly to the central Translation Memory Bank (2), and the bespoke NMT system (2), for reuse by other organisations. The Welsh Language Portal will house translated related resources, to assist **staff, translators** and **management** in their language or technology training, understanding the latest legislation, accessing research and websites with helpful tools such as Welsh language dictionaries, terminology sources, and more.

It is also worth noting where Figure 6. 8 illustrates an optimised workflow, however section 6 (under ‘return to the originator’) shows the point in the workflow where the data can be shared to the data bank.

6.7.2.5 THE WELSH LANGUAGE

6.7.2.5.1 WELSH LANGUAGE SKILLS

In addition, it is essential that **management** encourages stakeholders to support the translation service by using and nurturing their Welsh language skills, creating a culture of coaching, mentoring or even the introduction of a Welsh language ‘buddies’ scheme where **staff** encourage each other to speak Welsh at work; this would boost the confidence of the **staff**, particularly those who claim to have some language skills but lack confidence or feel embarrassed to use them. **Management** can co-ordinate user-friendly training modules, which can be accessed from the Welsh Portal via the Translation Management Tool, accessible by all **staff**. As this tool is cloud-based, **staff** would be able to improve their Welsh language skills from home and **management** can monitor **staff** who are improving or not.

6.7.2.5.2 WELSH LANGUAGE DISSEMINATION AMONGST STAFF

According to the findings of this study, the workforce could contribute significantly more than they currently do to support the translation workflow by communicating in Welsh. Several factors, such as a lack of confidence and embarrassment, which prevent **staff** from speaking or writing in Welsh, were not anticipated to be so prevalent.

This study hypothesises that if internal translation workflows were better **managed** and easily accessible via the Translation Management Tool, if **staff** were able to translate content with the use of TMs and NMT from their desktops, if there was better internal communication, and easy access to Welsh language support, termbases, and training, **staff** would feel more supported and be more motivated to use the simplified, yet efficient systems available to them to disseminate the Welsh language. This would bolster the Welsh Government's (2017) strategy, Cymraeg 2050: A Million Welsh Speakers, and help fulfil the aims of the Welsh Government's (2018) Welsh Language Technology Action Plan. Importantly, the system must be freely available and non-judgmental; for example, if a **staff** member sends an email to be reviewed, this must be encouraged, and workers must be praised for aiming to take control of the Welsh language from their desktops and engage in the workflow process.

Moreover, when Welsh-speaking **staff** are expected to translate content in addition to their current duties, they may be placed in an awkward position because they may already be overworked. If this were to be eradicated, the morale of Welsh-speaking **staff** would be boosted, and any implicit obligation to accept additional work from colleagues would be removed. It was insinuated in the focus groups that many **staff** who can communicate in Welsh choose not to, so encouraging **staff** to use their skills would help facilitate the translation workflow.

As a result of more **staff** translating internal documents/emails instantaneously and directly from their desktops, the translation **staff** would be able to **manage** more complex translation requests. This could result in increased work satisfaction, less

outsourcing (although an increase in post-editing), reduced costs to public spending, tighter language control, and the augmentation of TMs.

6.7.2.5.3 HUMAN RESOURCES MANAGEMENT

Human Resource **management** is also responsible for ensuring that their organisation employs Welsh-speakers who will support the dissemination of the Welsh language in the workplace and contribute significantly to a bilingual working environment. However, as some **managers** and **staff** choose not to use their language skills, Human Resources should liaise with line **managers** in-house to determine which out of the Welsh language speakers do not speak Welsh in the workplace and determine why. This study revealed that **managers** and **staff** chose not to speak Welsh out of fear of being overburdened with additional responsibilities in addition to their already substantial workload.

This study is aware that some Welsh language training is already available to support **staff** but notably, the results indicate that there is a need for further intervention by **managers** as only a fraction of the **staff** uses their Welsh language skills as expected.

6.7.2.6 RECOMMENDED CHANGES TO STAFFING STRUCTURES

In light of the recommendations aimed at optimising the translation workflow (see Figure 6. 8), it is advisable to implement subsequent refinements in the staffing framework, highlighted in grey. Notably, as shown below, Figure 5. 115 and Figure 6. 13 present distinct configurations within Swansea Council's translation department, while Figure 5. 116 and Figure 6. 14 showcase analogous changes within Swansea University's translation department.

Swansea Council Translation Services Staffing

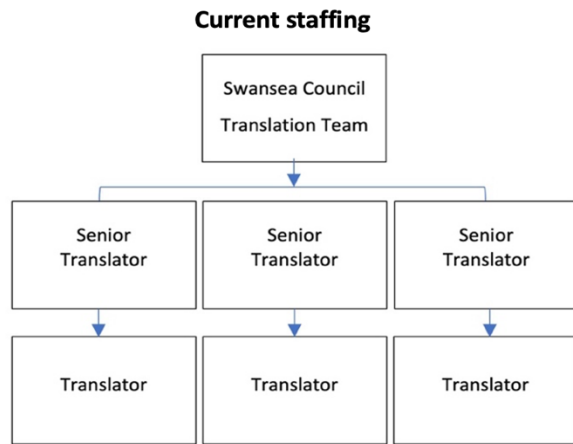


Figure 5. 115: Swansea Council Translation Services staffing

Recommended staffing

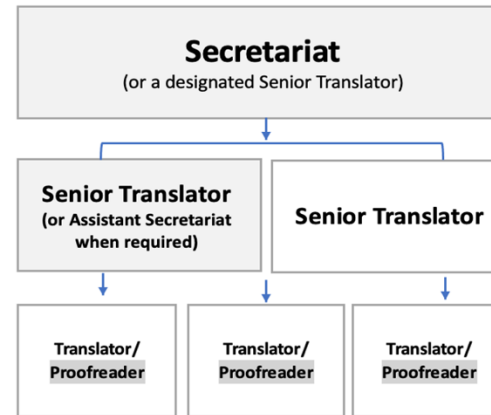


Figure 6. 13 Swansea Council Translation Staffing Recommendations

Swansea University Translation Services Staffing

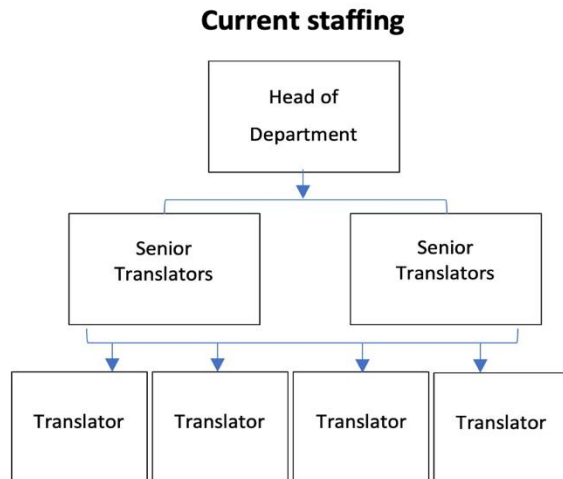


Figure 5. 116 Swansea University Translation Services Organisational Chart

Recommended staffing

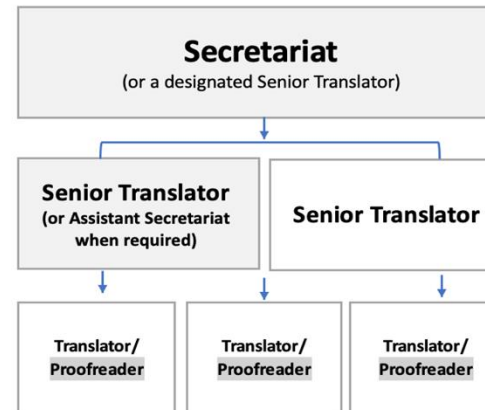


Figure 6. 14 Swansea University Translation Staffing and Recommendations

These changes at Swansea University and Swansea Council include the incorporation of a Secretariat in a **managerial** capacity, led by an experienced Senior **Translator**. Simultaneously, a Senior **Translator** assumes an assistant Secretariat role, poised for activation in response to increased workloads. To maintain a consistent, high-quality service, it is vital to adequately train the Assistant Secretariat for the Secretariat **management** role and ensure a Senior **Translator** is proficient as an Assistant Secretariat. This strategic readiness ensures translation team roles can adapt to varying situations, such as potential leave and illness, safeguarding service continuity and quality. The optimised workflow suggested in this thesis could lead to an increase in proofreading tasks due to the incorporation of Neural Machine Translation (NMT) and increased emphasis on dedicated proofreading. Consequently, the **translator's** responsibilities have expanded to encompass proofreading duties, enhancing overall service quality and increasing production levels.

Figure 5. 117 and Figure 6. 15 below illustrate the recommended changes in the Welsh Government's translation services **staffing** framework.

Welsh Government Translation Services Staffing

Current staffing

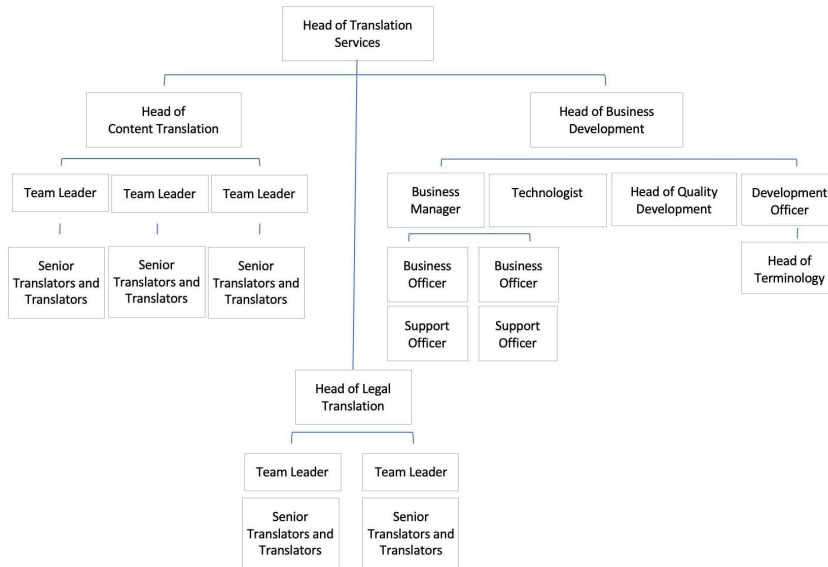


Figure 5. 117 The Welsh Government Translation Services Organisational Chart

Recommended staffing

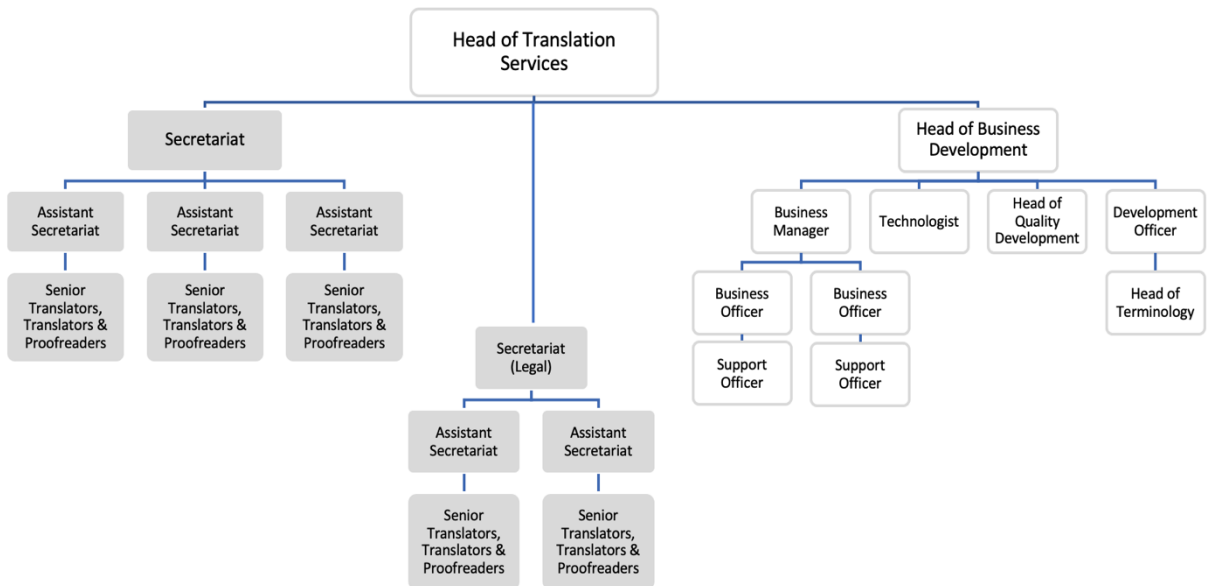


Figure 6. 15 The Welsh Government Translation Services Organisational Chart Recommendations

Given the Welsh Government's non-participation in the surveys of this study, the recommendations proposed for potential **staffing** changes are rooted in limited data. These suggestions would require revisitation should supplementary information become accessible. Notably, the primary distinction in each recommended case (as indicated in grey) entails the role of a Secretariat assuming the **managerial** responsibilities previously held by the Head of Content, along with an additional Secretariat designated for legal translation matters. Both Secretariats oversee translation requests comprehensively, serving as central project **managers** within their respective domains. Assistant Secretariats replace Team Leaders and originate from senior-level translator positions.

To ensure a consistent, high-quality service, akin to the recommendations for Swansea University and Swansea Council mentioned earlier, it is crucial to adequately train Assistant Secretariats for **managerial** Secretariat roles and to ensure Senior **Translators** are proficient when serving as an Assistant Secretariat. This strategic readiness equips translation teams to adapt to diverse scenarios, such as potential absences, thereby safeguarding continuity and quality.

The exact numbers of Welsh Government **translators** and senior **translators** remain unknown; therefore, the recommendations are founded on the same **staff** groups. Nevertheless, considering the nature of the optimised workflow proposed in this thesis, an increase in proofreading tasks is likely due to the integration of Neural Machine Translation (NMT). Consequently, the **translator's** roles have broadened to encompass proofreading duties, amplifying overall service quality and augmenting production levels.

6.8 SUMMARY

This chapter's primary objective was to highlight the essential findings and contributions of the evaluation process conducted for this thesis and propose additional recommendations to resolve issues raised during this process to better understand the impact technology has had on translation workflows. Using this information and utilising existing translation workflow technologies, the aim was to provide recommendations to improve access to and the use of professional translation workflows from the perspective of all stakeholders, as well as to promote a culture of data and knowledge sharing in the Welsh public sector.

Initially, the workflow procedures for professional translation in Swansea Council, Swansea University, and the Welsh Government were compared and summarised. Secondly, the Welsh language contributions and skill sets of the **staff** in the workplace were reviewed to determine whether there was any additional potential to increase the level of Welsh communication within the workforce. Thirdly, the **translators'** preferred translation tools were assessed, including comparing how their internal systems are upgraded as technology advances, and how **managers, staff** and **translators** receive training about Welsh language policies and the organisation's expectations. Next, the outcomes regarding the accuracy and reliability of the translation technology were reviewed, considered, and summarised, along with **translators'** perspectives on sharing TMs and termbases and their implications. Finally, the **staff** and **translators'** views on translation technology and future workflow were recorded. The recommendations concluded with a call to centralise the translation workflow process with the use of a Translation Management tool, incorporating an extensive, shared TM database comprised of existing and historical TMs obtained from both in-house and previously outsourced translations; to create a bespoke NMT system from existing TMs which is not only shared inter-institutionally but assists **staff** in generating translations from their desktops, thereby reducing costly outsourcing practices, and finally to set up a portal to serve as a hub for the Welsh language, training and translation resources. These recommendations have highlighted several challenges

in the public sector's workflow processes and this study has therefore suggested solutions to enhance internal translation workflows and communication, and increase Welsh language usage, translation productivity, reliability, and accuracy through a culture of cooperation, training, and resource sharing. The benefits to **managers, translators, and staff** from implementing the recommendations from this study is illustrated below in Figure 6.16.

Figure 6. 16 Benefits from implementing the recommendations in this thesis for management, staff, and translators.

MANAGERS

1. Improved management control over the translation systems and processes
2. Increased efficiencies and productivity through updated and automated technology
3. Reduced need for outsourcing through the use of a centralised TM bank and a bespoke NMT system
4. Improved communication and collaboration with staff and translators through the Translation Management Tool
5. Improved quality control through accurate word counting and retention of TMs in the Translation Management Tool
6. Improved translation workflow processes, leading to increased efficiency and potentially reduced costs from outsourcing
7. Better access to data and knowledge about translation workflows, allowing them to make more informed decisions
8. Improved communication and training about Welsh language policies and the organisation's expectations
9. Potential for increased productivity and better quality translations through the use of translation technology

STAFF

1. Faster and more reliable translation service, reducing workload and increasing productivity
2. Improved internal communication and collaboration through the Translation Management Tool
3. Access to an instant and automated translation tool for internal correspondence
4. Access to a centralised TM bank for instant translations
5. Access to a Welsh Language Portal for language resources and training
6. Improved access to professional translation workflows, making their job easier and more efficient
7. Increased opportunities to develop Welsh language skills and contribute to Welsh language communication within the workplace
8. Potential for reduced workload and increased productivity through the use of translation technology

TRANSLATORS

1. Formal training to enhance their skills and performance
2. Access to a centralised TM bank to increase their productivity and reduce the need for outsourcing
3. Access to a Translation Management Tool to streamline their workflow and communication with staff
4. Access to a centralised TM database and NMT system, which can save time and increase the accuracy of their translations
5. Improved communication and training about Welsh language policies and the organisation's expectations
6. Increased job satisfaction from having access to better tools and resources

In conclusion, this chapter has evaluated the findings of the thesis's evaluation process and presented recommendations to enhance the impact of technology on translation workflows in the Welsh public sector. The objective was to improve access to and utilisation of professional translation workflows while fostering a data and knowledge-sharing culture.

The recommendations propose centralising the translation workflow process by implementing a Translation Management Tool. This tool would incorporate a shared Translation Memory (TM) database derived from in-house and previously outsourced public sector translations. Additionally, developing a bespoke Neural Machine Translation (NMT) system, benefiting both the private and public sectors, along with a dedicated portal for Welsh language, training, and translation resources, is recommended.

Implementing these recommendations would address the challenges faced in the public sector's translation workflows, resulting in enhanced efficiency, improved accuracy, increased productivity, and cost savings. By centralising the workflow and utilising shared TMs, duplication of effort can be minimised, leading to significant financial benefits and reduced outsourcing costs. Adopting advanced NMT technology would also contribute to faster and more accurate translations while ensuring consistency in language terminology.

The potential benefits for **managers, translators, and staff** are illustrated in Figure 6. 16, highlighting the positive impact of these improvements on their work processes, language services, and overall productivity. Collaboration, training, and resource sharing would foster a culture of excellence, effectively utilising available resources and promoting the Welsh language within professional contexts.

While challenges may arise during implementation, careful planning, stakeholder engagement, and sufficient training can overcome these obstacles. The recommendations have been carefully tailored to address the specific needs of the

public sector's translation workflows and to create a more streamlined, cost-effective, and quality-driven translation ecosystem.

Embracing these suggestions will enable the Welsh public sector to stay at the forefront of translation technology, enhance language services, and contribute to preserving and promoting the Welsh language within professional domains. The proposed improvements will improve efficiency, communication and reinforce a stronger commitment to language excellence in the Welsh public sector.

7 CHAPTER 7: CONCLUSION

7.1 INTRODUCTION

This thesis reveals that the full impact of the technological turn on professional translation workflows has yet to be fully realised in the Welsh public sector and is still in progress. Instead, the study has demonstrated that, despite the availability of adequate translation technology, it is not always used to its full potential or properly maintained or managed, limiting the economic benefits of a fully functional, efficient process that uses previously translated content to support a bilingual workforce and improve internal translation workflows. To achieve optimal levels of efficiency, managers must be more engaged with stakeholders, understand the limitations and potential of the translation technology and processes, and invest more time in developing existing systems.

Adopting a case-study approach, this study was conducted in three distinct public sector organisations, Swansea Council, Swansea University, and the Welsh Government, by an independent researcher (rather than a government employee), which afforded the benefit of impartiality, advantageous when conducting critical analysis and developing practical recommendations for improvement.

It is anticipated that this study will be of interest to other ambitious nations that hold Wales in high regard due to its revitalisation of the Welsh language. As highlighted by D. Prys et al. (2019, p. 368), "Welsh is [...] in a privileged position for a minoritized language in having a well-defined roadmap for future action". Nations that wish to increase their minority language-speaking population, who face similar difficulties accessing larger quantities of bilingual corpora to feed the latest innovative AI technologies, would benefit from implementing the recommendations made in this study.

The research recommendations provided by Jiménez-Crespo (2020), Doherty (2016), Screen (2016b, 2017a), Esselink (2019), Yamada (2019), Nunes Vieira (2020), The Welsh Government (2020b) and D. Prys et al. (2022), have provided a framework for further investigations into the impact of technology on translation

practices. Building on this existing research, the present study delves deeper into the impact of recent Welsh Government legislation, such as the Welsh Government's (2017) *Cymraeg 2050: A Million Welsh Speakers strategy*, *Welsh Language Standards (2015-2018)* and *Welsh Language Technology Action Plan (2018)*. This study provides insights into the challenges in implementing this legislation and offers recommendations to overcome these obstacles. It highlights the importance of ongoing research to improve translation practices and their management and ensure that technology benefits and risks are balanced. By examining what transpired post-implementation of the recent legislation, this study offers valuable insights into why further research is necessary to reach the goal of one million Welsh speakers by 2050, which is particularly relevant since the release of the disappointing 2021 census results.⁸¹ This research underscores the need for continued efforts to take advantage of and better manage the latest technologies, invest in the collection of translation data, and empower the Welsh language community to ensure the Welsh language continues to thrive.

This study had three aims, and four empirical studies were conducted to accomplish these aims. The first aim was to assess the in-house technology used in the translation workflow regarding its productivity, accuracy, functionality, reliability, efficiency, usability, and cost-effectiveness, to determine whether the in-house technology has been utilised to its full potential, as well as assessing the level of Welsh language support from in-house **staff**. It also explores the possibility of inter-institutional collaboration, including data sharing to a centralised data bank, to increase access to larger quantities of shared translation memory banks for recycling in future translations across Wales. It also discusses the training of bespoke NMT systems solely using existing public sector TMs and supporting further research within the translation industry.

The second aim was to analyse the current internal translation workflow processes in terms of functionality, reliability, efficiency, speed, automation, and accuracy, as well as the overall satisfaction levels of the key stakeholders involved in the process and to determine if the current process meets expectations. The third aim was to

assess the impact of recent Welsh language legislation on the translation workflow post-implementation, evaluating the level of support from internal Welsh-speaking (non-translation) **staff** and determining how this could be enhanced to support and accelerate the growth of a bilingual community in the workplace.

This concluding chapter considers the significance of implementing the recommendations set out in Chapter 6; it highlights the beneficiaries of the research, such as the organisations and the stakeholders; and it suggests possible future research and the development of this study's findings.

7.2 RECOMMENDATIONS FOR IMPROVING TRANSLATION WORKFLOWS IN THE WELSH PUBLIC SECTOR

This study identifies challenges and presents recommendations related to organisational translation workflows, with a focus on the Welsh public sector. The recommendations aim to improve the functionality, reliability, efficiency, and usability of translation systems by creating a centralised Translation Memory (TM) bank and networking with public sector organisations to develop a bespoke Neural Machine Translation system. The study highlights the importance of Translation Management Tools, automation, collaboration, training, and regulation in enhancing the translation workflow process. The study also suggests implementing a system that receives translations at a central point, placing a stronger emphasis on pre-processing. This entails gathering all the supporting materials and instructions in advance of the translation to address delivery, time and quality issues. Poor communication between staff and translators was identified as a significant challenge, which could be addressed using the Translation Management Tool and providing an instant and automated translation tool for internal correspondence in both English and Welsh. The creation of a centralised TM bank containing retrieved TMs from historically outsourced translations and current TMs from all institutions in the Welsh public sector is also recommended, requiring a centralised, cloud-based TM data repository, a bespoke Neural Machine Translation system, and a Welsh Language Portal. To generate instant translations more efficiently and cost-effectively, the study proposes creating a bespoke TM data

bank for the public sector, organised by domain and accessible to all staff, managers, and translators. Finally, the study suggests developing a Welsh language portal to consolidate and provide the latest versions of key Welsh language resources to the public sector in one central location, complete with language, behaviour and technology training, which would support Welsh language dissemination. Future research could assess the feasibility and effectiveness of implementing the proposed recommendations through pilot studies in the Welsh government and expand the current study by examining the impact of technology on translation workflows in other minority-language countries. Additionally, future research could analyse the effect of recent Welsh language legislation on translation workflows, assess the level of support from Welsh-speaking staff, and suggest ways to enhance this support to accelerate the growth of a bilingual community in the workplace. By implementing the proposed recommendations and delving into new research domains, organisations in Wales and beyond can improve their translation workflows and contribute to fostering a bilingual environment in the workplace.

7.3 CONTRIBUTIONS OF THE RESEARCH: INDUSTRY-ORIENTED INSIGHTS AND ACADEMIC ADVANCEMENTS

This research makes notable contributions both as an industry-oriented study and an academic endeavour. Examining the impact of the technological turn on professional translation workflows in the Welsh public sector, it sheds light on the ongoing progress and reveals the unrealised potential within this domain. The findings demonstrate that despite the availability of adequate translation technology, it is not fully utilised, managed or properly maintained, leading to missed opportunities for a fully functional, cost-effective, and efficient process. These insights contribute to the industry by highlighting the need for greater management and stakeholder engagement, a deeper understanding of technology limitations and potential, and increased investment in systems development, particularly in light of neural technology advancements.

From an academic and theoretical perspective, this study aims to evaluate the efficiency and effectiveness of current translation processes in a bilingual setting. It specifically focuses on the Welsh public sector and investigates the extent to which translation workflows reach their full potential when supported by an internal Welsh-speaking workforce. This study significantly builds upon and extends existing research in several ways and benefits from being conducted by an independent researcher, therefore offering impartial analysis and practical recommendations for improvement, which enhances its academic rigour.

Translation Studies: Technology, Automation, Management Tools and Post-Editing

In the field of Translation Studies, this study on the impact of the technological turn on professional translation workflows in the Welsh public sector serves as a clear response to Nunes Vieira's (2020) call for comprehensive research on the impact of automation on the translation profession. Following Jiménez-Crespo's (2020) recommendation to broaden the conceptual focus on "technology" in Translation Studies, this study illustrates the benefits of this approach through an in-depth analysis of the integration of Translation Management Tools and process automation. The findings revealed an outdated translation process needing better management and highlighted the potential for significant improvements in translation workflow efficiencies, cost-effectiveness, and quality. This provides practical evidence of the advantages of expanding the technological perspective and implementing modern solutions to enhance translation practices.

The findings and recommendations of this study regarding the optimisation of the use of Translation Management Tools and process automation answers the need for further research in this area identified by Esselink (2019), while considering ethical implications such as privacy, confidentiality and data and cyber security, for example. The thesis also incorporates Yamada's (2019) argument that the post-editing process should be enhanced, as evident in the proposed Translation Management Tool workflow model. This model emphasises the need for translators to take on post-editing and proofreading roles for translations produced by non-

translators, such as public sector staff who utilise desktop translation resources. This ensures that the content destined for the public domain undergoes a thorough quality check from a professional perspective, maintaining high translation standards.

Benefits and Challenges of Technology in Welsh Translation

In the field of Welsh translation, this thesis has responded to Screen's call (2016b) for further research to explore the benefits and challenges of technology in Welsh translation and its wider adoption in the industry, by conducting an extensive analysis of current translation practices and proposing innovative solutions. Perhaps most significantly, the focus of this thesis on emerging technology and automation to improve translation workflow efficiencies and quality provides invaluable new research in the wake of the need identified in the Welsh Government's Cymraeg: It Belongs to Us All policy (2020b). Finally, it demonstrates how additional translation data could be collected, as advocated by D. Prys et al. (2022), and endorses their calls for data-sharing through the proposed Technology Management Tool. Moreover, this study's proposed Welsh Language Portal would facilitate the upskilling of language communities to promote the presence of Welsh within the European community.

This study thereby breaks new academic ground by offering a comprehensive evaluation of translation workflows and sentiment from stakeholders, specifically within the Welsh public sector, which has received limited attention in previous research. It examines the efficiency and effectiveness of current processes, identifying areas for improvement and proposing practical recommendations with significant cost savings as a result. By addressing the specific challenges and opportunities related to translation in a national context, with a focus on the Welsh language, the study expands the existing literature and fills a gap in knowledge.

Translation inherently involves the transfer of meaning and communication between two or more languages. Although the primary focus of this study is on the Welsh language, the findings and insights obtained can be applied to various

bilingual settings and national contexts. The processes, strategies, and considerations involved in translation remain applicable regardless of the specific language pairings involved.

Furthermore, the recognition of translation as a bilingual endeavour acknowledges the interconnectedness and interplay between languages. It highlights the need for translators to navigate and bridge linguistic and cultural gaps, regardless of the specific national context. Translating between English and Spanish, Chinese and French, or any other language combination occurs within a bilingual setting.

Therefore, the study's emphasis on the challenges and opportunities of translation in a bilingual setting, such as the Welsh language context, contributes to the broader understanding of translation and its impact across diverse national contexts. It underscores the universality of translation as an essential function that occurs in bilingual settings worldwide. The study's originality lies in its exploration of the impact of recent Welsh Government legislation on translation practices and the importance of balancing technological advancements with language revitalisation efforts. By examining the integration of technology and Translation Management Tools, the research offers unique insights into how language policies can shape translation workflows and emphasises the need to balance technological advancements and the preservation of linguistic heritage.

The significance of the findings and the advancement of the academic field are evident in various aspects. The study proposes practical solutions to improve translation workflows, such as establishing a central Translation Memory (TM) bank, developing a bespoke Neural Machine Translation system based solely on professional translations in the public sector, and creating a Welsh language portal. These recommendations provide concrete steps towards enhancing the translation process in the Welsh public sector and potentially in other minority-language and multilingual countries and organisations.

Furthermore, the study highlights the importance of clear communication, collaboration, up-to-date training, and regulation in creating effective translation

workflows. By emphasising the need for a holistic approach encompassing technology, language resources and skill development, the research expands the understanding of translation workflows and offers practical strategies for improvement.

In summary, this study advances the academic field by building upon existing works, addressing the specific challenges and opportunities of translation in a bilingual setting within the Welsh public sector. It breaks new ground by offering a comprehensive evaluation, proposing practical recommendations, and exploring the impact of language policies on translation practices. The study's originality lies in its integration of technology and language revitalisation efforts. Its significance is evident in its practical solutions, emphasis on holistic approaches, and potential implications for translation workflows and the technological turn in relation to the Welsh language and beyond.

Moreover, this research holds broader implications beyond the Welsh context, extending to nations aspiring to increase their minority language-speaking populations and/or improve their multilingual communication systems, particularly within large-scale governmental or public sector bodies. The study's recommendations offer valuable insights that can assist in overcoming the challenge of accessing sufficient bilingual corpora for AI technologies, benefiting these nations in their pursuit of effective language integration.

Overall, this thesis advances scholarly understanding of both the application of technology in Translation Studies and the impact of recent Welsh Government legislation on translation practices. By analysing the challenges faced in implementing this legislation and providing recommendations, it contributes to the ongoing research on translation practices, management, and technology.

The study also highlights the importance of carefully balancing the benefits and risks of technology, such as relying on technology for accurate word counts of source texts. While technology can speed up workflows, save time, and reduce effort, this thesis reveals a potential risk of inaccurate word counts, which could

lead to costly errors. Similarly, employing Welsh-speaking staff to support the Welsh language can be beneficial in language revitalisation efforts. However, relying heavily on Welsh-speaking staff to produce translations into Welsh alongside their regular work can have unintended consequences. It may lead to resentment among an already overburdened workforce and potentially reduce the active use of Welsh within the workplace.

7.3.1 FEASIBILITY AND EFFICIENCY OF THE PROPOSED RECOMMENDATIONS

To further advance this field of research, future studies can explore the feasibility and effectiveness of implementing the proposed recommendations through pilot studies in the Welsh government. Additionally, examining the impact of technology on translation workflows in minority-language and multilingual countries and analysing the effects of recent Welsh language legislation on translation workflows are potential avenues for future investigation. Furthermore, assessing the sentiment and level of language support from Welsh-speaking staff on a wider scale than documented in this thesis, and suggesting ways to enhance this support in accelerating the growth of a bilingual community in the workplace can provide valuable insights.

By adopting the proposed recommendations and embracing continued research, organisations in Wales and beyond can optimise their translation workflows, thereby fostering the growth of efficient and effective bilingual environments in the workplace. Furthermore, evaluating the effects of recent Welsh language legislation on translation practices will offer valuable insights into its impact and identify any necessary adjustments or improvements. Additionally, conducting a comprehensive assessment of the sentiment and level of language support from Welsh-speaking staff on a broader scale will provide a more holistic understanding of their needs and preferences, allowing for targeted strategies to enhance their support and facilitate the growth of a vibrant bilingual community in the workplace.

These combined efforts will contribute to the overall efficiency and effectiveness of translation workflows, considering technological advancements, legislative

frameworks, and the specific needs and aspirations of the Welsh-speaking workforce. By integrating these recommendations and findings into practice, organisations can ensure optimal utilisation of translation technology, improved stakeholder engagement, and cost-effective processes, leading to a more seamless and impactful bilingual work environment.

7.4 LIMITATIONS OF THE STUDY

The study was subject to limitations beyond the researcher's control, which should be borne in mind by academics interested in undertaking similar research before conducting their own studies.

7.4.1 GENERAL LIMITATIONS

One of the primary limitations of this study pertains to the number of participants in the Staff Survey and the Translation Unit/Services Survey. While the sample size was determined to be sufficient for the purpose of this study, it is essential to acknowledge that a more extensive participation from the Welsh Government would have significantly enhanced our understanding of public sector workflows and sentiment in Wales. Their involvement would have provided further insights into the operational dynamics and perspectives from a governmental standpoint, given their status as a larger organisation. Furthermore, the absence of the Welsh Government's participation in the Focus Groups limited the ability to gain deeper insights into internal workflows. Having their qualitative data alongside the other two organisations would have allowed for a more comprehensive analysis.

Moreover, this research encountered a dearth of previous academic studies on the research topic that related to the Welsh context. Consequently, non-academic sources such as potentially biased government policies, reports, strategies and plans were incorporated to supplement the academic research. Studies beyond Wales were used for comparative purposes due to the absence of Welsh-focused research. However, it should be noted that a broader range of individual studies related to professional translation workflows in both a public and private setting and from bilingual communities, the types of technology used and the stakeholders

involved, would have provided a more objective and impartial perspective, offering access to a more diverse set of insights and perspectives. The existence of such studies would have further strengthened the findings and supported the findings of this thesis.

In conclusion, although the sample size and data sources used in this study were deemed adequate for addressing the research objectives, it is crucial to acknowledge limitations arising from the limited participation of the Welsh Government and the reliance on non-academic sources. Recognising these limitations opens opportunities for future research to expand upon this study by incorporating a more extensive participation from the Welsh Government and a broader range of academic studies within the Welsh context.

7.4.2 LIMITATIONS RELATED TO THE COVID-19 PANDEMIC

Throughout the course of this study, the research was conducted amidst the unique constraints imposed by a global pandemic. The unforeseen travel restrictions, remote working arrangements, and legal requirements to work from home whenever possible posed significant challenges. While technology-enabled respondents were able to participate in the study, the inability to have direct face-to-face interactions with staff (except for the focus groups conducted at the conclusion of the study) was regrettable. Had the impact of the pandemic been anticipated, efforts could have been made to conduct in-person visits earlier in the process, even if it was just to establish initial face-to-face connections before the study commenced.

7.5 CONCLUSIONS

When assessing the key components of the translation workflow to determine their productivity, accuracy, functionality, reliability, efficiency, usability, cost-effectiveness, and whether they are being used to their full potential, this study revealed several areas of concern that would benefit from improvement. These areas mainly concern the management and maintenance of systems and workflow processes, translation technology, staff and management training, and the support of Welsh-speaking staff.

The study results showed that the CAT tool (DVX3) used by in-house translators in the translation workflow from all three organisations is outdated, inadequately maintained, and not being used to its full capacity. For example, translators do not regularly reuse previously translated content to increase productivity and efficiency and reduce costs, which is not surprising considering that translators are only trained to use the rudimentary features of the system. In addition, the investigation revealed that translators struggle to effectively manage the high volume of daily translation requests and lack sufficient support from Welsh-speaking colleagues (non-translators). This results in excessive outsourcing of translations, often by general staff members who bypass the translation workflow entirely, imposing unnecessary financial burdens on the public sector. These issues lead to embarrassing consequences, a loss of control over the Welsh language in-house style, and inconsistent terminology across the organisation.

An unanticipated challenge arose at the beginning of the study when analysing the word counts of the source texts provided by the three organisations. The analysis revealed that the technology used produced inaccurate word counts, overestimating the required word count for translation by 20%. As a result, there was a 20% increase in public expenditure and wasted time translating unnecessary content. Focus group meetings at Swansea Council and Swansea University confirmed that this was a common issue as translators need more time to analyse documents before translation, and all content is uploaded for translation regardless of instructions within the text stating not to translate. This observation is

noteworthy as the qualitative data reveals a need for better communication between translators and requesters.

Another obstacle identified in this study is the requirement for in-house staff to convert their documents into a specific Word (.docx) format to be accepted by the CAT tool (DVX3) used for translations. This causes frustration and unnecessary delays, and there is no reliable way to track the progress of a translation or ensure its completion. Third-party involvement, such as typesetters or desktop publishing designers, further complicates the process as translations are often treated as an afterthought and do not fit into templates designed for English-only content. These issues discourage staff members from using the translation service and result in them seeking external translators or agencies for their translation needs. This outsourcing can lead to embarrassing consequences, particularly in public signage, and undermines the control over translations. It is clear that translators need more support from management in managing Welsh language translations.

This research also highlighted challenges in retrieving post-translation Translation Memory (TM) data, as translation staff outsource a significant amount of content that in-house translators do not have time to translate. This outsourcing is more costly and error-prone since external translators do not have access to in-house termbases, glossaries or existing TMs. However, by accumulating and utilising historical bilingual corpora (TMs), the cost, time and cognitive effort required to complete a translation task would reduce, and these benefits have been exemplified through research conducted by Screen (2016a, pp. 13-14). However, this would only be the case if the TMs are collected, saved, and available to the translator. In Swansea Council and Swansea University (the Welsh Government did not complete the surveys), the research confirmed that outsourced TMs are generally not retrieved or saved to the organisation's internal TM bank, resulting in missed opportunities to accumulate valuable TM data and lower the cost and turnaround times of future translations. Despite the well-known benefits of TM data, the current workflow poses challenges for translation staff to actively acquire TMs. Due to time constraints, they often receive outsourced translations without

the corresponding TM data. This practice not only diminishes the value of TM data but also results in the organisation losing potentially valuable TMs that could have saved them time and effort in the future. On the other hand, the outsourced translator retains the TM for their own future use, while the organisation that funded the translation fails to reap the benefits.

The ownership of TM data is a subject of ongoing debate within the translation industry, raising questions about whether it should be owned by the translation service provider or the client organisation. Although this study does not directly delve into this debate, it recognises the importance of considering this aspect when evaluating the translation workflow and safeguarding the intellectual property of organisations.

During the course of researching this thesis, a new service has emerged within the translation industry to address the persistent need for data gathering, essentially creating a marketplace for monetising TM data. This development raises concerns because organisations and companies remain unaware of whether their content has been sold and the extent of such transactions. Furthermore, it introduces the potential for data breaches, where corpora are sold without adequate cleansing. In the event that sensitive governmental content is involved, this situation could lead to data poisoning and other cyber-attacks, resulting in irreparable damage, with the affected data being nearly impossible to trace.

To mitigate these issues, it is suggested that control over Welsh language data be centralised, allowing for effective management and protection. Establishing a central repository would facilitate regulating approved terminology, thereby supporting a unified Welsh language directive. By implementing these measures, potential risks associated with unauthorised data transactions and cyber threats could be minimised, enhancing the security and integrity of the Welsh language data.

According to research by Screen (2018, p. 261), the combination of NMT, TMs, and CAT tools has been identified as an effective and efficient solution for the Welsh

language. However, the integration of these technologies into a cloud-based Translation Management Tool (TMT) that consolidates all the necessary resources in a central location would offer even greater benefits. By adopting such a TMT system, bilingual organisations would possess the comprehensive toolkit required to support substantial language growth and enable their staff to actively participate in the cy<>en workplace.

The cloud-based nature of the TMT system ensures that translators and staff can access all translation-related resources from any location with an Internet connection. This capability becomes particularly valuable in the context of the recent pandemic, as it accommodates the hybrid work model wherein employees have the flexibility to work from home while occasionally visiting the office. As demonstrated by the findings of this study, cloud-based remote access to Translation Memories would become seamless for translation staff, eliminating the need to rely on outdated systems and unstable add-ons.

As recommended in Chapter 6, the proposed facility enables staff to upload their translation requests from a portal on their desktop in almost any format, and they can conveniently track the progress of their work within an optimised workflow. This streamlined approach allows them to effectively plan their workload, eliminating the need for time-consuming format adjustments or chasing delivery times (see section 6.3). By implementing this user-friendly and efficient system, the organisation can enhance productivity and improve overall translation workflow management.

Furthermore, the proposed TMT system offers additional benefits by providing access to third parties involved in the process of incorporating the Welsh language into various designs. Desktop publishers, designers, or web managers can conveniently access the documents directly from the management system through a secure portal. This streamlined access ensures efficient collaboration and eliminates the need for cumbersome file transfers or version control issues. For staff members responsible for managing websites or social media platforms, the TMT system can incorporate an Application Programming Interface (API) that

allows them to request translations seamlessly. With this automated process in place, as soon as a document is uploaded to the website, it can be automatically sent for translation and returned as needed. This feature not only saves time but also provides translators with the opportunity to review the translation before it undergoes the final check by the Web Manager. By avoiding time-consuming delays or extensive editing rounds, the translation process becomes more streamlined and efficient.

The proposed integration of a CAT tool into the TMT offers several advantages over current CAT tools. Unlike the existing tools, the CAT tool within the TMT can handle a wide range of file types, accommodating the diverse needs of translators and stakeholders. This functionality enables translators to work on various file formats without the need to rely on third-party designers, ultimately reducing cost and saving time.

Furthermore, conducting all translations within the TMT would lead to significant cost savings. By avoiding outsourcing and keeping the translation process internal, any inaccuracies in word counts from external translators would not disrupt the optimised workflow or increase costs, as any translation projects would be administrated solely from within the centralised system, which would generate the word count. External translators, upon logging into the portal, can directly access the system and begin translating using the internal TMs, termbases, and glossaries. Importantly, they would not retain any data for future use or sell it to third parties, ensuring the data remains securely within the public sector.

This internal data retention and reuse strategy has several benefits. It allows for the preservation of data for future translations, serving as valuable training data and facilitating research initiatives. Additionally, this data can be utilised to enhance and feed systems such as the bespoke NMT system, further optimising translation processes. By harnessing the power of internal data, the proposed approach promotes efficiency, cost-effectiveness, and the strategic utilisation of resources within the public sector.

Currently, the Welsh Government relies solely on Microsoft Translator as its NMT system. However, this study proposes the development of a customised NMT system tailored specifically for the public sector, leveraging historical and current public sector TMs. Collaborating with experts such as Supercomputing Wales would be advantageous in realising this project's goals. The availability of expertise from such organisations makes them well-suited for the development of a bespoke NMT system.

Additionally, the creation of a comprehensive Data Bank, connecting all public sector institutions to a centralised location and housing a vast amount of data, would be a crucial asset for the public sector. Given the pressing need to expand the available bilingual corpora for the Welsh language, considered a minority and vulnerable language, the data required to train NMT systems in Welsh becomes a valuable resource. By utilising existing public sector TM corpora, the bespoke NMT systems can be trained effectively. These systems can then be seamlessly integrated into optimised translation workflows across the public sector, resulting in increased productivity, enhanced efficiency levels, improved accuracy, and heightened reliability. Importantly, the implementation of bespoke NMT systems would lead to substantial reductions in translation costs, which could be reinvested in training, system improvements and future research endeavours.

By capitalising on the expertise and resources available within the public sector, particularly in collaboration with organisations like Supercomputing Wales, the proposed approach aims to address the specific language needs of Welsh while driving advancements in translation technology and supporting the overall goals of the public sector.

This study has revealed a notable reluctance among public sector staff in the participating organisations to utilise their Welsh language skills. It was observed that non-translation staff often end up shouldering translation or interpreting responsibilities without recognition or acknowledgement, effectively adding to the burden placed on Welsh speakers. This additional workload of assisting non-Welsh speakers compounds the existing demands on these individuals, further adding to

their already demanding professional responsibilities. The recommendations outlined in Chapter 6 aim to address these challenges by empowering the workforce and providing them with the necessary tools to manage their own internal translations directly from their workstations. This can be achieved by integrating translation capabilities within commonly used software such as Microsoft Outlook and Microsoft Office. For urgent and short texts, a dedicated "hotline" for immediate translation, as suggested in the Welsh Government policy "Cymraeg: It Belongs to Us All," could be implemented. It is important to note that an existing Welsh translation service called *Helo Blod*⁸² already exists, providing free Welsh translations up to a specified word limit per month, along with proofreading services for a specific word count per year. The *Helo Blod* website also offers valuable Welsh language resources to the public, including links to various interfaces that enable users to work in Welsh. Moreover, the website features menu sections with links for creating content in Welsh, speech resources, an experience guide, information on where to find Welsh content, language resources, contact information, and links to Welsh language legislation.

However, the proposed solution presented in this thesis goes beyond the existing *Helo Blod* service. It recommends the integration of additional resources within the portal, enhancing the TMT with the bespoke NMT system. This comprehensive system would empower public sector staff to handle their own translations, with the option to send them to professional translators for proofreading, if needed. By incorporating *Helo Blod* into the portal, the service can benefit from the more extensive TM data sharing and the capabilities of the bespoke NMT system.

Implementing this approach would not only assist Welsh-speaking staff in managing their own translations, but it would also alleviate the burden of ad-hoc translation tasks on Welsh-speaking personnel, enabling them to focus on their primary responsibilities. Moreover, professional translators would receive fewer requests for small projects, allowing them to concentrate on more substantial and complex translations, which could increase motivation and remove sources of frustration. Additionally, Chapter 6 proposes a "buddy scheme" to support staff in improving

their Welsh language skills without overburdening Welsh-speaking personnel. This scheme would enable staff, regardless of their language proficiency level, to pair up with colleagues for practising language skills during work hours, breaks, and lunchtime. This informal and interactive learning programme would promote internal Welsh communication, facilitate staff training, and create a positive impact on the workplace environment. By implementing these recommendations, the public sector can foster a more self-sufficient and engaged workforce, enhance translation processes, promote Welsh language usage, and create a supportive and dynamic work environment.

Therefore, this thesis concludes that if the recommendations from Chapter 6 were to be developed, the optimised translation workflow systems would function far more efficiently. A practical, productive, efficient, optimised professional translation workflow that has experienced the full impact of the technological turn would be able to meet the demands of an (often) impatient and frustrated workforce working in a bilingual environment. They could upload translation requests (in almost any format) and track their progress in real-time. This would enable staff to plan their workload accordingly without altering document formats or overcomplicating the process by introducing third-party suppliers, as the system would manage the finer details. In addition, translators would be able to access public sector-wide, categorised, domain-specific shared TM data bank, with termbases, glossaries and helpful material, providing bilingual services using intuitive and technologically advanced centralised systems such as Translation Management Tools, which leverage automated and neural technology systems with CAT tools designed to incorporate and enable all staff to use their Welsh language skills. It would significantly reduce cost and the need for outsourcing, retain TM data, and continuously create training data for the bespoke NMT system and additional research projects, with a culture of recycling and reusing data.

One of the recommendations of this thesis, which would prevent the monetisation of Welsh language bilingual corpora and expedite the dissemination of the Welsh language at scale, is to create an open-source, centralised, domain-specific, and

categorised TM data bank and use that data to train NMT systems for nationwide access. Creating systems like this, particularly open-sourced systems, is even more significant for minority languages such as Welsh due to a shortage of bilingual data, as copious amounts are needed not only for the systems discussed in this thesis but also for current and future research.

This research has revealed a vast collection of available TM bilingual data that has already been subsidised by the public sector. This existing data can serve as a valuable starting point for retrieving historical TMs. It is crucial to recover any outsourced TM data from suppliers and organisations that have submitted translations under various circumstances, including governmental contracts, framework agreements, and service level agreements. As discovered in this study, these entities have retained and utilised the TMs. However, it is necessary to ensure that the TMs are returned to the public sector organisations, as this resource is akin to the 'oil' of the translation industry. Not only does it fuel the bespoke public sector NMT system, which relies on extensive data, but it also expands the size of the TM databank, thereby supporting other research endeavours that necessitate substantial bilingual corpora.

The success of this process relies on the cooperation of all public sector organisations in sharing their TM data. Once the system is capable of storing the data, it would be prudent to consider enforcement measures by the Welsh Language Commissioner. This would ensure a regular and sufficient supply of data to the bespoke NMT system, enabling the public sector to benefit from more accurate automated translations, significant cost reductions, and a notably faster translation process. Furthermore, researchers would gain access to data streams that are currently in high demand.

By harnessing and sharing this wealth of TM data, the public sector can establish a robust foundation for language technology advancements, leverage the capabilities of the bespoke NMT system, and drive progress in linguistic research and development. Collaboration and enforcement measures would be instrumental in maximising the benefits derived from this valuable linguistic resource.

In addition to the recommendation of developing public sector-owned systems in collaboration with Government-funded organisations like Supercomputing Wales, which could create extensive TM banks for current and future projects, this study aligns with the current Welsh language policy of adopting emerging translation technology and automation. The study's findings propose the utilisation of existing pooled TMs and outsourced TMs from various public sector organisations to populate a Data Bank, as discussed in Chapter 6.

These accumulated corpora would also be used to train an open-source bespoke NMT system, which would be integrated into optimised translation workflows supporting all staff members in the public sector, not just translators. The aim is to enhance the use of the Welsh language within the workplace and provide tools that enable staff to produce bilingual text independently, eliminating the need for external translation services. Through instant access to translation tools on their desktops, each staff member can create translations efficiently. While internal documents may not initially be as accurate as proofread versions, the TM bank will evolve and learn from corrections, resulting in rapid improvements in translation quality over time. This system aims to address the current practice of staff members relying on Google Translate or choosing not to translate at all. By continuously adapting and learning, the system will develop alongside each organisation, ensuring ongoing enhancement.

To facilitate quick and immediate translations, a "translation hotline" would be accessible on staff members' desktops, generating instant translations using the public sector bespoke NMT system comprising existing TMs. The ability to translate within Microsoft Office would also be a simple and fast process, with an option to escalate translations for proofreading, if necessary. However, it is crucial to note that translations intended for the public domain must undergo proofreading by in-house professional translators. Additionally, staff members would have the capability to send translation requests in various formats, including instructions for translators, either from their desktops or by logging into the Translation

Management Tool. This functionality would allow requesters to track the progress of their translations, enabling effective planning and expectation management.

By implementing these recommendations, the public sector can establish robust translation infrastructure, leverage existing TM data, empower staff members to generate bilingual content autonomously, and ensure the continuous improvement of translation quality over time.

From the translator's perspective, the proposed system would streamline their workflow and provide them with an efficient and user-friendly experience. All translation or proofreading tasks would be centralised, accurately word counted, and presented in a compatible format. The translation requests could be distributed internally or externally, with access to an extensive TM and the bespoke NMT system. This would significantly increase productivity and ensure that all translated content is stored in the TMs and shared with the data bank. As translators work within the integrated process, any corrections made by proofreaders would instantly update and train the bespoke NMT system, making it available for immediate reuse across the public sector. However, it is crucial to implement a procedure to clean the data and remove confidential and sensitive information to maintain data security.

For external translators commissioned for translation, proofreading, or post-editing tasks, they would also work within the Translation Management Tool. They would have access to TMs, the bespoke NMT system, termbases, and any instructions provided by the requester. Access would be granted through a restricted portal with permission controls to ensure that all TMs are retained across the public sector. This system would provide visibility into the progress of the work, allowing easy identification of delays and enabling efficient management of translation projects. Additionally, the Translation Management System platform could generate reports for administrative and budgetary purposes, facilitating reporting within the organisation.

As emphasised in Chapter 6, the Training Platform plays a vital role within the Translation Management Tool, highlighting the importance of improved training provision. Comprehensive training is essential for maximising the potential of technology and optimising workflows, as demonstrated by this study. Upgrading, integrating, and centralising systems and providing training on their usage are key aspects identified. The Training Platform addresses three core areas: Welsh language training and support to increase the use of Welsh in the workplace, translation technology and workflow training to ensure managers, staff, and translators are proficient in the improved systems, and training on recent Welsh language legislation to clarify expectations. Accessible through the Translation Management Tool, the training platform would provide core training materials that can be utilised by any public sector organisation in Wales. This approach would ensure uniformity in processes and grant management and staff control over Welsh-speaking personnel, technology, and optimised workflows.

During the course of this research, it became evident that accessing up-to-date resources related to the Welsh language can be challenging for individuals and organisations. Consolidating these resources into a centralised Welsh language portal would greatly facilitate access and prove highly beneficial. The recommendations presented in Chapter 6 propose the development of a comprehensive Welsh Language Portal that encompasses a range of valuable tools, technologies, legislation, research opportunities, and dictionaries. This portal would also include a dedicated training platform with the following key features:

1. Interactive Welsh language training (basic, intermediate, and expert levels), catering to different proficiency levels.
2. Welsh language resources, providing users with a wide range of materials to support language learning and usage.
3. Updated information on recent Welsh language legislation, ensuring users are aware of legal requirements and language policies.
4. Access to current research data and resources, enabling users to stay informed about the latest developments in Welsh language studies.

5. Links to key websites relevant to the Welsh language and culture, directing users to reputable sources of information and additional language resources.

To enhance user experience and accessibility, the Welsh chatbot BOBi (see Figure 3.8) would be integrated into the portal, assisting users in retrieving information and navigating the various features and sections. Furthermore, the portal would serve as a valuable resource for organisations in both the public and private sectors, providing access to translation memories (TMs) tailored for the commercial sector. This would enable organisations to incorporate the Welsh language into their workplace communications effectively.

By establishing this Welsh Language Portal, the aim is to ensure that the necessary tools and resources to support a growing Welsh language community are readily available and easily accessible. This centralised platform would not only facilitate language learning and usage but also contribute to the overall development and preservation of the Welsh language and culture.

In conclusion, this study has identified several areas of concern within the translation workflow that would benefit from improvement. These areas include the management and maintenance of systems and workflow processes, translation technology and workflows, staff and management training, and support for Welsh-speaking staff. The study's findings highlight the outdated and underutilised CAT tool being used by in-house translators, the challenges in managing high translation volumes and lack of support for Welsh-speaking staff, inaccurate word counts leading to increased costs, the need for a central repository to track progress and ensure completion, and the importance of retrieving and saving post-translation TM data. Additionally, the issue of the ownership of TM data and the potential risks associated with data transactions and cyber threats have been identified. To mitigate these issues, this study recommends the establishment of a centralised repository for Welsh language data, the implementation of a cloud-based Translation Management Tool, the development of a bespoke NMT system, and the creation of a comprehensive Data Bank for the public sector. These measures

would enhance security, efficiency, and cost-effectiveness while supporting the growth of the Welsh language and public sector goals. Furthermore, empowering staff through integrated translation capabilities, providing resources for language learning, and creating a supportive work environment would promote self-sufficiency and engagement.

In conclusion, by implementing the proposed recommendations, including a comprehensive TMT system, central TM data bank, bespoke NMT system, and empowering staff, the public sector can achieve a practical, productive, and efficient translation workflow. This optimised workflow will meet the demands of a bilingual environment, reduce costs, enhance translation quality, promote language usage, and foster a self-sufficient and engaged workforce. Moreover, the creation of open-source resources and collaboration with expert organisations can further advance Welsh language translation technology and support the goals of the Welsh Government in its bid to reach one million Welsh language speakers by 2050.

7.6 FUTURE RESEARCH

The research conducted in this thesis has revealed several areas that may lead to further investigation. Future research directions which are closely related to the current study should address the gaps in understanding the impact of technology on translation workflow practices, particularly in the Welsh language context. D. Prys (2022) acknowledges the need for large-scale language technology research and development programmes to fill these gaps and investigate the technology's potential benefits and challenges in Welsh translation. The recommendations of Doherty (2016), Screen (2016a, 2017a), Esselink (2019), Yamada (2019), Jiménez-Crespo (2020), Nunes Vieira (2020), the Welsh Government (2020a), and Walker (2022) all call for further research in various aspects related to the use and impact of technology on translation workflows. These include improving the post-editing process, understanding the interaction between NMT and human translators, optimising the use of TMS and process automation, exploring further automation applications, developing more thorough metrics, more efficient integrated systems, and considering the ethical implications of technology.

Moreover, collecting additional translation data and upskilling language communities are crucial to ensuring a more prominent space for Welsh within the wider European community and global context. As research in this thesis focused on professional translation workflows in the public sector in Wales, equivalent researchers in countries with minority languages with a similar status to Welsh would be advised to conduct research with comparable aims and objectives. If the results demonstrated a similar pattern, this would strengthen the validity and reliability of the recommendations in this study and provide a blueprint for other countries with minority languages to explore.

As the second part of this study (the surveys) could only rely on one respondent from the Welsh Government, it would be pertinent to suggest that the Welsh Government's public sector employees should have an opportunity to voice their opinions in the same way staff from Swansea University and Swansea Council have done during this study. It is believed that the results from this research would strengthen the findings described in this thesis.

A related suggestion for future research is to explore large organisations' translation workflows and management. Building on research conducted at the DGT, future studies could investigate workflows at the Canadian Translation Bureau and in regions such as the Basque Country or Catalonia for example, enabling researchers to further understand systems that function well and forge international knowledge transfer and collaborations.

Investigating the use of Welsh, by Welsh language communicators in the public sector in Wales, as shown in section 6.3.1.4, would be another fruitful area of research. This study highlighted the differences in staff who use Welsh at home but not in the workplace and a high level of staff who choose not to use their language skills at work due to a lack of confidence or embarrassment. Further research is required to understand what happens when a new staff member is employed, whether they always use their language skills, and whether Human Resources keep track of Welsh-speaking staff and offer support.

With regard to economic factors, an urgent research suggestion relates to the TAUS marketplace, as discussed in section 1.3.6. The monetisation of the translation industry is growing, with concern about whether bilingual data has been cleaned sufficiently or whether confidential data is being sold and distributed widely. Further research is required to safeguard organisations from their data exposure and potentially look to hold organisations such as TAUS to account if a breach is found.

Furthermore, enhancing community spirit and fostering a genuine appreciation for the Welsh language within the public sector is crucial. While there may be a surface-level acceptance of the Welsh language requirement among public sector employees, it is clear that there exists a lack of understanding regarding the importance of legislation designed to ensure a bilingual public sector.

Recent research conducted at Bangor University has made significant contributions to highlighting the benefits of the ARFer programme (see section 2.8.4), aimed at promoting the use of Welsh in the workplace. However, there is untapped potential for further exploring the sentiments of public sector employees, aiming to foster a positive and proactive attitude towards incorporating Welsh into their daily work. By reshaping the learning process as an adventure rather than a chore, employees can actively engage in Wales's journey towards realising its full potential as a bilingual nation.

To bolster community spirit, future research should focus on initiatives encouraging public sector employees to embrace the Welsh language and take pride in their linguistic heritage. Such initiatives could include cultural events, language immersion programmes, and mentorship opportunities. Creating an environment that celebrates the richness of the Welsh language and culture can instil a sense of belonging and enthusiasm among public sector employees, making them enthusiastic champions of Wales' bilingualism. This transformation will benefit individual employees and contribute to the greater goal of building a stronger and more inclusive bilingual society.

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APPENDICES

APPENDIX 1: SOURCE TEXT (ST1) - AS PROVIDED BY SWANSEA UNIVERSITY: SEO FOR TRANSLATION

Please do not translate this column	English	Welsh
	Guide to Extra Help and Support	
SEO & keywords	Support at University, Support and Wellbeing, Student Services, Specialist Support, Mentoring, Student Wellbeing, Student's Mental Health and Wellbeing, Prospective Students	
Description & og:description	For prospective students of Swansea University who may have a disability or long-standing difficulty. We offer lots of help and support to those who need it.	
Image Description – Step 1	Graphic of a pencil in the Swansea University colours, blue, green and white	
Image Description – Step 2	Graphic of a graduation cap in the Swansea University colours, blue, green and white	
Image Description – Step 3	Graphic of a notebook and pencil in the Swansea University colours, blue, green and white	
Image Description – Step 4	Graphic of an accommodation block in the Swansea University colours, blue, green and white	
Image Description – Step 5	Graphic of three hands up in the air in the Swansea University colours, blue, green and white	
Image Description – Step 6	Graphic of a computer mouse in the Swansea University colours, blue and white	
Application		
SEO & keywords	Help and support, wellbeing, mental health, disability, dyslexia, autistic spectrum conditions, student disabilities	
Description & og:description	At Swansea University you can tell us about your disability at any point. If you let us know as soon as you can we can make sure all the right help and support is in place	
Additional Funding		
SEO & keywords	Disabled Students Allowance, DSA, funding, specialist mentoring, one to one study skills, specialist equipment, NHS bursary	
Description & og:description	Disabled Students' Allowances (DSAs) are grants to help you with extra costs you might face because of a disability, such as Specialist Mentoring	
Adjustments and Equipment		
SEO & keywords	Academic adjustments, exam adjustments, extra time, additional support, individual needs, student disabilities	
Description & og:description	At Swansea University we want to ensure all students have the right support and help they are entitled to in order to have a positive university experience.	
Accommodation		
SEO & keywords	Student accommodation, adapted accommodation, individual needs, disabilities, additional support, quiet rooms	
Description & og:description	At Swansea University we have a range of campus accommodation, including quiet and alcohol-free rooms as well as flashing fire alarms and personal triggers.	
Personal Care and Support		
SEO & keywords	Personal care support needs, student disabilities, individual needs, additional support	
Description & og:description	If you have any personal care support needs you will need to make arrangements privately. However, do contact the Disability Office who can give you advice	
Checklist and Contacts		
SEO & keywords	Support at University, Support and Wellbeing, Student Services, Specialist Support, Prospective Students	
Description & og:description	Check that you are prepared for university life. Contact us if you have any enquiries about extra help and support at Swansea University.	
Image Description – Disability Office	Two pebbles with drawn on glasses, arms and legs, holding hands	
Image Description – Wellbeing Service	Aerial shot of Swansea Bay, overlooking Singleton Campus towards Mumbles lighthouse	
Further Information		
Image Description – Students' Union	Students chatting in a common room on campus	
Image Description - Admissions	Students walking through the stable block, Singleton Campus	
Image Description – Year Abroad	Student cycling along Swansea Bay	
Image Description – Work Placements	Student working in a Research Lab	
Image Description - Libraries	Student at Bay Library	
Image Description – Information for Parents	Students at Graduation throwing their caps in the air	

APPENDIX 2: SOURCE TEXT (ST2) - AS PROVIDED BY SWANSEA COUNCIL: WARM HOMES



Cyngor Castell-nedd Port Talbot
Neath Port Talbot Council

Datganiad i'r Wasg Press Release

Monday 11th January 2021

More than 60 homes benefit from free central heating scheme

More than 60 homes throughout Neath Port Talbot have now had a free central heating system installed thanks to the Warm Homes Fund.

The Fund helps homeowners who do not already have an oil or gas central heating system, to lower the costs of their energy bills through heating their homes more efficiently.

Homeowners who qualify for the Fund can have a free first time gas central heating system (boiler, radiators, pipework) installed, plus a range of energy saving measures such as loft insulation, draught proofing and low energy light bulbs.

Since launching, the Neath Port Talbot Council managed scheme has funded more than £450,000 worth of installations and energy saving measures across the county borough.

Homeowners do not have to pay anything towards the cost of the central heating system but the Fund cannot be used towards the cost of a gas connection to your property. Some households will be eligible for financial support towards a gas connection through the Fuel Poverty Network Extension Scheme. The team will be able guide you through the process.

To be eligible for the fund, homeowners must:

- Live in Neath Port Talbot and:
 1. Be classed as a low income household
 2. Or spend more than 10% of household income on energy
 3. Or live in a low income area (check with the team to confirm if you live in a low income area)
 4. Or be in receipt of certain benefits
- Not have an existing oil / gas or LPG central heating system (a boiler and radiators)
Properties with a solid fuel central heating system will be eligible to apply for this grant.
- Must own your own property or privately rent (private landlords will be required to pay a 25% contribution towards the cost of the works)

Councillor Peter Richards, Cabinet Member for Adult Social Services and Health, said:

“We believe that everyone deserves to live in a warm home and we are fully committed to ensuring people are able to afford the energy they need.

media@npt.gov.uk

ST1 continued:

“Many of the homeowners we have helped have had their electric heaters or coal fired boilers replaced with new energy efficient central heating systems, saving them over a thousand pound a year on heating costs.”

“I’d encourage anyone who thinks we could help to get in touch – and for residents to think of any friends or family members who could benefit from the Warm Homes Fund.”

The scheme is funded by the £150m Warm Homes Fund, which has been established by National Grid, and is administered by Community Investment Company, Affordable Warmth Solutions, to support local authorities to address some of the issues affecting fuel poor households.

Jeremy Nesbitt, Managing Director of Affordable Warmth Solutions, said:

“We are excited about this investment from National Grid and are delighted to support Neath Port Talbot’s Council’s Warm Homes Fund to fund the scheme to address fuel poverty. Solving the issues associated with Fuel Poverty continues to challenge many of our stakeholders and the feedback we’ve already received provides evidence of how the Warm Homes Fund will make a positive difference to thousands of homes throughout Great Britain.”

For more information and to apply, visit: <https://www.npt.gov.uk/warmhomesfund> . If you are unsure if you meet the criteria, contact the Housing Renewals Team on 01639 686504 or email renewalarea@npt.gov.uk .

END

APPENDIX 3: SOURCE TEXT (ST3) - AS PROVIDED BY THE WELSH GOVERNMENT: TEST PIECE

Making our services fit for an ageing population

While the ageing population presents particular challenges for health and social care services, people need to access these services at all stages of life. We know that there are particular challenges facing people of all age groups, eg higher levels of mental health problems compared with the rest of the UK, particularly the high rate of suicide among young men, increasing numbers with chronic conditions and the impact of population health issues such as alcohol, obesity and smoking. There are a number of key policies and strategies in place and under development which aim to improve the health and wellbeing of people of all ages by setting standards, focusing on safe and effective care, improving integration of service delivery and promoting evidence-based practice.

How age is currently used in health and social care

There are certain circumstances when age criteria are used for beneficial or justifiable reasons e.g. to help tailor an individual's diagnosis, treatment or care. Age can be used to ensure that services are designed and delivered to better meet the needs of people of a particular age. Taking account of age-related differences between people is an important part of personalising services.

We are aware however that other, more subtle ageist practices and attitudes can exist and that there may also be a public perception that people in certain age groups are treated less favourably than others. For example, the Life and Times Survey in 2008 found that 62% of respondents aged under 65 felt that health and social care workers treat older people less well in terms of their attitudes towards them.

We want to ensure that any future age discrimination legislation not only protects people from harmful age-based practices in health and social care but also allows everyone to access the safe and effective health and social care services they require.

The role of clinical research

While clinical research has underpinned the development and application of health interventions, comparative evaluations of these interventions that provide guidance as to when and to which patients to apply them have lagged. Additionally, a number of factors affecting Wales have added impetus to the need to move forward on the development and implementation of a comprehensive, national strategy for patient-centred research.

While investments in health research have led to the development of a vast array of interventions for health, there is an increasing impatience among clinical staff, policy makers and patients with the pace at which scientific discovery is resulting in new products or interventions.

Also, significant gaps in high quality evidence on comparative effectiveness mean that it is difficult to establish guidelines for appropriate care. This lack of evidence is now seen as one of the major drivers for variations in care. Indeed, several studies have demonstrated that up to 25% of patients get care that is not needed or could be potentially harmful. We also know that patients treated in settings that are actively involved in research have better health outcomes.

Wales has not by any means been standing still with respect to patient-centred research. But the financial imperative, as well as both entrenched and emerging health challenges, speak to the need to develop a comprehensive strategy to move forward.

Fortunately, Wales already has the core underlying strengths to build on and broad acceptance that we can do better. There are also many models, both within Wales, in the UK and internationally, that we can learn from and adapt to different contexts. In short, the need is great, the potential benefits are huge and Wales is ready.

APPENDIX 4: CAT TOOL ANALYSIS OF SEO FOR TRANSLATION BY SWANSEA UNIVERSITY

All Files	SEO For Translation SU					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	12	30	252	5.51%	0
Chars/word: 6.86	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	5	6	55	1.10%	0
	95% - 99%	1	9	53	1.65%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	2	29	180	5.33%	0
	50% - 74%	23	121	824	22.24%	0
	No Match	28	349	2368	64.15%	0
	Total	71	544	3732	100.00%	0
	Internal Repetition	19.91%				

APPENDIX 5: CAT TOOL ANALYSIS OF SEO FOR TRANSLATION BY SWANSEA COUNCIL

All Files	SEO for Translation SU					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	12	30	252	5.51%	0
Chars/word: 6.86	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	5	6	55	1.10%	0
	95% - 99%	0	0	0	0.00%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	8	33	248	6.07%	0
	No Match	46	475	3177	87.32%	0
	Total	71	544	3732	100.00%	0
	Internal Repetition	19.91%				

APPENDIX 6: CAT TOOL ANALYSIS OF SEO FOR TRANSLATION BY WELSH GOVERNMENT

All Files	SEO for Translation SU					
	Type	Segments	Words	Characters	Percentage	Tags
Total	Duplicates	12	30	252	5.51%	0
Files: 1	Guaranteed Matches	0	0	0	0.00%	0
Chars/word: 6.86	Exact Matches	3	4	35	0.74%	0
	95% - 99%	2	2	20	0.37%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	0	0	0	0.00%	0
	No Match	54	508	3425	93.38%	0
	Total	71	544	3732	100.00%	0
	Internal Repetition	19.91%				

APPENDIX 7: CAT TOOL ANALYSIS OF WARM HOMES BY SWANSEA UNIVERSITY

All Files	Warm Homes SC					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	0	0	0	0.00%	0
Chars/word: 6.04	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	5	1	27	0.18%	0
	95% - 99%	0	0	0	0.00%	0
	85% - 94%	2	10	65	1.78%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	5	37	206	6.60%	0
	No Match	21	513	3092	91.44%	0
	Total	33	561	3390	100.00%	0
	Internal Repetition	6.37%				

APPENDIX 8: CAT TOOL ANALYSIS OF WARM HOMES BY SWANSEA COUNCIL

All Files	Warm Homes SC					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	0	0	0	0.00%	0
Chars/word: 6.04	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	15	186	1149	33.16%	0
	95% - 99%	5	59	366	10.52%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	1	8	45	1.43%	0
	50% - 74%	2	37	196	6.60%	0
	No Match	10	271	1634	48.31%	0
	Total	33	561	3390	100.00%	0
	Internal Repetition	6.37%				

APPENDIX 9: CAT TOOL ANALYSIS OF WARM HOMES BY THE WELSH GOVERNMENT

All Files	Warm Homes SC					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	0	0	0	0.00%	0
Chars/word: 6.04	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	0	0	0	0.00%	0
	95% - 99%	0	0	0	0.00%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	4	24	148	4.28%	0
	No Match	29	537	3242	95.72%	0
	Total	33	561	3390	100.00%	0
	Internal Repetition	6.37%				

APPENDIX 10: CAT TOOL ANALYSIS OF TEST PIECE BY SWANSEA UNIVERSITY

All Files	Test Piece WG					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	0	0	0	0.00%	0
Chars/word: 6.19	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	0	0	0	0.00%	0
	95% - 99%	0	0	0	0.00%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	1	8	48	1.33%	0
	No Match	23	592	3666	98.67%	0
	Total	24	600	3714	100.00%	0
	Internal Repetition	2.48%				

APPENDIX 11: CAT TOOL ANALYSIS OF TEST PIECE BY SWANSEA COUNCIL

All Files	Test Piece WG					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	0	0	0	0.00%	0
Chars/word: 6.19	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	0	0	0	0.00%	0
	95% - 99%	0	0	0	0.00%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	2	15	79	2.50%	0
	No Match	22	585	3635	97.50%	0
	Total	24	600	3714	100.00%	0
	Internal Repetition	2.48%				

APPENDIX 12: CAT TOOL ANALYSIS OF TEST PIECE BY THE WELSH GOVERNMENT

All Files	Test Piece WG					
Total	Type	Segments	Words	Characters	Percentage	Tags
Files: 1	Duplicates	0	0	0	0.00%	0
Chars/word: 6.19	Guaranteed Matches	0	0	0	0.00%	0
	Exact Matches	0	0	0	0.00%	0
	95% - 99%	0	0	0	0.00%	0
	85% - 94%	0	0	0	0.00%	0
	75% - 84%	0	0	0	0.00%	0
	50% - 74%	0	0	0	0.00%	0
	No Match	24	600	3714	100.00%	0
	Total	24	600	3714	100.00%	0
	Internal Repetition	2.48%				

APPENDIX 13: THE THREE SURVEYS

INTRODUCTION FROM ALL THREE SURVEYS (EN<>CY)

This introduction is at the beginning of all three surveys, shown here to avoid repetition.

<p>Hi! I'm Sharon Stephens, a fellow language geek and a PhD Researcher in Translation.</p> <p>My research focuses on the technology we use in the translation industry and how it impacts translation workflows in the public sector in Wales. This is vital research which will provide insight into the industry, and your help upon completing this survey will help to support future research and development.</p> <p>I just need approx. 5 minutes of your time. By the way, congratulations on choosing the best industry to work in and the best University to study in! Please answer the questions honestly; there are no right or wrong answers. Your participation is invaluable to my research so thank you very much for your help and good luck with winning the £25 voucher just for completing this survey.</p> <p>My details: Sharon Stephens Email: [REDACTED]</p> <p>*This survey is available in Welsh - to change the language, select '<i>Cymraeg</i>' from the top right-hand corner of this form.</p>	<p>Helo! Sharon Stephens ydw i, cyd-'geek' ieithoedd ac Ymchwilydd PhD mewn Cyfieithu.</p> <p>Mae fy ymchwil yn canolbwyntio ar y dechnoleg rydym ni yn defnyddio yn y diwydiant cyfieithu a sut mae'n effeithio'r llif waith cyfieithu yn y sector cyhoeddus yng Nghymru. Mae hyn yn ymchwil hanfodol a fydd yn darparu mewnwelediad gwerthfawr mewn i'r diwydiant a fydd eich cymorth ar ôl cwblhau'r arolwg yma yn helpu i gefnogi ymchwil a datblygiad yn y dyfodol.</p> <p>Dim ond tua 5 munud o'ch amser sydd angen arnaf. Gyda llaw, llongyfarchiadau am ddewis y diwydiant gorau i weithio mewn a'r Brifysgol gorau i astudio mewn! Atebwch y cwestiynau yn onest, os gweli di'n dda, nid oes atebion cywir nac anghywir. Bydd dy gyfranogiad yn werthfawr i fy ymchwil felly, diolch yn fawr am dy gymorth a phob lwc er mwyn ennill y daleb werth £25, ddim ond am gwblhau'r arolwg hwn.</p> <p>Fy manylion: Sharon Stephens E-bost: [REDACTED]</p>
<p>CONSENT</p>	<p>CANTIÂD</p>
<p>You are being invited to take part in a web-based research study conducted under the direction of Sharon Stephens, a PhD Researcher in the field of Translation at Swansea University. The purpose of this study is to gain insight into translation workflows in the public</p>	<p>Rwyt ti yn cael dy wahodd i gymryd rhan mewn astudiaeth ymchwil ar y we wedi'i harwain o dan gyfarwyddyd Sharon Stephens, Ymchwilydd PhD yn y maes Cyfieithu ym Mhrifysgol Abertawe. Pwrpas yr astudiaeth yma yw i gael mewnwelediad i'r llif gwaith cyfieithu yn y sector cyhoeddus a'r defnydd o dechnoleg cyfieithu.</p>

<p>sector and the use of translation technology.</p> <p>I am inviting your participation, which will involve completing 1 survey that will take approximately 5 minutes to complete.</p> <p>Your participation in this study is voluntary, and you may decide to not begin or to stop the study at any time. To be eligible to participate, you must be at least 18 years old and be able to read the study materials which are in English. You have the right not to answer any question, to change your mind and to stop participation at any time without penalty.</p> <p>I recommend that you refrain from using your name or any other identifying information in your responses in the surveys. There are no foreseeable risks or discomforts to your participation.</p> <p>Your answers to the questionnaire will be kept confidential, and the survey will not collect identifying information unless you choose to take part in the focus group or to be entered into the draw for £25 Amazon Vouchers</p> <p>The primary investigator (Sharon Stephens) and University Supervisors (Prof. A J Rothwell and Dr. M Fernández Parra) will be the only people with access to the data. The results of this study may be used in reports, presentations, or publications but your name will not be used, and the results will only be shared in aggregate form.</p>	<p>Rwy'n dy wahodd i gymryd rhan, fydd yn golygu cwblhau 1 arolwg a fydd yn cymryd tua 5 munud i gwblhau.</p> <p>Fydd dy gyfranogiad yn yr astudiaeth yma yn wirfoddol, a gallwch benderfynu i beidio â'i chychwyn neu i stopio'r astudiaeth ar unrhyw bryd. I fod yn cymwys i gymryd rhan, rhaid i ti fod o leiaf 18 mlwydd oed a gallu darllen deunyddiau'r astudiaeth sydd mewn Saesneg. Mae gen ti'r hawl i beidio ag ateb unrhyw gwestiwn, i newid dy feddwl ac i stopio cymryd rhan ar unrhyw bryd heb gosb.</p> <p>Rwy'n argymhell i ti beidio â defnyddio dy enw neu unrhyw wybodaeth enwi arall yn dy atebion yn yr arolygon. Nid oes risgiau rhagweladwy neu anghysur i dy gyfranogiad.</p> <p>Bydd dy atebion i'r holiadur yn cael eu cadw'n gyfrinachol, a ni fydd yr arolwg yn casglu gwybodaeth enwi, oni bai dy fod yn dewis i gymryd rhan mewn grŵp ffocws neu i gael dy gofrestru i'r raffl am Dalebau Amazon werth £25.</p> <p>Fydd y prif ymchwiliwr (Sharon Stephens) a'r goruchwylwyr y Brifysgol (Yr Athro. A J Rothwell a Dr. M Fernández Parra) yn yr unig bobl a fydd yn cael mynediad i'r data. Gall canlyniadau'r ymchwil yma cael eu defnyddio mewn adroddiadau, cyflwyniadau, neu gyhoeddiadau ond ni fydd dy enw yn cael ei defnyddio, a fydd y canlyniadau ond yn cael eu rhannu mewn ffurf cydgasgledig.</p>
<p>CONTACT</p> <p>If you have questions at any time about the study or the procedures, you may contact my research supervisors:</p> <p>Prof. Andrew Rothwell DPhil (Oxon), SFHEA Professor of French and Translation, Department of Modern Languages,</p>	<p>CYSWLLT</p> <p>Os oes gen ti unrhyw gwestiynau ar unrhyw bryd amdano'r astudiaeth neu'r dulliau gweithredu, gallwch gysylltu â fy ngoruchwylwyr ymchwil:</p> <p>Yr Athro. Andrew Rothwell DPhil (Oxon), SFHEA Athro Ffrangeg a Chyfieithu, Adran Ieithoedd</p>

Translation, and Interpreting.

██
██
██
Dr. Maria Fernández-Parra SFHEA
Senior Lecturer and Researcher / Senior
Fellow of the HEA
Department of Modern Languages,
Translation and Interpreting
██
██
██

If you feel you have not been treated according to the descriptions in this form, or that your rights as a participant in research have not been honoured during the course of this project, or you have any questions, concerns, or complaints that you wish to address to someone other than the investigator, you may contact the above supervisors.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking on the "Agree" button indicates that:

- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older.

- Agree
- Disagree

Modern, Cyfieithu a Chyfieithu ar y pryd.

██
██
██
Dr. Maria Fernández-Parra, SFHEA
Uwch Darlithydd ac Ymchwilydd/ Uwch
Gymrawd o'r AAU
Adran Ieithoedd Modern, Cyfieithu a
Chyfieithu ar y pryd
██
██

Os wyt ti'n teimlo dy fod heb gael dy drin yn unol â'r disgrifiadau ar y ffurflen hon, neu fod dy hawliau fel cyfranogwr mewn astudiaeth ddim wedi cael eu parchu yn ystod y cwrs neu'r prosiect yma, neu os oes gen ti unrhyw gwestiynau, pryderon, neu gwynion a dymunwch i gyfeirio at rywun heblaw'r ymchwiliwr, gellir gysylltu â'r goruchwylwyr uchod.

CANIATÂD ELECTRONIG: Dethola dy ddewisiad isod, os gweli di'n dda. Gellir argraffu copi o'r ffurflen caniatâd hon am dy gofnodion. Fydd clicio ar y botwm "Cytuno" yn dangos:

- Rwyd ti wedi darllen y wybodaeth uchod.
- Rwyd ti wedi cytuno yn wirfoddol i gymryd rhan.
- Rwyd ti'n 18 mlwydd oed neu'n hŷn.

- Cytuno
- Anghytuno

**APPENDIX 14: SURVEY OF INTERNAL STAFF (ALL STAFF NOT INCLUDING TRANSLATORS) -
ENGLISH AND WELSH**

	ABOUT YOU	AMDANOCH CHI																			
2	<p>What is your gender?</p> <ul style="list-style-type: none"> <input type="radio"/> Female <input type="radio"/> Male <input type="radio"/> Prefer not to say. <input type="radio"/> Other 	<p>Beth yw eich rhyw?</p> <ul style="list-style-type: none"> <input type="radio"/> Benyw <input type="radio"/> Gwryw <input type="radio"/> Mae'n well gen i beidio â dweud <input type="radio"/> Arall 																			
3	<p>What is your age?</p> <ul style="list-style-type: none"> <input type="radio"/> 18-24 <input type="radio"/> 25-34 <input type="radio"/> 35-44 <input type="radio"/> 45-54 <input type="radio"/> 55-64 <input type="radio"/> 65+ <input type="radio"/> Prefer not to say 	<p>Beth yw eich oedran?</p> <ul style="list-style-type: none"> <input type="radio"/> 18-24 <input type="radio"/> 25-34 <input type="radio"/> 35-44 <input type="radio"/> 45-54 <input type="radio"/> 55-64 <input type="radio"/> 65+ <input type="radio"/> Mae'n well gen i beidio â dweud 																			
4	<p>What is your Nationality?</p> <ul style="list-style-type: none"> <input type="radio"/> Welsh <input type="radio"/> English <input type="radio"/> Irish <input type="radio"/> Scottish <input type="radio"/> Western Europe <input type="radio"/> Mediterranean & Middle East <input type="radio"/> Central and Eastern Europe <input type="radio"/> Asian <input type="radio"/> American <input type="radio"/> Other 	<p>Beth yw eich cenedligrwydd?</p> <ul style="list-style-type: none"> <input type="radio"/> Cymro/Cymraes <input type="radio"/> Sais/Saesnes <input type="radio"/> Gwyddel/Gwyddeles <input type="radio"/> Albanaidd <input type="radio"/> Ewropeaidd Gorllewinol <input type="radio"/> Canoldirol ac o'r Dwyrain Canol <input type="radio"/> Ewropeaidd Canolog a Dwyreiniol <input type="radio"/> Asiaidd <input type="radio"/> Americanaidd <input type="radio"/> Arall 																			
5	<p>What is (are) your native language(s)?</p> <ul style="list-style-type: none"> <input type="radio"/> English <input type="radio"/> Welsh <input type="radio"/> Other 	<p>Beth yw eich iaith (ieithoedd) brodorol?</p> <ul style="list-style-type: none"> <input type="radio"/> Saesneg <input type="radio"/> Cymraeg <input type="radio"/> Arall 																			
6	<p>You answered 'Welsh' on the Question 5, I need to understand your level of Welsh proficiency in the WORKPLACE</p>	<p>Gwnaethoch chi ateb Cymraeg ar Gwestiwn 5, rwyf angen ddeall eich lefel o ruglder yn Gymraeg yn y GWEITHLE.</p>																			
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7	<p>You answered 'Welsh' on the Question and 5; I need to understand your level of Welsh proficiency at HOME</p>	<p>Gwnaethoch chi ateb 'Cymraeg' ar gwestiwn 5, rwyf angen ddeall eich lefel o ruglder yn Gymraeg yn y CARTREF</p>																			
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8	<p>What is your highest level of education?</p> <ul style="list-style-type: none"> <input type="radio"/> GCSE (grades D-G) <input type="radio"/> GCSE (grades A*–C) <input type="radio"/> A-level, National Diploma <input type="radio"/> Higher National Certificate <input type="radio"/> Higher National Diploma <input type="radio"/> Non-honours bachelor’s degree <input type="radio"/> Bachelor’s degree with honours <input type="radio"/> Master’s Degree <input type="radio"/> Doctoral Degree 	<p>Beth yw eich lefel uchaf o addysg?</p> <ul style="list-style-type: none"> <input type="radio"/> TGAU (graddau D - G) <input type="radio"/> TGAU (graddau A* - C) <input type="radio"/> Lefel A, Diploma Genedlaethol <input type="radio"/> Tystysgrif Genedlaethol Uwch <input type="radio"/> Diploma Genedlaethol Uwch <input type="radio"/> Gradd baglor heb anrhydedd <input type="radio"/> Gradd anrhydedd baglor <input type="radio"/> Gradd Meistr <input type="radio"/> Gradd Doethurol
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YOUR WORK AND WORKPLACE

EICH SWYDD A’CH GWEITHLE

9	<p>Who is your employer?</p> <ul style="list-style-type: none"> <input type="radio"/> Swansea University <input type="radio"/> Swansea Council <input type="radio"/> Welsh Government 	<p>Pwy yw eich cyflogwr?</p> <ul style="list-style-type: none"> <input type="radio"/> Prifysgol Abertawe <input type="radio"/> Cyngor Abertawe <input type="radio"/> Llywodraeth Cymru
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10	<p>Do you agree with the following statements?</p>	<p>Ydych chi’n cytuno gyda’r datganiadau canlynol?</p>
<p>I use the Welsh Translation Service to translate my content ></p> <p>My Welsh isn’t good enough for work ></p> <p>I do all my own translations ></p> <p>I went to a Welsh school but I know my Welsh isn’t suitable ></p> <p>I say I can’t write in Welsh as I am embarrassed to use it for work purposes ></p> <p>I lack confidence in my Welsh writing skills ></p> <p>I do try to do my own translations just to get it done! ></p> <p>I use Google Translate ></p>	<ul style="list-style-type: none"> <input type="radio"/> Strongly Disagree <input type="radio"/> Disagree <input type="radio"/> Neither agree nor disagree <input type="radio"/> Agree <input type="radio"/> Strongly Agree <input type="radio"/> n/a 	<p>Gwasanaeth Cyfieithu Cymraeg i gyfieithu fy nghynnwys ></p> <p>Nid yw fy Nghymraeg yn ddigon dda ar gyfer gwaith ></p> <p>Rwy’n gwneud holl o fy nghyfieithiadau fy hun ></p> <p>Es i i ysgol Gymraeg ond dwi’n gwybod nad yw fy Nghymraeg yn addas ></p> <p>Rwy’n dweud na allaf ysgrifennu yn Gymraeg oherwydd mae gen i gywilydd i ei ddefnyddio am ddibenion gwaith ></p> <p>Mae gen i ddiffyg hyder yn fy sgiliau ysgrifennu Cymraeg ></p> <p>Rwy’n ceisio gwneud fy nghyfieithiadau fy ></p> <p>Rwy’n defnyddio ‘Google Translate’ ></p>
		<ul style="list-style-type: none"> <input type="radio"/> Anghytuno’n Gryf <input type="radio"/> Anghytuno <input type="radio"/> Ddim yn cytuno nac yn anghytuno <input type="radio"/> Cytuno <input type="radio"/> Cytuno’n Gryf <input type="radio"/> Yn amherthnasol

	I consider not translating content where possible >		Rwy'n ystyried peidio â chyfieithu cynnwys lle mae'n bosib >	
11	What is your job title? If you prefer not to answer this question due to anonymity, then that's okay.		Beth yw teitl eich swydd? Os yw'n well gennych I beidio ag ateb y cwestiwn hwn oherwydd anhysbysrwydd, mae hynny'n iawn.	
12	What Grade is your job classification? <input type="radio"/> Grade 1 <input type="radio"/> Grade 2 <input type="radio"/> Grade 3 <input type="radio"/> Grade 4 <input type="radio"/> Grade 5 <input type="radio"/> Grade 6 <input type="radio"/> Grade 7 <input type="radio"/> Other		Pa Radd yw dosbarthiad eich swydd? <input type="radio"/> Gradd 1 <input type="radio"/> Gradd 2 <input type="radio"/> Gradd 3 <input type="radio"/> Gradd 4 <input type="radio"/> Gradd 5 <input type="radio"/> Gradd 6 <input type="radio"/> Gradd 7 <input type="radio"/> Arall	
13	How long have you worked at your current workplace? <input type="radio"/> 1 year or less <input type="radio"/> 1 to 2 years <input type="radio"/> 2 to 4 years <input type="radio"/> More than 4 years		Am faint o amser ydych chi wedi bod yn gweithio yn eich gweithle presennol? <input type="radio"/> 1 flwyddyn neu lai <input type="radio"/> 1 i 2 flynedd <input type="radio"/> 2 i 4 flynedd <input type="radio"/> Mwy na 4 blynedd	
14	How many hours a week do you work on average? <input type="radio"/> 0-16 hours <input type="radio"/> 16-24 hours <input type="radio"/> 24-32 hours <input type="radio"/> 32-40 hours <input type="radio"/> 40+ hours <input type="radio"/> Other		Sawl awr yr wythnos ydych chi'n gweithio ar gyfartaledd? <input type="radio"/> 0-16 awr <input type="radio"/> 16-24 awr <input type="radio"/> 24-32 awr <input type="radio"/> 32-40 awr <input type="radio"/> 40+ awr <input type="radio"/> Arall	
15	Have you received any training to comply with The Welsh Language Standards (No. 7) Regulations 2018? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Maybe <input type="radio"/> What's that?		Ydych chi wedi derbyn unrhyw hyfforddiant i gydymffurfio â'r Rheolau Safonau Iaith Cymraeg (Rhif.7) 2018? <input type="radio"/> Ydw <input type="radio"/> Nac ydw <input type="radio"/> Efallai <input type="radio"/> Beth yw hwnna?	

TRANSLATION

CYGEITHU

16	When (approximately) was the last time, you requested a Welsh translation from the translation department? <input type="radio"/> less than 1 month ago <input type="radio"/> 1-2 months ago <input type="radio"/> 2-3 months ago <input type="radio"/> 3-4 months ago <input type="radio"/> 4-5 months ago <input type="radio"/> 5-6 months ago		Pryd (tua) oedd y tro diwethaf i chi ofyn am gyfieithiad Cymraeg o'r adran cyfieithu? <input type="radio"/> Llai na 1 mis yn ôl <input type="radio"/> 1 - 2 fis yn ôl <input type="radio"/> 2 - 3 fis yn ôl <input type="radio"/> 3 - 4 fis yn ôl <input type="radio"/> 4 - 5 fis yn ôl <input type="radio"/> 5 - 6 fis yn ôl	
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	<ul style="list-style-type: none"> <input type="radio"/> 6+ months ago <input type="radio"/> Never <input type="radio"/> Other 	<ul style="list-style-type: none"> <input type="radio"/> 6+ fis yn ôl <input type="radio"/> Byth <input type="radio"/> Arall 																						
17	<p>What is the lead time on any translation request (working days)?</p> <ul style="list-style-type: none"> <input type="radio"/> Less than 24 hours <input type="radio"/> 1 - 2 days <input type="radio"/> 2 - 3 days <input type="radio"/> 3 - 5 days <input type="radio"/> 5 - 7 days <input type="radio"/> 7 - 10 days <input type="radio"/> More than 10 days <input type="radio"/> We don't have a lead time <input type="radio"/> I have no idea <input type="radio"/> Other 	<p>Beth yw'r amser aros bras ar unrhyw gais cyfieithu (diwrnodau gweithio)?</p> <ul style="list-style-type: none"> <input type="radio"/> Llai na 24 awr <input type="radio"/> 1 - 2 diwrnod <input type="radio"/> 2 - 3 diwrnod <input type="radio"/> 3 - 5 diwrnod <input type="radio"/> 5 - 7 diwrnod <input type="radio"/> 7 - 10 diwrnod <input type="radio"/> Mwy na 10 diwrnod <input type="radio"/> Nid oes gennym amser aros <input type="radio"/> Does gen i ddim clem <input type="radio"/> Arall 																						
18	<p>How do you request a translation?</p> <ul style="list-style-type: none"> <input type="radio"/> Email <input type="radio"/> Upload <input type="radio"/> I don't know <input type="radio"/> Other 	<p>Sut ydych chi'n gofyn am gyfieithiad?</p> <ul style="list-style-type: none"> <input type="radio"/> E-bost <input type="radio"/> Lan-lwytho <input type="radio"/> Dwi ddim yn gwybod <input type="radio"/> Arall 																						
19	<p>How likely are you to receive your Welsh Translation back on time?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Not at all likely Extremely likely</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Pa mor debygol ydych chi o dderbyn eich Cyfieithiad Cymraeg yn ôl ar amser?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Dim yn debygol o gwbl Yn hynod o debygol</p>	0	1	2	3	4	5	6	7	8	9	10
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0	1	2	3	4	5	6	7	8	9	10														
20	<p>Did your LAST translation request arrive back when you expected?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A 	<p>A gyrhaeddodd eich cais cyfieithu diwethaf yn ôl pan oeddech yn disgwyl?</p> <ul style="list-style-type: none"> <input type="radio"/> Gwnaeth <input type="radio"/> Ni wnaeth <input type="radio"/> Ym amherthnasol 																						
21	<p>How long did it take (working days) for you to receive your last translation request back?</p> <ul style="list-style-type: none"> <input type="radio"/> Less than 24 hours <input type="radio"/> 1 - 2 days <input type="radio"/> 2 - 3 days <input type="radio"/> 3 - 5 days <input type="radio"/> 5 - 7 days <input type="radio"/> 7 - 10 days <input type="radio"/> More than 10 days <input type="radio"/> We don't have a lead time <input type="radio"/> I have no idea 	<p>Faint o amser cymerodd (diwrnodau gweithio) i chi dderbyn eich cais cyfieithu yn ôl?</p> <ul style="list-style-type: none"> <input type="radio"/> Llai na 24 awr <input type="radio"/> 1 - 2 diwrnod <input type="radio"/> 2 - 3 diwrnod <input type="radio"/> 3 - 5 diwrnod <input type="radio"/> 5 - 7 diwrnod <input type="radio"/> 7 - 10 diwrnod <input type="radio"/> Mwy na 10 diwrnod <input type="radio"/> Nid oes gennym amser aros <input type="radio"/> Does gen i ddim clem 																						
22	<p>Did your request for a translation slow down your own workflow, for example stopped you from getting things completed at your normal pace?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes, it slowed me down 	<p>Gwnaeth eich cais ar gyfer cyfieithiad arafu eich llif gwaith, er enghraifft wedi eich atal rhag cwblhau pethau ar eich cyflymder arferol?</p> <ul style="list-style-type: none"> <input type="radio"/> Oedd, fe wnaeth fy arafu <input type="radio"/> Na, nid oedd wedi fy arafu 																						

	<ul style="list-style-type: none"> <input type="radio"/> No, it didn't slow me down <input type="radio"/> Other 	<ul style="list-style-type: none"> <input type="radio"/> Arall 																						
23	<p>How much confidence do you have with the speed of the Translation Service?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Not at all confident Extremely confident</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Faint o hyder sydd gennych gyda chyflymder y Gwasanaethau Cyfieithu?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Dim yn hyderus o gwbl Yn hyderus iawn</p>	0	1	2	3	4	5	6	7	8	9	10
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24	<p>Did you consider not having your content translated?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes or Maybe <input type="radio"/> No 	<p>Ydych chi'n ystyried peidio â chael eich cynnwys eu cyfieithu?</p> <ul style="list-style-type: none"> <input type="radio"/> Ydw neu efallai <input type="radio"/> Nac ydw 																						
25	<p>If you answered 'yes or maybe' to the above, why did you consider not to get your content translated? Type n/a if not applicable</p>	<p>Os gwnaethoch chi ateb 'ydw neu efallai' i'r uchod, pam ydych chi'n ystyried peidio â chael eich cynnwys eu cyfieithu? Teipiwch amherthnasol os nad yw'n cymwys</p>																						
26	<p>How confident are you that your translation request will be completed on time?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Not at all confident Extremely confident</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Pa mor hyderus ydych chi fydd eich cais cyfieithu yn cael ei gwblhau ar amser?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Dim yn hyderus o gwbl Yn hyderus iawn</p>	0	1	2	3	4	5	6	7	8	9	10
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TECHNOLOGY

DECHNOLEG

27	<p>Have you ever used Machine Translation (e.g., Google Translate) to translate content instead of using the Translation Department service?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Maybe 	<p>Ydych chi erioed wedi defnyddio Peiriant Cyfieithu (e.e Google Translate) y cyfieithu cynnwys yn lle defnyddio gwasanaeth yr Adran Cyfieithu?</p> <ul style="list-style-type: none"> <input type="radio"/> Ydw <input type="radio"/> Nac ydw <input type="radio"/> Efallai
28	<p>If you answered 'Yes' to number 27, why did you use Machine Translation?</p> <ul style="list-style-type: none"> <input type="radio"/> It was faster <input type="radio"/> It was easier <input type="radio"/> It wasn't that important to be 100% correct <input type="radio"/> Other 	<p>Os gwnaethoch chi ateb 'Ydw' i rhif 27, pam wnaethoch chi denyffio Peiriant Cyfieithu?</p> <ul style="list-style-type: none"> <input type="radio"/> Roedd yn gyflymach <input type="radio"/> Roedd yn hawsach <input type="radio"/> Nid oedd mor bwysig bod yn 100% yn gywir <input type="radio"/> Arall
29	<p>Name ONE thing that you would like to change regarding the Translation Workflow in your organisation. For example, 'make it faster' 'make it automatic' 'access the translation from my computer' etc. Feel free to put N/A if you have nothing to add here.</p>	<p>Enwch UN peth a hoffech chi newid ynglŷn â'r Llif Gwaith Cyfieithu yn eich cyfundrefn. Er enghraifft, 'ei wneud yn gyflymach', 'ei wneud yn awtomatig', 'mynediad i'r cyfieithiad o fy nghyfrifiadur' a.y.b. Mae croeso i chi roi Amherthnasol os nad oes gennych unrhyw beth i'w ychwanegu yma.</p>

AND FINALLY**AC YN OLAF**

	<p>Would you be willing to take part in a focus group to give your opinions about technology in the translation industry? ps. don't worry you can say no!</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Maybe 	<p>A fyddech chi'n fodlon cymryd rhan mewn grŵp ffocws i roi eich barn am dechnoleg yn y diwydiant cyfieithu? Ôl-nodyn, peidiwch â phoeni gallwch chi ddweud na!</p> <ul style="list-style-type: none"> <input type="radio"/> Byddwn i yn fodlon <input type="radio"/> Ni fyddwn i yn fodlon <input type="radio"/> Arall
31	<p>Thank you for agreeing to take part in a focus group, please provide your email below so I can get in touch with you.</p>	<p>Diolch am gytuno i gymryd rhan yn y grŵp ffocws, darparwch eich e-bost isod er mwyn i fi cysylltu â chi, os gwelwch chi'n dda.</p>
32	<p>Do you have any further comments about Welsh translations in your workplace? Do let me know what you think... any comments are invaluable to my research.</p>	<p>Oes gennych chi unrhyw sylwadau pellach ynglŷn â chyfieithiadau Cymraeg yn eich gweithle? Rhowch wybod i mi beth yw eich barn chi... mae unrhyw sylwadau yn amhrisiadwy i'm hymchwil</p>
33	<p>Thank you for completing this survey, your response is greatly appreciated. Please rate how you feel about the translation industry right now 1 star =dislike. 5 stars = Love it! *****</p>	<p>Diolch am gwblhau'r arolwg, gwerthfawrogir eich ymateb yn fawr. Graddiwch sut rydych yn teimlo am y diwydiant cyfieithu ar hyn o fryd, os gwelwch chi'n dda :-)</p> <p>1 seren = Dim yn hoffi. 5 sêr = yn ei charu! *****</p>
34	<p>If you want to be entered into the draw for £25 Amazon Vouchers, then just provide your email and I will let you know if you have won. Good luck!</p>	<p>Os hoffech chi gael eich cofrestru mewn i'r raffl am Dalebau Amazon werth £25 yna darparwch eich e-bost yn unig a byddaf yn rhoi gwybod i chi os ydych wedi ennill. Pob lwc!</p>

APPENDIX 15: SURVEY OF INTERNAL TRANSLATION UNIT/SERVICES STAFF (THE TRANSLATORS) - ENGLISH AND WELSH

	ABOUT YOU	AMDANOCH CHI
2	<p>What is your gender?</p> <ul style="list-style-type: none"> <input type="radio"/> Female <input type="radio"/> Male <input type="radio"/> Prefer not to say <input type="radio"/> Other 	<p>Beth yw eich rhyw?</p> <ul style="list-style-type: none"> <input type="radio"/> Benyw <input type="radio"/> Gwryw <input type="radio"/> Mae'n well gen i beidio â dweud <input type="radio"/> Arall
3	<p>What is your age?</p> <ul style="list-style-type: none"> <input type="radio"/> 18-24 <input type="radio"/> 25-34 <input type="radio"/> 35-44 <input type="radio"/> 45-54 <input type="radio"/> 55-64 <input type="radio"/> 65+ <input type="radio"/> Prefer not to say 	<p>Beth yw eich oedran?</p> <ul style="list-style-type: none"> <input type="radio"/> 18-24 <input type="radio"/> 25-34 <input type="radio"/> 35-44 <input type="radio"/> 45-54 <input type="radio"/> 55-64 <input type="radio"/> 65+ <input type="radio"/> Mae'n well gen i beidio â dweud
4	<p>What is your Nationality?</p> <ul style="list-style-type: none"> <input type="radio"/> Welsh <input type="radio"/> English <input type="radio"/> Irish <input type="radio"/> Scottish <input type="radio"/> Western Europe <input type="radio"/> Mediterranean & Middle East <input type="radio"/> Central and Eastern Europe <input type="radio"/> Asian <input type="radio"/> American <input type="radio"/> Other 	<p>Beth yw eich cenedligrwydd?</p> <ul style="list-style-type: none"> <input type="radio"/> Cymro/Cymraes <input type="radio"/> Sais/Saesnes <input type="radio"/> Gwyddel/Gwyddeles <input type="radio"/> Albanaidd <input type="radio"/> Ewropeaidd Gorllewinol <input type="radio"/> Canoldirol ac o'r Dwyrain Canol <input type="radio"/> Ewropeaidd Canolog a Dwyreiniol <input type="radio"/> Asiaidd <input type="radio"/> Americanaidd <input type="radio"/> Arall
5	<p>What is (are) your native language(s)?</p> <ul style="list-style-type: none"> <input type="radio"/> English <input type="radio"/> Welsh <input type="radio"/> Other 	<p>Beth yw eich iaith (ieithoedd) brodorol?</p> <ul style="list-style-type: none"> <input type="radio"/> Saesneg <input type="radio"/> Cymraeg <input type="radio"/> Arall
6	<p>What are your working language pairs?</p> <ul style="list-style-type: none"> <input type="radio"/> English <> Welsh <input type="radio"/> English <> French <input type="radio"/> English <> German <input type="radio"/> English <> Polish <input type="radio"/> English <> Spanish <input type="radio"/> Other 	<p>Beth yw eich parau iaith rydych chi yn gweithio gyda?</p> <ul style="list-style-type: none"> <input type="radio"/> Saesneg <> Cymraeg <input type="radio"/> Saesneg <> Ffrangeg <input type="radio"/> Saesneg <> Almaeneg <input type="radio"/> Saesneg <> iaith Gwlad Pwyl <input type="radio"/> Saesneg <> Sbaeneg <input type="radio"/> Arall
7	<p>What is your job title? If you prefer not to answer this question due to anonymity, then that's okay.</p>	<p>Beth yw teitl eich swydd? Os yw'n well gennych beidio ag ateb y cwestiwn hwn oherwydd anhysbysrwydd, mae hynny'n iawn.</p>
8.	<p>What Grade is your job classification?</p> <ul style="list-style-type: none"> <input type="radio"/> Grade 1 <input type="radio"/> Grade 2 <input type="radio"/> Grade 3 <input type="radio"/> Grade 4 <input type="radio"/> Grade 5 <input type="radio"/> Grade 6 	<p>Pa Radd yw dosbarthiad eich swydd?</p> <ul style="list-style-type: none"> <input type="radio"/> Gradd 1 <input type="radio"/> Gradd 2 <input type="radio"/> Gradd 3 <input type="radio"/> Gradd 4 <input type="radio"/> Gradd 5 <input type="radio"/> Gradd 6

	<ul style="list-style-type: none"> ○ Grade 7 ○ Other 	<ul style="list-style-type: none"> ○ Gradd 7 ○ Arall
9	<p>How long have you been working for the organisation?</p> <ul style="list-style-type: none"> ○ 1 year or less ○ 1 to 2 years ○ 2 to 4 years ○ More than 4 years 	<p>Am faint o amser yr ydych chi wedi bod yn gweithio am y gyfundrefn?</p> <ul style="list-style-type: none"> ○ 1 flwyddyn neu lai ○ 1 i 2 flynedd ○ 2 i 4 flynedd ○ Mwy na 4 blynedd
10	<p>How long have you worked as a professional translator? (Including freelance)</p> <ul style="list-style-type: none"> ○ 1 year or less ○ 1 to 2 years ○ 2 to 4 years ○ More than 4 years 	<p>Am faint o flynyddoedd ydych chi wedi bod yn gweithio fel cyfieithydd proffesiynol? (yn cynnwys gweithio ar eich liwt eich hun)</p> <ul style="list-style-type: none"> ○ 1 flwyddyn neu lai ○ 1 i 2 flynedd ○ 2 i 4 flynedd ○ Mwy na 4 blynedd
11	<p>What is your highest level of education?</p> <ul style="list-style-type: none"> ○ GCSE (grades A*–C) ○ GCSE (grades D-G) ○ A-level, National Diploma ○ Higher National Certificate ○ Higher National Diploma ○ Non-honours bachelor's degree ○ Bachelor's degree with honours ○ Master's Degree ○ Doctoral Degree ○ Other 	<p>Beth yw eich lefel uchaf o addysg?</p> <ul style="list-style-type: none"> ○ TGAU (graddau A* - C) ○ TGAU (graddau D - G) ○ Lefel A, Diploma Genedlaethol ○ Tystysgrif Genedlaethol Uwch ○ Diploma Genedlaethol Uwch ○ Gradd baglor heb anrhydedd ○ Gradd anrhydedd baglor ○ Gradd Meistr ○ Gradd Doethurol ○ Arall
12	<p>What is your educational background?</p> <ul style="list-style-type: none"> ○ Linguistics ○ Translation Studies ○ Philology ○ Engineering ○ Education ○ Economics ○ Medicine ○ Law ○ Other 	<p>Beth yw eich cefndir addysgol?</p> <ul style="list-style-type: none"> ○ Ieithyddiaeth ○ Astudiaethau Cyfieithu ○ Ffiloleg ○ Peirianeg ○ Addysg ○ Economeg ○ Meddygaeth ○ Cyfraith ○ Arall
13.	<p>Do you have qualifications in Translation e.g., BA Translation, MA Translation etc.? If so, please explain.</p>	<p>Oes gennych chi gymwysterau mewn cyfieithu e.e. BA Cyfieithu, MA Cyfieithu a.y.b.? Os oes, esboniwch, os gwelwch chi'n dda.</p>
14.	<p>Are you a translation specialist in any particular subject?</p> <ul style="list-style-type: none"> ○ Yes ○ No 	<p>Ydych chi'n gyfieithydd arbenigol mewn unrhyw bwnc penodol?</p> <ul style="list-style-type: none"> ○ Ydw ○ Nac ydw
15	<p>You answered yes, what is your specialism?</p> <ul style="list-style-type: none"> ○ Medical 	<p>Ateboch chi ydw, beth yw eich arbenigaeth?</p> <ul style="list-style-type: none"> ○ Meddygaeth

	<ul style="list-style-type: none"> <input type="radio"/> Legal <input type="radio"/> Technical <input type="radio"/> Literature <input type="radio"/> Public sector/Government <input type="radio"/> Other 	<ul style="list-style-type: none"> <input type="radio"/> Cyfraith <input type="radio"/> Technegol <input type="radio"/> Llenyddiaeth <input type="radio"/> Sector Cyhoeddus/Llywodraeth <input type="radio"/> Arall 																						
YOUR WORK AND WORKPLACE		EICH SWYDD A'CH GWEITHLE																						
16	<p>Who is your employer?</p> <ul style="list-style-type: none"> <input type="radio"/> Swansea University <input type="radio"/> Swansea Council <input type="radio"/> Welsh Government <input type="radio"/> Other 	<p>Pwy yw eich cyflogwr?</p> <ul style="list-style-type: none"> <input type="radio"/> Prifysgol Abertawe <input type="radio"/> Cyngor Abertawe <input type="radio"/> Llywodraeth Cymru <input type="radio"/> Arall 																						
17	<p>How many hours a week do you work on average at your current workplace?</p> <ul style="list-style-type: none"> <input type="radio"/> 0-16 hours <input type="radio"/> 16-24 hours <input type="radio"/> 24-32 hours <input type="radio"/> 32-40 hours <input type="radio"/> 40+ hours 	<p>Sawl awr yr wythnos ar gyfartaledd ydych chi'n gweithio yn eich gweithle presennol?</p> <ul style="list-style-type: none"> <input type="radio"/> 0-16 awr <input type="radio"/> 16-24 awr <input type="radio"/> 24-32 awr <input type="radio"/> 32-40 awr <input type="radio"/> 40+ awr 																						
18	<p>How often do you feel stressed at work in a typical week?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Never All the time</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Mewn wythnos arferol, pa mor aml ydych chi'n teimlo o dan bwysau mewn gwaith?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Byth. Trwy'r amser</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														
19	<p>What do you think could be the main cause of stress in your workplace? You can select multiple answers</p> <ul style="list-style-type: none"> <input type="radio"/> Too little to do <input type="radio"/> Too much to do <input type="radio"/> Too much expected of you <input type="radio"/> Lack of training of translation tools <input type="radio"/> I just feel overwhelmed <input type="radio"/> A backlog of work gets me down <input type="radio"/> I can't keep on top of it <input type="radio"/> I am never stressed! <input type="radio"/> I think it is all just about right! <input type="radio"/> Other 	<p>Beth ydych chi'n credu yw'r prif achos o teimlo o dan bwysau yn eich gweithle? Gallwch ddewis mwy nag un ateb</p> <ul style="list-style-type: none"> <input type="radio"/> Rhy ychydig i wneud <input type="radio"/> Gormod i wneud <input type="radio"/> Gormod yn cael ei ddisgwyl o chi <input type="radio"/> Diffyg hyfforddiant o offer cyfieithu <input type="radio"/> Rwy'n teimlo fy mod wedi gorlethu <input type="radio"/> Mae yna lwyth o waith sy'n fy nghael i lawr, ni allaf gadw lan gyda'u <input type="radio"/> Rydw i byth yn teimlo o dan bwysau! <input type="radio"/> Rwy'n credu bod y cyfan bron yn iawn! <input type="radio"/> Arall 																						
20	<p>What are your thoughts about using translation technology?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>It's awful It's fantastic</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Nawr am y dechnoleg</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Mae'n ofnadwy Mae'n ffantastig</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														

	TRANSLATION TECHNOLOGY	TECHNOLEG CYFIEITHU
21	<p>How do you feel about using the following tools when completing your translations?</p> <p>CAT tools such as Trados, Systran, Memsourc e etc.</p> <ul style="list-style-type: none"> <input type="radio"/> Don't like at all <input type="radio"/> Don't like much <input type="radio"/> It's okay <input type="radio"/> I like it <input type="radio"/> I like it a lot <input type="radio"/> It's a complete lifesaver <input type="radio"/> n/a <p>Machine Translation such as Google Translate, Microsoft Translator etc.</p> <ul style="list-style-type: none"> <input type="radio"/> Don't like at all <input type="radio"/> Don't like much <input type="radio"/> It's okay <input type="radio"/> I like it <input type="radio"/> I like it a lot <input type="radio"/> It's a complete lifesaver <input type="radio"/> n/a <p>Translation Management Tools such as Wordbee, Smartcat, Smartling etc.</p> <ul style="list-style-type: none"> <input type="radio"/> Don't like at all <input type="radio"/> Don't like much <input type="radio"/> It's okay <input type="radio"/> I like it <input type="radio"/> I like it a lot <input type="radio"/> It's a complete lifesaver <input type="radio"/> n/a 	<p>Sut ydych chi'n teimlo am ddefnyddio'r offer canlynol i gwblhau eich cyfieithiadau?</p> <p>Offer cyfieithu gyda chymorth cyfrifiadur (CAT tools) megis Trados, Systran, Memsourc e a.y.b.</p> <ul style="list-style-type: none"> <input type="radio"/> Dim yn hoffi o gwbl <input type="radio"/> Dim yn hoffi lawer <input type="radio"/> Mae'n iawn <input type="radio"/> Rwy'n ei hoffi <input type="radio"/> Rwy'n ei hoffi llawer <input type="radio"/> Mae'n hollol achubwr bywyd <input type="radio"/> Yn amherthnasol <p>Cyfieithu megis Google Translate, Microsoft Translator a.y.b.</p> <ul style="list-style-type: none"> <input type="radio"/> Dim yn hoffi o gwbl <input type="radio"/> Dim yn hoffi lawer <input type="radio"/> Mae'n iawn <input type="radio"/> Rwy'n ei hoffi <input type="radio"/> Rwy'n ei hoffi llawer <input type="radio"/> Mae'n hollol achubwr bywyd <input type="radio"/> Yn amherthnasol <p>Offer Rheoli Cyfieithu megis Wordbee, Smartcat, Smartling a.y.b.</p> <ul style="list-style-type: none"> <input type="radio"/> Dim yn hoffi o gwbl <input type="radio"/> Dim yn hoffi lawer <input type="radio"/> Mae'n iawn <input type="radio"/> Rwy'n ei hoffi <input type="radio"/> Rwy'n ei hoffi llawer <input type="radio"/> Mae'n hollol achubwr bywyd <input type="radio"/> Yn amherthnasol
22	<p>Which Translation Technology Tools do you use in your workplace today? You can select multiple answers</p> <ul style="list-style-type: none"> <input type="checkbox"/> DéjàVu <input type="checkbox"/> Google Translate <input type="checkbox"/> MemoQ <input type="checkbox"/> Memsourc e <input type="checkbox"/> Microsoft Translator <input type="checkbox"/> OmegaT <input type="checkbox"/> Passolo <input type="checkbox"/> Systran <input type="checkbox"/> Trados <input type="checkbox"/> Wordbee <input type="checkbox"/> Other 	<p>Pa Offer Technoleg Cyfieithu ydych chi'n defnyddio yn eich gweithle heddiw? Gallwch ddewis mwy nag un ateb</p> <ul style="list-style-type: none"> <input type="checkbox"/> DéjàVu <input type="checkbox"/> Google Translate <input type="checkbox"/> MemoQ <input type="checkbox"/> Memsourc e <input type="checkbox"/> Microsoft Translator <input type="checkbox"/> OmegaT <input type="checkbox"/> Passolo <input type="checkbox"/> Systran <input type="checkbox"/> Trados <input type="checkbox"/> Wordbee <input type="checkbox"/> Other

23	<p>Do you have experience working with these translation tools? Please list in order of preference (preferred at the top) - use the arrows ↓ ↑ on the right to drag each line</p> <ol style="list-style-type: none"> 1. DéjàVu 2. Google Translate 3. MemoQ 4. Memsorce 5. Microsoft Translator 6. OmegaT 7. Passolo 8. Systran 9. Trados 10. Wordbee 	<p>Oes gennych chi brofiad o weithio gyda'r offer cyfieithu hwn? Rhestrwch yn nhrefn eich gorau, os gwelwch chi'n dda (y gorau ar y top) - defnyddiwch y saethau ↓ ↑ ar y dde i lusgo pob llinell</p> <ol style="list-style-type: none"> 1. DéjàVu 2. Google Translate 3. MemoQ 4. Memsorce 5. Microsoft Translator 6. OmegaT 7. Passolo 8. Systran 9. Trados 10. Wordbee 																								
24	<p>Why do you like your preferred tool? You can select multiple answers</p> <ul style="list-style-type: none"> <input type="checkbox"/> A well-recognised brand <input type="checkbox"/> Speeds up productivity <input type="checkbox"/> Cloud-based Tool <input type="checkbox"/> Easy to use <input type="checkbox"/> Price <input type="checkbox"/> Helps to improve the quality of the translation <input type="checkbox"/> Training Provided <input type="checkbox"/> Other 	<p>Pam ydych chi'n hoffi eich offer gorau? Gallwch chi ddewis mwy nag un ateb</p> <ul style="list-style-type: none"> <input type="checkbox"/> Brand cydnabyddedig iawn <input type="checkbox"/> Cyflymu cynhyrchaeth <input type="checkbox"/> Offeryn sy'n seiliedig ar y 'Cloud' <input type="checkbox"/> Hawdd i ddefnyddio <input type="checkbox"/> Y pris <input type="checkbox"/> Helpu i wella ansawdd y cyfieithiad <input type="checkbox"/> Hyfforddiant wedi'i darparu <input type="checkbox"/> Arall 																								
25	<p>Have you ever used Machine Translation to translate content and then post-edit the text?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Maybe 	<p>Ydych chi erioed wedi defnyddio Peiriant Cyfieithu i gyfieithu cynnwys ac wedyn ôl-olygu'r testun?</p> <ul style="list-style-type: none"> <input type="radio"/> Ydw <input type="radio"/> Nac ydw <input type="radio"/> Efallai 																								
26	<p>How often do you USE the following Machine Translation tools before postediting?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Google Translate ></td> <td style="width: 50%;"><input type="radio"/> Daily</td> </tr> <tr> <td>Yandex ></td> <td><input type="radio"/> Weekly</td> </tr> <tr> <td>Bing Translator ></td> <td><input type="radio"/> Monthly</td> </tr> <tr> <td>Microsoft Translator ></td> <td><input type="radio"/> 3 monthly</td> </tr> <tr> <td>Amazon Translate ></td> <td><input type="radio"/> Annually</td> </tr> <tr> <td></td> <td><input type="radio"/> Never</td> </tr> </table>	Google Translate >	<input type="radio"/> Daily	Yandex >	<input type="radio"/> Weekly	Bing Translator >	<input type="radio"/> Monthly	Microsoft Translator >	<input type="radio"/> 3 monthly	Amazon Translate >	<input type="radio"/> Annually		<input type="radio"/> Never	<p>Pa mor aml ydych chi'n DEFNYDDIO'R offer Peiriant Cyfieithu canlynol cyn ôl-olygu?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Google Translate ></td> <td style="width: 50%;"><input type="radio"/> Dyddiol</td> </tr> <tr> <td>Yandex ></td> <td><input type="radio"/> Wythnosol</td> </tr> <tr> <td>Bing Translator ></td> <td><input type="radio"/> Misol</td> </tr> <tr> <td>Microsoft Translator ></td> <td><input type="radio"/> 3 misol</td> </tr> <tr> <td>Amazon Translate ></td> <td><input type="radio"/> Blynnyddol</td> </tr> <tr> <td></td> <td><input type="radio"/> Byth</td> </tr> </table>	Google Translate >	<input type="radio"/> Dyddiol	Yandex >	<input type="radio"/> Wythnosol	Bing Translator >	<input type="radio"/> Misol	Microsoft Translator >	<input type="radio"/> 3 misol	Amazon Translate >	<input type="radio"/> Blynnyddol		<input type="radio"/> Byth
Google Translate >	<input type="radio"/> Daily																									
Yandex >	<input type="radio"/> Weekly																									
Bing Translator >	<input type="radio"/> Monthly																									
Microsoft Translator >	<input type="radio"/> 3 monthly																									
Amazon Translate >	<input type="radio"/> Annually																									
	<input type="radio"/> Never																									
Google Translate >	<input type="radio"/> Dyddiol																									
Yandex >	<input type="radio"/> Wythnosol																									
Bing Translator >	<input type="radio"/> Misol																									
Microsoft Translator >	<input type="radio"/> 3 misol																									
Amazon Translate >	<input type="radio"/> Blynnyddol																									
	<input type="radio"/> Byth																									

27	<p>Which Machine Translation tool do you trust more? Please list in order of preference (preferred at the top) - use the arrows ↓↑ on the right to drag each line</p> <ol style="list-style-type: none"> 1. Amazon Translate 2. Bing Translator 3. Google Translate 4. Microsoft Translator 5. Yandex 	<p>Pa offeryn Peiriant Cyfieithu ydych chi'n ymddiried ynddo mwyaf? Rhestrwch yn nhrefn eich gorau, os gwelwch chi'n dda (y gorau ar y top) - defnyddiwch y saethau ↓ ↑ ar y dde i lusgo pob llinell</p> <ol style="list-style-type: none"> 1. Amazon Translate 2. Bing Translator 3. Google Translate 4. Microsoft Translator 5. Yandex 																						
28	<p>Would you TRUST the following technology when translating?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee ></p> </td> <td style="width: 50%; vertical-align: top;"> <p><input type="radio"/> Definitely Not <input type="radio"/> Probably Not <input type="radio"/> Possibly <input type="radio"/> Probably <input type="radio"/> Definitely <input type="radio"/> Never heard of it!</p> </td> </tr> </table>	<p>DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee ></p>	<p><input type="radio"/> Definitely Not <input type="radio"/> Probably Not <input type="radio"/> Possibly <input type="radio"/> Probably <input type="radio"/> Definitely <input type="radio"/> Never heard of it!</p>	<p>Byddet ti'n YMDDIRIED yn y dechnoleg ganlynol pam yn cyfieithu?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator> OmegaT > Passolo > Systran > Trados > Yandex > Wordbee ></p> </td> <td style="width: 50%; vertical-align: top;"> <p><input type="radio"/> Yn bendant ddim <input type="radio"/> Mwy na thebyg na <input type="radio"/> Efallai <input type="radio"/> Mwy na thebyg na <input type="radio"/> Yn bendant <input type="radio"/> Byth wedi clywed amdano!</p> </td> </tr> </table>	<p>DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator> OmegaT > Passolo > Systran > Trados > Yandex > Wordbee ></p>	<p><input type="radio"/> Yn bendant ddim <input type="radio"/> Mwy na thebyg na <input type="radio"/> Efallai <input type="radio"/> Mwy na thebyg na <input type="radio"/> Yn bendant <input type="radio"/> Byth wedi clywed amdano!</p>																		
<p>DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee ></p>	<p><input type="radio"/> Definitely Not <input type="radio"/> Probably Not <input type="radio"/> Possibly <input type="radio"/> Probably <input type="radio"/> Definitely <input type="radio"/> Never heard of it!</p>																							
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29	<p>Do you think translation technology makes translating more difficult or easier?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p style="display: flex; justify-content: space-between;">DifficultEasier</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Ydych chi'n meddwl bod technoleg cyfieithu yn wneud cyfieithu yn fwy anodd neu yn hawsach?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p style="display: flex; justify-content: space-between;">AnoddHawsach</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														
30	<p>How much do you think use of translation technology has impacted the translation process in your organisation?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p style="display: flex; justify-content: space-between;">Not at allVery much so</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Faint yr ydych chi'n meddwl bod y defnydd o dechnoleg cyfieithu wedi effeithio ar y proses o gyfieithu mewn eich cyfundrefn?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p style="display: flex; justify-content: space-between;">Dim o gwblYn fawr iawn</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														
31	<p>How much do you think use of translation technology speeds up the translation process?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p style="display: flex; justify-content: space-between;">Not at allVery much so</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Faint yr ydych chi'n meddwl bod y defnydd o dechnoleg cyfieithu yn cyflymu'r proses o gyfieithu?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p style="display: flex; justify-content: space-between;">Dim o gwblYn fawr iawn</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														
32	<p>How is the translation workflow carried out in your workplace?</p>	<p>Sut mae'r llif gwaith cyfieithu yn cael ei wneud yn eich gweithle?</p>																						

	<p>For example: Receive Translation > Assigned to internal translator > Receive translation back > Assign to proofreader > Receive proofread translation back > Quality check > Return to original sender. If you have a document that explains this better, then please email [REDACTED]</p>	<p>Er enghraifft: Derbyn Cyfieithiad > Neilltuo cyfieithydd mewnol > Derbyn y cyfieithiad yn ôl > Neilltuo prawfddarlennydd > Gwirio'r ansawdd > Dychwelid i'r anfonwr gwreiddiol. Os oes gennych chi ddogfen sydd yn esbonio hyn yn well, wedyn, e-bostiwch [REDACTED], os gwelwch chi'n dda</p>																						
33	<p>What is the lead time on any translation you receive?</p> <ul style="list-style-type: none"> <input type="radio"/> Less than 24 hours <input type="radio"/> 1 - 2 days <input type="radio"/> 2 - 3 days <input type="radio"/> 3 - 5 days <input type="radio"/> 5 - 7 days <input type="radio"/> 7 - 10 days <input type="radio"/> More than 10 days <input type="radio"/> We don't have a lead time <input type="radio"/> I have no idea 	<p>Beth yw'r amser aros bras ar unrhyw gyfieithiad a dderbyniwch?</p> <ul style="list-style-type: none"> <input type="radio"/> Llai na 24 awr <input type="radio"/> 1 - 2 diwrnod <input type="radio"/> 2 - 3 diwrnod <input type="radio"/> 3 - 5 diwrnod <input type="radio"/> 5 - 7 diwrnod <input type="radio"/> 7 - 10 diwrnod <input type="radio"/> Mwy na 10 diwrnod <input type="radio"/> Nid oes gennym amser aros <input type="radio"/> Does gen i ddim clem 																						
34	<p>How likely are you deliver a translation on time?</p> <table border="1"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Not at all likely Extremely likely</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Pa mor debygol ydych chi o ddychwelyd cyfieithiad ar amser?</p> <table border="1"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Dim yn debygol o gwbl Yn hynod o debygol</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
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35	<p>Do you have any comments about translation technology today? Do comment freely, your response is anonymous.</p>	<p>Os gennych sylwadau am y dechnoleg cyfieithu heddiw? Rhwch sylwadau'n rhydd, mae eich ymateb yn anhysbys.</p>																						

THE FUTURE

Y DYFODOL

	How do you feel about being a translator and the future? Are you very worried, excited, or confused?	Sut yr ydych yn teimlo am fod yn gyfieithydd ac am y dyfodol? Ydych chi'n poeni, yn gyffroes neu yn ddryslud iawn?
36	<p>The future of the translation industry ></p> <p>A translator in ten years' time ></p> <p>The role of a translator changing ></p> <p>Machines taking over translating content ></p>	<p>○ Very worried</p> <p>○ Slightly worried</p> <p>○ Neither worried nor excited</p> <p>○ Slightly excited</p> <p>○ Very excited</p> <p>○ I am confused</p> <p>Dyfodol y diwydiant Cyfieithu ></p> <p>Cyfieithydd ymhen deg mlynedd ></p> <p>Mae rôl cyfieithydd yn newid ></p> <p>Peiriannau yn cymryd dros gynnwys cyfieithu ></p>
37	<p>Imagine we are now in 2035, how may a translator's job be different?</p> <p>I am interested in your thoughts on how technology will affect the future of translation.</p>	<p>Dychmygwch ein bod ni nawr yn 2035, sut gall swydd cyfieithydd fod yn wahanol? Mae gen i ddiddordeb yn eich syniadau am sut y bydd technoleg yn effeithio ar y dyfodol o gyfieithu.</p>

QUALITY CONTROL

RHEOLI ANSAWDD

38	<p>How much do you think using translation technology improves the quality of your translations?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Not at all Very much so</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Faint ydych chi'n meddwl bod defnyddio technoleg cyfieithu yn gwella'r ansawdd o eich cyfieithiadau?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Dim o gwbl Yn fawr iawn</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														
39	<p>Is there a Quality Control Standard such as an International Standard (ISO 17100:2015) in place or an equivalent (specifically for the public sector in Wales)?</p> <p>○ Yes</p> <p>○ No</p> <p>○ Maybe</p>	<p>Oes yna Safon Rheoli Ansawdd megis Safon Ryngwladol (ISO 17100:2015) mewn lle neu gyfwerth (yn benodol ar gyfer y sector cyhoeddus yng Nghymru)?</p> <p>○ Oes</p> <p>○ Nac oes</p> <p>○ Efallai</p>																						
40	<p>How do you measure the quality of each translation completed? Are there any specific checks in place? Please explain your answers to the above</p>	<p>Sut ydych yn fesur yr ansawdd o bob cyfieithiad wedi'i gwblhau? Oes yna unrhyw wiriadau penodol mewn lle? Esboniwch eich atebion i'r uchod, os gwelwch chi'n dda</p>																						

	Answer the following questions:	Atebwch y cwestiynau canlynol:		
41	<p>Do you ever translate without using technology (such as CAT tools or Translation Management Tools)? ></p> <p>Do you always use a proofreader? ></p> <p>Do you always quality-check before sending a document back? ></p>	<ul style="list-style-type: none"> <input type="radio"/> Never <input type="radio"/> Rarely <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Always 	<p>Ydych chi erioed yn cyfieithu heb ddefnyddio technoleg (megis offer Cyfieithu gyda chymorth cyfrifiadur (CAT tools) neu Offer Rheoli Cyfieithu)? ></p> <p>Ydych chi pob amser yn defnyddio prawfddarllennydd?></p> <p>Ydych chi pob amser yn gwirio'r ansawdd cyn danfon dogfen yn ôl? ></p>	<ul style="list-style-type: none"> <input type="radio"/> Byth <input type="radio"/> Go brin <input type="radio"/> Yn aml <input type="radio"/> Weithiau <input type="radio"/> Bod tro
42	<p>Who oversees the technology in your department? Are they one of the following?</p> <ul style="list-style-type: none"> <input type="radio"/> Technician (IT professional) with no linguistic skills <input type="radio"/> Technician (IT professional) with linguistic skills <input type="radio"/> A linguist in the department <input type="radio"/> An admin within the organisation <input type="radio"/> Other 	<p>Pwy sy'n arolygu'r dechnoleg yn eich adran? Ydyn nhw'n un o'r canlynol?</p> <ul style="list-style-type: none"> <input type="radio"/> Technegydd (gweithiwr proffesiynol TG) heb sgiliau ieithyddol <input type="radio"/> Technegydd (gweithiwr proffesiynol TG) gyda sgiliau ieithyddol <input type="radio"/> Ieithydd yn yr adran <input type="radio"/> Gweinyddwr y gyfundrefn <input type="radio"/> Arall 		

	Do you agree with the following statements?		Ydych chi'n cytuno gyda'r datganiadau canlynol?	
43	<p>We receive regular training to keep us up to date with technology ></p> <p>I have too much work to do ></p> <p>I have too little work to do ></p> <p>My work is respected and valued by others ></p> <p>I feel overwhelmed by my workload ></p> <p>I always meet expected turnaround times ></p> <p>We are trained on matters of Cyber Security and kept up to date ></p> <p>We are trained on Intellectual Property ></p> <p>We have been trained on the Welsh Standard and know how to comply with it ></p> <p>Each of our translations are quality checked ></p> <p>The Welsh Standards makes everything so much more difficult ></p>	<p><input type="radio"/> Strongly</p> <p><input type="radio"/> Disagree</p> <p><input type="radio"/> Disagree</p> <p><input type="radio"/> Neither Agree nor Disagree</p> <p><input type="radio"/> Agree</p> <p><input type="radio"/> Strongly Agree</p> <p><input type="radio"/> n/a</p>	<p>Rydym yn derbyn hyfforddiant cyson i'n diweddarau ni a'r dechnoleg ></p> <p>Mae gen i ormod o waith i'w wneud ></p> <p>Nid oes gen i ddigon o waith I wneud ></p> <p>Mae fy ngwaith wedi'i pharchu a'l gwerthu gan eraill ></p> <p>Rwy'n teimlo fy mod wedi gorlethu gan lwyth o waith ></p> <p>Rwyf bob amser yn cwrdd â'r amseroedd gwblhau disgwylidig ></p> <p>Rydym wedi ein hyfforddi ar faterion gwarchodaeth seibr ac yn cael y wybodaeth ddiweddaraf ></p> <p>Rydym wedi cael hyfforddiant am Eiddo Deallol ></p> <p>Rydym wedi cael ein hyfforddi ar y Safon Gymraeg ac yn gwybod sut i gydymffurfio ag ef ></p> <p>Mae ansawdd o bob ein cyfieithiadau wedi'u gwirio ></p> <p>Mae'r Safon Gymraeg yn wneud popeth yn fwy anodd ></p>	<p><input type="radio"/> Anghytuno'n Gryf</p> <p><input type="radio"/> Anghytuno</p> <p><input type="radio"/> Dim yn cytuno na'n anghytuno</p> <p><input type="radio"/> Cytuno</p> <p><input type="radio"/> Cytuno'n Gryf</p> <p><input type="radio"/> Yn Amherthna sol</p>

FINALLY**AC YN OLAF**

44	<p>Do you think that combining resources such as generic Translation Memories and Termbases with other public sector organisations would be helpful?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Maybe 	<p>Ydych chi'n meddwl bydd cyfuno adnoddau megis Cofion Cyfieithu (TM) a Basau Term (TB) generig gyda chymunedau sector cyhoeddus eraill yn ddefnyddiol?</p> <ul style="list-style-type: none"> <input type="radio"/> Ydw <input type="radio"/> Nac Ydw <input type="radio"/> Efallai
45	<p>Would you be willing to take part in a focus group to give your opinions about technology in the translation industry? Ps. don't worry you can say no!</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Maybe 	<p>A fydddech chi'n fodlon cymryd rhan mewn grŵp ffocws i roi eich barn am dechnoleg yn y diwydiant cyfieithu? ôl-nodyn, peidiwch â phoeni gallwch chi ddweud na!</p> <ul style="list-style-type: none"> <input type="radio"/> Byddwn i yn fodlon <input type="radio"/> Ni fyddwn i yn fodlon <input type="radio"/> Efallai
46	<p>Thank you for agreeing to take part in a focus group, please provide your email below so I can get in touch with you.</p>	<p>Diolch am gytuno i gymryd rhan yn y grŵp ffocws, darparwch eich e-bost isod er mwyn i fi cysylltu â chi, os gwelwch chi'n dda.</p>
47	<p>Thank you for completing this survey, your response is greatly appreciated. Please rate how you feel about the translation industry right now 1 star =dislike 5 stars = Love it! *****</p>	<p>Diolch am gwblhau'r arolwg, gwerthfawrogi eich ymateb yn fawr. Graddiwch sut rydych yn teimlo am y diwydiant cyfieithu ar hyn o fryd, os gwelwch chi'n dda :-) 1 seren = Dim yn hoffi. 5 sêr = yn ei charu! *****</p>
48	<p>If you want to be entered into the draw for £25 Amazon Vouchers, then just provide your email and I will let you know if you have won. Good luck!</p>	<p>Os hoffech chi gael eich cofrestru mewn i'r raffl am Dalebau Amazon werth £25 yna darparwch eich e-bost yn unig a byddaf yn rhoi gwybod i chi os ydych wedi ennill. Pob lwc!</p>

APPENDIX 16: SURVEY OF BA/MA TRANSLATION (STUDENTS AND RECENTLY QUALIFIED TRANSLATORS) - ENGLISH AND WELSH

	ABOUT YOU	AMDANOCH CHI
2	<p>What is your gender?</p> <ul style="list-style-type: none"> <input type="radio"/> Female <input type="radio"/> Male <input type="radio"/> Prefer not to say 	<p>Beth yw eich rhyw?</p> <ul style="list-style-type: none"> <input type="radio"/> Benyw <input type="radio"/> Gwryw <input type="radio"/> Mae'n well gen i beidio â dweud
3	<p>What is your age?</p> <ul style="list-style-type: none"> <input type="radio"/> 18-24 <input type="radio"/> 25-34 <input type="radio"/> 35-44 <input type="radio"/> 45-54 <input type="radio"/> 55-64 <input type="radio"/> 65+ <input type="radio"/> Prefer not to say 	<p>Beth yw eich oedran?</p> <ul style="list-style-type: none"> <input type="radio"/> 18-24 <input type="radio"/> 25-34 <input type="radio"/> 35-44 <input type="radio"/> 45-54 <input type="radio"/> 55-64 <input type="radio"/> 65+ <input type="radio"/> Mae'n well gen i beidio â dweud
4	<p>What is your Nationality?</p> <ul style="list-style-type: none"> <input type="radio"/> Welsh <input type="radio"/> English <input type="radio"/> Irish <input type="radio"/> Scottish <input type="radio"/> Western Europe <input type="radio"/> Mediterranean & Middle East <input type="radio"/> Central and Eastern Europe <input type="radio"/> Asian <input type="radio"/> American <input type="radio"/> Other 	<p>Beth yw dy genedligrwydd?</p> <ul style="list-style-type: none"> <input type="radio"/> Cymro/Cymraes <input type="radio"/> Sais/Saesnes <input type="radio"/> Gwyddel/Gwyddeles <input type="radio"/> Albanaid <input type="radio"/> Ewropeaidd Gorllewinol <input type="radio"/> Canoldirol ac o'r Dwyrain Canol <input type="radio"/> Ewropeaidd Canolog a Dwyrainol <input type="radio"/> Asiaidd <input type="radio"/> Americanaidd <input type="radio"/> Arall
5	<p>Have you decided what you would like to do once you have finished your BA/MA? Please select from below:</p> <ul style="list-style-type: none"> <input type="radio"/> Interpreter <input type="radio"/> Freelance Translator <input type="radio"/> In-House Translator <input type="radio"/> Project Manager at an agency <input type="radio"/> I don't know, not a clue! 	<p>Wyt ti wedi dewis beth hoffet ti wneud unwaith y byddet ti wedi gorffen dy BA/MA? Dewis o'r isod, os gweli di'n dda:</p> <ul style="list-style-type: none"> <input type="radio"/> Cyfieithydd ar y pryd <input type="radio"/> Cyfieithydd annibynnol <input type="radio"/> Cyfieithydd mewnol <input type="radio"/> Rheolwr prosiect mewn asiantaeth <input type="radio"/> Nid ydw i'n gwybod, does gen i ddim clem!
6	<p>What is your course name and where are you studying?</p>	<p>Beth yw enw dy gwrs and ble wyt ti'n astudio?</p>
7	<p>Have you chosen a sector you would like to specialise in, please select from the options below:</p> <ul style="list-style-type: none"> <input type="radio"/> Medicine <input type="radio"/> Law <input type="radio"/> Technology <input type="radio"/> Literature <input type="radio"/> Public sector/Government <input type="radio"/> Other 	<p>Wyt ti wedi dewis y sector a fyddet ti'n hoffi arbenigo mewn? Dewis o'r opsiynau isod, os gweli di'n dda:</p> <ul style="list-style-type: none"> <input type="radio"/> Meddygaeth <input type="radio"/> Cyfraith <input type="radio"/> Technoleg <input type="radio"/> Llenyddiaeth <input type="radio"/> Sector Cyhoeddus/Llywodraeth <input type="radio"/> Arall

8.	Have you carried out any 'professional translation' work yet (as in you have been paid for your translation)? <input type="radio"/> Yes <input type="radio"/> No	Wyt ti wedi gwneud unrhyw waith 'cyfieithu proffesiynol' eto (fel dy fod wedi cael dy dalu am dy gyfieithiad)? <input type="radio"/> Ydw <input type="radio"/> Nac ydw
9	If you said 'yes' to number 3, how much professional translation experience do you have? <input type="radio"/> 0-1 years <input type="radio"/> 1-2 years <input type="radio"/> 2-5 years <input type="radio"/> 5-10 years <input type="radio"/> More than 10 years	Os atebest ti 'Ydw' i rhif 8, faint o profiad cyfieithu profesiynol sydd gen ti? <input type="radio"/> Flwyddyn <input type="radio"/> 1-2 flynedd <input type="radio"/> 2-5 flynedd <input type="radio"/> 5-10 flynedd <input type="radio"/> Mwy na 10 blynedd

TECHNOLOGY

DECHNOLEG

10	What are your thoughts about using translation technology tools such as CAT tools, Translation Memories, Machine Translation and Post-editing etc. Honesty is very important here. <input type="radio"/> I'm excited about it <input type="radio"/> I love it <input type="radio"/> I like it <input type="radio"/> It's okay <input type="radio"/> I don't like it <input type="radio"/> It's terrible <input type="radio"/> I am worried about it	Beth yw fy meddyliau am ddefnyddio technoleg cyfieithu megis offer cyfieithu gyda chymorth cyfrifiadur (CAT tools), Cofion Cyfieithu (TM), Peiriant Cyfieithu ac ôl-olygu a.y.b. Mae gonestrwydd yn bwysig iawn yma. <input type="radio"/> Rwy'n gyffroes amdano fe <input type="radio"/> Rwy'n ei charu <input type="radio"/> Rwy'n ei hoffi <input type="radio"/> Mae'n iawn <input type="radio"/> Nid wyf yn ei hoffi <input type="radio"/> Mae'n ofnadwy <input type="radio"/> Rwy'n poeni amdano fe
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11	Translation Technology How do you feel about the using the following tools when completing your translations?	Technoleg Cyfieithu Byddet ti yn defnyddio'r offer canlynol wrth gwblhau eich cyfieithiadau?	
	<p>CAT tools such as Trados, Systran, Memsource etc. ></p> <p>Machine Translation such as Google Translate, Microsoft Translator etc. ></p> <p>Translation Management Tools such as Wordbee, Smartcat, Smartling etc.></p>	<input type="radio"/> Won't use <input type="radio"/> Probably won't use <input type="radio"/> Maybe will use <input type="radio"/> Probably will use <input type="radio"/> Definitely will use <input type="radio"/> Can't work without it!	<p>Offer cyfieithu gyda chymorth cyfrifiadur (CAT tools) megis Trados, Systran, Memsource a.y.b.></p> <p>Peiriant Cyfieithu megis Google Translate, Microsoft Translator a.y.b.></p> <p>Offer Rheoli Cyfieithu megis Wordbee, Smartcat, Smartling a.y.b.></p>

12	<p>List the Translation Tools in order of preference. Use the arrows on. the right ↓↑ to drag each line</p> <ul style="list-style-type: none"> ○ DéjàVu ○ Google Translate ○ MemoQ ○ Memsourc ○ Microsoft Translator ○ OmegaT ○ Passolo ○ Systran ○ Trados ○ Wordbee 	<p>Rhestru'r Offer Cyfieithu mewn trefn dy orau. Defnyddia'r saethau ar y dde ↓↑ i lusgo pob llinell</p> <ul style="list-style-type: none"> ○ DéjàVu ○ Google Translate ○ MemoQ ○ Memsourc ○ Microsoft Translator ○ OmegaT ○ Passolo ○ Systran ○ Trados ○ Wordbee 				
13	<p>Have you ever used Machine Translation (such as Google Translate) to translate content and then post-edit the text?</p> <ul style="list-style-type: none"> ○ Yes ○ No 	<p>Wyt ti erioed wedi defnyddio Peiriant Cyfieithu (megis Google Translate) i gyfieithu cynnwys ac wedyn ôl-olygu'r testun?</p> <ul style="list-style-type: none"> ○ Ydw ○ Nac ydw 				
14	<p>How often do you USE the following Machine Translation tools before postediting?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 40%; vertical-align: top;"> <ul style="list-style-type: none"> Google Translate > Microsoft Translator > Wordbee > Yandex > Amazon Translate > Bing Translator > </td> <td style="width: 20%; vertical-align: top;"> <ul style="list-style-type: none"> ○ Daily ○ Weekly ○ Monthly ○ 3 monthly ○ Annually ○ Never </td> </tr> </table>	<ul style="list-style-type: none"> Google Translate > Microsoft Translator > Wordbee > Yandex > Amazon Translate > Bing Translator > 	<ul style="list-style-type: none"> ○ Daily ○ Weekly ○ Monthly ○ 3 monthly ○ Annually ○ Never 	<p>Pa mor aml wyt ti'n DEFNYDDIO'R offer Peiriant Cyfieithu canlynol cyn ôl-olygu?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 40%; vertical-align: top;"> <ul style="list-style-type: none"> Google Translate > Microsoft Translator > Wordbee > Yandex > Amazon Translate > Bing Translator > </td> <td style="width: 20%; vertical-align: top;"> <ul style="list-style-type: none"> ○ Dyddiol ○ Wythnosol ○ Misol ○ 3 misol ○ Blynnyddol ○ Byth </td> </tr> </table>	<ul style="list-style-type: none"> Google Translate > Microsoft Translator > Wordbee > Yandex > Amazon Translate > Bing Translator > 	<ul style="list-style-type: none"> ○ Dyddiol ○ Wythnosol ○ Misol ○ 3 misol ○ Blynnyddol ○ Byth
<ul style="list-style-type: none"> Google Translate > Microsoft Translator > Wordbee > Yandex > Amazon Translate > Bing Translator > 	<ul style="list-style-type: none"> ○ Daily ○ Weekly ○ Monthly ○ 3 monthly ○ Annually ○ Never 					
<ul style="list-style-type: none"> Google Translate > Microsoft Translator > Wordbee > Yandex > Amazon Translate > Bing Translator > 	<ul style="list-style-type: none"> ○ Dyddiol ○ Wythnosol ○ Misol ○ 3 misol ○ Blynnyddol ○ Byth 					
15	<p>Would you TRUST the following technology when translating?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 40%; vertical-align: top;"> <ul style="list-style-type: none"> DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee > </td> <td style="width: 20%; vertical-align: top;"> <ul style="list-style-type: none"> ○ Definitely Not ○ Probably Not ○ Possibly ○ Probably ○ Definitely ○ Never heard of it! </td> </tr> </table>	<ul style="list-style-type: none"> DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee > 	<ul style="list-style-type: none"> ○ Definitely Not ○ Probably Not ○ Possibly ○ Probably ○ Definitely ○ Never heard of it! 	<p>Byddet ti'n YMDDIRIED yn y dechnoleg ganlynol pam yn cyfieithu?</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 40%; vertical-align: top;"> <ul style="list-style-type: none"> DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee > </td> <td style="width: 20%; vertical-align: top;"> <ul style="list-style-type: none"> ○ Yn bendant ddim ○ Mwy na thebyg na ○ Efallai ○ Mwy na thebyg ○ Yn bendant ○ Byth wedi clywed amdano! </td> </tr> </table>	<ul style="list-style-type: none"> DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee > 	<ul style="list-style-type: none"> ○ Yn bendant ddim ○ Mwy na thebyg na ○ Efallai ○ Mwy na thebyg ○ Yn bendant ○ Byth wedi clywed amdano!
<ul style="list-style-type: none"> DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee > 	<ul style="list-style-type: none"> ○ Definitely Not ○ Probably Not ○ Possibly ○ Probably ○ Definitely ○ Never heard of it! 					
<ul style="list-style-type: none"> DéjàVu > Google Translate > MemoQ > Memsourc > Microsoft Translator > OmegaT > Passolo > Systran > Trados > Yandex > Wordbee > 	<ul style="list-style-type: none"> ○ Yn bendant ddim ○ Mwy na thebyg na ○ Efallai ○ Mwy na thebyg ○ Yn bendant ○ Byth wedi clywed amdano! 					
16	<p>Which Machine Translation tool do you trust more? Place in order of importance. Use the arrows on. the right ↓↑ to drag each line</p>	<p>Pa offeryn Peiriant Cyfieithu wyt ti'n ymddiried ynddo mwyaf? Rhestru yn nhrefn eu pwysigrwydd. Defnyddia'r saethau ar y dde ↓↑ i lusgo</p>				

	<ul style="list-style-type: none"> ○ Amazon Translate ○ Bing Translator ○ Google Translate ○ Microsoft Translator ○ Yandex ○ Wordbee 	<p>pob llinell</p> <ul style="list-style-type: none"> ○ Amazon Translate ○ Bing Translator ○ Google Translate ○ Microsoft Translator ○ Yandex ○ Wordbee 																						
17	<p>Why do you like your favourite tool? Place in order of importance. Use the arrows on. the right ↓↑ to drag each line</p> <ul style="list-style-type: none"> ○ A well-recognised brand ○ Cloud-based Tool ○ Easy to use ○ Price ○ Training Provided ○ I don't like them at all ○ I hate them, something always goes wrong 	<p>Pam wyt ti'n hoffi dy offer gorau? Rhestru yn nhrefn eu pwysigrwydd. Defnyddia'r saethau ar y dde ↓↑ i lusgo pob llinell</p> <ul style="list-style-type: none"> ○ Brand cydnabyddedig iawn ○ Offeryn sy'n seiliedig ar y 'Cloud' ○ Hawdd i ddefnyddio ○ Y pris ○ Hyfforddiant wedi'i darparu ○ Nid ydw i'n hoffi nhw o gwbl ○ Rwy'n casáu nhw, mae rhywbeth yn mynd yn anghywir bod tro 																						
18	<p>Do you think translation technology makes translating more difficult or easier?</p> <p>0= not at all 10=Very much</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Difficult Easier</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Wyt ti'n meddwl bod technoleg cyfieithu yn wneud cyfieithu yn fwy anodd neu yn hawsach?</p> <p>0= Dim o gwbl. 10=Yn fawr iawn</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Anodd Hawsach</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														
19	<p>How much do you think translation technology helps the translation process?</p> <p>0= not a lot at all. 10=Very much</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Not at all Very much</p>	0	1	2	3	4	5	6	7	8	9	10	<p>Faint wyt ti'n meddwl fod technoleg cyfieithu yn helpu'r proses cyfieithu?</p> <p>0= Dim o gwbl. 10=Yn fawr iawn</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Dim o gwbl Yn fawr iawn</p>	0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10														
0	1	2	3	4	5	6	7	8	9	10														

	The Future	Y Dyfodol
	Are you worried or excited about being a translator and the future?	Wyt ti'n poeni neu yn gyffroes iawn am fod yn gyfieithydd ac am y dyfodol?
20	<p>The future of the translation industry ></p> <p>A translator in ten years' time ></p> <p>The role of a translator Changing ></p> <p>Machines taking over translating content ></p> <ul style="list-style-type: none"> ○ Very worried ○ Slightly Worried ○ Neither worried nor excited ○ Slightly excited ○ Very excited 	<p>Dyfodol y diwydiant cyfieithu ></p> <p>Cyfieithydd ymhen deg mlynedd ></p> <p>Mae rôl cyfieithydd yn newid ></p> <p>Peiriannau yn cymryd dros gynnwys cyfieithu ></p> <ul style="list-style-type: none"> ○ Yn poeni'n llawer ○ Ychydig yn bryderus ○ Ddim yn poeni nac yn gyffroes ○ Ychydig yn gyffroes ○ Gyffroes iawn
21	Imagine we are now in 2035, describe a translator's job and how it may differ from today. I am interested in your thoughts on how technology will affect the future of translation.	Dychmyga ein bod ni nawr yn 2035, disgrifia swydd cyfieithydd a sut gall e newid o heddiw. Mae gen i diddordeb yn dy syniadau am sut y bydd technoleg yn effeithio ar y dyfodol o gyfieithu.
22	Do you have any comments about the use of technology in the translation industry? Do comment freely, your response is anonymous.	Oes gen ti unrhyw sylwadau ynglŷn â'r dechnoleg yn y diwydiant cyfieithu? Rho sylwadau'n rhydd, mae dy ymateb yn anhysbys.
23	<p>If there was one thing you could change about technology in the translation industry, what would it be?</p> <p>You can select more than one answer here</p> <ul style="list-style-type: none"> <input type="checkbox"/> More training <input type="checkbox"/> Less confusion on whether they are accurate or not <input type="checkbox"/> Make the technology less complicated <input type="checkbox"/> Free training please! <input type="checkbox"/> Make it cheaper! <input type="checkbox"/> No, get rid of it! 	<p>Os mae yna un peth gallet ti newid am dechnoleg yn y diwydiant cyfieithu, beth fydda fe?</p> <p>Gellir dewis mwy nag un ateb yma</p> <ul style="list-style-type: none"> <input type="checkbox"/> Mwy o hyfforddiant <input type="checkbox"/> Llai o ddryswch ynghylch a ydyn nhw'n gywir neu beidio <input type="checkbox"/> Creu'r dechnoleg yn llai cymhleth <input type="checkbox"/> Hyfforddiant am ddim, os gwelwch yn dda! <input type="checkbox"/> Ei gwneud yn rhatach! <input type="checkbox"/> Na, cael gwared ohono!
24	<p>Would you be willing to take part in a focus group to give your opinions about technology in the translation industry? ps. don't worry you can say no!</p> <ul style="list-style-type: none"> ○ Yes ○ No 	<p>A fyddet ti'n fodlon cymryd rhan mewn grŵp ffocws i roi dy farn am dechnoleg yn y diwydiant cyfieithu? Ôl-nodyn, peidia â phoeni gellir dweud na!</p> <ul style="list-style-type: none"> ○ Byddwn yn fodlon ○ Ni fyddwn yn fodlon
25	Thank you for agreeing to take part in a focus group, please provide your email below so I can get in touch with you.	Diolch am gytuno i gymryd rhan yn y grŵp ffocws, darpara dy e-bost isod er mwyn i fi cysylltu â thi, os gweli di'n dda.

26	<p>Thank you for completing this survey, your response is greatly appreciated. Please rate how you feel about the translation industry right now.</p> <p>1 star =dislike 5 stars =Love it! *****</p>	<p>Diolch am gwblhau'r arolwg, gwerthfawrogir eich ymateb yn fawr. Graddiwch sut wyt ti'n teimlo am y diwydiant cyfieithu ar hyn o fryd, os gweli di'n dda.</p> <p>1 seren = Dim yn hoffi 5 sêr = yn ei charu! *****</p>
27	<p>If you want to be entered into the draw for £25 Amazon Vouchers, then just provide your email and I will let you know if you have won. Good luck!</p>	<p>Os hoffet ti gael dy gofrestru mewn i'r raffl am Dalebau Amazon werth £25 yna darpara dy e- bost yn unig a byddaf yn rhoi gwybod i ti os wyt wedi ennill. Pob lwc!</p>

APPENDIX 17: QUESTIONNAIRE FOR TRANSLATION DEPARTMENTS

1. How many staff members work in your Translation Department? For example, 3 full-time (37 hours) and 2 part-time (18 hours).
2. Do you have an organisational structure for your Translation Department? If not, can you explain the structure of your department? Feel free to send an attachment via email to [REDACTED]. I do not need names, just job titles.
3. Do you outsource translations, proofreading and or post-editing work?
4. Which languages do you outsource?
5. Roughly what proportion of your translations are outsourced? For example, 25%
6. When a new member of staff begins work in your department, do they complete an induction? Is there an induction booklet/guide related specifically to your Translation Department? If so, would you send me a copy for my records?
7. Are there any skills you specifically look for as an in-house translator? If so, are there any new skill sets that are becoming more desired from potential applicants?
8. Do you distribute information to staff so they comply with the Welsh Standard? For example, instructions on when they need to ask for a translation and how? If so, would you send the information to me?
9. I need to understand your translation workflow procedure. For example, when you receive a translation request through to sending the translation back to the originator. Do you have anything you could send? (Applicable to the Welsh Government only as no information was provided from a survey).

APPENDIX 18: ANSWERS TO QUESTIONNAIRE FROM SWANSEA COUNCIL

Questions from Questionnaire	Swansea Council
1 How many staff members work in your Translation Department?	6 staff members, employed jointly by Swansea Council and Neath Port Talbot Council (Neath Port Talbot pay the salaries of 1.5 members of the unit). All 6 staff members work 37 hours a week.
2 Do you have an organisational structure for your Translation Department? If not, can you explain the structure of your department.	We used to be a part of a much bigger unit (up to 14 members of staff, including a manager and an office manager who used to process our internal inbox and job requests), but over the last 3 years various people have left and the council has not filled these positions. This leaves us with our current staffing structure, which consists of 3 'senior' translators (all in honorarium positions since June 2019) and 3 translators. The senior translators proofread all documents produced within the unit. All 6 members of the unit each take a turn managing the internal inbox and we now have to process each request ourselves, on top of our daily duties.
3 Do you outsource translations, proofreading and or post-editing work?	We have been outsourcing over the last 2-3 years since our manager and most of our senior members left the unit. We usually outsource larger documents over 10,000 words which are required within a tight timeframe. We encourage clients to review their deadlines before we outsource, but due to consultation deadlines many documents are needed urgently therefore we use a local translation company.
3 Which languages do you outsource?	English > Welsh
5 Roughly what proportion of your translations are outsourced?	Anything with an unachievable deadline – we have a translation timescale chart that staff members should refer to before submitting a translation request (see below in red). If the client has requested a document within an unsuitable timescale, we will query what the absolute deadline is for that document, before ensuring there is capacity within the unit to complete this request. If a client were to submit 15,000 words to be returned within one week, we would outsource this, as we cannot keep on top of our daily workflow, let alone larger, last-minute requests. We outsource, on average, 1-2 documents a week. This can range from anything between 6,000 to 50,000 words. No two weeks are ever the same! 5Here is the form used by customers to submit request for translation, available on the council's Staffnet page: Get something translated into Welsh

All information for the public must be available in both Welsh and English to comply with the⁸ Welsh language standards.

The⁹ Welsh translation team carry out all translations on behalf of the council, including proof reading final documents before they are published.

Read more about the Welsh standards and Welsh language within the council

All requests must be made using the online form below - do not contact translators directly, as your request will not be processed.

Please note that at busy times translations may take slightly longer to get back to you, depending on the unit's workflow.

Written translations

- Word document format only. Do not include JPEG or text within images or scanned images. These need to be typed and submitted in a Word document alongside the request.
- Do not duplicate work, check your colleagues haven't already sent the same document to be translated.
- Use the 'any other instructions' box on the online form to specify desired return times for example, by lunchtime on the desired date. If the work is urgent, let us know and we will prioritise accordingly.
- Please refer to the timescales included on the online form when submitting your request. However long it has taken to write, it will take longer to translate and proof read.

Proof reading

- We can accept Word documents as well as PDF form for proof reading only.
- The Translation Unit provides a proofreading service for work which has already been translated.

The Translation Unit accepts no responsibility for work that is not returned for proof reading before printing.

Simultaneous translation

This is a form of translation in which the interpreter translates as quickly as possible while the speaker is still speaking, i.e. live translation.

Please contact the Unit to arrange a simultaneous translator or hire equipment.

Telephone: 01792 636090 or email welsh.translation@swansea.gov.uk

		<p>Translation timescales - General guideline</p> <p>Under 100 words (submitted before 3pm) Same working day where possible</p> <p>Under 500 words (before 3pm) Next working day where possible</p> <p>Up to 1,000 words Within 3 working days</p> <p>Up to 2,000 words Within 5 working days</p> <p>Up to 4,000 words Within 3 weeks</p> <p>Up to 6,000 words Within 6 weeks</p> <p>Up to 10,000 words Within 2 calendar months</p> <p>Over 10,000 words Please contact us in advance to make arrangements: Telephone: 01792 636090 or email welsh.translation@swansea.gov.uk</p>
6	<p>When a new member of staff begins work in your department, do they complete an induction? Is there an induction booklet/guide related specifically to your Translation Department? If so, would you send me a copy for my records?</p>	<p>3 years ago, there would have been a thorough induction process. This would have included the new member of staff starting at a 'trainee translator' level, meaning that they would be focussing on mastering our house style, having their work proofread entirely by one of our most senior staff. This could also include one to one tutoring to work on strengths/weaknesses. All staff members would need to have some basic knowledge of a translation software, but if this were not the case, we would train them on how to use our CAT tool (DVX3 as of October 2021, although we will be migrating to Team Server in the New Year, hopefully). As we have had no new staff members in quite some time, it is difficult to ascertain what our current induction process would entail, but due to our current staffing structure, we would only be able to hire someone at a more senior level as we have reached our capacity within the unit and therefore, we do not have the capacity to train a new staff member from 'trainee' level.</p>
7	<p>Are there any skills you specifically look for as an in-house translator? If so, are there any new skill sets that are becoming more desired from potential applicants?</p>	<p>Many! With regards to a senior translator, we would prefer that they were a member of Cymdeithas Cyfieithwyr Cymru (the association of Welsh translators and interpreters), this sets a standard within the unit as the qualification is obtained by sitting a number of translation exams (3 members in the unit at present, all of which are senior translators). The skills we would look for are attention to detail / the ability to research extensively and apply that to documents / the ability to adapt to a variety of audiences from document to document / someone with a background in linguistics and translation is always a desired skill / someone with excellent Welsh speaking and writing skills (we also offer an in-house</p>

		interpreting service) / good level of technical competence with regards to 7using CAT tools/Word/Outlook/Adobe on a daily basis / ability to work alone as well as part of a team, to a high standard at all times / the ability to work under pressure whilst also ensuring consistency
7	Do you distribute information to staff, so they comply to the Welsh Standard? For example, instructions on when they need to ask for a translation and how? If so, would you send the information to me?	In the past the council has employed staff to monitor and ensure the Welsh Standards are being adhered to, therefore this does not fall on the shoulders of the unit. If the unit received an enquiry with regards to the Standards, we would forward this to the relevant officer.
8	I need to understand your translation workflow procedure. For example, when you receive a translation request through to sending the translation back to the originator. Do you have anything you could send?	This question is only applicable to the Welsh Government as they did not complete the surveys as requested

APPENDIX 19: ANSWERS TO QUESTIONNAIRE FROM SWANSEA UNIVERSITY

Questions from Questionnaire		Swansea University
1	How many staff members work in your Translation Department?	3 full-time (37 hours) 2 part-time (18 hours). 7 members of staff, 5 FT, 1 x term time contract, 1 x 0.6 FTE
2	Do you have an organisational structure for your Translation Department? If not, can you explain the structure of your department.	Head of Dept, 2 Senior Translators and 4 Translators
3	Do you outsource translations, proofreading and or post-editing work?	The university sends work externally due to timescales and lack of resources internally to undertake the work. The unit doesn't send stuff externally.
4	Which languages do you outsource?	Departments send documentation to translate from English to Welsh
5	Roughly what proportion of your translations are outsourced?	For example, 25%, don't have this data
6	When a new member of staff begins work in your department, do they complete an induction? Is there an induction booklet/guide related specifically to your Translation Department? If so, would you send me a copy for my records?	The undertake the University induction course and then the individual is mentored by a senior member of the team.
7	Do you distribute information to staff, so they comply to the Welsh Standard? For example, instructions on when they need to ask for a translation and how? If so, would you send the information to me?	This is available on the staff Intranet or contact the WL officers
8	I need to understand your translation workflow procedure. For example, when you receive a translation request through to sending the translation back to the originator. Do you have anything you could send?	This question is only applicable to the Welsh Government as they did not complete the surveys as requested

APPENDIX 20: ANSWERS TO QUESTIONNAIRE FROM THE WELSH GOVERNMENT

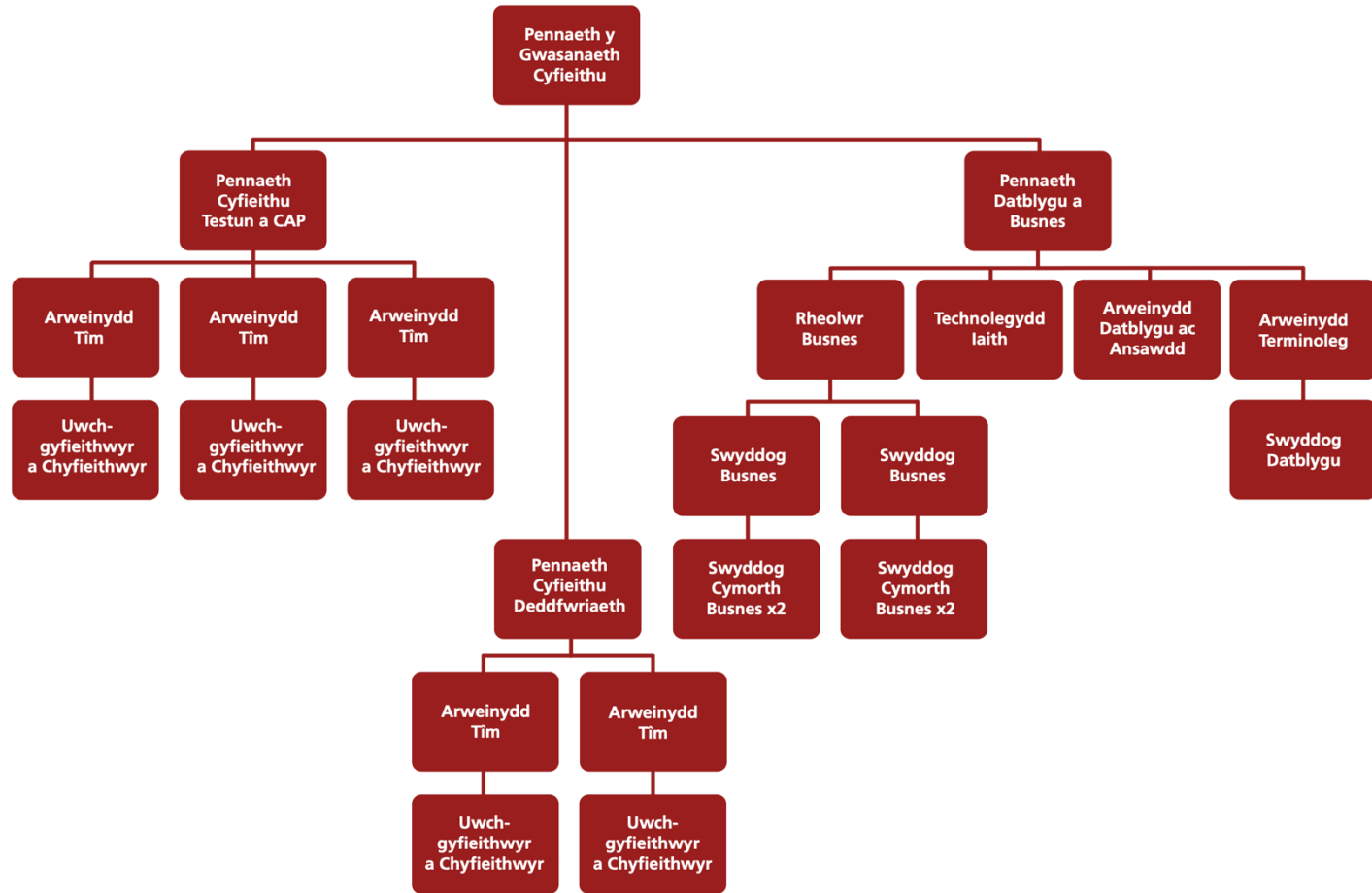
Questions from Questionnaire		The Welsh Government
1	How many staff members work in your Translation Department?	The breakdown of the Welsh Government Translation Service staff, excluding vacancies, as of 1 November 2021 is 37 full time 14 part time
2	Do you have an organisational structure for your Translation Department? If not, can you explain the structure of your department.	The Welsh Government Translation Service outsources translations as required to supplement in-house capacity via the NPS Translation and Simultaneous Interpretation Framework Agreement (NPS-PS-0078-17). The Framework Agreement provides for the possibility of outsourcing proofreading and post-editing work; however, the Translation Service rarely uses this facility.
3	Do you outsource translations, proofreading and or post-editing work?	See below following this table *
4	Which languages do you outsource?	NPS Translation and Simultaneous Interpretation Framework Agreement is used exclusively for English to Welsh and Welsh to English translation and interpretation. Please see the accompanying document for a list of the languages provided under the Crown Commercial Services Language Services Framework, which is available for use by Welsh Government officials, but not used by the Translation Service.
5	Roughly what proportion of your translations are outsourced?	Welsh Government Translation Service outsourced 35% of its translation work in the 2020/21 financial year. This figure can vary greatly from month to month and is dependent on the requirement to support in-house capacity. Information on other languages is not held centrally and I have estimated that it will take longer than the appropriate limit set out in the Freedom of Information and Data Protection

		<p>(Appropriate Limit and Fees) Regulations 2004 to answer your requests. The appropriate limit specified for central government is £600. This represents the estimated cost of it taking over 24 hours of time to determine whether we hold the information and to thereafter locate, retrieve, and extract it.</p> <p>The Welsh Government's finance system does not hold the specific information you have requested and as such, officials would need to review transactions/records to respond.</p> <p>During the current financial year (alone), there have been 4,171 transactions booked to the translation nominal on the Welsh Government's finance system (the nominal describes the category of expenditure). I estimate it would take approximately 3 minutes to extract and review each record categorised as Translation to determine whether any information related to other languages is held and whether any additional % information is recorded – the limit is therefore exceeded (4171 x 3 minutes = 12,513/60 = 208.55 hours).</p>
6	<p>When a new member of staff begins work in your department, do they complete an induction? Is there an induction booklet/guide related specifically to your Translation Department? If so, would you send me a copy for my records?</p>	<p>Every new member of staff joining Welsh Government completes a corporate induction programme which includes:</p> <ul style="list-style-type: none"> •Pre-starter information pack issued to new starters ahead of their start date to prepare for their first day <p>The following are sent direct to the new starter on their first day:</p> <ul style="list-style-type: none"> •Welcome pack, including information and development activities covering their first 12 weeks •Welcome video from the Permanent Secretary •Invitation to attend a corporate induction course which takes place over three sessions over three weeks

		<ul style="list-style-type: none"> • Invitation to attend a programme of welcome events and information sessions covering a range of topics • Invitation to join our online new starter network, hosted through MS Teams <p>In addition, the Welsh Government Translation Service provides a series of presentations for new starters joining the Translation Service. These give an overview of various aspects of the service’s responsibilities and functions, and usually take place during the first two weeks.</p> <p>The Translation Service handbook, provided to all new starters, is tailored to the specific job role. Please see attached copies of the generic sections. The following information is also provided as part of the generic induction into the Translation Service’s work processes. However, the Translation Service is currently in the process of procuring a Translation Memory and termbase solution via Sell2Wales. This could lead to using a different software solution from that specified in the information below</p>
7	<p>Are there any skills you specifically look for as an in-house translator? If so, are there any new skill sets that are becoming more desired from potential applicants?</p>	<p>Please refer to the skills listed in the most recent job advert for translators, available online: https://llyw.cymru/ygyrch-recriwtio-staff-cymorth-tim-2022</p>
8	<p>Do you distribute information to staff, so they comply to the Welsh Standard? For example, instructions on when they need to ask for a translation and how?</p>	<p>Information is provided to all staff, stating that the Welsh Government has a statutory duty to provide many internal and external services in Welsh and that consideration should be given as to when it is appropriate and essential to provide services through another language or accessibility format. More detailed guidance is provided on the staff intranet regarding the specific requirements of the Welsh</p>

	<p>If so, would you send the information to me?</p>	<p>Language Standards, in terms of services, policy making and operational matters. The Welsh Language Standards Team, established at the beginning of 2015, lead on this work, and provide advice and guidance as necessary.</p>
<p>9</p>	<p>I need to understand your translation workflow procedure. For example, when you receive a translation request through to sending the translation back to the originator. Do you have anything you could send?</p>	<p>Guidance is provided on the Welsh Government’s intranet pages on how to commission an English to Welsh or Welsh to English professional translation through the Translation Service, and on commissioning work directly via the NPS Framework Agreement in certain circumstances.</p> <p>The Translation Service requires the requesting department to complete an online translation request form which, once centrally received by our business unit, is assessed and a decision made on whether to deal with the request internally or to outsource depending on the nature, size, and timescale of the work. The completed translation is saved, recorded, and returned to the customer via email.</p> <p>The Translation Service is currently in the process of procuring a Translation Memory and termbase solution via Sell2Wales. The specification includes a workflow system as a desirable service, which would lead to streamlining of the process. Please see the relevant section of the specification below:</p> <p>A Translation Management solution which will allow translation work to be delegated to members of the internal team and to external suppliers while allowing them access to the TS’s repository of Translation Memories and Terminological databases in order to maximise the efficiency of the entire workflow and minimise the cost of external translation.</p> <p>For other languages, please refer to the link under question 3.</p>

10. Do you outsource translations, proofreading and or post-editing work? (This question was only applicable to the Welsh Government as they did not complete the surveys.



NOTES

- ¹ More information is available at: <https://atril.com/product/deja-vu-x3-professional/> accessed 14/09/2022.
- ² More information is available at: <https://www.trados.com/> accessed 14/09/2022.
- ³ More information is available at: <https://www.memoq.com/> accessed 14/09/2022.
- ⁴ More information is available at: <https://www.urdd.cymru/en/> accessed 08/08/2022.
- ⁵ More information is available at: <https://www.legislation.gov.uk/ukpga/1988/40/contents> accessed 26/7/2022.
- ⁶ More information is available at: <https://www.legislation.gov.uk/ukpga/1998/38/contents> accessed 26/7/2022.
- ⁷ More information is available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/2011censusquickstatisticsforwales/2013-01-30> accessed 08/08/2022.
- ⁸ More information is available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/language/bulletins/welshlanguagewales/census2021> accessed 08/02/2023.
- ⁹ More information is available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/2011censusquickstatisticsforwales/2013-01-30> accessed 08/08/2022.
- ¹⁰ More information is available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/2011censusquickstatisticsforwales/2013-01-30> accessed 08/08/2022.
- ¹¹ More information is available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/language/articles/languageinenglandandwales/2013-03-04#welsh-language> accessed 25/07/2022.
- ¹² More information is available at: <https://gov.wales/welsh-language-data-annual-population-survey-2021> accessed 09/08/2022.
- ¹³ More information is available at: <https://gov.wales/welsh-language-data-annual-population-survey-2021> accessed 09/08/2022.
- ¹⁴ More information is available at: <https://gov.wales/welsh-language-data-annual-population-survey-2021> accessed 09/08/2022.
- ¹⁵ More information is available at: <https://gov.wales/welsh-language-data-annual-population-survey-2021> accessed 09/08/2022.
- ¹⁶ More information is available at: <https://gov.wales/welsh-language-data-annual-population-survey-2021> accessed 09/08/2022.
- ¹⁷ More information is available at: <https://gov.wales/written-statement-welsh-language-bill> accessed 10/08/2022.
- ¹⁸ Each version of the Welsh Language Standards is available at: <https://www.legislation.gov.uk/primary+secondary?title=Welsh%20Language%20Standards> accessed 16/08/2022.
- ¹⁹ More information is available at: <https://www.welshlanguagecommissioner.wales/public-organisations/welsh-language-standards/the-imposition-process> accessed 26/09/2022.
- ²⁰ More information is available at: <https://gov.wales/well-being-of-future-generations-wales> accessed 26/07/2022.
- ²¹ More information is available at: <https://cofion.techiaith.cymru/en/articles/welcome> accessed 01/08/2022.

- ²² More information is available at: accessed 01/08/2022.
- ²³ For further information see <https://www.tpsgc-pwgsc.gc.ca/bt-tb/index-eng.html> accessed 20/03/23.
- ²⁴ For further information see: <https://www.tpsgc-pwgsc.gc.ca/bt-tb/gclingua/fournisseurs-suppliers-eng.html#s1> accessed 19/03/2023.
- ²⁵ For further information see: <https://www.rws.com/about/news/2019/canadas-translation-bureau-selects-sdl/> accessed 22/03/2023.
- ²⁶ For further information see <https://www.rws.com/about/news/2019/canadas-translation-bureau-selects-sdl/> accessed 22/03/2023.
- ²⁷ For further information see: <https://docs.rws.com/binary/980998/807215/x/project-management-qsg> accessed 22/03/2023.
- ²⁸ For further information see: <https://www.un.org/dgacm/en/content/translation> accessed 23/03/2023.
- ²⁹ For further information see: <https://www.un.org/dgacm/en/content/gtext> accessed 24/03/2023.
- ³⁰ Back translation refers to the process of translating a translated text back into the original language. It is often used as a quality assurance technique in translation and localisation to assess the accuracy and fidelity of the initial translation.
- ³¹ More information is available at: <https://www.taus.net/platforms/data-marketplace> accessed 01/08/22.
- ³² See 21st February 2022 Language Technology and Language Revitalization in Wales - Delyth Prys presented as the keynote speaker Cardamom Seminar Series: <https://www.youtube.com/watch?v=9C5BD26o0qg> accessed 15/07/2022.
- ³³ More information is available at: <https://www.gov.wales/written-statement-welsh-government-response-report-working-group-welsh-language-and-local> accessed on 20/08/2022.
- ³⁴ More information is available at: <https://www.gov.wales/written-statement-welsh-government-response-report-working-group-welsh-language-and-local> accessed on 20/08/2022.
- ³⁵ More information is available at: <https://www.gov.wales/written-statement-welsh-government-response-report-working-group-welsh-language-and-local> accessed on 20/08/2022.
- ³⁶ More information is available at: <https://gov.wales/written-statement-welsh-government-response-report-working-group-welsh-language-and-local> accessed 20/08/2022.
- ³⁷ More information is available at: <https://www.cardiff.gov.uk/ENG/Home/Contact-us/Chatbot/Pages/default.aspx> accessed 01/08/2022.
- ³⁸ More information is available at: <https://github.com/techiaith/trawsgrifiwr-arlein> accessed 01/08/2022.
- ³⁹ More information is available at: <https://www.supercomputing.wales> accessed 01/08/2022.
- ⁴⁰ Behavioural change website page: <https://www.bangor.ac.uk/canolfanbedwyr/arfer.php.en> accessed 31/7/2022.
- ⁴¹ ARFer literature guidelines: https://www.bangor.ac.uk/canolfanbedwyr/pdf/arfer_map_guidelines.pdf accessed 31/07/2022.
- ⁴² More information is available at: <https://www.swansea.gov.uk/meetourstaff> accessed 17/06/2021.
- ⁴³ More information is available at: <https://www.swansea.gov.uk/cymraeg/> accessed 17/06/2021.
- ⁴⁴ More information is available at: <https://www.swansea.gov.uk/cymraeg/> accessed 17/06/2021.
- ⁴⁵ More information is available at: <https://www.swansea.ac.uk/media/Welsh-Language-Standards-Compliance-Report-April-July-2018.pdf> accessed 18/08/2022.
- ⁴⁶ More information is available at: <https://www.swansea.ac.uk/welsh-language-standards/compliance/> accessed 18/08/2022.
- ⁴⁷ More information is available at: <https://www.swansea.ac.uk/welsh-language-standards/> accessed 16/06/2021.
- ⁴⁸ More information is available at: <https://www.swansea.ac.uk/media/Welsh-Language-Standards-Compliance-Report-Aug2018-July-2019.pdf> accessed 15/09/2022 (see page 7).

- ⁴⁹ Swansea University Campuses are based in Swansea Bay and Singleton Park, Swansea.
- ⁵⁰ Three Faculties: Faculty of Medicine, Health & Life Science, Faculty of Humanities & Social Sciences, and the Faculty of Science & Engineering.
- ⁵¹ More information is available at: <https://kinsta.com/blog/linkedin-statistics/> accessed 15/02/2021.
- ⁵² More information is available at: <https://www.gov.wales/sites/default/files/publications/2020-11/baseline-evidence-and-research-project-for-gender-equality-in-stem-final-report-data-review.pdf> accessed 14/02/2023.
- ⁵³ Upon recruitment, Human Resources Staff take note of any staff's Welsh language skills. This is also often a requirement of the advertised position within the organisation in order to improve the linguistic capabilities of staff.
- ⁵⁴ Swansea University Salary Scales: <https://www.swansea.ac.uk/jobs-at-swansea/working-at-swansea-university/salary-scales/> accessed 31/03/2022.
- ⁵⁵ Swansea Council Salary Grades: <https://democracy.swansea.gov.uk/mgConvert2PDF.aspx?ID=67639> accessed 31/03/2022.
- ⁵⁶ Welsh Government Pay Bands: <https://gov.wales/welsh-government-civil-service-pay-and-benefits> accessed 31/03/2022.
- ⁵⁷ This data was collected from Microsoft Forms.
- ⁵⁸ One respondent is employed by Cyngor Castell-nedd Port Talbot (Neath and Port Talbot Council), however, works in the Swansea Council translation team, under an agreement between the two councils therefore will be considered as a Swansea Council employee for the purpose of this study.
- ⁵⁹ *Cymdeithas Cyfieithwyr Cymru* (the association of Welsh translators and interpreters) is the national body which leads, develops, and promotes the profession in Wales, with funding from the Welsh Government. It claims to be the only professional association for English <> Welsh translators and interpreters. <https://www.cyfieithwyr.cymru/en/> accessed 15/04/22.
- ⁶⁰ Swansea University Salary Scales: <https://www.swansea.ac.uk/jobs-at-swansea/working-at-swansea-university/salary-scales/> accessed 31/03/2022.
- ⁶¹ Swansea Council Salary Grades: <https://democracy.swansea.gov.uk/mgConvert2PDF.aspx?ID=67639> accessed 31/03/2022.
- ⁶² Welsh Government Pay Bands: <https://gov.wales/welsh-government-civil-service-pay-and-benefits> accessed 31/03/2022.
- ⁶³ The result showing 88% (and subsequent numerical results from this question) display a rounded-up percentage, differing from the totals shown in the main Table 5. 14 and therefore may not total 100% exactly.
- ⁶⁴ This data was collected from Microsoft Forms.
- ⁶⁵ More information is available at: NPS Translation and Simultaneous Interpretation Framework Agreement (NPS-PS-0078-17): https://www.sell2wales.gov.wales/Search/Search_Print.aspx?ID=NOV222171 (accessed 22/05/2022).
- ⁶⁶ An Application Programming Interface (API) is a set of functions, protocols, and tools that allows developers to create software applications and interact with the features, functionalities, or data of an operating system, application, or service.
- ⁶⁷ More information is available at: <https://www.taus.net/resources/blog/the-future-does-not-need-translators>: Article by van de Meer on the TAUS website, accessed 06/08/2022.
- ⁶⁸ More information is available at: <https://www.taus.net/resources/blog/machine-translation.-we-can-do-better> accessed 05/08/2022.
- ⁶⁹ More information is available at: <https://www.taus.net/resources/blog/taus-launches-the-data-marketplace>: Comment from Nicoletta Aresca on the TAUS website, accessed 06/08/2022.
- ⁷⁰ More information is available at: <https://www.cyfieithwyr.cymru/en/>: *Cymdeithas Cyfieithwyr Cymru* (the association of Welsh translators and interpreters) accessed 05/08/2022.

- ⁷¹ More information is available at: <https://gov.wales/bydtermcymru> accessed 05/08/2022.
- ⁷² An Application Programming Interface (API) is a set of functions, protocols, and tools that allows developers to create software applications and interact with the features, functionalities, or data of an operating system, application, or service.
- ⁷³ More information is available at: <https://www.noslangués-ourlanguages.gc.ca/en> accessed 11/7/2022.
- ⁷⁴ More information is available at: <https://www.noslangués-ourlanguages.gc.ca/en/ambassadeur-ambassador-eng> accessed 12/07/2023.
- ⁷⁵ More information is available at: <https://www.gov.wales/bydtermcymru> accessed 12/03/2023.
- ⁷⁶ More information is available at:
https://businesswales.gov.wales/heloblod/?gclid=CjwKCAiAh9qdBhAOEiwAvxlok5dDN6z7AGFb5OZEI1pJzGQRTHTGtRQ8lr--A_oo5I-PrYQ3mE6OnBoCs0UQAvD_BwE accessed 13/03/2023.
- ⁷⁷ More information is available at: <https://www.cysgliad.com/en/cysgeir/> accessed 13/03/2023.
- ⁷⁸ More information is available at: <https://www.ciol.org.uk> accessed 12/03/2023.
- ⁷⁹ More information is available at:
<https://www.welshlanguagecommissioner.wales/media/yfof2r43/collaborative-working-translation-service.pdf> accessed 25/08/2023.
- ⁸⁰ More information is available at:
https://www.npt.gov.uk/media/7519/wls_annual_report2016.pdf?v=20200206123425 accessed 25/08/2023.
- ⁸¹ More information is available at:
<https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/language/bulletins/welshlanguagewales/census2021> accessed 08/02/2023.
- ⁸² More information is available at:
https://businesswales.gov.wales/heloblod/?gclid=CjwKCAiAh9qdBhAOEiwAvxlok5dDN6z7AGFb5OZEI1pJzGQRTHTGtRQ8lr--A_oo5I-PrYQ3mE6OnBoCs0UQAvD_BwE accessed 13/03/2023.