The current state of technology use in the translation industry in Japan: Project Managers' views

Focus Group Report

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Table of contents

Introduction

Technology is becoming increasingly pervasive and ubiquitous in our daily lives. While we enjoy the convenience it provides, we cannot ignore its potential negative impact. We asked translation project managers (PMs) working in Japan what challenges they are facing in their workplaces with regard to technology use and how they are dealing with them. Their answers encompassed all aspects of their day-to-day operations, including work tasks, career development, work conditions and human relationships. Circumstances concerning other actors involved in these operations, such as translators and clients, were also discussed. PMs were chosen as our study participants due to their intermediary position, which places them in continuous contact with both upstream and downstream players in the translation production process. The aim of the study is to provide useful information for the shaping of a successful and sustainable translation industry in Japan, and worldwide.

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The Great Britain Sasakawa Foundation

Japan Society for the Promotion of Science (JSPS)

Japan Translation Federation (JTF)

Rikkyo University

Kansai University

We would also like to thank all the PMs who participated in our study for their cooperation.

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Summary of research findings

1. CAT tools

We discovered that PMs using CAT tools would like to see improvements in terms of cross-product compatibility (interoperability) and pricing. We also found that individual user circumstances impose certain restrictions on CAT tool use. Various issues also came to light with regard to ambiguity of contract terms concerning the update and storage of translation memory, as well as to the question of who is responsible for implementing such tasks.

2. Machine Translation (MT)

A lack of consensus exists between language service providers (LSPs) and translators regarding the unauthorised use of MT by translators. We also discovered that while client demand for machine translation post-editing (MTPE) is increasing, uncertainties still remain even for LSPs who have introduced such services. These include securing appropriate human resources to carry out post-editing, pricing, and establishing suitable post-editing guidelines.

3. Technology training for translators and PMs

LSPs feel that providing technology-related support to freelance translators is a significant burden, and would prefer that such translators undertake their own training in the use of such technologies. While they have high hopes for the training resources provided by software vendors, such systems were regarded as having both merits and demerits. PMs felt that the lack of appropriate higher education institutions in Japan providing courses in translation technologies was responsible for creating a skill gap amongst translators. Education of PMs was taken care of by mid-career recruitment of employees already in possession of those skills, by providing on-the-job training, or by relying on PMs undergoing their own training.

4. Paid-crowdsourcing business model

Only one of the LSPs participating in our study had implemented a crowdsourcing procurement business model. Some other LSPs had introduced a similar system that was used solely for their internal workflow. Conversely, several LSPs had used, or had considered the use of, crowdsourcing translation services as an alternative means of translation procurement, but they were generally dismissive of the value of such services.

5. Communication tools

LSPs frequently employ email as a means of communication, with some also using company portals and messaging apps. They also used a variety of communication tools, including telephone and face-to-face conversations. Such tools were used in combination to compensate for their particular strengths and weaknesses. LSPs also used various translator forums to recruit freelance translators, but were divided as to the value of this.

6. Other important points

Of the various topics discussed in the study, PMs were most interested in MT and technology training. They were also keen to obtain information on systems that could lead to improvements in work efficiency, such as translation management systems (TMS), and automatic vendor management systems.

Research Methodology

Purpose

The purpose of this study is to identify how new technologies are being used in the translation industry in Japan, and what benefits and issues arise from their use, through discussions of such matters with people employed in the translation profession. We also aim to share examples of good practice with the industry as a whole, and to make recommendations as to how these technologies can be used both effectively and constructively.

Dates of implementation

6 and 7 July 2018 (Tokyo), 14 July 2018 (Osaka)

Participants in this study

Participants in this study were individuals directly in charge of project management or in a management role with responsibility for either project management or project coordination at Japanese LSPs. In this report, all these individuals are described collectively by the globally- recognized title of Project Manager (PM).

Recruitment of participants

Participants were recruited using the following two methods:

- We solicited participation of individual PMs by sending an email to corporate members of the Japan Translation Federation asking them for cooperation in forwarding our message to interested employees. After an interval of three weeks, we sent a follow-up email.
- The authors posted an open call for participation in the study on social media.

Participants

- Twenty-two participants from 19 LSPs took part
- Average size of the LSPs employing the participants was 85 employees (±107)
- Average period participants had been working as a PM was 8.6 years (±6)
- Participants' job titles were: Translation Coordinator (8 persons), Translation Project Manager (7 persons), Quality Control Manager (2 persons), Managing Director (1 person), Director of Operation Japan (1 person), Head of Production (1 person), Localization Manager (1 person), and Administration Specialist (1 person).

Procedures

Participants were divided into groups, each consisting of 4-7 persons, and each focus group session lasted two hours. Discussions were recorded using an IC recorder, and were transcribed and anonymised before being analysed. Focus groups discussions covered the following six topics:

1. CAT tools
2. MT
3. Technology training for translators and PMs
4. Paid-crowdsourcing business model
5. Communication tools

6. Other important points

Sources of funding and organizations providing support

Ethical considerations

The study received ethical approval from the Ethics Committee of the Faculty of Humanities and Social Sciences at the University of Portsmouth (Ref number: 16/17:55).

Findings

1. CAT (Computer-aided Translation) Tools

Q.1-1 If you could change one thing about CAT tools, what would it be?

This question prompted participants to discuss issues experienced with the CAT tools on a regular basis. The responses we obtained enabled us to explore possible solutions to the question of how such translation technologies can better serve the translation process.

The troublesome issue of compatibility

The biggest problem cited by PMs was the low levels of compatibility between various individual CAT tools and between different versions of the same CAT tool. In theory, the compatibility of TM (translation memory) files should be guaranteed by use of the TMX (Translation Memory Exchange) format. However, PMs who participated in our study were uncertain as to just how accurately complex content such as tags and context matches could be shared between various CAT tools and actually felt the lack of compatibility between different tools to be an inconvenience. This issue has forced LSPs to use a variety of CAT tools, which is a cost burden. Thus, the sheer variety of CAT tool products available on the market is actually a drawback for LSPs.

Despite high prices, the use of free CAT tools is still not widespread

Another obstacle mentioned by PMs was the high price of certain CAT tools. This creates two issues, the first related to translators and the other to the internal workings of LSPs.

Firstly, even if an individual translator is highly-skilled, should the CAT tool he or she uses fail to match an LSP's requirements, the high price of such tools prevents the LSP from requesting the translator to purchase the required CAT tool. This in turn prevents LSPs from selecting translators freely. Some CAT tools allow LSPs to distribute free limited licenses to translators, but there is a tendency for CAT tool selection to be limited to products that are already in use. We found there were various reasons for this. These include a propensity for LSPs to only use products that have already been adopted by clients, the accumulation of TM files that use a certain CAT tool forcing LSPs to use that product exclusively, and the amount of time required by translators to master new CAT tools.

In addition, some LSPs faced internal issues that impacted on company operations. One example was the need to limit the number of CAT tool licences due to cost restraints, which caused inconvenience to PMs.

Free open-source CAT tools are also available. However, of the 19 LSPs whose PMs participated in our research, only one used such products. That LSP benefitted fully from the merits of using open-source tools, such as their being responsive to product improvement requests, free of charge, and simple and easy to use. This shows that LSPs who employ appropriate human resources (technicians) may be able to operate without spending money on the purchase of CAT tools, depending on the configuration of their business.

Issues extend beyond problems with CAT tools, and are related to individual user circumstances

However, cost issues cannot be resolved simply by adopting free open-source CAT tools. This is because a user's CAT tool selection is intimately related to individual circumstances.

CAT tool acquisition is a time-consuming process. This means that the CAT tools used by LSPs are limited by the CAT tool skills of the freelance translators on their books. The in-house skill set available at a particular LSP also has an impact on product choice. For instance, LSPs who employ specialist technicians are able to construct a flexible translation workflow even when using CAT tools that are rather complex to operate. However, for small LSPs whose PMs need to undertake a variety of work tasks (such as file creation and management, client relations, translator management and quality assurance), adopting CAT tools that are complicated to operate imposes a heavy burden on PMs. Under such operating conditions, the quality and distribution of human resources in a particular LSP will influence which CAT tool that LSP finds easiest to use. We found that LSPs' evaluation of individual CAT tools differed in accordance with such variables.

Moreover, CAT tools do not necessarily make every project more efficient. Some PMs complained that the default settings of CAT tools were unable to cope with projects that had extremely complex text structures. In such cases, highly competent users well-versed in the application of the CAT tool (including translators, reviewers, PMs and clients) will be needed to respond to any issues that arise. Therefore, depending on project content, CAT tools may be useful in some cases, while in others they will actually lead to lower efficiency.

Cloud-based CAT tools showing sharp rise in popularity, "ease of use" is key

In view of the aforementioned circumstances, it was unsurprising to hear many PMs praising cloud-based CAT tools. Specifically, PMs valued the effortless way in which files could be shared with translators, commending the "ease of use" of such products. Cloud-based products seem to be particularly appreciated when PMs are required to carry out a variety of different tasks and roles.

However, PMs also pointed out various drawbacks of cloud-based products. They stated that since files are not stored locally, it is difficult to trace the cause of problems when they occur. Moreover, when such products are updated they are forced to use the new version, which may cause problems with existing operations.

Areas where PMs wish to see improvement

Other areas for improvement cited by our focus group participants were:

- Process of file analysis (preparing the file for use) is time-consuming.
- Methods CAT tools use to analyse Japanese texts including English words are inadequate, or else it is difficult to grasp the rationale behind them.
- It is difficult for users to find functions on CAT tools with a large number of icons on their interfaces.
- Treatment of tags differs between various CAT tools, making it difficult to trust in their compatibility.
- At some CAT tool vendors, areas of responsibility for support staff are extremely compartmentalised and it takes time for LSPs to receive a response to enquiries.
- Algorithms used to calculate fuzzy matches vary between different CAT tools.

Typical comments from participants

On compatibility

- There are just too many variations [between products].

- I don't really want to make grandiose demands about analysis statistics. I would just like CAT tool developers to ensure that translation memory files used on CAT tool A can also be used on CAT tool B.
- LSPs often end up being forced to use CAT tools that are being used by our clients. That's because [the different CAT tools] are not compatible.

On CAT tool prices

- We need to purchase a variety of CAT tools to run our LSP successfully, and I always feel that this takes a great deal of money.
- CAT tools are extremely expensive and many translators are reluctant to purchase them. Even if they are a really good translator, we then can't use them at our LSP.
- [Open-source products] are free to use. They also have a server function. That means any number of people can access the same single project simultaneously and therefore I don't believe you can find anything cheaper than that.

On user-related circumstances

- I really wonder whether the people making the tools are aware of [the circumstances relating to specific projects.].
- We have people (translators) registering with us who have no previous experience of such technologies, and therefore I feel that [cloud-based products] are easy for such people to get accustomed to.
- I think that probably the vendor has come up [with such and such a function] with the intention of improving workflow, but actually I feel it has increased PMs' workload.

On cloud-based CAT tools

- It's easy for the user, because it's cloud-based. We don't need to distribute files.
- Most cloud-based products don't allow you to save a local copy, and so it is really difficult to trace the cause when we have a problem.
- Since these products are cloud-based, the company just keeps on implementing updates...That means the interface changes without warning, and new functions different to those available the day before suddenly appear. It seems like they just don't have LSPs like us in mind.

Question 1-2. Who do you think should be responsible for updating and storing TM databases?

This question encouraged PMs to discuss who, out of clients, LSPs and translators, they thought should be responsible for the management of translation memory (TM) file data bases. The treatment of such data bases, which are an important translation asset, has many grey areas. Therefore, the purpose of this question was to find out exactly how LSPs deal with them. However, during our discussions other significant issues also came to light.

Rules relating to the storage of TM are ambiguous in practice

Management of TM includes two stages: updates of TM data and storage of the final file version.

Requirements for TM file storage should be stipulated under the terms of the contract agreed on for each project between the client and the LSP and, depending on those terms, either the client or the LSP should be responsible for storage. However, we found that contract terms may be ambiguous and that there are cases where the parties to the agreement are not aware of the terms. Moreover, we discovered that PMs themselves may also be unaware of those terms.

Varying TM management processes

We found that the following five methods were used to update TM data bases:

- **Case 1:** After a translation is produced in a CAT tool and a cleaned-up translation delivered, the client uses the translation after making additional revisions. This revised translation is returned to the LSP, whose employees incorporate the changes in the TM.
- **Case 2:** The translation and TM are both delivered to the client, who makes additional revisions and updates the TM.
- **Case 3:** After the translation is delivered, the client uses it without making any revisions.
- **Case 4:** The client revises the translation, but the TM is not updated to reflect these revisions.
- **Case 5:** Each time a translation is commissioned, the LSP asks the client to submit previous translations, and these are aligned to create TM (this is more efficient in cases where the client has revised the previous translations).

In addition, we heard that one ideal scenario would be for LSPs to create a central database of TMs from all of their clients, divided into relevant fields. This would enable them to form huge TMs that could be used for all its clients, thereby making it easier to ensure consistency of terminology in a particular field. However, another participant suggested that if LSPs create large TMs in this way, the degree of usability of translation suggestions for each individual work commission will be reduced, and thus this scenario may ultimately be ineffective[1].

One example of good practice we found was for the LSP to export the TMs to TMX files when delivering the commission to the client. Delivery of the TMX file list together with the translations ensures that all concerned were aware of all the files involved.

The PMs involved in this study felt that Cases 1 and 2 above were examples of ideal work practice. However, they found that in reality it was difficult to implement such methods, and were particularly troubled by commissions that followed the pattern of Case 4.

Both clients and LSPs bear some responsibility for the problem of TM degradation

The problem with Case 4 above is that continued use of a TM file may cause some inaccurate translated sentences to be saved. As a result, the final translation will be lacking in quality and translators may become fatigued due to the increased cognitive load required for using the TM.

Various factors affecting both the LSP and the client lie behind the failure to update TM. On the client side, PMs stated that these factors included a) (in cases when the LSP is responsible for updating TM), the person at the client's company who is responsible for commissioning the translation may be too busy, or there may be other reasons why the client does not provide the LSP with the latest version of the data, and b) (in cases when the client is responsible for updating TM), the client may not have employees who are capable of updating TM, or the appropriate employees may be too busy to undertake this task.

Here, "people" are the key factor. For example, variables such as how many people on the client side are actually involved in using TM, whether there is a consensus regarding translations among those people, what level of foreign language skills each of them has, how much time they have available, and how much understanding they have of the translation process will have a great impact on how invested the client is in TM management.

Moreover, we noted that LSPs who maintained close contact with their clients were able to engage in successful TM management. It is clear that communication with clients is invaluable in maintaining TM quality.

Factors impacting on the issue for LSPs were cited as a) lack of personnel/time, b) lack of budgetary funds, and c) inability to keep up with huge volume of data involved. If the PM (or other person responsible) at the LSP does not have sufficient time

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[1] However, certain changes to CAT tool settings may enable the user to get appropriate suggestions for each individual project, thereby resolving this issue.

available, TM updates will not be carried out properly. Some LSPs had taken measures, such as making one specific employee responsible for the task of updating TM, or outsourcing the work to translators or another LSP. However, other LSPs had been unable to take these measures due to lack of funds. We noticed during discussions that, generally speaking, employees at LSPs were struggling to find the time to carry out follow-up tasks after their primary mission of delivering the translation had been completed.

Party responsible for TM storage holds power over direction of future translation commissions

Another important concept we discovered was that TM is a crucial "bargaining tool" which enables the parties involved to gain control over the direction of future translation commissions. The reason for this is that possession of an optimised TM increases LSPs' chances of gaining future commissions from a particular client.

Conversely, if the client is responsible for TM storage, there is a possibility that translation work may be given to a different LSP in the future. Furthermore, when clients are responsible for TM update and if the update is carried out inappropriately, the TMs will adversely affect future work projects.

Clearly, the storage and management of TM has a strong influence on the continued receipt of translation commissions by LSPs. However, TM management is also a time-consuming task, which is difficult for PMs to carry out in parallel with the many other tasks they are required to perform on the job. Our discussions revealed that PMs were torn between these two opposing factors.

Typical comments from participants

On TM file management and storage

- Our clients need to be in possession of these translation assets…But, I think there are probably cases where TMs come into the possession of other parties and this verges on illegality and runs counter to contracts which have been concluded with clients.
- It is our job as PMs to manage clients' assets. However, although these assets do in fact belong to the client, the question of whether or not TM itself needs to be handed over to the client is governed by a contract.
- I think people hold a variety of opinions on this, but I believe, first of all, that if we consider the matter of copyright, then TM should be stored by the client.

On the TM management process

- It may be rude to describe them as clueless, but some clients are like that, and so I believe that realistically speaking, the persons responsible for quality management and sales at the LSP should maintain close communications with the client and make various suggestions to them where required.
- If clients don't return the final version of the translation to the LSP, then it ends up being impossible for us to update our TM. However, perhaps the client doesn't understand that, or even if they do understand, all their energies are taken up with the task of completing the translation.
- The client says that ultimately they want the LSP to be responsible for updating and storing TM. However, that is not something that can be achieved in only a few months. Since it takes such a long time, and a whole variety of people are involved with the process [on the client side], both sides are probably feeling frustration as a result.

On quality of TM data

- Our LSP has TMs [stored on its server] but we have to keep changing translations in the various revision stages, and we aren't able to incorporate those changes in the TMs. As a result, we have ended up with a situation where the final versions of translations are not stored in the TMs.
- In most cases, I have found that, in my experience, the client is too busy or doesn't have the human resources available to maintain the TM.
- Our LSP did in fact have an employee responsible for TM management. However, they have retired, and the company hasn't yet found a successor, and so the TMs have just been left untouched. But, in fact, if you were to ask me whether there was such a huge difference between having proper TM management or not, I would say that it actually hasn't made that much of a difference.

On TM management and the receipt of translation commissions

- From the perspective of the LSP, I certainly think that having [the TM] enables you to keep control of the reins. In a sense, TM is a bit like a hostage. [laughs]
- So we can say "We have the TM, so you had better use our LSP." [laughs]
- That [client] is quite a large one, and provides us with repeat commissions, so we want to improve the situation (regarding TM updates), but it has been difficult.

2. Machine Translation (MT)

Q.2-1 To what degree do you think translators should use MT when undertaking translation work?

Free MT services are becoming increasingly available online. Considering such circumstances, this question was aimed at establishing, from participants' responses, the degree to which translators use MT in their own translation work, and the impact that this has on LSPs' operations. The scope of this question did not include commissions requiring machine translation post-editing (MTPE), but was limited purely to the use of MT by translators in human translation projects (for a discussion of MTPE services see Q. 2-2 below).

PMs believe there is a high percentage of MT use; trust and quality cited as issues

Even when commissioned to undertake a human translation project, a translator can use MT instead of a dictionary, or can carry out MTPE instead of actually translating the document. Unless a translator uses an MT plugin in a CAT tool, leaving a record of MT use, it is currently impossible for PMs to accurately gauge the percentage of translators who use MT in their commissioned work. PMs' estimates ranged from 30% to 80%-90%. Some reported that a number of translators submitted similar trial translations or said they had been told privately that many translators are secretly using MT."

A number of PMs reported the same issue, stating that although a commission had been for a human translation, the translator concerned delivered a translation identical to that which would be produced by a free cloud translation service. PMs felt there was a moral issue with a translator delivering MT output as their translation when they were being paid per character for the commission. They also feared this could lead to a loss of client trust. PMs were particularly concerned about use of the free Google Translate service.

Furthermore, PMs felt that translators who rely on MT are in many cases incapable of raising their translation quality to the level required for human translation. They were concerned that such low-quality translation would damage credibility with clients.

If translators wish to use MT, PMs suggested requirements should be that the translator:

1) uses a MT engine approved by the LSP (i.e. one that ensures there are no leaks of confidential information) that runs on a paid web-based API, or else an installed MT system;

2) uses MT only in fields where high-quality output can be obtained, and

3) ensures that the document is edited to the same level as human translation before delivery to the LSP.

However, there was no consensus on MT among the PMs who participated in our study. Opinions were divided between those who thought that MT should not be used in commissions that specified a human translation and those who thought that it could be used if translation quality was good enough.

Agreements between LSPs and translators are ambiguous and there is a reliance on "unspoken understanding"

While some PMs were willing for translators to use MT, provided that the quality of the final translation could be guaranteed, they thought that the environment and processes required to enable proper MT operation were not yet fully in place. Currently, translators use MT secretly, with the tacit understanding of PMs, but participants believed that the situation regarding translators' use of MT is likely to change in the future.

Few LSPs had included specific provisions regarding the management of MT usage in their Non-Disclosure Agreements (NDAs) and contracts. Some LSPs were considering changing contract terms.

Typical comments from participants

On actual MT use

- I think that 80% to 90% of translators are using it in some form. For example, as a replacement dictionary.
- As to whether translators purchase and use MT APIs, I feel that is extremely doubtful.
- I can't say this openly, but even if translators are actually using it, it is not something that I am able to check up on. Before too long things are likely to change a little.

On the use and quality of MT

- In cases where translators use MT; from our perspective as a translation vendor I think that provided the quality of the finished product is good then translators can use whatever tools they please.
- There are cases where the finished product delivered is obviously just raw MT. I would like translators to stop doing that. It is totally unacceptable.
- I would like translators to use MT in a way that limits its use, by for example thoroughly comparing MT with the kind of translation they could produce unaided, or by using MT for a reference purpose only when translating.

On agreements regarding MT use

- Our LSP is steadily promoting MT (as a product to clients), but use by the translator is totally prohibited except at the specific request of the LSP.
- We have no clear rules on this. I don't think it is included in our contract provisions either.
- We don't have any specific rule to speak of, but basically the idea is that MT shouldn't be used.
- We don't prohibit the use of MT. We thought there was an unspoken agreement (that it should not be used), but it actually turned out that no such understanding exists.

Q. 2-2 Do you believe that machine translation post-editing (MTPE) services will replace traditional translation in the future?

Provision of MTPE services increasing

Twenty-two PMs from 19 companies participated in this study. We found that 8, or 42%, of these LSPs provided MTPE services. This is considerably higher than the 15.6% of LSPs who responded that they "were using MT" in a 2017 industry survey carried out by the Japan Translation Federation (JTF). Moreover, it is a similar figure to the 41% result from a 2016 fact-finding survey in the UK and the 47% result from a 2016 fact-finding survey in Spain.[2] This may of course be a reflection of the fact that this study's objectives are related to technology and therefore participating PMs tended to have an interest in such matters.

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[2] Dranch, K. (2016). *UK language services market 2016*. London: The Association of Translation Companies (ATC).

[2] Presas, M., Cid-Leal, P., & Torres-Hostench, O. (2016). Machine translation implementation among language service providers in Spain: A mixed methods study. *Journal of Research Design and Statistics in Linguistics and Communication Science*, *3*(1), 126–144. http://doi.org/10.1558/jrds.30331

Increasing client expectations have complicated demand for translation

According to PMs employed by LSPs utilising MT, "client expectations" are an important motivator behind the increased use of MT. Such clients can be divided into two categories. Those in the first category want to use MT to obtain translations as inexpensively as possible. Such clients prioritise low price, and are happy to accept translations of a slightly lower quality, provided there are no actual mistranslations. They would like to keep the post-editing process to a bare minimum, and in some cases are actually satisfied with raw MT output. The second category are extremely demanding clients who want to receive translations of the same quality as before, only more speedily and at lower prices.

However, PMs told us that clients' stance regarding the use of MTPE differs according to translation field. Moreover, they stated some clients were reluctant to use MT due to security risks and concerns over translation quality. Our study revealed that the advent of MT has caused a diversification of client demand. There is still no consensus on what shape the ideal translation process should take among either clients or LSPs.

Still, it is clear that the arrival of MT has further increased clients' appetite for inexpensive translation services, and PMs were concerned that failing to adopt MTPE would lead to a loss of clients. A few LSPs, while not openly advertising provision of MTPE services, had actually started to make them available to selected clients.

PMs also informed us that clients were tending to adopt a wait-and-see approach with regard to the use of MT and were interested in finding out which translation services were being used by other clients. LSPs were also attempting to predict the direction of future client demand. With clients and LSPs tracking each other's movements in this way it is clear that the industry's stance on MPTE services, as well as the current situation regarding such services, still remains unformed in many respects.

PMs predict split of translation between raw MT output without PE and human translation

According to PMs who work at LSPs that are actively adopting MT, there has been a shift in client demand. An increasing number of clients are requesting speedy and inexpensive translations that do not need to be of high quality, provided that their meaning is understandable. PMs are waiting to see how much the quality of MT will improve in future, and how quickly such improvements can be realised. Should quality improve, they predicted that some commissions would not need post-editing, or that raw MT output could be delivered to the client instead of translation, and more LSPs might adopt a business model of selling MT engines. In fact, some LSPs were already employing such models. Participants in our study reported that high-quality MT output was already achievable in fields such as medicine, patents, IT, law, instruction manuals and internal business documents.

However, this does not mean that the need for human translation has disappeared entirely. Some PMs in the focus group discussions predicted a future split in industry demand between raw MT output on the one hand, and human translation in fields where use of MT is not possible on the other.

Furthermore, PMs themselves were divided, according to their LSP or work division, into those who used MT and those who did not. We found that PMs employed in divisions that did not use MT did not have the opportunity to learn about MT trends or technologies. Participants also informed us that, depending upon the size of the LSP, there might not be sufficient resources to utilise MT.

Typical comments from participants

- Readers are growing ever more tolerant of errors, therefore…it seems that we don't even need post-editing, that MT output would be fine without it.
- Our clients are becoming more and more demanding. It might be a slight exaggeration, but they are now saying to us that whatever the volume of translation, they want it translated in one day." [laughs]

- For small LSPs…our clients are quite reluctant to change, and I feel that they are resistant toward MT.
- If clients ask LSPs to use MT, then I believe that LSPs will be pulled in the direction of MTPE.
- I can't manage to keep up with this discussion at all [laughs].

Existing MTPE services far from optimal

From comments made by PMs employed at LSPs offering MTPE services to clients, we can see that such services are still far from optimal. The following issues were cited as being of concern.

Difficulty of securing appropriate human resources for post-editing, and lack of consensus over skill

PMs felt that it was extremely difficult to secure the appropriate human resources to carry out post-editing.

PMs believed that the task should ideally be carried out by expert translators, but many commented that this was difficult to realise in practice. They cited various reasons for this, stating that translators consider post-editing to be unprofitable, believe the work to be inferior to translation and are too proud to do it. They added that experienced translators in particular show reluctance. Asking such skilled translators to carry out post-editing commissions was felt by PMs to require courage and tact and some said they felt guilty about asking.

When asked what kind of person they actually commissioned to carry out post-editing work, PMs reported taking one of two routes. The first was to ask a skilled translator to undertake post-editing at the same rate they would charge for a normal translation job. According to one particular PM, if appropriate rates were paid, 80% of translators were willing to take on post-editing tasks. Another method was to ask an inexperienced translator, or a proofreader or checker aiming to become a translator in the future to undertake the task. According to PMs, it is easier to ask such persons to carry out post-editing tasks, since they have no prejudice or unnecessary pride regarding the task of post-editing and can be paid lower rates.

PMs also felt that some translators were more suited to the position of post-editor than others. They commented that those suited to the task are flexible, have the courage to ruthlessly eliminate bad output, are not egotistic, obey the rules, possess knowledge of a specialist field, have an eye for detail (those who operate intuitively are not suitable), and don't necessarily enjoy translating from scratch. We were also told that translators who are not fond of typing documents are positively disposed to post-editing. PMs were divided on the linguistic skills required for post-editing. Opinions ranged from those who believed that, with the current level of MT quality, post-editing is impossible without foreign language ability to those who argued that even high-school students can undertake PE if they have a love of English (the main foreign language used in Japan). Furthermore, PMs also felt there was a tendency for post-editing work to be passed on mainly to translators who generally accept jobs with tight deadlines at low rates.

Some PMs were extremely conflicted over the fact that while the human translation carried out by skilled translators had been responsible for the success of their LSPs, developments in MT had left them unable to continue to provide such translators with the type of work commissions they found satisfactory.

However, in view of the reality that skilled translators are reluctant to engage in MTPE, many PMs stated that it would be better to ask people other than translators to undertake post-editing. They made the following specific suggestions:

- Translation reviewers, checkers and rewriters, proofreaders with foreign language skills
- People who have undergone post-editing training and passed an MTPE trial
- Translation coordinators and PMs with foreign language skills
- Clients (clients are to be responsible for post-editing and LSPs accept commissions for MT output only)
- Collaboration between a translation checker, terminology checker and a QA checker (IT specialist).

Typical comments from participants

- From the perspective of quality, it is still difficult in practice, at this stage, for a person without expert knowledge [of translation] to undertake post-editing, and we therefore ask translators to do it.
- We generally ask aspiring translators with little or no experience, but some degree of ability, and who we consider promising prospects, to undertake post-editing.
- Therefore, I think it would be better if the position of post-editor existed as a separate job category, perhaps as something like a translation editor, and was not lumped together with that of translator.
- I think that some people are much more suited to being post-editors than others. Some translators are very skilled when translating the text themselves, but when you ask them to correct pre-existing MT output, they are just no good at it at all. I end up finding places that haven't been corrected.
- If the quality (of MT) improves, then it might be ok to leave [MTPE] to the client [laughs]. Then post-editing could generally be undertaken by the client, who is the party most familiar with the content of the project.

Lack of consensus over pricing model

We found that there was still no optimal industry-wide model for payment to post-editors and client invoicing of MTPE. LSPs used a whole variety of models. Some paid the same rates to post-editors as for normal translations, and used MTPE to speed up workflow. Some were considering shifting from a character/word-based rate to an hourly rate for post-editing. Some were testing the implementation of different rate scales for individual commissions and specific clients. Yet others sought to maintain profitability by ensuring that their profit margins would fall as little as possible. However, when MT is included in the translation process, clients think that there is no point [in commissioning the LSP] to carry out the job unless the work can be carried out cheaply and demand lower rates than normal translation. This means that MTPE businesses tend to lean towards a low-margin high-turnover model. Moreover, despite the fact that productivity tends not be very high with current MT quality levels LSPs still need to limit the amount paid to post-editors. It is therefore becoming increasingly difficult to secure skilled personnel for this task.

Should the time required for post-editing be reduced by using a specialized engine that has undergone sufficient training to improve the quality of MT output, it should be theoretically possible for post-editors to receive the same level of fees as for translation even at low unit rates. This should mean that post-editors will be happy to carry out such work. However, there is strong pressure from clients to reduce prices still further, and the industry has still not created a pricing system that is acceptable to all stakeholders. As a result, PMs themselves are still in the exploratory stage regarding MTPE pricing.

Typical comments from participants

- Generally when clients ask for MT, in almost all cases they expect to receive unchanged product quality at MT unit rate. Translators refuse and tell us that's impossible. This means our profits are inevitably reduced.
- I think it means that our prices will be under pressure, and will get lower and lower. At the same time, however, if we can clearly state that we are only going to do this much (level of editing) and no more, then that will serve as protection for us. So I think it depends on how we go about it.
- One practical problem we face is that if MT is fully incorporated into our business, then we are going to have to offer it at extremely low rates. If we don't, clients are likely to say that there is no point in having used MT.
- Everyone is talking about speed and price, but I believe that just as every normal business commission can have rush order fees applied, in the same way, perhaps one idea might be for LSPs to say that if MT is used, the delivery date will be half that of regular commissions, but clients will be charged twice the price.

Inadequate PE guidelines place extra strain on post-editors

PMs raised concerns that a lack of clearly defined post-editing guidelines (i.e. what types of error will be corrected and to what degree) placed excessive work strain on post-editors. Post-editors who cannot produce post-editing to the required quality standards are sometimes labelled as being unsuitable for post-editing work. However, PMs pointed out that LSPs often do not issue clear instructions as to when and how to make corrections. This complicates post-editors' work and makes them less motivated. PMs also felt that it was difficult for LSPs to set their own guidelines. Some PMs were aware of the TAUS post-editing guidelines, but no LSPs were actively implementing such external guidelines at present.

Typical comments from participants

- I think the reason that the burden [placed on post-editors] is so great is the lack of rules governing the degree of correction to be made. The LSP should determine these and clarify them to post-editors.
- [Post-editors] are obsessed with the idea that they should utilize [the MT output] and they make unnecessary efforts to do so.
- They need the courage to accept badly written text without trying to correct it. They need to cure themselves of the human tendency to want to correct whatever is put in front of them [laughs].
- Post-editing rules are more frustrating than translation. The terminology, and just how far we should edit grammar mistakes.

Issues particular to Japan

PMs considered Japanese clients to have a strong resistance to the use of MT in comparison to clients in Western countries. They cited the reason for this as the lower quality of Japanese-English MT output compared to that of other languages.

Furthermore, PMs stated that it is difficult to find suitable post-editors because of the paucity of educational institution offering courses on MT in Japan. This means that there are few translators with the appropriate knowledge and readiness to undertake such work. Some PMs commented that this may also relate to the fact that translation schools[3] place an emphasis on teaching human translation.

Participants also highlighted the following circumstances that are unique to Japan.

- When clients are Japanese subsidiaries of overseas companies, they have difficulty in persuading their parent company to understand the special circumstances pertaining to the Japanese language, where parent companies demand their subsidiaries to use MT.
- Some clients looking for inexpensive MTPE are sending work to LSPs in China and though this is not widely known, competition is now taking place on a global scale.

Typical comments from participants

- In Japan there is still a resistance, in comparison with Western countries, to using raw MT, or post-edited MT, and I think many of our clients would say that they don't want to use MT for their translations.
- Japanese and English are extremely distant linguistically, and I believe that is one reason why we cannot easily obtain accurate MT.
- [Clients say]: "MT is fine, all we need is a translation with just a little editing, but if we get it done in Japan it is expensive, so why don't we get it done in China".

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[3] Translation schools are privately-run schools, which provide afternoon and evening classes to aspiring translators. They are often managed by LSPs and form mainstream training institutes for the translation industry in Japan.

3. Technology education and training

Q.3-1 Who do you think should be responsible for providing technology training to translators?

This question prompted PMs participating in the focus groups to discuss how freelance translators to whom they outsource commissions should learn about new translation tools.

PMs would like translators to undertake training on their own initiative

Under current LSP operations, translators are expected to use translation technologies such as CAT tools competently. In such circumstances, PMs would prefer that individual translators themselves took responsibility for ensuring that they are trained in the required technologies. They cited various reasons for this, such as enabling translators to improve their translation ability, and work more efficiently. They also pointed out that such skills are required to register with many LSPs, and therefore translators who do not undertake such training will be unable to obtain work. PMs particularly emphasised the importance of "translators' willingness to learn" in regard to their undertaking training in such technologies. Many PMs bemoaned the fact that there were still many translators who were unwilling to undertake training in the new tools. The reason for this is the difference in perception between those working at LSPs and translators. The former feel that the ability to use such tools in the workplace is crucial to translators' professional survival, while the latter still do not share this sense of crisis.

PMs are willing to assist enthusiastic and skilled translators

We found that while PMs would ideally prefer individual translators to make the effort to undertake their own technology training, in practice LSPs are actually providing a variety of support for translators' technology training. For example, some have set up a kind of support centre, with staff responding to queries from translators, have created a manual for their translators to use, or hold workshops on relevant technologies. However, many PMs believed that the most realistic way for translators to become conversant in new technologies was for them to undertake their own training and then to undergo OJT on actual work commissions. This indicates that PMs, rather than considering technology training to be the responsibility of the translator, would like to actively support translators who are willing to learn.

Various reasons for the provision of such support for training in translation tools were given by participating PMs. Some cited the fact that LSPs have the requisite knowledge, and are requiring translators to use a tool chosen by the LSP, as well as constantly evolving technologies. Others stated that it is the responsibility of LSPs to increase available human resources and that these will be an "asset" for LSPs. Meanwhile, another reason given was that LSPs need to show translators that they are prepared to work together with them as a team. However, PMs' opinions were divided as to the degree of support LSPs should provide to translators, with some pointing out issues such as the fact that providing technology training for translators is time-consuming and costly for LSPs, and that needing to field frequent questions from translators could interrupt PMs' regular work.

Software vendors' training resources should be valuable reference tool, but are actually difficult to use

Some PMs responded that one productive method for translators to master translation tools through independent study would be for them to use resources provided by software vendors. For example, translators could participate in workshops or online webinars organized by vendors or take vendor-run licensing exams. However, PMs also expressed dissatisfaction with vendor resources, commenting that vendor workshops charged participation fees, were infrequent, and participation was time-consuming. They also stated that the content of such training events was difficult to understand, and that translators were afraid that participation would oblige them to purchase the product. PMs also complained that there were

few Japanese-related webinars. They also felt dissatisfied with the content of such workshops and webinars, commenting that the way in which functions are introduced as being used by vendors may differ from how they are actually used in practice in the industry, and therefore does not help translators in performing actual translation work.

Translators urged to familiarise themselves with "how to learn" about technology

PMs wanted translators to actively explore how to use technology and related trouble-shooting techniques. They emphasized that the importance of very basic research methods for learning about tools that could be undertaken by individual translators. PMs also expressed dissatisfaction with translators who failed to undertake such default operations as reading the manual first, and googling an error code when it is displayed. In addition, they suggested that translators should utilize the internet and SNS, by watching videos users have made on YouTube, reading blogs written by other translators, becoming a registered user on online communities related to translation tools or tweeting any questions on Twitter (since they might receive a useful response there). We found that translators were being called on to actively engage in gathering information.

Japan currently faces translators' skill gap and lack of appropriate educational institutions

Participants in our study also discussed the lack of higher educational institutions in Japan offering courses in translation technologies, stating that this was a problem peculiar to Japan. PMs believed that university programmes taught classes in the theory of translation, while translation schools focused on linguistic translation techniques. They felt that there were no educational institutions that offered opportunities to learn about translation technologies. As a result, they thought that a substantial gap exists between the skills acquired by someone who has studied at university or translation school and the actual skills required on the job, and LSPs were therefore forced to rely on experienced translators. A few PMs were aware that universities in Europe and the United States offered courses in translation technologies at postgraduate level, but we were unable to find any examples of translators who had studied such courses being registered with LSPs in Japan. Some PMs commented that should Japan's translation schools start to offer courses in translation tools, the number of capable translators would increase. However, others expressed concern, stating that, even if translators were to study technologies at translation schools, such study would become meaningless as soon as new versions of tools were released.

We did not hear any comments from participants regarding the involvement of industry associations in translators' technology education, but one of the PMs in our study suggested that one option might be for a number of LSPs to collaborate in hosting a joint seminar on the topic.

Typical comments from participants

On translators

- If they don't have the will to learn in the first place, then no matter how much they are taught they will not remember it, and so the most important thing is the effort made by each individual. I think that motivation is key.
- I don't want to teach [translators] whose only response is to sit there passively and say "Teach me please", no; I have had enough of that.
- Some say that they have no intention of learning about such tools.
- Software vendors have prepared tutorials and other materials, and so if translators search these up on Google then they should be able to get a good grasp of everything, but still for some reason they come to us with questions [laughs].
- Another idea is for translators to use Twitter to tweet about their problem online. If they do, they may suddenly receive a reply, saying "If you do so and so then your problem will be solved". Then, they will exclaim "Oh wow!" and that will be it: problem solved! [laughs].

On LSPs

- LSPs possess the most information and therefore I think it would be best if we trained translators.
- Actually, our LSP does it all. We have even set up a support centre. But this is a cost burden on the company, and we would prefer not to do it if possible.
- We also incorporate training into translation commissions, something like OJT. If we don't do such things then we won't be able to develop our human resources.

On vendor resources

- I would like vendors to hold [workshops] more frequently and free of charge.
- Tool vendors say things like "Our tool also has this function…" but we at LSPs would actually respond that we don't use that function due to various constraints. From our perspective the information that tool vendors want to communicate to translators is not the same [as the things we would like them to know].

On higher education institutions

- I would like educational institutions to teach [translation technologies] properly.
- It's true that there are few universities in Japan teaching such [translation technologies] courses. I know that in Europe, for example in France or Spain, such universities do exist.

Q.3-2 Who do you think should be responsible for providing technology training to PMs?

This question prompted study participants to discuss the current situation regarding technology training supplied for PMs at LSPs, as well as their future expectations for such education.

Most PMs are mid-career hires

PMs were generally of the opinion that, under current circumstances, it was preferable for LSPs to hire experienced, work-ready candidates as PMs. This was preferable, they said, due to the time and effort required to train new graduates. Hires should ideally understand English, or another foreign language, and have experience of project management, if not in translation then in another field. PMs told us that they generally relied on their own efforts to obtain knowledge and expertise in related technology, receiving OJT from senior staff members or colleagues, studying instruction manuals, attending tool vendor workshops, reading expert blogs and participating in industry gatherings. As with freelance translators, they were of the opinion that there was a limit to the training that LSPs could provide, and believed that individual PMs needed to be self-motivated to improve themselves. However, we were also told that PMs who were usually responsible for handling commissions that did not use translation tools were unable to obtain knowledge about translation technologies, thereby creating unequal training opportunities within LSPs.

PMs are required to be both generalists and specialists

Some participants told us that it was important for PMs to have knowledge and expertise not only of specialist translation tools such as CAT tools, but also to be well-versed in using Microsoft Office products like Word, PowerPoint and Excel. They should also possess general technological knowledge, such as that relating to email etiquette and data security. Others commented that in addition to PMs, employing personnel with specialist IT knowledge who would be able to improve the general efficiency of projects would be crucial for the future survival of LSPs. At one extreme, one participant even said that such technical specialist may not even need to possess the language and translation knowledge that is usually a prerequisite for hires at LSPs, provided they have IT knowledge and expertise.

Currently, PMs are required to possess both basic general office skills and also specialist technological knowledge. However, since the skills that they can develop vary according to the content of their work and the commissions they deal with, some PMs are unable to improve their technology-related skills due to the nature of their work position.

Japan also needs higher education courses for PMs

Participants also discussed the fact that there are currently no educational institutions in Japan offering specialist courses that allow students to obtain knowledge and expertise in translation project management. A few were aware of overseas examples, such as the translation and localization management degrees offered by Middlebury Institute of International Studies at Monterey in the United States. The idea of offering translation project management courses at higher educational institutions does not currently exist in Japan, but PMs commented that were this to be realized in future, it would raise the professional profile of project managers, and contribute to the development of skilled personnel. Some PMs also commented that in addition to learning about translation tools it would also be worthwhile incorporating the study of matters such as the use of email, business etiquette, and training in the use of Microsoft Office into such university courses.

Typical comments from participants

- If you ask me what kind of person, we would like to employ at our LSP [as a PM] it would be someone with a proven track record at another company. That's because employing such an individual will make training easier for us.
- Our LSP is really rather unclear on this. We don't have Trados workshops or anything specific like that. Instead, we have, well it's not exactly OJT, but when it becomes necessary more experienced colleagues teach us what to do. Also, we have user manuals, so when I have time, I often look through them and try to figure things out myself.
- [Our LSP] doesn't conduct any training of its employees in particular, and it is left up to the individual to make his or her own efforts. People who are good at their job are envied by other employees, so that doesn't make for a very productive atmosphere.
- Some graduates [of Middlebury College] are now working at our LSP's headquarters. They are all very capable. I feel that if an educational institution can put together a project management course with a proper curriculum, then I think it would be possible to teach project management at university level.
- I am often talking with people at other LSPs about the lack of training programs for PMs in Japan. Therefore, I think that it would be good if we could collaborate on hosting a joint program.

4. Paid-crowdsourcing business model

Q.4 If your LSP already uses this business model, what benefits (or disadvantages) does this model bring to your work practices? If you don't, what benefits (disadvantages) do you think it would bring to your practices if you were to use it?

Recently, paid-crowdsourcing business models, in which clients obtain services from a multiplicity of workers (a crowd) via the internet, have been increasing in number in various fields. The translation industry is no exception to this trend. Here, paid-crowdsourcing translation services refer to fee-based services that register multiple translators and bilingual speakers from around the world as translators, accept work commissions online and automatically match up translators with available work jobs. This is a new business model that was launched from around 2015, mainly by new start-ups. We asked PMs their opinions regarding these new-style translation services and how they were coexisting with them. Since some PMs were unaware of the existence of such services, we started out by explaining what this business model involved.

Established LSPs use this business model in two ways.

Limited application as part of their own company's business model

Of the 22 PMs who participated in our study, 6 were employed by LSPs that had adopted this business model (but in a limited manner, as we see here). Only 1 of these 6 LSPs was publicly providing a fully-fledged crowdsourcing service, but this was only on a small scale and the business had not yet reached a profitable level. The other 5 companies were currently using a crowdsourcing-style project-translator matching method in their current project management workflow, though the application was limited to a small number of projects or clients. For example, after a work project has been obtained in the normal fashion from a client by the LSP's sales staff or PM, the PM posts information regarding the project on the company's internal portal. The project thus becomes available to registered translators, with the first to respond being assigned the project. Other LSPs assigned work projects in a similar fashion via other avenues including CAT tools' project management systems or translator forums such as Proz.com. In all of these cases, such methods were positioned as complimentary services for LSPs' existing work operations. However, some PMs in our study commented that they did not really understand or could not imagine using this business model.

Established LSPs are reluctant to source translations from paid-crowdsourcing translation services

Another alternative is for LSPs to use such crowdsourcing translation services as a translation vendor. However, only one of the PMs in our study had experience of sourcing translations from such services. The PM said they used it only in a supplementary fashion to source work projects of certain content and size. A number of LSPs had apparently been approached by paid-crowdsourcing companies or had held negotiations regarding using the services of such companies, but after due consideration, had decided not to use their services. Many PMs said that their LSP had never used such services, and would not be likely to use them in future.

The reasons they gave for this (in descending order of frequency) were:

1. If the companies operate a system in which translators on their books can bid freely for their preferred translation jobs, PMs will not be able to manage this process and the company will not be able to guarantee translation quality.

2. Such a system is not suitable for large-volume translation commissions.

3. LSPs will be unable to ask skilled translators to undertake repeat commissions.

4. It may not be possible to find a translator willing to undertake the commission within a certain period of time.

5.   Security may be a concern.

Furthermore, as MT quality continues to improve, PMs were also doubtful whether it would be possible to justify the continuation of such business models.

Paid-crowdsourcing services also have some limited advantages

Some PMs acknowledged that such services may have some, albeit limited, advantages. They described these as:

1.   Providing inexperienced translators with work opportunities.

2.   Widening the reach of translation products and making translation more accessible to the general public.

3.   In-house processing of work commissions is not required, thereby shortening the delivery period and lightening PMs' workload.

4.   Time differences between countries can be exploited to achieve shorter lead-times.

5.   LSPs can increase their client base and the number of translators on their books.

6.   Such services can be used to as a brain-storming translation procurement method when translating marketing materials.

Typical comments from participants

Disadvantages

- One disadvantage we have heard about is the issue of what will happen if no translator accepts the job even after 24 hours have passed.
- If the job doesn't need to be very high-quality, then Google Translate is good enough.
- I think it probably won't be possible for clients to give repeat commissions to the same translator, since they have no idea of who is going to accept the job. In such a case, we would have concerns about the consistency of translation quality.
- It's not just about quality, but from a management perspective it is also very difficult to see what is going on. I would be concerned about that.
- I am certain there are LSPs that would be against [crowdsourcing] due to security concerns.

Advantages

- One good point of [paid-crowdsourcing] is that it can act as a gateway to success or initial starting-point for would-be translators
- One benefit might be that it would reduce PMs' workload. All we would need to do would be to post the job and that would be it [laughs].
- An advantage is that if we have a work commission that needs to be completed within 24 hours, then a translator in a different time zone can take on the job. This means that the commission will still be completed even if it is night-time in Japan.
- I think that one great merit of crowdsourcing is that it has greatly reduced the obstacles faced by the general public when trying to have something translated. They don't need to search for an LSP, or make phone calls.
- I believe that one benefit is that [paid-crowdsourcing service] is uncovering unmet needs. Another is that it gives LSPs further marketing avenues.

5. Communication tools

Q. 5 Which of the communication tools you are currently using would it be the most difficult to do without at work? (SNS, social media, email, translator forums such as Proz.com, company portal, blogs)

Through this question, we aimed to find out from PMs what technologies they utilised to communicate and share information with translators and clients.

Email is PMs' main means of communication, with other tools used as required

We found that a variety of communication tools were in use in the translation industry. Of those, email was the one considered most important by PMs. They stated it allowed them to cope with time differences between Japan and overseas, prevented them from forgetting to communication information, enabled them to keep records of business exchanges and to attach files to send to clients and translators. However, PMs were concerned about possible security issues when sending file attachments. In order to avoid such problems, some LSPs only exchanged files on their company portals. Some PMs commented that when communication was conducted via the company portal in this way, email was not such a significant communication tool.

Some LSPs used messaging apps, both free and paid, instead of email. However, the method and frequency of use of such apps varied and included:

- LSPs who are actively utilizing apps, responding to requests from translators and trying out a variety of different apps.
- LSPs who are using apps to conduct in-house meetings via chat rather than holding face-to-face gatherings.
- LSPs who use apps alongside email.
- LSPs who prohibit the use of messaging apps.

Examples of messaging apps in use included Slack, LINE WORKS and Skype for Business.

PMs who were reluctant to use messaging apps said they were concerned that, since message exchanges cannot be preserved on the system, they could not be used as evidence in the case of disputes. They also expressed misgivings about the unpredictability of free app services, which might be suspended without warning.

In addition to the use of email and messaging apps, some PMs believed that face-to-face exchanges with translators were also important. They commented that it was easier to develop relationships of trust and make work requests to translators whom they had met in person. Some also stated that it was easier to ascertain people's personalities by using Skype or the telephone rather than email and that it was easier for them to make work requests in such cases. PMs told us that they used the telephone to communicate urgent matters (urgent work commissions and delivery reminders).

In addition, we heard the opinion that CAT tools messaging functions were useful when communicating on a specific work commission.

With regard to communication tools in general, PMs used them in various combinations in accordance with their required objective. For example, after sending an email, they sent a message via a messaging app to communicate the fact that the email had been sent, or confirmed scheduling via email before exchanging files on the company portal.

Information-sharing forums used to recruit translators

We also had participants discuss how they used specialist translation forums, networks and listing sites (hereafter referred to collectively as "translator forums") in order to recruit translators. The five forums whose names were mentioned in these discussions were Amelia, Translator Directory, Proz.com., LinkedIn and the Japanese Translation Federation's translator

listings (while the form and functions of these various forums differ, here we will treat them as identical as means of recruiting translators).

PMs held a wide variety of opinions regarding such forums. These ranged from using them purely as a point of reference to feeling that they would be inconvenienced if such forums did not exist. Opinions were divided as to whether forums were an effective means of recruiting translators. Those who thought that they were not effective stated they felt that the information provided is not always reliable. On the other hand, those PMs who thought such forums were effective felt that they were useful for posting advertisements to recruit translators and post-editors or sending job requests.

PMs valued various forums for different reasons, praising Amelia for the way it graded translators, and Proz.com for its large number of registered members, as well as for acting as a means of approaching translators living overseas and working in minor languages.

However, participants in our study pointed out that few translators working in non-European languages were registered on the forums mentioned in our discussions. Some LSPs place recruitment advertisements on translator forums in China when looking for translators to work on Chinese language commissions. The reason given for this was that the rates of translators registered on forums in China were lower than those of translators registered on forums in Japan. Some LSPs apparently found forums useful in order to outsource jobs into and out of minor languages other than English to overseas LSPs, with our study showing that such forums form part of a global recruiting strategy.

Problem of spread of rumours and gossip among translators on the internet

Some PMs commented that exchanges of views on translator forums may include negative comments about their LSP, which made them feel depressed or demotivated, and therefore they avoid looking at such exchanges. They also commented that Japanese translators tend to be rather insular, and therefore many of them did not participate in such forums. Others pointed out that since the translation industry was multinational, some people on forums made comments that showed a lack of understanding of Japanese business practices. One specific example cited in this regard was fee payment methods. Such issues are characteristic of the internet, however, and as such are not confined to the translation industry but are a challenging aspect of our modern-day society as a whole.

During our discussions, no references were made to social media or blogs by participating PMs.

Typical comments from participants

On communication tools

- We also make use of our company portal and so our company portal might also be a good choice, but if I was told to choose just one [communication tool] then I think it would be email.
- All communications within our LSP as a whole and within our department are made using Slack, and as a result we no longer all get together for meetings.
- If you meet directly in person first [with the translator], it definitely helps to ensure that the work goes smoothly after that.

Regarding the use of translation forums as recruiting tools

- My impression is that it is impossible to tell whether profiles placed online are genuine or not.
- I might look at them on occasion, but we do not use them as a direct recruitment route. I do, however, think that [forums] are one valid route.
- Should [one specific forum] disappear I would find things difficult.
- Recently, I posted a recruitment advertisement for a post-editor [on such a forum] and was surprised by the unexpected number of responses.

- In the case of Chinese translation, translator rates on [one specific forum] are high. Therefore, we post advertisements on a Chinese job search site. They do work inexpensively for us.

On forums as information sharing venues for translators

- Sometimes my LSP is mentioned by name and criticised, and so I have given up [reading these]. That's because I would lose faith in translators. Since it involves exchanges between translators, there are some aspects that would be good for LSPs to know, but I felt it was likely to make me depressed and therefore I stopped reading them.
- Generally it's always the same people who post on these forums. So you end up saying, "Oh, so-and-so is commenting again." or "It's that topic again."
- Perhaps this is a characteristic of translators living in Japan, but many of them are inward-looking. Many of them try to avoid external contact, or are not comfortable dealing with it.

6. Lastly …

Q.6-1 Is there any other translation technology you feel is important that was not mentioned in our discussion today?

We asked participating PMs whether there were any other important translation technologies apart from the ones that we had already discussed under the various themes. The main three mentioned were as follows:

- Translation Management Systems (TMS), which are used to manage the translation process. In particular, PMs stressed the importance of tools and systems that enhance the efficiency of the operating process, such as company portals used for process management, file exchange services built into TMS, and Single Sign On (SSO) systems used in TMS.
- Methods for improving the efficiency and automation of vendor resource management.
- Data cleaning technologies

Q.6-2 Which of the matters we discussed today is the most important for your work?

Finally, we asked PMs which of the technologies and related topics that had been mentioned in our discussions was of particular interest to them or was the most important. The aim of this question was to gather opinions from those working in the industry as to what aspects of technology would deserve future research.

The most common response to this question was, unsurprisingly, MT (ten people). However, even among those who were interested in MT, two opposing schools of thought could be observed. The first group were positively in favour of the technology and believed that the diversification of translation industry calls for the development of services that make maximum use of MT. The second group were cautious and had concerns about the influence that use of MT might have on the work environment and translation quality. The latter group, while acknowledging the benefits that MT can bring in terms of improved translation efficiency, felt that it was difficult to predict what effects it would have on the people involved. In particular, they wanted to know what the prospects were for maintaining an optimal balance between MT and human work, in terms of how quality could be maintained while using MT and how workers in the industry could coexist happily with MT.

The topic of next highest interest to PMs was education and training (eight people). PMs were particularly interested not simply in technology education for freelance translators, but also in that for in-house employees. They were concerned that insufficient in-house training provisions would cause problems when existing employees left the LSP or when the company hired new recruits. Moreover, they pointed out that it was important for all LSP employees (including sales staff) as well as clients to possess the appropriate technological knowledge. In addition, some PMs stressed the importance of regularly reporting workplace issues and situations to upper management in order that management policy remains in step with true workplace requirements.

Conclusions and recommendations

We compared the discussions by participants in this study with recent research and industry trends in Japan and oversea. Points worthy of further consideration are described below, along with our recommendations.

1.   On CAT tools

In order to overcome the issue of being tied to one product, LSPs need to build up a store of technical knowhow

Product compatibility and high price are generally described as key CAT-tool-related issues and were also discussed in this study. Considering the existence of standard file formats such as TMX (the standard file format used for translation memory data) and XLIFF we would expect transfers of data between different CAT tools to be carried out without too much difficulty. However, the reason that no technical solution has been found to this issue may be due, at least in part, to the ulterior motives of CAT tool vendors. Therefore, we believe that this issue is not something that can be resolved by LSPs working unilaterally.

However, we also uncovered additional operational challenges faced by LSPs. Action by LSPs on these issues is both possible and essential.

The first significant issue is LSPs' being tied to one product. LSPs' CAT tool use is restricted by the following:

- The CAT tools already used by clients.
- The CAT tools owned by freelance translators on the LSPs' books or the CAT tools such translators are capable of using.
- The CAT tools PMs themselves are accustomed to using.
- The CAT tools that have been used to produce existing TMs either by the LSP or by clients.

One way of dealing with this issue is for LSPs to employ technicians with the skills and expertise needed to use different products. Another is to ensure that PMs have the requisite training to carry out this task. If LSPs employ personnel capable of speedily resolving errors and issues with file exchanges when necessary, then they can use inexpensive or free CAT tools regardless of the products that are already being used by clients and translators. This will lead to reductions in CAT tool-related costs. Moreover, LSPs will not need to recommend that translators buy highly priced CAT tools.

A store of technological knowhow is important for LSPs not only to solve the issue of being tied to one product, but also to achieve efficient use of different CAT tools in general.

As we already mentioned, it would be ideal if CAT tool developers were to resolve technical issues relating to data exchanges. However, in practice, it is LSPs who will need to take measures, at least for the interim, by undertaking appropriate personnel placement, thereby reducing the limitations and strain placed on operations.

Merits of CAT tools need to be positively conveyed to translators

PMs have difficulty persuading translators to use CAT tools as required due to their being bound to a particular product. At the root of this lies the fact that many translators regard the use of CAT tools in a negative light. If translators can be persuaded to regard such tasks not reactively, as simply the task of correcting errors in suggestions made by the TM, but positively as the act of utilising good translations that have been provided by the TM, then more translators will become willing to use CAT tools. To achieve this, the careful management of TM databases is vital, as we discuss in the next section.

Increasing significance of TM database management

Improvements in translation efficiency with TM require both sufficient quantity of TM data and maintenance of data quality. A poor-quality TM, apart from decreasing translation efficiency, increases the cognitive load on translators, thereby reducing their motivation for the job. Furthermore, in the case of long-term consecutive projects, the impact of poor TM quality on translations will become evident only gradually as time goes on. In such cases, it is extremely difficult to solve the issue after it has already become apparent.

This issue of declining TM quality occurs as part of the normal translation process and it is therefore difficult to avoid completely. When text created with a CAT tool is cleaned up and its layout adjusted, various edits in layout and of translation errors discovered at that stage are added. Consequently, there are inevitably differences between the TM data and the final version of the translation. PMs need to determine the translation workflow and carry out work tasks while bearing such drawbacks in mind. Specifically, we suggest the following measures are effective.

First, confirm contract provisions regarding TM management

First, the party responsible for management and storage of TM needs to be determined clearly in the contract for each work commission. If the LSP has received ISO17100 certification, it must also abide by the relevant regulations. The LSP should explain the significance and role of the TM database to the client before a contract is signed and ensure that all of the parties involved are satisfied with the contract provisions. Moreover, all concerned should be fully cognisant with the details of the contract and strictly abide by its provisions.

Create necessary environment for efficient TM use

However, in practice, a variety of factors other than contract provisions influence the TM management process. The following points will ensure efficient use of TM.

First, PMs need to judge which work commissions need to have TMs created from them. An important criterion for making this judgement is whether the TM thus created is likely to be used for repeat commissions.

If that is the case, then PMs need to confirm whether the personnel and resources needed for TM creation are available on both the client side and the LSP side. Specifically, the following points need to be ascertained:

- Whether the person responsible for the TM on the client side has knowledge of English (or another foreign language/languages).
- Whether that person is knowledgeable about the translation process.
- Whether that person is familiar with CAT tools and is currently using such tools. Also, the degree of time and commitment he or she is prepared to make to the translation process.
- The degree of TM management resources available at the LSP. (For example, software, personnel, budgetary funding).

Collaboration with clients is extremely important for the effective use of TM. LSP employees who are in direct contact with clients, whether PMs or sales staff, need to build an optimal operational environment by skilfully involving clients in the work process, while following their wishes where possible.

Recognise TM management as a legitimate work process

What became apparent from the PMs' discussion was that TM management tasks, such as updating the TM, are viewed as work to be carried out by translators and PMs only when they have spare time available. This recognition is, however, problematic. We recommend that LSPs acknowledge TM management tasks as legitimate work tasks, rather than as something PMs do not really have time for, or tasks they have to carry out in spite of various obstacles. As such, LSPs should reserve an appropriate budget for the task and engage in it with a view to reaping long term benefits.

A long-term perspective is essential, with LSPs needing to accumulate the necessary skills and personnel over time

There is a general tendency for people to believe that translation quality is linked to the skill of the translator. However, the PMs' discussions have demonstrated that the existence of an operational environment and personnel which permit optimal use of resources (here TM) are what in fact ensures the quality and efficiency of the final translation.

What is invaluable is a PM who is not simply capable of using CAT tools and other technology, but who understands the significance of using such technology and can communicate with clients and the other players involved. A long-term perspective is the key here. The topic of technology training will be revisited in the section entitled "3. On technology education and training" below.

A future-oriented perspective that is not confined to use of CAT tools, but also includes MT creation

This topic was not mentioned in our focus group discussions, but TM data can potentially be an important resource for the creation of an MT engine. The number of LSPs and other companies using high-quality TM databases to launch MT engine creation services for clients has been increasing. TM management undertaken with such expansion of work operations in mind is likely to become important in the future. From this perspective also, employees with technical expertise broader than just knowledge of CAT tools are likely to become an increasingly vital resource in future.

2.   On machine translation (MT)

Personal use of MT by translators calls for new relationship of trust

One issue raised during the PMs' discussions was the increasing use of free MT engines leading to unauthorised use of MT by translators on work commissions stipulated as human translation. This has caused PMs both concern and irritation. Up until now PMs had thought there was an unspoken agreement that MT would not be used for human translation commissions. However, some translators no longer abide by this unspoken agreement. PMs feel dissatisfaction and mistrust as a result. Nevertheless, this is perceived to be merely a moral issue and no clear rules have yet been established by the industry regarding it.

However PMs view this matter, the spread of MT has spurred a shift in industry norms, at least from the perspective of translators. As a result, moral perceptions have become blurred.

Under such circumstances, there is a need to develop a consensus on best practices that is acceptable to both LSPs and translators. It would be desirable to create forums for exchanges between LSPs and translators and post-editors, such as conferences and industry events. Ultimately what is required is to have agreed best practices clearly set out in contracts.

Future prospects for MTPE services still remain unclear

The number of LSPs supplementing traditional human TEP (Translation-Editing-Proofreading) services with MTPE operations is set to increase, at least in the short term. However, the burning question amongst industry stakeholders concerns the mid to long-term outlook for the MTPE business model. This encompasses questions about the prospects for MTPE demand, the possibility of its overtaking TEP services and the viability of post-editing as a profession.

Evolving MTPE services face four uncertainties

This study has shown that MTPE services are still evolving, and that no stable business model has yet been developed for them. PMs face numerous difficulties due to the need to satisfy the conflicting wishes of clients and translators. Evidence-based dissemination of knowledge is required so that all those on the frontline of the industry can make the appropriate judgement calls.

1. **Information on future needs for MTPE**：We need to establish the likely amount of future demand for post-editing work. MTPE may become redundant in certain fields once MT accuracy improves. The unpredictability of post-editing demand, namely whether it is only temporary or whether a stable demand can be expected in future is a source of uncertainty in the profession. It is important for the industry to share information and predictions regarding market outlooks, particularly the future market share of post-editing.

2. **Information on appropriate personnel for post-editing**：We predict that there will be a shortage of post-editing staff in the short-term. However, a study claims that the level of NMT (Neural Machine Translation) has already exceeded the English level of Japanese university students[4]. Other research conducted on the skill level required of English-Japanese post-editors indicates that people with a language ability equivalent to that of Japanese university students will be unable to detect particular types of errors produced by NMT[5]. Our study has shown that due to skilled translators being reluctant to take on post-editing work, PMs either currently request less skilled translators or persons other than translators to undertake post-editing jobs, or else are considering such a strategy. There is a general lack of awareness in the industry that such personnel selection may risk serious translation errors remaining undetected.

3. **Information about post-editing guidelines:** We argue that establishing practical guidelines for post-editing work is a pressing concern for the industry. These should include determining how various errors are corrected and whether in fact they should be corrected at all. The reason for urgency in this matter is that until this matter is resolved, the issue of appropriate personnel selection and education referenced in 2) above will also not be satisfactorily resolved. In current circumstances, where no shared industry guidelines exist, ultimate responsibility tends to rest with the post-editor, and this is a strain on those performing this work. Guidelines established by TAUS, or large corporations such as SDL, do exist, but such guidelines are still insufficiently well-known and utilised in the workplace. Furthermore, research into whether such existing guidelines are the best option is still in its infancy.

4. **Information regarding best pricing practices:** Industry stakeholders have conflicting motivations, with clients demanding low cost, LSPs concerned about falling profit margins and post-editors fearing reduced incomes. Under such circumstances, the industry needs to establish a pricing method that satisfies the requirements of all three groups of stakeholders. Failure to achieve such a pricing method may lead to unfair price collapses, which may then cause a talent drain from the industry. This will have serious implications for the sustainability of the industry. However, it is difficult to establish a pricing framework for MTPE due to the influence of various factors. These include costs for MT engine creation, and the skills and work speed of post-editors.

Establish best practices by melding industry opinions with technical research

Certain of the four issues mentioned above are already the subject of translation studies research. What we consider to be the most pressing issue is to understand future industry needs for post-editing. This issue closely relates to the impact of expected technological advancements in machine translation itself. As such, MT developers need to engage in joint discussions and research with LSPs, translators, industry and professional bodies, think tanks and translation studies researchers. In order to establish how the translation profession is likely to evolve in the future, various stakeholders should

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[4] https://miraitranslate.com/uploads/2017/06/2d5778dcdee47e4197468bc922352179.pdf
[5] https://www.jostrans.org/issue31/art_yamada.php

share the information they possess, and create a set of best practices suitable for the industry. To this end, we need to increase the number of forums for exchanges of information between industry and academia.

Specifically, we recommend that an industry-academic consortium should be founded. This consortium should immediately establish a future direction for the translation industry, and would need to engage in creating the appropriate industry environment, training and guidelines to achieve this.

3.   On technology education and training

Japan currently lacks the institutions and opportunities to raise the next generation of technologically-versed translators

Our research has shown that technology education within Japan's translation industry relies on industry professionals, being realised by the individual efforts of freelance translators supplemented by cooperation from LSPs. This framework benefits LSPs, since it enables them to secure skilled translators in exchange for conducting their training. However, it is also a burden on work operations from the perspective of the costs and time required.

We also found that PMs did not possess sufficient information regarding educational opportunities for training in translation technologies available both inside and outside Japan. While PMs are engaged in providing day-to-day work-based technological support for translators, their discussions did not reveal any industry-wide vision for translators' technology education.

LSPs consider technological skills to be a legitimate requirement for translators. However, as we learned from our focus groups, translators themselves do not necessary share this opinion. It is our contention that translators and LSPs need to share their opinions as to how they see the industry evolving over the long term and what part technology use will play in this. Once this has been achieved, the industry as a whole should establish a shared vision for the future education of translators.

Japanese translation industry lagging behind global business trends, risk of hollowing out of human resources

The World Economic Forum's *The Future of Jobs Report 2018*[6] emphasises that rapid changes in the employment market caused by technological advances will give rise to changes not just to individual companies, but to a structural transformation of society and industry as a whole. The report states that securing a constant supply of human resources fully conversant in the use of technology is an issue of critical importance for each respective industrial sector. The report further emphasises that education and retraining of personnel needs to be undertaken through cooperation between various industry stakeholders, rather than by individual companies acting in isolation. It also reports findings from a survey of business executives employed by global companies showing which entities they consider to be preferred partners in managing the integration of new technologies and workforce transition. According to the survey results these included not only specialised departments in the executive's own firm (85%), but also industry associations (66%), academic experts (63%), international educational institutions (52%), and local educational institutions (50%).

The results of this study illustrate that Japan's translation industry is currently out of step with such international trends. In Japan, employee technology training is reliant on efforts made by individual workplaces and workers. This means that either the industry lacks a concerted vision, or this has not permeated down to PMs in the workplace.

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[6] http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf

What is needed is for industry and academia to create a joint vision and related initiatives for human resource development

We believe translators' technology education is essential for the healthy and sustained development of the Japanese translation industry. To this end, the industry needs to partner with higher education institutions to engage in effective translator education and initiatives that would lead to a dynamic model of workforce composition within the industry.

We propose the following measures.

- Universities, post-graduate institutions and translation schools introduce technology education that responds to the needs of the workplace and provide translator training needed to create a sustainable translation industry. In order to make this achievable, a forum for periodic exchanges between LSPs and educational institutions should be established.
- The industry needs a huge volume of research data and specialist knowledge in order to ascertain what kind of training should be undertaken and in what way. Here, it would be useful to reference educational frameworks such as the European Master's in Translation established by the European Commission. A system for collaboration with researchers, both at home and abroad, should also be established.
- Translation technology training must focus on enabling translators to thoroughly understand the principles of technology. It must teach them about both the merits and demerits of technology with regard to its impact on translation. If translators are simply taught how to use various CAT tools, such training will become meaningless when new versions of such tools are issued. Hence, training that focuses only on learning how to use technology is inadequate.
- The educational opportunities provided for technology training should not be limited to individual LSPs nor influenced by the profit motives of CAT tool vendors.
- The industry needs to communicate to technology vendors exactly what kind of educational resources are required and to urge them to provide resources that meet the needs of the translation workplace.

Labour market for PMs depends on experienced employees and stresses self-study

Our research has shown that translation project managers (PMs) generally obtain their skill and expertise by already being experienced in some kind of project management when they are recruited by LSPs and then supplementing that with self-study and OJT after joining the industry. Since new graduates need to receive technology training from a very basic level, LSPs have preferred to recruit experienced employees. As with freelance translators, when the current generation of PMs retires, there is a danger that the industry will see a 'hollowing out' of the labour market for PMs.

This situation has been exacerbated by the lack of higher educational institutions teaching translation project management classes in Japan. While such programs are still few in number overseas, there are examples of higher educational institutions providing specialist training in localisation. These include the Middlebury Institute of International Studies in the United States, Leeds University in the United Kingdom, the Republic of Ireland's Dublin City University and Xi'an University in China.

New developmental strategy required for PM personnel

However, in a uniquely Japanese phenomenon, translation schools managed by LSPs play a significant role in domestic translator training. As with translator education, the Japanese translation industry needs to take these unique employment market conditions and corporate culture into account when considering how best to train skilled translation PMs. This should not be delegated to individual LSPs. We believe the industry as a whole should come to an agreement on this and implement the following initiatives together with academia.

- The industry and academia should create opportunities for joint discussion to explore the possibility of universities, postgraduate institutions and translation schools creating training programmes for PMs, in addition to those already on offer for translators.
- Academic research into course curriculums planning for PM training at universities and postgraduate institutions is already underway overseas, based on industry needs assessment studies. Japanese researchers are also starting similar research projects. We believe that opportunities for academia to share knowledge with the industry regarding this matter must be increased in future.

4. On the paid-crowdsourcing translation business model

Not viewed as competing with existing LSPs, but providing services for a different client market

In other industries, the 'disruptive' crowdsourcing business model is the subject of discussion, both positive and negative. Similar services are also becoming available in the translation industry, but at this time it is still not clear what influence they will have.

We found that PMs believe that the paid-crowdsourcing translation business model will not destroy existing business models, but can coexist alongside them. They recognise the value of crowdsourcing as a provider of easily accessible translation services for general users. However, considering current developments in MT, PMs have doubts about the long-term viability of such services, believing that they will be replaced by MT in the future.

Furthermore, the use of crowdsourcing translation services as vendor services by LSPs (to outsource translation commissions) is limited. Some LSPs were already trialling the use of such services, or considering their use, but did not rate them highly. The main reason cited was that it was difficult to guarantee the quality of translation produced.

Focus on whether crowdsourcing translation will become a widely accepted service or a niche business

In the Hype Cycle model developed by Gartner Inc.,[7] which measures the maturity and adoption of technologies, a technology's degree of penetration into society is divided into five stages. These are: Innovation Trigger, Peak of Inflated Expectations, Trough of Disillusionment, Slope of Enlightenment and Plateau of Productivity. If we compare PMs' opinions with this model, paid-crowdsourcing translation services appear to have entered the third stage of "Trough of Disillusionment". If such services evolve as suggested in the Hype Cycle, it could be argued that they will start to enter a period of recovery over the next few years. A small number of businesses will climb the "Slope of Enlightenment" and the market will realise the benefits of crowdsourcing services. Under such a scenario, the paid-crowdsourcing translation business model will then continue to evolve, either as a widely accepted business practice or as a niche business model.

With focus on impact of MT, industry continues to take a cautious approach

However, due to the presence of MT, which is currently in competition with crowdsourcing translation services in the translation market, it seems unlikely that crowdsourcing translation services can continue in their present form and follow the route of a normal Hype Cycle. The majority of such services will need to eliminate the disadvantages that concern PMs, i.e., ensuring stable translation quality and resolving security issues, in order to evolve into sustainable businesses.

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[7] https://www.gartner.com/en/research/methodologies/gartner-hype-cycle

One advantage of the paid-crowdsourcing translation model is that it semi-automates the process of matching translation commissions with appropriate translators. Therefore, should it be possible to eliminate the disadvantages that currently concern PMs, it may be possible to adopt the matching model in conventional project management operations in future.

Moreover, we believe it likely that, rather than competing with MT, LSPs will offer services in which crowdsourcing is integrated into normal workflow operations that already include MT. There are examples in the global market, in which a sophisticated MTQE (machine translation quality estimation) system is used to decide which commissions are to be catered for by raw MT outputs and which by crowdsourced human translation.[8] Here, an automated QE system is the key. Crowdsourcing translation services will evolve in tandem with various other technologies such as MTQE and it is necessary to pay close attention to future developments in this area.

5. On communications

The industry needs to share best practices regarding the use of online resources

We discovered from the focus group discussions that PMs are taking advantage of a variety of new communication tools in an attempt to improve operational efficiency and effectiveness. However, PMs were not in agreement over how this should be accomplished in practice. The question of whether translation forums should be used to recruit translators was particularly divisive.

The issue of how to respond to damaging comments made on the internet was also raised. If translators engage in criticisms of LSPs on such a forum, should PMs regard this as an opportunity to improve operational quality? Or should they avoid such exchanges, perceiving them as something that would cause them to lose enthusiasm for their work? Since this matter relates to employees' work morale and motivation, LSPs need to consider their response.

We believe it to be beneficial for the industry as a whole that online forums should exist as a place where all parties involved in the translation industry can participate in open and constructive exchanges. However, one characteristic of the internet as a medium is that it is difficult to monitor. Our opinion is that sharing best practices for forums and social media in order to optimise translation operations would also be beneficial for LSPs.

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[8] Examples can be found at: https://amtaweb.org/amta-2018-first-workshop-translation-quality-estimation-automatic-post-editing/