translate

DUEL OR DUET?

How humans and machines can perfectly complement each other in the translation industry

1.

INTRODUCTION

Artificial intelligence is already present in many area of our lives, be it in our smartphone's face recognition feature, in self-driving cars or in the voice assistant in our smart home device. These cutting-edge technologies are entering the translation industry, too: with the increasing capacity of computers, new applications are on the rise and promise more success for your company – think machine translation. Machine translation enables the automated translation of a source text into a target text.

The opportunities for translation service providers and clients to benefit from these new options are ever increasing. The progress in machine learning and automation of human-like thought processes has led to a steady improvement of machine translation tools. Systems for neural machine translation (NMT) are now capable of collecting and processing hundreds of pieces of information on every word and every sentence in your source text, and to convert it into a fluent translation.

The output is considerable: Machines are already translating **over one billion words per day. That is more than all translators in the world together translate in one year.** Machine translation can be done with pre-trained machines which come with an existing data base, or with models which are trained individually in your company. However, the latter require a high level of specialist expertise and large data sets for training, which many companies lack.

With technological advances progressing at such a rapid rate, companies are no longer willing to tie themselves to one specific machine translation solution for several years. Companies must stay agile and capable of reacting to changing circumstances at all times. Translation service providers likewise need to maintain this flexibility. They are constantly integrating new technical solutions and advise their clients on the application that is most likely to lead to success in their individual circumstances.

Alongside opportunities, the use of machine translation does carry some risks. Especially in a business context, this type of translation will only ever lead to sustained success if it is used in a focussed and, above all, managed way. **This whitepaper offers information on the opportunities and risks of machine translation services, and gives recommendations on how best to manage them.**

2.

MACHINE TRANSLATION AND POST-EDITING

From the rapid translation of individual words for private purposes to emails or short texts for business use – the use of free translation tools such as Google Translate, Bing or DeepL is on the rise. They are all based on one principle: machine translation (MT). Machine translation systems transfer a source text into the target language without a human translator being involved.

The results differ above all in terms of quality. Machine translations for the mass market are widely considered technically mature; however, the use of artificial intelligence (AI) is meeting its limits, especially in professional contexts. Companies are increasingly asking themselves: Can one generic system for machine translation meet my specific business requirements? Does machine translation guarantee the confidentiality of my data? How can we integrate machine translations into our individual workflow?

Good to know – the basis of machine translation systems

Rule-based machine translations (RBMT)
consist of an ideally well-founded combination of linguistic algorithms, grammatical rules, dictionaries and general vocabulary. Due to the resulting word-for-word translation, the final text will come across as mechanically constructed.

Statistical machine translations (SMT)
"learn" to translate by statistically analysing large amounts of data and combining similar fragments into one translation. These translations tend to be more fluent but are often incomplete and feature false syntactic references.

Neural machine translations (NMT)
process language components according to qualitative similarities. Deep-learning algorithms analyse contexts and create an abstract linguistic model. The results are virtually faultless for short sentences but where the sentence structure is more complex and specialist terms are used, this system comes up against its limits.

It is people who optimise machine performance.

The term "machine translation" is initially misleading. Even where translations are carried out with the help of technologies, it is frequently the human factor that makes all the difference. Machine translations have weaknesses especially in areas in which a professional translator has been indispensable up to now:

- Translations which require substantive expert knowledge and therefore specialist terms and contexts
- Translations in which grammatical rules, sentence structure and cross-sentence contexts and connections are crucial
- Translations which contain the cultural context of the target audience and essential puns or wordplay
- Translations into exotic languages

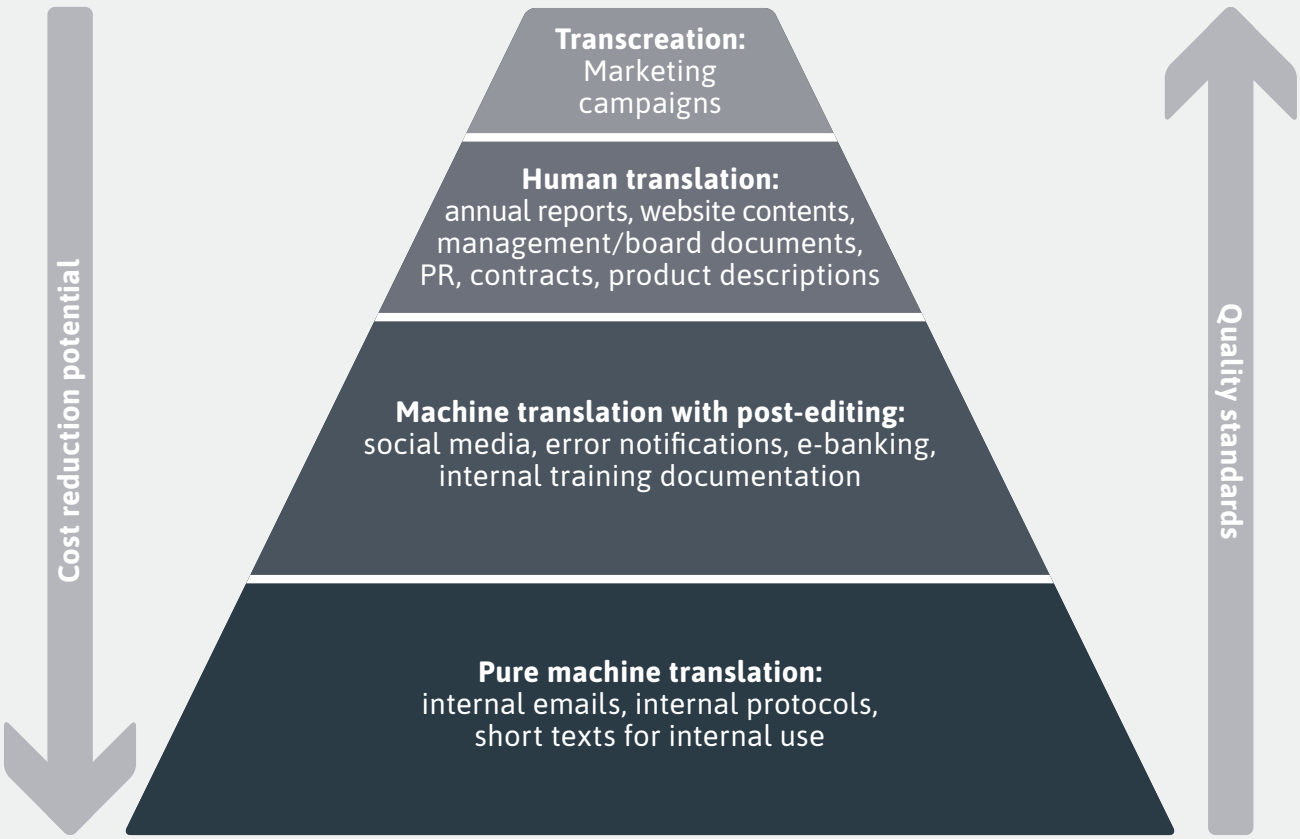
Language experts are needed to refine the computer-generated text. This is what is known as post-editing (PE). Professional specialist translators who are familiar with the sources of errors in machine translations focus on the finer points of language and cultural particularities and correct the machine-generated text. The result is a coherent target text that reads well.

3.

QUALITY MANAGEMENT

Text quality depends on requirements.

Many companies wonder how machine translations can be optimally and most promisingly used. The answer depends on the individual quality requirements: the less complex the translation, the more likely it is to be suitable for machine translation. On the other hand, the quality of the source text is crucial: the fewer mistakes there are in the source text, the better the results rendered by the machine translation tool will be.



A **pure machine translation** will suffice, for instance, for internal emails, minutes or less demanding short texts in which comprehension of the information conveyed is the only important factor. Erroneous punctuation or various typographical or translation errors will be of less consequence in these cases. Texts with higher quality standards, such as annual reports, website contents, product brochures or general terms and conditions, should be reserved for human translators.

Where a reader should not be able to notice that the original translation was done by a machine, a machine translation should always be supplemented with **post-editing.** This applies, for example, to error notifications, training documentation or social media content. Post-editing by an experienced native-language translator is indispensable in the world of business if machine translation is to lead to success.

The lower the quality requirements and therefore the effort of post-editing, the higher will be the time and cost savings. Experts work on the assumption that costs can be reduced by up to ten per cent. However, compromising on quality is not always advisable. Free translation tools should only be used if their results can be checked and verified. Blind translation should never be considered adequate and is not advisable even for translations for internal use. The costs of badly translated content is initially invisible but can quickly become reality, leading to unprofessional results, dissatisfied clients or threat to a company's image. Regaining trust costs a company time and money.

Machine translation can inform customers, but it cannot win them over. Where creative communication is being translated, say for a marketing campaign, cultural and stylistic factors play a central role. Machines simply cannot consider such factors. What is needed here is what is known as **transcreation and cultural adaptation.** This means that a text is translated from one language into another with special consideration of the cultural backdrop of the target country.

Where this method is not applied, absurd – and rather ineffective – faux pas may result. One Swedish manufacturer of household goods once intended to introduce their vacuum cleaners to the US market and wanted to emphasise their superior suction power in its marketing. The resulting slogan in American English ran "Nothing sucks like Electrolux". A literal translation for sure, but hardly likely to attract many customers! Such slip-ups can only be prevented by experts.

Machine translation offers huge potential and is associated with comparatively low costs. In many areas it is perfect for saving resources and yielding adequate results.
However, it can never fully replace human translation of a higher quality. A truly high-quality text can only be guaranteed by a human specialist translator.

4.

IT SECURITY AND DATA PROTECTION IN THE TRANSLATION PROCESS

Security aspects of machine translation

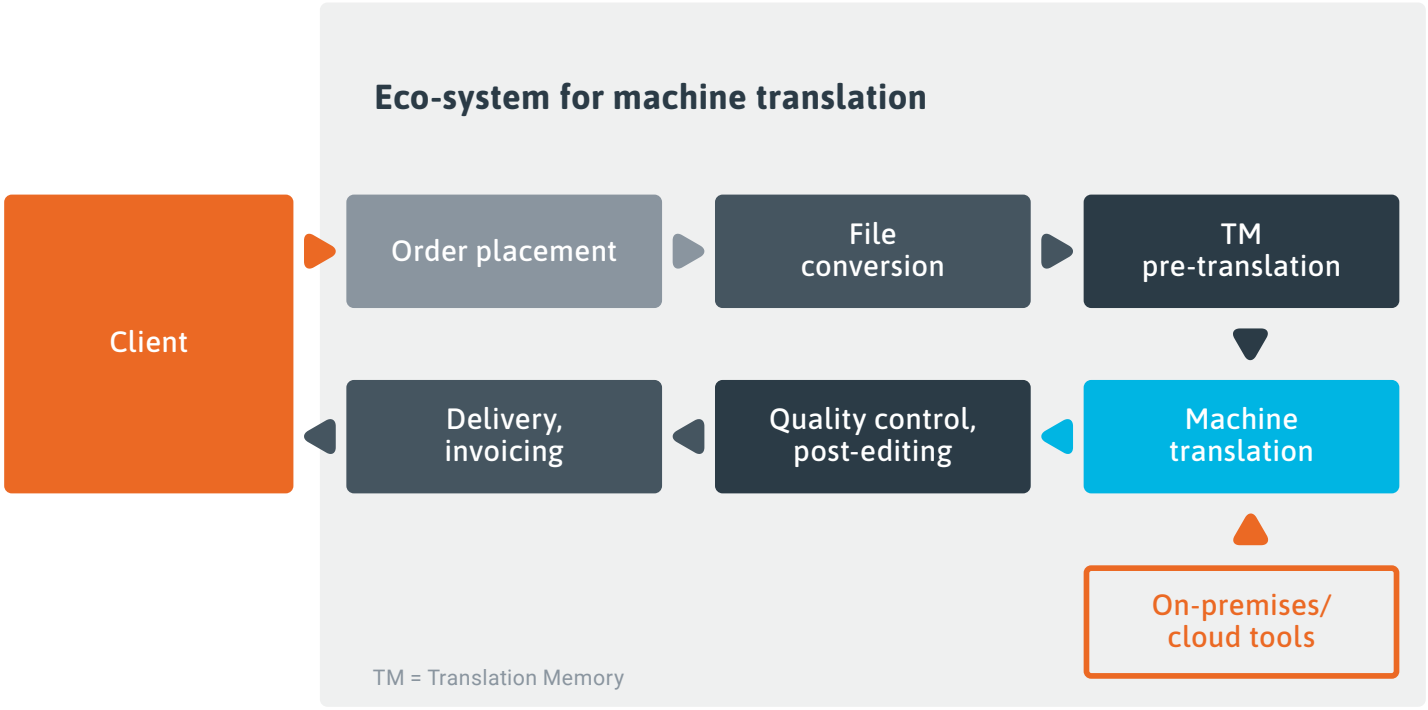
Time and time again we hear of data breaches at large corporations. This means we must ask: How secure are our company data if we use machine translation systems? What happens to the data?

Although publicly available translation programs are very popular, companies must realise that they do not offer a high security level. The data entered are generally stored on external servers, rendering the safeguarding of confidentiality of internal data virtually impossible. In the worst-case scenario, the translated contents will become publicly available, can be found with a simple Google search, or are exploited by competitors. Many companies have now meanwhile block free translation tools for their employees and impose strict security rules.

In order to ensure data security, many companies consider a machine translation system operated on-site on the company's own network a secure alternative. This avoids any data leaking outside the company. Cloud-based translation technologies can likewise be a good option, provided they are equipped with secure, encrypted communication channels. What is often underestimated is the extremely time-intensive process and high costs which are associated with the introduction and training of a company's own machine translation tool.

Companies may likewise consider the option of an on-premises solution. However, the hardware, training and integration requirements for a high-performance on-premises system are high. In addition, regular updates are needed to keep up to date with current standards.

As a result, many companies deliberately decide not to introduce their own machine translation tool and increasingly outsource machine translation to experienced service providers who have optimal technologies available. Such service providers are not only equipped with the necessary expertise with regard to machine translation but also guarantee a high level of protection for sensitive data by way of ISO certifications, security workflows, encrypted data transmission or functional limitations.



Language service providers often use leading, pre-trained machine translation tools – a big step towards speed and cost efficiency. The decisive advantage: companies may easily integrate machine translations as a step in the translation workflow, without being dependent by having committed to one translation system for several years. In addition, translation service providers are increasingly offering the option of integrating existing on-premises or cloud machine translation tools seamlessly into their system landscape.

5.

OPPORTUNITIES AND RISKS OF MACHINE TRANSLATION

What machine translation can do – and what it cannot do

Machine translation systems are more mature now than they ever have been. Nevertheless, they should not be used without careful consideration. Their positive effects only pay out in combination with professional knowhow. Used in an amateurish way, the promised success can quickly turn into failure.

Opportunities of machine translation

1. Time and cost savings

The biggest advantage offered by machine translation is its rapid processing and therefore time saved. For every hour, significantly more words will be processed than in pure human translation. This leads to a shorter time to market, for example for multilingual information products such as e-commerce product descriptions. But short processing times also mean fewer costs. According to current studies, costs may reduce by between 30 and 90 per cent, depending on whether and to what extent post-editing is used.

2. Support of various language combinations

Machine translation tools always cover several language combinations. This provides a larger choice of application options. Even just looking at the most commonly used languages on websites, this equates to 28,730 different language combinations available. Ignoring languages used by less than 0.1 per cent of websites, machine translation tools can cover all language combinations.

3. Potential for innovative use

The quality of machine-generated translations has improved significantly since the advent of neural machine translation. According to the case study "Neural vs. Phrase-based Machine Translation Quality", there have been reductions of

- morphological errors by 19 per cent,
- lexical errors by 17 per cent,
- errors in word order by up to 50 per cent and
- post-editing by 26 per cent.

While this does not rival a human translation, it does offer new opportunities for texts with low quality requirements. Machine translations are not only much quicker, they are also significantly cheaper. Contrary to pre-machine translation days, it now makes sense to carry out a translation even at draft stage to enable content to be linguistically verified and adapted. Some machine-translated texts may even be usable without any post-editing. Examples are texts for social networks, company-internal communications, e.g. emails or chat, or support requests. Internal documents with low quality requirements may likewise be translated time and cost-effectively. In combination with human post-editing, the translation quality may be increased further.

4. Developing a competitive advantage

Intensive research and development are currently going into neural translation technologies. While neural machine translation tools are not yet used widely, many companies are in the planning phase and are allocating budgets to introduce them. From a company perspective, now is the perfect time to differentiate yourself from the competition by exploiting the advantages of NMT and to develop a clear competitive edge.

Particularly companies who deal with large translation volumes may benefit from MTPE translation services. Where those volumes need to be processed in limited time, with a limited budget and with relatively low quality standards, machine translation can provide an adequate solution at short notice.

The risks are significant, too

1. Wrong choice of machine translation tool

The number of machine translation solutions available is ever increasing. That in itself renders a company's choice of the right machine a complex matter. Language combinations and translation quality likewise vary between different machines: if a company needs to cover 48 language combinations using the languages most commonly used on websites in the respective best possible quality, it will need to employ eight different tools.

The constant optimisation of machine translation tools is making the right choice even more difficult, as there is a frequent shift in which tool offers the best translation quality. In 2019 alone, the best tool for language combinations changed 19 times in six months. For an individual company, the risks of choosing the wrong technology are significant.

2. Unrealistic quality standards

The important thing to remember is that to date, despite all improvements, no machine translation tool is able to rival the quality of a human translation. Punctuation, numbers, spaces or symbols are among the common errors. Where a source text is of poor quality, results will never be of good quality. Company-specific and technical terminology is considered only to an inadequate extent. The matter is complicated by the factor that current NMT technology translates all sentences in parallel, so that connections between sentences are frequently lost and the text does not read well.

3. Security gaps in freely available machine translation tools

The above-mentioned security risks associated with machine translation tools freely available online represent a significant factor when it comes to the protection of critical company data. Providers are frequently granted the right to dispose of the contents entered at their own discretion and to fail to effect encryption. Allowing sensitive data such as personnel information, customer data or passwords to be handled in this manner can lead to business risks on an enormous scale.

4. Lack of acceptance due to tool combinations

There are currently over 500 technical tools for a variety of translation and interpreting applications on the market. Machine-assisted translation services are integrated in company systems and combined with other services in a variety of ways. They are often subordinated to other systems and cannot meet the specified requirements due to overriding project criteria. This poses the risk of machine-assisted translations not being accepted in the long term due to poor results.

5. Time-intensive training of a machine translation tool

To create high-quality target texts, machine translation systems have to be expertly trained with data. Good results in many cases require several million perfectly translated sentence segments per language combination – a requirement that is almost impossible to meet by one individual company. Success is most likely if proven experts with professional specialist knowledge are involved. However, such experts are often difficult to access and can be a barrier for a company, resulting in a failure to successfully implement artificial intelligence projects at all.

6.

CONCLUSION

Whether a text is suitable for machine translation crucially depends on the quality requirements. In general, the lower the required standard, the more likely the text is to be suitable for machine translation.

Machine translation services in combination with post-editing (MTPE) offer great savings potential which need not necessarily compromise the text quality in any way. As development is ongoing and new, complex links are constantly being discovered, companies should resort to the expertise of specialists when introducing any solution based on artificial intelligence. Professional language service providers will establish in initial conversations and feasibility analyses whether an integration of machines into the translation process can be expected to be profitable, and which level of post-editing is most likely to yield the desired results.

The best solution often lies in-between: in the combination of humans and machines.

There is no battle between human and machine translation. They complement each other. Machine translation offers drastic time savings and optimises translation costs. Refinement by people (post-editing) finally ensures that the machine translation meets the highest quality standards.

7.

About 24translate

Companies have been able to connect with the entire world for two decades, thanks to 24translate - one of the leading international language service providers. Our core compentencies - specialised translations, text optimisations, as well as process optimisations across all industries - thus offer our customers our unique technical expertise and our advanced security standards, especially for very demanding translation projects.

Do not hesitate to get in touch with us if you still have questions or would like to know more about how to make better use of your multilingual communication potential.

We will gladly offer you individual and free-of-charge advice.

Switzerland

24translate GmbH
Rittmeyerstrasse 13
9014 St. Gallen

Web www.24translate.ch
Telephone +41 (0) 71 226 46 56
E-Mail info@24translate.ch

Germany

24translate Direct GmbH & Co. KG
Straßenbahnring 19a
20251 Hamburg

Web www.24translate.de
Telephone +49 (0) 40 480 63 20
E-Mail service@24translate.de