Translation Standard Using MT (MTPE)

Version: 1.5

Revision date: 01.07.2024

Department:	*Translation Department*
Document code:	*RGL-TRA-008*

Contents

I. Terms and definitions

Machine Translation (MT) is the process of translating text from one natural language to another using special computer software. It is performed by fully automated tools without human involvement. Machine translation speeds up the process and is often used to translate large volumes of text.

Rule-Based Machine Translation (RBMT) is machine translation based on grammar, language patterns, and bilingual dictionaries. The very first generation of MT technology.

Example-based Machine Translation (EBMT) is machine translation based on the search for analogies between the source text and existing parallel texts. The program finds similar translations in its archives and applies them to the new text. The second generation of MT technology.

Statistical Machine Translation (SMT) is machine translation based on analysis of large volumes of parallel texts. This system calculates the translation options for individual words and their frequency, before including the most likely option in the translation. The third generation of MT systems.

Neural Machine Translation (NMT) is machine translation based on machine learning and neural network technology. This technology uses parallel bodies of text and requires significant computing capacity. This is the fourth generation of MT technology. The first neural engines appeared on the market in 2016, resulting in a significant improvement in the quality of MT.

Machine Translation Engine (MTE) is a technology used to generate machine translation. The engines can be pre-trained/stock and custom.

Machine Translation Post-editing (MTPE) is translation of text using machine translation technology. The purpose of post-editing is to improve the translation to the standard of human translation using automatic machine translation.

In the industry there is a distinction between “light” and “heavy” post-editing: in the former, partial corrections are made to the meaning of a translation, while in the latter , the machine translation is improved to a standard comparable with human translation.

At InText, we always apply heavy post-editing!

Edit Distance (ED) is an indicator of how useful the MT has been. Using dedicated software, we measure the number of changes required to correct the translation, as well as the total number of characters. This gives us a percentage value for each segment. The edit distance does not reflect the quality of the translation, but it tells us how useful the MT has been.

II. Introduction

As information technology develops, new tools for speeding up the translation process are constantly emerging: text editors, automated spell checkers and translation quality checkers, electronic dictionaries, and translation memory systems. All these computer tools share a common purpose – to provide prompts to translators as they work.

Modern machine translation tools provide good prompts for suitable texts, considerably speeding up the translation. In addition, the use of pre-prepared machine translation is now mandatory for a number of large jobs. If certain conditions are met, the ability to work with MT enables the translator to process traditional jobs faster and to accept jobs involving new technology chains.

It is important to note that irrespective of how good machine translation is, it cannot replace the work of a translator. MT is not suitable for all subject areas, language pairs and document types, and the standard of translation is not such that human editing is no longer required.

In 2019 we tested the results of machine translation of a wide variety of texts using multiple engines. As a result, we managed to develop criteria for determining the expediency of using MT for a particular job.

This document describes machine translation technology and the procedure for using it. It provides useful tips for optimizing the workflow.

III. Use of MT in InText

There are more than 50 commercial machine translation engines in the world. They are designed for different regions and work with different language pairs. The quality and cost of machine translation vary enormously. InText has put a lot of effort into researching and improving its technologies. We have drawn up criteria for the application and selection of MTE – each such project is processed individually.

First of all, we focus on **information security**. All the translation jobs we do are confidential, which means that engine providers must ensure that uploaded information will not be used by anyone other than representatives of InText. Free MT engines cannot guarantee this, so we use only paid-for solutions in our work.

The second selection criterion is the **quality of translation** provided by the engine. We have tested the most common engines in our language pairs and subject areas to measure translation quality. We prepared and tested a wide selection of test jobs. Feedback from translators and the edit distance metric were used as criteria.

One important aspect in terms of quality is that the selected engines are based on neural machine translation. In most cases, this technology helped to improve the quality of machine translation and reduce the time spent by the translator, relative to statistical engines.

Another important aspect is process of training machine translation engines. InText has mastered this process and trains translation engines for individual projects and subject areas. Training improves the quality of automatic translation: the machine understands and takes account of textual, stylistic and terminological requirements. As a result, the translation is more consistent and concise.

To use this technology, the TM must be prepared in a specific way and additional funding is required. It therefore makes sense to use it for large projects with a constant flow of jobs.

MT translation should result in a ready-to-use text. In the following sections we have pulled together some practical hints on how to achieve this result more effectively. This information is based on the experience of our suppliers who participated in the testing of various MTEs.

IV. The role of the translator when using MT

Post-editing has become firmly established as a service in the industry – translation association standards are publicly available, different aspects and the best ways to work with the technology are discussed at conferences, the ISO standard has recently been released.

There remains the important question of whether this task is part of the translation or the editing process.

At InText, we think that post-editing is closer to translation. The prepared machine translation is regarded as a guide for the translator rather than as the final product. Moreover, to improve the quality to the level of human translation, the text must be edited after post-editing.

One could say that the term "post-editing", as used in the industry, actually means translation using prompts based on automatically prepared texts. Therefore, what is called post-editing in the industry is considered by us as translation with the help of MT.

As for the job of the translator using machine translation, this has been concisely described by the U.S. National Institute of Standards and Technology:

Make the MT output have the correct meaning, using understandable English, in as few edits as possible.

This means that three key conditions must be met:

1) Correctly convey the meaning of the source text;
2) Use an appropriate and understandable style;
3) Use machine translation as much as possible in order to reduce the number of corrections.

To meet these conditions, it is worth remembering that:

- There are often several alternative ways of editing machine translation. All of them may be correct. In such situation, it is better to focus on the one that requires **fewer corrections.**

- The translation must always convey **the same meaning as the original**, it is not acceptable to add or delete information.

- When translating, you need to consider the **style** of the target language. Word-for-word translations should be avoided.

- You should try to reduce the **number of corrections** when this can be done without compromising the meaning or readability of the translation. Each inserted/deleted/updated word or punctuation mark is considered a correction.

V. Tips for working with machine translation

1) Inconsistent translation

Unlike a human being, a machine thinks in segments. It is not able to determine the overall context of the text, remember words from previous segments, or think consistently.

This is very noticeable when the same word occurs in different segments.

In these situations, a human translator first does some research and selects the most appropriate translation option, memorizes it and uses it later in the translation.

A machine does not memorize which translation option it has already chosen – in each segment it does the research afresh. Because of this, the same word can be translated differently.

The more meanings a word has, the harder the choice is for the software. For example, a “listed company” (a company listed on an exchange) can easily be translated as a “company on the list”.

Maintaining a glossary is a good habit when working with MT.

Thanks to the functionality of SDL Trados Studio, a glossary can be created and populated while working with a text. This takes up very little time and allows the translator to re-check their work.

2) Short or too long segments

This problem is related to two aspects of machine translation: the absence of general context and the difficulty of establishing connections in complex and compound sentences.

The software can struggle when translating short segments of 1–3 words. It analyses these segments in isolation **without understanding the overall context**. As a result, in some cases it identifies the subject area correctly and chooses the right terminology, while in others it makes a mistake and chooses something completely wrong.

Documents consisting mostly of these types of segments are not suitable for machine translation. If the MT engine is trained, however, this problem can be resolved.

Long sentences pose a different kind of problem: the software **gets confused over the links between sentences and their parts**. This often results in incorrect translation. The problem gets more complicated if there are punctuation errors in the source text.

It is worth bearing in mind the risks associated with segments that are too short or too long.

3) Style and tone of the text

The quality of sentence construction, communication of the style and phrasing have greatly improved as neural technology has replaced statistical machine translation.

This has made it possible to use machine translation even in marketing texts.

However, it is important to remember that the software still tends to make certain mistakes.

There are **difficulties with syntax** – the software might simply copy it from the source text. This problem is most noticeable when working with materials for publications.

Another typical feature of the software is the use of **words with the same roots close** to each other. The software is not able to understand that this choice of words impairs the style of text.

It is also important to consider the role **of context in the style** of translation. The software can translate a text inconsistently in terms of style or, for example, fail to take into account turns of phrase used in a particular industry. The term “palazzo” can be translated as “palace” in texts about Italy, although in some cases the

term “palazzo” has become established. The word “chapel” may be translated in several different ways, depending on the context of source text.

The program cannot distinguish between a **formal and informal tone of address.** The problem of tone is particularly relevant for translations from English. The use of the formal or informal “you” in translation needs to be checked, because one cannot rely on the software to get it right.

4) Errors in the source text

One important thing that helps when working with MT is attentive examination of the source text. The technology is still poor at spotting **typos in the source text**.

Situations that would cause no difficulties for a human translator become critical for the software. For example, the phrase “The folowing matix” instead of “the following matrix” could result in the following translations: “ATM leak”, “folding matix” and “foloving matix”.

It is best to take note of such cases immediately while reading the source text.

5) Working with tags

The various machine translation engines process tags differently. The most efficient engines often have no significant problems with this, and tags are successfully transferred to the translation. Only minor issues occur sometimes when, for example, a space is added between a tag and a word.

If a less advanced machine translation engine is used (for example, at the client's request), more complex situations are likely to arise. We have seen situations in which a tag is read by the software as a break in the sentence. Each part of the sentence before and after the tag was treated as separate.

We kindly ask you to report such issues as soon as you discover them!

6) Abnormal errors

You can sometimes encounter apparently inexplicable errors when working with machine translation. For example, there was a case in which the answer “yes” was translated as “Olympiad” by one of the engines.

We assume that these kinds of translations arise from errors in the materials on which the engine was created and trained. It might have been broken segmentation or just incorrect translation.

No engine is immune to this type of defect, and it is not possible to anticipate such issues. Great care is therefore required when working with machine translation.

VI. Assessing the quality of machine translation

InText assesses all jobs in which machine translation has been applied. To obtain a full assessment, two factors are taken into account: the translator’s impressions and the edit distance.

The translator’s impressions

It is important for us to receive feedback directly from translators. We use web forms for this. There is a dedicated item on the checklist for each job with machine translation. This is a request to assess the machine translation:

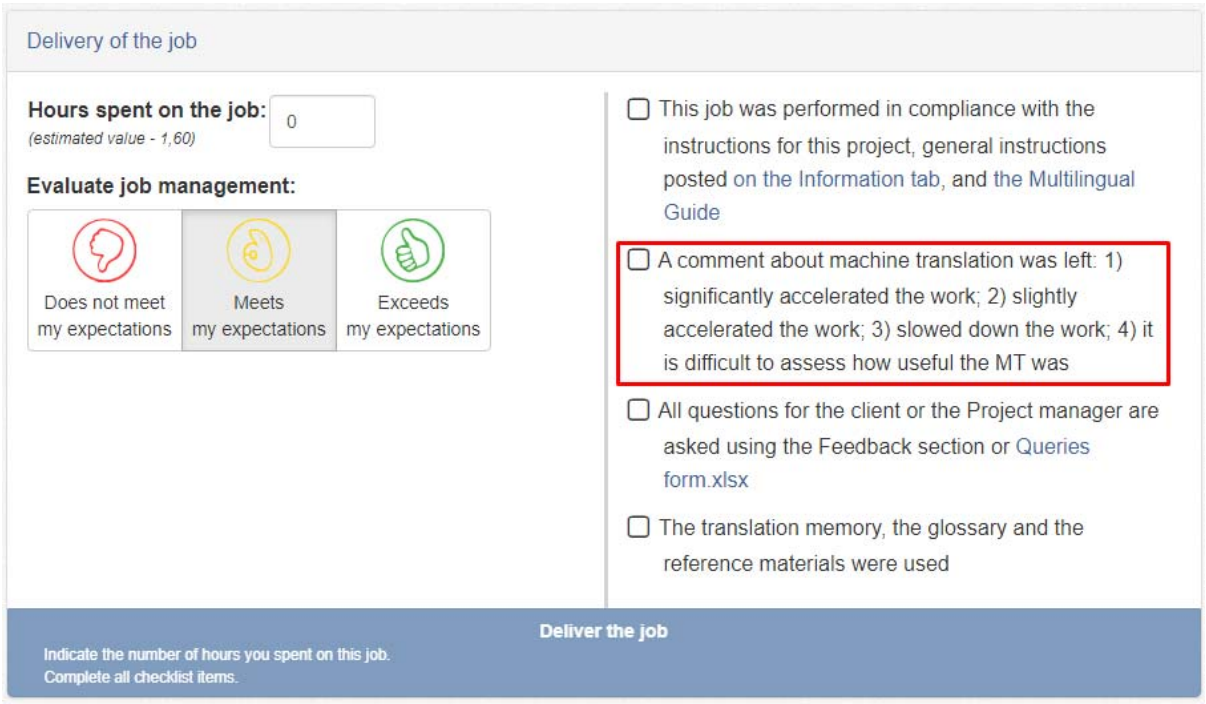

Figure 1. Checklist for jobs with MT

A comment must be left in the Feedback section upon completion of each job.

Edit Distance

This is a percentage indicator that reflects the degree of similarity between the machine translation and the corrected text. This indicator only indirectly reflects the quality. Its main purpose is to provide an indication of the effort required from the translator when working with MT. It calculates how many actions needed to be performed to amend the text and shows the results as a percentage of the total number of characters. Calculation is carried out per segment and a weighted average is displayed for the whole text.

Edit distance for a text with MT can be interpreted as follows:

<50% – minimal usability;
50–60% – average usability;
>60% – high usability.

When assessing jobs involving machine translation our specialists compare the translator's impressions with the average edit distance for segments with MT.

If there is no contradiction, they note the quality of machine translation, and if there is, they try to determine the cause of the discrepancy. Changing the machine translation engine or training one's own engine may help in such jobs. In cases where it is not possible to improve the quality of machine translation, the senior manager of the project team will talk to the client about the merits of using MT in the project.

VII. Abnormal situations

1) The quality of machine translation is substandard

Although InText has developed criteria for jobs in which machine translation can be applied, situations in which the machine does not provide the expected benefits cannot be ruled out.

We are committed to ensuring that translators are not adversely affected in these situations. If machine translation has not been helpful, the company will pay for the full job at the usual translation rate.

In such cases you must report the difficulties in the Feedback section on the web forms and indicate that the job should be paid as a standard translation.

2) A translator prefers a particular machine translation engine

Some translators already have experience of working with certain machine translation engines. They know their strengths and weaknesses and understand what outcome to expect for a particular text.

If you have such preferences, please let us know when a job is assigned to you.

We will try to prepare the translation using the right machine translation engine.

VIII. Terms of Payment

At InText, translation with MT is paid by the word. The rate is 75% of the basic rate for translation.

The rate for machine translation is applied only for new words and 50–74% fuzzy matches. Other matches are processed without MT and paid at the standard translation rates.

The rate is the same for all machine translation engines. Where a trained engine is used, the rate is not reduced.

What are the benefits of machine translation?

The main advantage of machine translation is that it speeds up the work. According to our tests, the increase in speed can be between 20% and 100% depending on the subject area, the machine translation engine and the translator's skills. Hence, the increase in speed may be higher than the difference between the rates for post-editing and standard translation. It is also effective to alternate translation using MT with standard translation.