Machine Translation: 10 questions and answers

(as guidance for professional translators)

1) What is Machine Translation (MT) and how does it work?

- Machine Translation (MT) is automatic translation using computers.
- In the past, MT mainly used a rule-based approach, i.e. a set of rules for the language combination processed by the MT engine. This RbMT came up against certain limitations and has largely been superseded by a statistical approach (SMT), which is probability-based and relies on large corpora of source texts and their human translations. This has been made possible by the greater processing power of computers now available. In some cases, hybrid systems incorporating both RbMT and SMT or other models are employed.
- The texts or other content subjected to MT may have to be treated in advance (known as pre-editing), and the raw MT output requires post-editing or some other human involvement, unless specified otherwise.

2) Where is the use of post-edited MT output a feasible option?

MT may well be suitable for certain tasks, such as

- translating highly repetitive content or
- content that would otherwise not be translated because of the cost factor

3) Where can the use of raw (i.e. unedited) MT output have dire consequences?

For example, businesses that send out unedited MT texts together with their products will seriously harm their corporate image and may even face product liability implications.

4) Who uses MT?

There are various types of MT users, for instance:

- organisations aiming to speed up workflows or handle large volumes of content
- members of the general public who use self-service models but are usually unaware of the deficiencies
- professional translators utilising MT as part of their own specific resources for the purpose of enhancing their productivity ("MT as an Optional Resource" in the diagram below)

5) What are the drawbacks of MT?

- In the vast majority of cases, MT engines cannot match human translators in terms of the translation quality achievable because, for example, they lack creativity and common sense in deciding whether a piece of a previous translation applies in the current context.
- MT output therefore needs significant post-editing or reworking to meet the requirements specified in advance, unless no or only light post-editing is considered adequate for the intended purpose. These products must be clearly identified as such.

6) Where are human translators indispensable?

- in areas where professional translators with the appropriate skills and qualifications produce reliable translations and deliver reliable services
- in areas where demanding, high-quality products are needed, such as
  - highly specialised legal or medical documents
  - marketing texts

Needless to say, producing high-quality translations that meet demanding requirements takes time and needs to be remunerated accordingly.

7) Is there any overlap or interaction between MT and human translation?

This is best explained by the following diagram.

Interaction between human translation and machine translation (MT) in translation activites
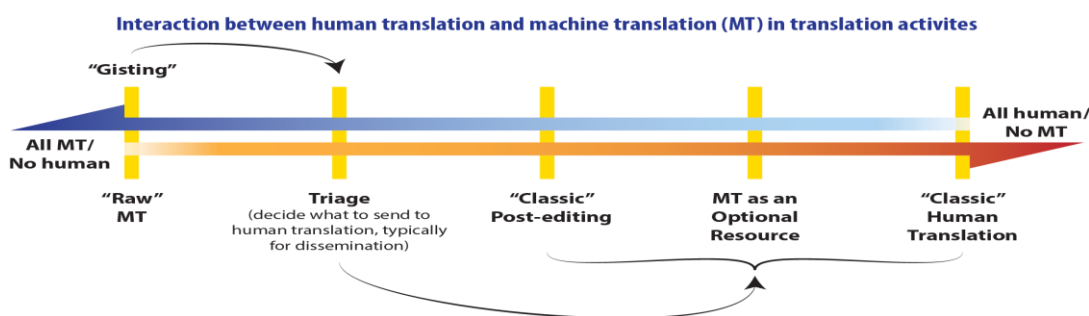
Post-editing of MT output is one area of activity for translators. Obviously, the post-editing effort needed to produce satisfactory translation quality must not be excessive in terms of time and cost, or else human translation will be the better option.

8) What is the precondition for deciding how to handle a translation project?

It is absolutely essential to specify the requirements in advance. For example:

- What kind of product does the customer need (target language, audience and purpose)?
- What is expected in terms of the terminology to be used, delivery deadlines to be met, accuracy, fluency and style, etc.?

Only on the basis of such project specifications can it be decided whether the use of MT or human translation is appropriate.

9) Can machines completely replace human translators?

MT is unlikely to completely replace human translators in the foreseeable future because, for example, they lack creativity and common sense in deciding whether a piece of a previous translation applies in the current context.

10) What should professional translators do?

Professional translators have an important role to play in helping to ensure that the strongly growing demand for translations worldwide can be met. With their knowledge and expertise they can advise customers on whether the use of MT is a feasible option. Dialogue and cooperation between professional translators and translation buyers are therefore essential.