MAKING THE MOST OF MACHINE TRANSLATION TODAY
Machine Translation (MT) is ever present in the translation industry.

The technology is being used to shorten project timelines for LSPs (Language Solutions Providers) and reduce costs for clients as they localize content around the globe. At this point it has become obvious, however, that MT cannot be used as a sole means of translation due to issues with its accuracy. Applications like Google Translate have proven to be a successful way to translate documents or segments of words generally, but are not able to capture specific vernacular traits that human translators are capable of deciphering. This article will describe the ways in which global companies can best leverage machine translation without sacrificing the quality of translation projects.

HISTORY

Machine Translation is a relatively new technology, having origins in the early 20th century and not being considered a completely realized tool until advancements in the field in the 1980 and 1990s. George Artsrouni and Petr Smirnov-Troyanskii worked individually on ways to create MT in the 1930s, with Smirnov-Troyanskii laying the groundwork for what was needed in an MT system. Namely, Smirnov-Troyanskii suggested the system would require an editor familiar with a source language to convert words to base forms before sending them to a machine to turn them into equivalent forms in the target language. After this, another editor familiar with the target language would edit the machine translations (Craciunescu, Gerding-Salas, Stringer-O’Keeffe, 2004).

Attempts to create a successful MT system continued into the 1950s and 60s with the advent of computers and, in 1954, the first MT test run happened when IBM partnered with Georgetown University, a demonstration widely circulated in the media and considered to be quite a feat at the time. Although advancements continued in the field, the thought of translating languages digitally seemed less and less like a possibility and more like a flawed experiment. Hopes were diminished to the point that the United
States government created an advisory committee on the technology, ALPAC, that released an unflattering report of MT's progress, saying research wasn’t progressing at it should have. The report put a stop to MT research for some time, before important developments resurfaced in the 1980s.

MT research and development has boomed in the 1990s and 2000s as we have moved into the digital age. Statistical- and example-based translation were brought to the forefront in the 90s and 2000s while the most recent advances, such as neural machine translation (NMT), are making waves in the industry today.

Currently, MT is seen as a technology that’s drastically progressed since its infancy but still has a good amount of room to grow.

**FUNCTIONS**

MT serves a number of functions for companies within different verticals, including Legal, Life Sciences, Manufacturing, Information Technology, Finance and Consumer Products. Businesses attempting to localize content have had success using MT to reduce costs and more efficiently convey global messages.

MT has many features that help to expedite translation projects, including:

- **Language Identification**: A function that can quickly go through a large number of documents and decipher what languages the text in these documents is written in
- **Keyword search**: This allows users to search for certain terms that come up often in documents.
- **Ocular Character Recognition**: OCR is a technology that allows for the recognition of printed characters using digital technology

Right now, MT acts as a great way for users to get the “gist” of a translation without having to use a human translator to do so. There are instances in which the new technology can be a boon for a business, but, at the same time, its limitations outweigh its abilities if used the wrong way.

MT is the act of translating documents digitally, without the help of human interpreters. MT is ubiquitous in the modern world, with sites like Google and Bing Translate allowing anyone to use the technology. Before the advent of this MT, the only way to decipher documents in another language was to employ a multi-lingual human being to do the job.

Very recently Google and Microsoft have started using
Neural Machine Translation (NMT) with their translation systems, a relatively new technology that is on pace to replace Phrase-Based Machine Translation (PBMT). NMT employs artificial intelligence that can understand entire sentences or ideas using neural networks, while PBMT can only decipher words, or segments of a sentence, at a time (Wu, et al., 2016).

WHEN MT WORKS FOR BUSINESS

Before using MT for business, users should ask themselves a handful of questions to see if the solution will be a successful one.

The decision of whether to use MT should rely heavily on the following:

- Is quality an important part of this project?
- Is a quick turnaround time necessary?
- Will this be distributed externally?
- Is cost-effectiveness a priority?

Right away, companies should identify what kind of project they need to complete when deciding whether to use MT. If quality of utmost importance, it will be impossible to use MT to receive accurate translations without the help of a human interpreter.

At the same time, if a law firm needs to quickly identify a large number of documents and find out which need to be translated for trial, using MT as a tool can be very helpful. A strong language identification (LI) tool can act as a time-saving and cost-effective feature for assignments that require going through a large amount of foreign language text before translation.

This feature can also be helpful for those facing tough deadlines, as LI can go through text much faster than an interpreter to sort what needs translation and what doesn’t. But if a translation project is going to be distributed externally or to clients, it is imperative one uses a human translator or a combination of an interpreter and machine translation.

If cost is an issue, companies can leverage certain machine translation tools to mitigate their expenses. For language identification or in order to basically understand foreign language documents, MT is far cheaper than the use of a certified Language Solutions Provider (LSP).

WHEN MT DOESN’T WORK

The biggest setback of MT is its inability to pick up on linguistic nuance and metaphors as humans can. This is pointed out by AlSukhni, Al-Kabi and Alsmadi in their study.
on using Google and Bing Translate to translate passages from the Quran.

For projects that necessitate quality, MT cannot be used as the only translation tool for businesses. When translations are needed in highly regulated industries, such as the medical device field, MT would not be a proper solution as an incorrect translation could be the difference between life and death.

Projects that should not rely only on MT include:

- Those in highly regulated fields such as medical device
- Projects that will be distributed for external use
- Projects that require the translation of nuanced, complicated texts

Businesses should use MT as a primer, or first wall of defense in figuring out the “gist” of a foreign language text or what needs to be translated with a combination of MT and human interpreters. Businesses are faced with time and cost restraints, but in the end, sometimes money needs to be spent in order to get the necessary results.

In Ryoko, Hirono, MJ and Takahiro’s article examining the usability of Machine Translation among nurses in Japan, it was discovered that respondents found MT was “not useful enough” when deciphering medical texts in a foreign language. The study also emphasized the fact that a stronger knowledge of technical terms in other languages made for a better experience using MT.

Know your audience, industry and the scope of your project

MT is an extremely valuable asset to businesses that know how to use it properly. Using the new technology to generally decipher what a text is saying or going through an enormous volume of documents to discern what must be translated by a human, are probably the two main benefits MT can provide for companies.

MT tools used in a secure environment can be strong assets
for those in any vertical. Maybe most importantly, businesses interested in MT need to know how they want to use the technology and what the scope of their project is to employ the resource effectively.

MT should never be used as the only resource for translating documents unless they will stay inside of a company. Even still, companies should always be cognizant that MT won’t pick up on linguistic nuances that a translator would, and the fact that mistakes are likely to occur when only using MT.

Those who want to expedite the translation process and save money while still being cognizant of MT’s inherent limitations should employ the following best practices when deciding whether or not to use the technology:

- Use MT to get the “gist” of a document
- Employ MT when you have a number of documents that need to be reviewed quickly and cheaply
- MT can be helpful when reviewing documents internally
- Understand the risks of using MT. The best way to produce accurate translations is using a combination of machine and human translation.
- Be smart about when to deploy the technology – know your audience, your industry and the scope of your project.

REFERENCES:
