The Ultimate Guide to Machine Translation in 2020
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What is Machine Translation?

Localization is an investment made by companies and their global growth teams to be able to connect and communicate with humans on the other side of the world who are speaking different language, and this naturally means the need to be cognizant of cultural nuances in speech and overall language. As a result, translators are an essential element that help to humanize the translated content. And with more authentic content at scale, businesses will find translation a more major challenge.

As recent stages of innovation bring in more and more advanced localization technologies and techniques, let us take a look at a specific type of method of translation that is gaining popularity amongst global companies of all industries and sizes: Machine Translation. For those looking to learn more about MT for the first time, or localization professionals crushing up on their new technologies, here's a breakdown of what Machine Translation is, how it's used, and how it is making localization easier for companies around the world.

How It Works

Machine Translation is a type of technology that automates translation. Depending on the software or platform, MT may happen with or without humans in the translation loop. At a glance, here's how it works: the MT software will take the input content and automatically translate it based on existing translations, sourcing translations from existing platforms like Google Translate and the like. Then, the software gets 'smarter' as it is 'trained' by your localization team through additions like style guides or even continuous real-time input from humans in the translation loop. Depending on the accuracy level and customization required, the type of MT and the ratio of machine-driven versus human-edited translations may differ. When is it used?

When It's Used

Machine Translation is a popular option for companies that are translating a lot of content at scale, because it is more manageable and far more efficient than any other method for translating these hundreds of thousands to millions of words into target languages.

On a more granular level, companies experienced in localization will also choose to mix and match various method for different types of content. For example, the website content may need extra care and attention from translators to make sure that the front image of the company in its new market is both on brand and also culturally conscious. On the other hand, help docs and other pages on the back end may be simpler and can therefore be mass translated with some lighter human-in-the-loop touchpoints for quality control.
Common Misconceptions of Machine Translation

As technological advances enable fields like localization and translation processes to become faster and more accurate, methods that were previously perceived as complex and inaccurate (like Machine Translation) are now gaining more momentum and use across global companies.

Of course, as with the introduction of any new technology, there are bound to be questions and hesitation from experts and users in the industry. Here are some of the common misconceptions about MT to help you better understand the cross section of MT and localization.

**Misconception #1:**
_There is only one type of Machine Translation._

While Machine Translation is one method out of the three main ones that companies can use to translate their content at scale, it does not mean that it is a single and static solution. Contrary to popular belief, there are actually various types of Machine Translation that companies can leverage — the two main types being Rule-based Machine Translation and Statistical Machine Translation. At a glance, Rule-based MT is based on a specific set of rules that are developed by your experts and developers, forming a library of manually built translation lexicons that can also be adjusted over time to further improve translation quality. On the other hand, Statistical MT uses computer algorithms to build a database of translations that are based on the statistical likelihood that a certain word or phrase in the source language will be another word or phrase in the target language.

What does this mean for those looking to try out Machine Translation? That not only are there multiple methods, but all of them give way to enabling your team to form even more accurate translations based on accurate, algorithmic developer customization.
Misconception #2: Machine Translation requires a lot of time spent manually correcting inaccuracies.

As with any other translation method, there are of course both advantages and disadvantages to Machine Translation. However, the perception that Machine Translation produces inaccurate translations resulting in more time and resources spent making corrections is, well, inaccurate.

Of course, one major challenge is accounting for local context that would make translations more accurate. The truth of the matter is that now the most effective MT use cases actually balance out this challenge by adding a “human-in-the-loop” aspect to the overall MT process. This, as the term suggests, brings a human translator into the overall workflow. By combining machine and human, the result is more optimized, faster, and accurate.

Misconception #3: Machine Translation means no more human translators on the job.

Following the previous misconception, this one is naturally debunked. While Machine Translation as a standalone method and algorithm has its advantages in terms of efficiency and accuracy, there is still no replacing the human translation touch. Because at the core of it, localization is a human-centric process that aims to help improve communication—communication of your global business brand, and communication between your representatives and your customers.

When paired together with Machine Translation, human translators are actually able to produce higher quality content and increase their overall productivity. Recent studies reveal that “humans are more productive when post-editing machine translated content, rather than translating from scratch.” Based on this, localization researchers optimistically posit that “understanding how human post-editors work could open the door to the design of better interfaces, smarter allocation of human translators to content, and automatic post-editing.”
With the advancement of technology comes an increasingly efficient and accurate number of ways that you can translate your website content and localize your products. In recent years, a fundamental method has been trending in popularity as companies find more and more ways to integrate it into their business and localization workflows. This method is Machine Translation. These are the pros and cons of Machine Translation in today's world, as well as its place in the localization landscape today and tomorrow.

### The Benefits of Machine Translation

Machine Translation enables global companies to translate content at scale using “machines” such as Google Translate. It is often found as a feature that is integrated into localization platforms and used by companies looking to lower their translation costs.

To date, it has been especially effective for lower tier content (i.e., content that does not require translation precision and extensive copywriting) for which Machine Translation is often seen as the best solution. Depending on how much content needs to be translated, Machine Translation can provide translated content in just a matter of seconds. This, and the following advantages of Machine Translation, are what motivates companies to keep leveraging Machine Translation:

- Fast and does not require vetting and managing of translators
- Cost-efficient for large volumes of translations
- Reduced time-to-market due to faster translation delivery
- Flexibility from a number of Machine Translation source engines
- Adaptable, programmable, and developer-friendly
- Ability to retrain MT into customized workflows and strings

In a nutshell, Machine Translation is seen as an easy, low-cost fix for a complicated problem (translation and localization at scale). It can produce good results for businesses that are looking for a low-cost solution for their large volumes of lower-tier content, or for global companies that pair it effectively with human translation efforts.
The Challenges of Machine Translation

As with any translation method, there are advantages and disadvantages. One major disadvantage of Machine Translation is its inability to pick up on cultural nuances, contextual content clues, and local slang. This results in content that can feel a bit robotic, choppy, and not completely culturally aligned. While Machine Translation is an efficient method to translate lower-tier content that does not require extensive content finesse, industry experts often recommend against using Machine Translation for intricate customer-facing content.

And as with the rise of any new technology comes the inquiry as to whether or not it will replace the previously human and manual ways that it was completed. To address this in short, while Machine Translation does enhance the translation and localization process, it is still highly unlikely that it will replace human translators and current workflows entirely. The following challenges of Machine Translation shed some more light into exactly why that is.

- Inability to account for certain local phrases due to lack of context
- Possibility for diluted marketing and brand messages due to word-for-word translations
- Difficulty to accurately translate nuances, slang, and other culturally relevant phrases
- Possibility for brand damage due to lack of cultural awareness and cohesiveness
- Difficulty translating complicated or industry-specific terms
- Difficulty predicting and correcting specific grammatical and cultural errors

Tying back to the misconception that humans will no longer be needed with Machine Translation in the mix, these challenges are actually only able to be easily overcome with the addition of a human touchpoint into the translation and localization workflow. Translators are essential for catching those cultural nuances, brand cohesiveness, and grammatical errors that machines cannot, and for adding that localized brand touch that will help companies maintain their brand consistency and integrity while scaling globally.
Localization is a rapidly growing and evolving industry, enabling companies to go global through new methods and technologies. Over time, the art and science that is translation and localization has become more refined, efficient, and accurate with the discovery of new technologies and innovations. On top of this, new research in the field is helping bring to light the benefits of AI, machine learning, and other areas that are contributing to the increased accuracy and efficiency of one area in particular – machine translation. One of its more specific methods, Neural Machine Translation (NMT) is one of these new tech avenues that is becoming more widely adapted by the platforms and companies of the localization world.

Here are the top trends and research takeaways in the localization and MT worlds, for companies to keep a tab on this year as they continue to go global.

**Increasing Accuracy for Content Types Across the Board with Machine Translation**

**Using MT and AI-driven translation to level up game localization like never before**

While game localization is gaining speed, many classic video games are still only accessible in a single language. Engadget explores how a new software, Version 1.7.8 of the RetroArch emulator, will help gamers worldwide enjoy their favorite games through a new “AI Service feature that uses machine learning to translate game text into the language of your choice” by tapping into services like Google Translate.

**Leveraging Machine Translation to more easily translate subtitles**

As far as content localization goes, subtitling remains one of the last types that machine translation has yet to crack, since it is “highly nuanced [and] made up of dialogue that contains colloquialisms, cultural references, and humor.” This year, Slator highlighted new research that reveals a “strong case for machine subtitling in translation” and how it can be done with new technological findings.
MT Increasing Accuracy for Asian Markets & Languages

In one particular subsection of trends in the MT space, research has revealed that MT has proven particularly effective for companies that are localizing into languages that are not comprised of the traditional Latin characters, such as Asian languages.

Here are a couple of examples of the recent trends, research, and successful use cases of how the localization world is embracing Machine Translation for localization into Asian markets and beyond.

Marrying human and Machine Translation increases accuracy in Asian localization efforts

Entrepreneur Asia Pacific explains how “[translation] accuracy is in the eye of the beholder,” as proven by how leading companies vary in the way they approach and leverage machine and human translation in their localization efforts in new Asian markets. “In the translation world, it’s not a question of can you use a machine or not? It’s not a binary decision. It’s more about asking where you can use it.”

Baidu productizes speech-to-speech translation through AI and MT

Baidu recently released its “speech-to-speech machine simultaneous interpretation service” – a new localization technology leveraging AI and MT, as reported by Slator. With this, “the tech giant claims to be able to translate ‘just a few seconds into the speaker’s speech and finish just a few seconds after the speaker finishes, very much like a simultaneous interpreter.’”

The promising state of Neural Machine Translation for Asian Languages

“Research on NLP and NMT for Asian languages is ascendant and promising,” reported Slator this year. “It is still in the stage of resource accumulation due to its features. Most Western languages are cognate languages and their letters are basically Latinized. However, compared to the West, Asian languages have different sources and the spectrum is diverse. The characters of Asian languages are complicated.”
What the Future Holds

As we enter 2020, we see Machine Translation and human translators continuing to integrate in a natural and seamless ways, paving the way for new innovative localization workflows for globally minded companies. While there is debate in the industry as to whether Machine Translation is a friend or a foe to current processes and user roles, there is no doubt that the future is bright and filled with more accurate translations at scale.

Big Tech Investing in MT & AI Research

As MT continues to optimize translation for users and businesses across industries, we are seeing more and more innovative use cases of organizations and companies leveraging Machine Technology and related AI-driven translations to break down language barriers. Here are the latest updates of this rapidly changing MT world and the growing number of applications it is bringing.

Facebook funds AI and MT research to solve challenges in natural language processing

In an effort to improve machine translation of non-English languages, Facebook has announced the launch of a new initiative, providing funds for researchers to investigate ways to improve natural language processing and support neural machine translation research, with a focus on how to use the emerging technologies to translate different languages into English.

How deep learning is impacting the translation industry

In the 1950s, leading researchers thought it would just be a few years before they were able to crack the machine translation puzzle. While the prediction was off, recent MT research reveals that deep learning could be the key that cracks the machine translation code. Authority analyzes how human translation, and the concept of a translation agency as we understand it today, could transform as a result.

The intelligent translation era: the next step in going global

“When trying to reach a global audience, the words themselves are cheaper than the context.” UK Tech details the importance of localization, how global brands are using it to reach their growing audiences, and how this process has become more efficient and accurate for marketers thanks to today’s technology enabling the merging of machine learning and human optimization.
Rising Applications & Use Cases

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Facebook Researchers Use Math for Better Translations

Today, MT tools still rely primarily on dictionaries, glossaries, and other similar word databases to make foreign languages more accurately translated and understandable for global markets. As big tech players like Facebook and Apple continue to bet on Machine Translation as the next frontier of language and communication, we have seen some new innovation updates from their research helms.

Specifically, Facebook researchers are finding that numbers may be the key to unlocking a new type of MT that produces better translations: “rendering words into figures and exploiting mathematical similarities between languages [and creating] a promising avenue,” as the Inquirer details.

TechFest event looks to the future of translation for text-to-911

While translation, localization, and it’s more technologically-advanced counterpart, Machine Translation continues to help global businesses make strides across their respective industries, there is one area, in particular, that is starting to see the true benefits of machine-driven translations: the medical field.

Specifically speaking, “there is an increasingly pressing need for PSAPs to be able to translate text-to-911 messages sent in languages other than English,” as reported by EMS1.

While “the introduction of texting to 911 emergency call centers from mobile phones opened up a new way to contact public safety officials, public safety answering points (PSAPs) face a real problem if the texts are in a foreign language.” And here is where Machine Translation would come in: “With the growing adoption of text-to-911 services, industry leaders see an increasingly pressing need to be able to translate text-to-911 messages sent in languages other than English.”
Pocket Babel: How translation tech and devices are changing business

With more global businesses and organizations investing in localization to reach their global markets, there comes with this trend a wave of an increasing number of applications and services helping to ‘translate’ these localization advantages for day-to-day users. By this token, one area in particular to keep an eye on is the rise of translation technology and devices that are not only changing the game for businesses, but for the wide range of end users.

“Pocket translators are quickly becoming a vital tool for businesses and tourists alike. More efficient than a call-in translation service, better suited for business meetings than a smartphone app, and instantly ready to perform the moment they’re needed, these small but powerful language tools are changing how we communicate,” as reported by Japan Today.

Training Machine Translation to Write Like the New Yorker

When it comes to Machine Translation, the machine is as smart as the word databases and human teaching it receives. Today, more and more ‘smart’ text composers pop up – from predictive text for emails to robotic localization applications in more technical fields – and bring with them the hope of even more advanced applications.

Recently, the New Yorker began exploring the possibility of using MT and AI to report and write articles, breaking down exactly how machine intelligence works and the current potential for applying it to as human-centric a field as journalism, proposing the futuristic question: “What if some much later iteration of [Machine Translation], far more powerful than [current models], could be hybridized with a procedural system, so that it would be able to write causally and distinguish truth from fiction and at the same time draw from its well of deep learning?”

As Machine Translation continues to open up new horizons in the localization world, the industry and its global businesses are now ushering in a new era of more efficient translations by optimizing machine and human translation efforts. With this, we see more and more research, innovation, and applications of MT that previously would have been thought unimaginable.
Selecting a Localization/MT Software for Your Global Business

MT is still an evolving technology that is being refined day by day. Because of this, the quality of the translation output from MT still falls on a spectrum depending on which tools you utilize, how well you train the software, and how much human-in-the-loop you integrate into your overall localization workflow.

However, the future is bright with more and more tech giants and innovative localization technologies continuing to invest time and research into elevating the accuracy and efficiency levels of Machine Translation. For example, Amazon Translate recently teamed up with Transifex to bring machine translation to enterprise content management – moving the world another step forward towards making localization more accessible for all.
Go Global with Machine Translation

It’s clear that more and more businesses and users from various industries find innovative applications of Machine Technology.

Curious to try out Machine Translation for your localization team? Transifex has all your Machine Translation and content localization needs covered. With Transifex, you and your localization team can use Machine Translation easily and directly from the Transifex platform. Additionally, Transifex integrates with services from Google, Microsoft, and Amazon. To access integrations like this one and start translating your content, unlock the power of localization with a free 15-day trial of Transifex.

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