

# Machine Translation And Its Impact In Our Modern Society

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**Abstract:** Machine translation is now rather popular and is gradually breaking the world language barrier. Translation accuracy and efficiency are getting closer to human ability. In addition to translating letters and sentences, machines for translating speech have also been developed and exist in various forms. This technology has both advantages of speed, multilingual compatibility, and mobility, but it also has some disadvantages and has influences on the users. Machine translation, which still has many problems with accuracy, cannot completely replace humans now. Once we understand the advantages and disadvantages of machine translation, its application is not difficult. And after all, if users improve their language skills and knowledge, they can understand and use the words themselves correctly without relying on machine translation. This paper was based on latest journals as well as supports of the respondents who are working and studying in Ho Chi Minh City during August of 2019. From then on, some recommendations were mentioned to confirm the roles of new technology in our modern world.

**Index Terms:** Future, Japanese, Machine Translation, Technology.

## 1 INTRODUCTION

In preparation for the 2020 Tokyo Olympics, Japan is making various preparations to welcome foreign visitors. Among them, an interpreting machine for breaking the language barrier has recently become a hot topic. The convenience of the machine is surprisingly impressive. Looking at this phenomenon, how much progress has been made in machine translation, and in the future, will this technology be better than human interpreters and translators? Will this technology eliminate the need for foreign language learning? What effect will machine translation have? In order to find the answer, we decided to study the original mechanism of machine translation and its effects.

## 2 TRANSLATION MACHINE AND ITS HISTORY

Machine translation has a long history. There is also a theory that the first form of machine translation was born in the 17th century after the philosopher Rene Descartes proposed to create a common language as a representative language of other languages. Up to now, many studies have been conducted on machine translation in the background, but only those who majored in IT mainly focused on natural language processing technology. There are few research papers as references for translators or language learners. Especially, in Vietnam, there are few machine translation books and papers for language learners and translators. There is almost no theme for automatic machine translation in Japanese and Vietnamese, that is, doing related research in this field is necessary [1]. Literally, “machine” “translates” and is called machine translation. Since it is a machine translation, it is also called “automatic translation” at the stage of “translation” by automatically translating without human assistance. This was born from a combination of three fields: “language”, “translation” and “information science”. Currently, “machine translation” belongs to “natural language processing” which is one part of “artificial intelligence” (English: AI – Artificial Intelligence), is one field of information science. In 1629, Rene Descartes proposed a universal language that assigns the same concept in different words with a single symbol, but this

is only a theory. In the middle of the 1930s, George Artsrouni invented a bilingual automatic dictionary that moved with paper tape and received a patent for the first invention of the concept of “machine translation”. Later, Russian Pyotr Troyanskii proposed a technique based on the Esperanto grammar system that handles the grammatical functions of each language in addition to the bilingual dictionary. However, his proposal remained unknown until 1950 [2]. The real beginning of the history of machine translation was the 1950s when computers were developed. In July 1949, Warren Weaver, a scholar, submitted the first proposal for a computer-translated technique (Fig 1).



*Figure 1. Warren Weaver*

Regardless of the recent trend toward the Tokyo Olympics, machine translation has long existed in the form of “speech translation,” combining speech recognition and speech synthesis technologies with speech processing technologies. Although it has a short history since 1983, speech translation has made great progress. In 2015, a speech translator called Blabber Messenger, which can translate 23 languages, was developed, and speech translation is now used all over the world. Applications include medical facilities, schools, police, hotels, retail stores, travel, and factories. These systems apply anywhere that communicates using spoken language. There are speech translators used for various purposes from various brands. Not only that, there are many smartphone apps that have a speech translation function without a dedicated speech

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translator. There are examples of popular apps including Google Translate and iTranslate. Web apps, web conferencing, etc. can also be applied to apps with automatic translation functions [3].

### 3 IMPACT, ADVANTAGES AND DISADVANTAGES OF OPPORTUNITY TRANSLATION

#### 3.1 Merit

Machine translation using information science and artificial intelligence has, of course, various advantages. First is speed. In particular, one of the advantages of machine translation is that the sentence can be translated immediately using copy paste on a PC or smartphone. Of course, the nuances aren't exactly right, but if we need urgency on the spot, machine translation can be fully met in that emergency. In addition to using simple words such as shopping and travel, documents with a lot of fixed sentences such as administrative documents and government documents can be quickly translated by machine translation [4].

The second is multilingual compatibility. Unlike electronic dictionaries with limited languages, most of today's automated translation apps can handle multiple languages. Including Google translation, we can translate from one language to many languages and change the output language quickly. Google Chrome, a web browser, can also discover the language of a website and translate the entire website, further enhancing convenience [4]. The third is mobility. In this era of smartphones, what users need most is convenience. Therefore, machine translation can be easily used even if it does not have a complicated machine shape, as long as it has a smartphone. Its speed and multilingual compatibility are almost the same as PCs. And now, there are many apps that use the smartphone's microphone to recognize and translate speech. If we cannot buy a dedicated speech translator, it is not uncommon to translate using your smartphone's translation app.

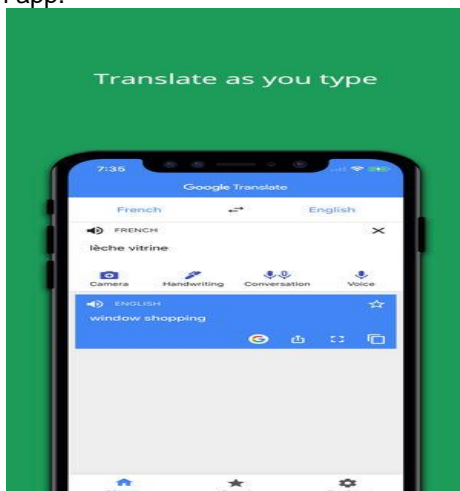


Figure 2. Google Translate app on iOS

Thus, machine translation, which has speed, multilinguality, and mobility, is gradually breaking the language barrier in the world of power generation. In fact, machine translation has above advantages, but it also has many disadvantages [6].

#### 3.2 Demerit

Technology in the translation industry is being developed and optimized. The rate of use of mechanical translation is increasing rapidly. Needless to say, mechanical translation plays a vital role for the modern translation industry. However, mechanical translation still has drawbacks. Although modern technology has been developed significantly, it does not have the ability to solve many problems that only veteran translators can. The mechanical translation on the Internet is called a dictionary rather than a translator. The opinions of translators and users regarding the shortcomings of mechanical translation are as follows [6]. First, in mechanical translation, the situation of the text and the user's wishes are not known, and mistakes often occur during translation. For example, when translating polite text from Vietnamese to Japanese, it translates using the normal form but cannot translate it with polite expression (Fig 3).



Figure 3. The fact that Google Translate could be rude when translating a language

Not only that, there are words in any language that have the same pronunciation but different meanings. Since mechanical translation is just a machine, the situation is unknown and the language is wrong. The translated version leads to mistakes [5]. Second, domestic use does not always mean the same language. Some dialects do not understand mechanical translation. For example, in Japan, there are many dialects, both reading and writing are different, but there are also dialects that have the same meaning. Third, technical texts and specific industry texts can be mistaken when translated by mechanical translation. Because it does not know the technical term, it may be translated into a different language. Fourth, mechanical translation is expected to improve the accuracy of the translated version into the third language by using the indirect PIVOT language. For example, when translating from English to Catalan through Dutch indirect language, mechanical translation is likely to cause errors in translating into Catalan.

#### 3.3 Impact of opportunity translation

We need to understand what machine translation is, what it is better than humans, and what is inferior, and what impact machine translation will have on language learners and interpreters. Then, we will analyze not only the scope of Japan-Vietnam, but also how it affects the interpreting and translation industries in other languages, and we will have right solutions.

## 4 METHODOLOGY AND RESULTS

To analyze how machine translation affects language learners, a questionnaire survey was conducted at the Japanese language department at FPT University. The contents of the questionnaire are five questions about machine translation usage frequency, quality assessment and machine translation dependency. The first question is: "Do you often use machine translation / automatic translation tools?"

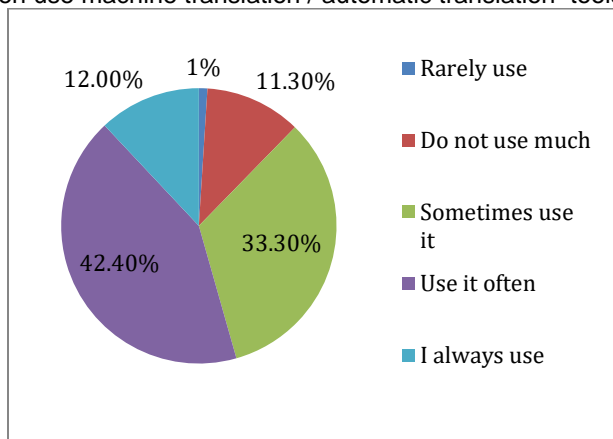


Figure 4. The frequency of using machine translation

From the survey results, it is found that machine translation is very popular among language learners. The percentage of people who "use it often", "sometimes use it", or is 75.7% in total (Fig 4). To the second question: "What do you think about the quality of machine translation and automatic translation?". As for quality, there are many opinions of "normal", and it can be said that machine translation is still less accurate than humans.

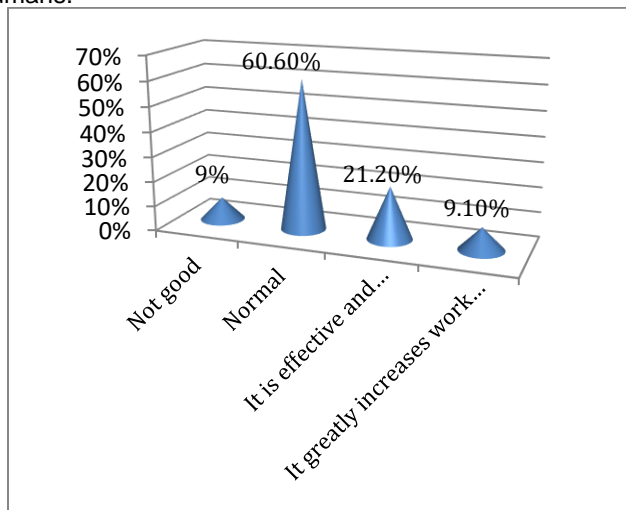


Figure 5. The frequency of using machine translation

Word translation has high accuracy, but when it comes to sentences, its accuracy is not high. However, it is no doubt that machine translation is a tool that increases work efficiency [5]. In addition, for the third question is: "How do you evaluate the translation function of the machine translation? translation tools?", many language students show their interest in machine translation tools to do their best to study and work (Fig 6).

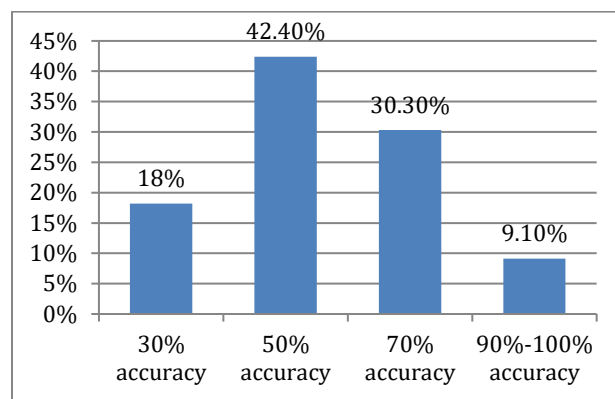


Figure 6. The frequency of using machine translation

In fact, through automatic translation, learners can automatically translate lectures, texts and written sentences into Japanese without cost and effort. However, it adversely affects the learner. The problem is not with automatic translation, but with the user. The translated version of Google Translate may be more complete than the translated version of our own, but if we continue to do so, users will increasingly rely on automatic translation, and our Japanese ability will gradually decline. In other words, using automatic translation is not always good. In addition, the answers in the form of direct interviews also reflect that; automatic translation cannot translate an unclear sentence into a beautiful sentence. In addition, basically, automatic translation is set to translate sentences one by one, so long paragraphs still cannot be translated well. Therefore, if we do not pay attention when using it, there is a possibility that it may become a translated version that does not suit the situation or a wrong translated version. There are also some ideas that through automatic translation, we can search for new words and understand sentences in Japanese faster than before. Being able to study Japanese without taking too much time increases the motivation for the learner. However, some think that they do not have to study anymore because they have automatic translation. That person's motivation will gradually disappear [2].

### 5 SOME RECOMMENDATIONS

Again, human efforts are needed to reduce the negative impact of machine translation. First, the dependence on machine translation must be reduced. To do so, we must first develop our own language skills, especially foreign language skills. Because the higher the foreign language ability you have, the more we can speak and translate ourselves, the faster we can find mistakes in machine translation and the avoidance of misunderstandings. However, it is a waste to not use machine translation completely. We must also learn how to use appropriate machine translation. Along with the development of machine translation, foreign language education must also develop. If the merits of machine translation are successfully applied to foreign language education, the learner knows how to use machine translation and can apply it independently. As for translators, we must first improve our language skills as well as broaden our general knowledge and knowledge in various fields. There are two reasons for this. First, by expanding our knowledge, we can expand the field of translation and translate more accurately. Second, while using machine translation, we can understand

whether the machine translation tool translates correctly or makes a mistake. Especially for technical terms, if we do not know not only the definition of the terms but also the knowledge of the specialized field, we cannot use the technical terms accurately. If we have our knowledge in the past, we can save time looking up, and we can be sure of accuracy even if our translation speed is not as fast as the machine [6].

## 6 CONCLUSION

There are two things have been discussed in this paper. First, machine translation is evolving and it may be possible to get closer to humans and accurately translate, but humans cannot be completely replaced. As for words, most languages, including Japanese, have many homonyms, so if we do not understand the context during conversation, we will make mistakes. Second, it is up to the user how much the impact of machine translation is. If a users learns only simple things without improving their language ability, their language ability deteriorates and without a translator, they cannot communicate well. Indeed, machine translation is a very useful tool at the present time, and if applied well, machine translation will have a positive impact.

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