Research on Computer Aided English Translation in the Wave of Globalization

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Abstract. In the context of globalization, people's demand for translation services is growing rapidly, which leads to the increasing scale of translation. With the rapid development of science and technology, computer aided translation (hereinafter referred to as CAT) greatly improves the efficiency of translation. With the development of economic globalization, traditional machine translation can’t meet the needs of people on the quality and speed of English, which requires people to improve the CAT technology. Therefore, CAT as an alternative has become one of the most effective choices for translators, which will help translators to complete English translation at a higher quality and speed. At present, the core technology of CAT tools is translation memory, including translation memory system, term management system, alignment tool, translation project management tool, etc., which will better translate. Firstly, this paper analyzes the core module of CAT. Then, this paper proposes some machine translation processes. Finally, some suggestions are put forward.

Keywords: Globalization Wave, Computer Aided, English Translation

1. Introduction
In the tide of globalization, English translation is indispensable in international communication. With the rapid development of the information age, people put forward new requirements for English translation, which leads to a substantial increase in the number of documents in various languages[1]. With the rapid development of economic globalization, traditional machine translation has been unable to meet people's requirements for English quality and speed, which requires people to improve CAT technology. With the rapid development of computer software technology, automatic or semi-automatic translation becomes possible. In the past 70 years, computer translation has made great progress[2]. At the same time, human participation in CAT has achieved certain results. CAT can realize automatic translation, which is a machine translation system based on statistics and examples. At present, there are many commercial products of CAT, such as SDL, Trados, Wordfast, Yaxin cat, etc. the core technology of these mainstream software is translation memory[3].

2. Core modules of CAT
The core technology of CAT software is translation memory, and its core module is shown in Figure 1.

2.1. Translation memory
Translation memory is a language database used to store the original text and translation. The feature of translation memory is reuse. By analyzing the application scope of translation memory, the software can automatically point out the text with high internal repetition rate, which is the scope of application of translation software. Translation memory is to store the source language and the translated version into the memory. Through reuse, we can translate new source languages. Only in the text with high repetition, translation memory can play a good role\textsuperscript{[4]}. The working principle of translation memory is to compare the translation fragments to be translated with the existing ones in the database. When the matching rate is determined and reaches the standard, the software will provide the translation to the translator for reference. Then, translators can adopt, edit, modify or discard.

2.2. Terminology management
Term base is a term container established to utilize and manage terms, which is a term collection based on computer. The term bank in the field of CAT is a bilingual or multilingual glossary, including definitions, disciplines, parts of speech, etc. The purpose of term base is to maintain the consistency of terms in translated texts, which can automatically and efficiently maintain the consistency of term translation in translation projects. Based on term management, there will be no multi translation of one word in the text. According to the source of terms, we can divide the term sources into customer, Internet or original document. Based on the glossary, translators can establish a term base, including import, creation, real-time update and automatic extraction\textsuperscript{[5]}. First, import mode. Through Excel forms, translators sort out and edit the terms. Then, we can convert them into term base definition files and term data files. Finally, the translator can import the term data file into the blank database. Second, create patterns. In the established term base file, translators can manually add terms, which will form a term library. Third, real-time update mode. In the process of translation, when translators translate, the system will automatically add and modify terms, which will complete the real-time updating and maintenance of the database. Term management includes two meanings: term management in translation process and organization. At present, most of the mainstream computer-aided software has integrated term management software, such as SDL multitenn and so on. Term management is an activity to systematically manage the professional vocabulary in a specific field\textsuperscript{[6]}.
2.3. Align tool
Alignment means that the original text and the translation are matched one by one according to the translation units. Machine matching needs manual editing, which can better ensure the accuracy of translation. With alignment tools, translators can align words, sentences and other language units. At present, sentence alignment is the most common unit. Through computer-aided English translation, the software can present the alignment results intuitively. Therefore, the results of alignment can be input into the memory, which will help expand the translation memory and facilitate the use of translators. At present, the effect of alignment module of cat is not ideal, which still needs simple manual editing and proofreading. Therefore, the automation level of cat alignment tool needs to be improved.[7]

2.4. Translation project management module
The core technology of CAT is translation memory module. Translation project management module is the key to ensure the operation of translation projects. At present, most of the CAT tools have project management tools, which can automatically complete the translation project management. Through the translation project management tool, translators can refer to the memory bank, which requires the translation of new content and give full play to the function of translation memory. Through the translation project management module, cat can realize the automation and intensification of manual assistance, which will ensure the quality of translation, save translation time and reduce translation costs. The functions of translation project management module include: source text import, text word number and field analysis, pre translation, proofreading and quality control, and target translation export. Firstly, the software will establish the translation project folder, including management project file, memory file, term base file, source language text, target language file, etc. Then, by importing the source text into the translation tool, we can get the translated version, which includes automatic saving, automatic assembly, generating translation memory and other functions.

3. CAT system structure level
Cat can be divided into four modules: corpus input module, feature extraction module, model building module and feedback module. Among them, the corpus undertakes the task of term management, which can help translators to translate. After inputting the corpus, we can generate a formatted corpus file. Through the feature extraction module, CAT software can analyze the input file, which will extract the main features. Cat will then build the model. Finally, through the feedback evaluation module, cat can feedback the translation content, as shown in Figure 2.

Figure 2. System structure level.

4. Evaluation of cooperative mode in CAT
4.1. Stand alone CAT software
The translation cooperation of stand-alone CAT software is a free translator without a server, which is the translation cooperation between part-time translators. Some smaller translation companies often use this method. This kind of translation cooperation has less investment in the early stage and simple task division. However, the stand-alone version of CAT software has many problems, such as the inability to share translation resources in real time, including translation memory, term base, etc., which easily leads to inconsistent term translation.

4.2. CAT software for server
The server version of CAT software is specially customized for project management and translation collaboration, which is a real-time collaborative translation software. The biggest advantage of server version CAT software is that it can share translation memory and term base in real time. Through real-time access to the latest approved content, we can give full play to the role of translation memory, which not only improves the efficiency of translation, but also ensures the accuracy and consistency of translation. By storing the project files on the server, we will not delay the project due to the absence of any party. However, the translation cooperation based on server version CAT software needs to purchase server version CAT software, which is a great expense. At the same time, special technicians are needed for routine maintenance.

### 4.3. Free online CAT software
The biggest advantage of the Google translator kit is that it's free to use without any investment. Based on browser, translators have little requirement for computer operating system, which can share translation memory and term base in real time. So, free online CAT software
It is a good tool for translation project practice and cooperative teaching. After the source language file is uploaded, the free online CAT software will automatically add the translation of Google machine translation. The translator only needs to confirm sentence by sentence, which is a typical "machine translation + Post translation editing" translation mode.

### 4.4. Cloud translation software
The translation cooperation mode based on cloud translation software is the most flexible and efficient translation solution. The administrator or project manager is responsible for deploying the software working environment, creating projects and assigning tasks. The interpreter can translate or check the files only by logging in. When translating, the system can share translation memory database and term database in real time, and project manager can view statistical reports at any time and control the progress of the project in real time. Project resources are stored in the cloud server, which has a strong security guarantee. Cloud translation software does not need installation and maintenance, users can use the software through the browser, which saves software installation and daily maintenance.

### 4.5. Comparison of translation cooperation modes
This paper makes a comparative analysis of four translation cooperation modes, which can make a more concise and intuitive comparison of the advantages and disadvantages of several documents, as shown in Table 1.

| Collaborative approach | Real time sharing | Translation proofreading | Price |
|------------------------|-------------------|--------------------------|-------|

Table 1. Comparison of translation cooperation modes.
5. Conclusion
With the rapid development of cat, the professionalization, industrialization and technicalization of English translation will have an important impact on English translation, which also puts forward new requirements for the cultivation of translation talents in Colleges and universities. Cat will never replace translators, but translators who know how to use cat will replace traditional translators. The future English translation competition is not only the competition between translators and machine translation, but also the competition between skilled translators. The progress of cat is the general trend, which is an inevitable trend for every English translator. Therefore, in the wave of globalization, English translators must study the future application based on cat specialization, which will be easier to become professional language service talents.

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