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COMPUTER-AIDED TRANSLATION IN THE PROCESS OF MODERN SCIENTIFIC AND TECHNICAL TRANSLATION

Particular use of new information technologies during; didactic possibilities of information technologies in translation are described in the article. The paper offers a model of technical correlation between translation memory, machine translation systems and editing that enables to achieve a high-quality translation. This article deals with very important and relevant issue: the use of machine translation systems, computer-aided programs in professional training of future interpreters.

Key words: *information and communication technologies; future interpreters; machine translationж computer-aided translation programs.*

Introduction. Computers, electronic tools, new technologies – in other words, information and communication technologies (ICT) – have begun to impact profoundly on our daily lives, especially in these first years of the twenty-first century. The way of performing our work in every field has changed radically because of them. It is undeniable, however, that some professions have been affected to a larger extent than others.

Huge volumes of translation, a large number of Language translations and hard conditions of time trouble, in one hand, and spesialization of translation for narrow field of controlled language, unified linguistic resources in other hand stimulated another renaissance of machine translation. Today, machine translation systems based on rules, statistical and hybrid machine translation systems are integrated into the system of translation memory, and application programs implemented in optimal interaction of interpreter, translation memory and machine translation (Berber D. I., 2005).

Theoretical basis and research methods. Since the 90s of the twentieth century, informative communication technologies, that create opportunities for the use of the machine, computer translation, study the scientists from all over the world: Hovard Reynhol’d, Et’yen Venher, Karen Svon, Piter Shi (USA); Moiseyeva M. V., Patarakin Ye. D., Polat Ye. S., Khutors’kyy A. V., Churayeva N. S. (Russia); Bykov V. Yu., Zhaldak M. I., Zadorozhna N. T., Kukharenko V. M., Shyshkina M. P. (Ukraine).

Some aspects of future translators professional training become the object of scientific investigation of the following researchers. Y. Kolos (informational and technological competence), A. Kozak (translation culture), S. Panov (technical translators training), O. Rohulska, A. Yankovets (the formation of professional competence of translator by means of information and communication technologies), R. Bell, W. Benjamin, D. Berber J. Boase-Beier, W. Wilss play (training of conference translators).

The aim of the investigation. Thus the aim of this article is to highlight the modern model of translation, which is based on software and linguistic resources.

Summary of the main material. Machine Translation systems are differentiated into those that are based on rules, statistical and hybrid. The effectiveness of machine translation systems, which based on rules (RBMT: regelbasierte maschinelle Translation), defined by quality of bilingual dictionaries and precision of specified rules, and their creation requires long hard work.

The first system of the machine translation created for specific pairs of languages and based on complex language modeling processes, mainly accounted methods of analysis, transfer, synthesis and Interlingua. The first systems based on the direct method of replacement of the original target words to translated words. The second generation systems analyzed the structure of the source language, and then based on the transfer of synthesized them into structure of the source language (Carabelli, Angela. 1999, c. 149-155).

There were attempts to create a machine translation system based on formal language intermediary – interlinguas. Today, for example, the firm Delta International (http://www.dicits.com/ index.php? option.ru) applies professional translation system Lucysoft, SYSTRAN, Prompt to optimize the process of translation using translation memory systems and adapt these systems to customer needs by adding to the system corporate terminology dictionaries and programming language rules for bi-dyrektal text translation for pairs of languages such as: English-German, German-Ukrainian, English-Ukrainian and more (Burger, Carolyn and Phyllis Zatlin, 1989, c. 91-96).

Current machine translation systems are based mostly on statistical or hybrid methods. In the base of the first – automatic extraction of similar segments of bilingual language pairs with fulltext buildings, which account for billions of tokens. The second are created today on the ground of existing machine translation systems, based on rules, addition of statistical methods. In this way, «learning» how statistical machine translation systems (SSMT) and hybrid machine translation (HSMT) is based on a bilingual corpus of texts and does not need deep and complex contrastive linguistic analysis.

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Thus, access to machine translation systems with translation memory are now offering its customers the world leaders who specialize in creating software for the field of language services: SDL, Across, Killgray (MemoQ), Atril (DejaVu) (Cervato, Emanuela and Donatella de Ferra, 1995, c. 191-204).

The algorithms operating of machine translation does not depend on the combination of languages as they are used for «training» new pair of languages, and the very possibility of such training ensures a gradual improvement in quality translation. However, to ensure an effective process of translation must account the next:

1) the specificity of content and applicability of machine translation;

2) a bilingual corpus for training the system (trunk volume from one to five million tokens);

3) the potential for quality control of the translation (Mishchenko A. L., 2013, c. 172-180).

More details on the integrated model of SDL translation memory systems and statistical machine translation Language Weaver (LW), because it offers customers the innovative solutions: training the system by customer translation memory resources.

At this stage the system is used to translate 24 languages bidirectional pairs (bidirektional), whose number will increase in the future. Among distinguished as Western languages, Eastern European languages, Asian languages, Africa and the Middle East. To convert to LW used statistical methods of cryptography and algorithms of machine learning. The main module of Language Weaver – decoder which manages the whole process of translation, using the other modules of the program, namely: a model of language, specialized translation program, specialized dictionaries, base data glossary etc. (Tapling M., 2010).

The module, which is responsible for the training system, is called kastomayzer (Customizer). Language Weaver «learns» directly from parallel texts and automatically generates a statistical learning process «language model» given languages. Adaptation of the needs of the client provides its training material for specific profession, industry or corporate language linguistic resources. These texts are aligned automatically (Alignment) by a special program LW-Aligner, or another alignment program (Aligner-Tool: Giza, WinAlign andetc.) in the form of segments presented in the form of phrases, sentences, texts or adstracts and fix in a special translation program. In need program allows you to generate translation memory and specialized dictionaries. This modul ensures basis system of Language Weaver adaptation to customer needs and allows significantly to improve the quality of translated texts (Haag M., 2011).

Although translators have never been keen on having a machine replace them, in the 1980s they realized that computers could be of great help in their work to meet the constantly growing demand for translation because of globalization. Among the benefits that computers were bringing to translators' lives, word processing, the creation of individual glossaries (what is discussed as DIY corpora in this paper), on-line access and transmission of documents could be listed.

Machine translation could not and would not be the answer to their needs, since they wanted and actually required to keep control of the process. It was thus that CAT (computer-assisted translation or computer-aided translation) was developed. CAT is defined as «a form of translation wherein a human translator translates texts using computer software designed to support and facilitate the translation process». The term covers a range of tools, which may be software, add-on programs, or databases (Burger, Carolyn and Phyllis Zatlin, 1989., c. 91-96).

Although translation memory (TM) software is the most common tool associated with CAT, other tools included in the term are spell and grammar checkers and terminology data bases, which can be built into word processing software, or as CD-ROMS, or as add-on programs; dictionaries and encyclopedias on CD-ROM or available through the Internet; indexers or full-text search tools and concordancers and bitexts, which are programs that can interact and complement each other when needed. Indexers are a subtype of search engine for full texts (Berber D. I., 2010), while concordancers serve for finding out patterns of vocabulary, grammar, and style, by finding a key word in its context. A bitext consists of two texts that are mutual translations, i.e., one being the source-language version of a given text and the other being the target-language version of it. The software for creating it is known as an alignment tool. Though bitexts may be similar to translation memories (TM), they are different in that TMS store matched sentences, phrases, paragraphs or blocks of text, while losing the original sentence order, whereas a bitext retains the original sentence order (Berber D. I. 2005).

A translation memory is «a linguistic database that continually captures your translations as your work for future use», which accumulates translations in source and target language pairs which are called translation units. When the source file is opened, the TM will extract identical matches and fuzzy matches (similar but not identical), which may be accepted or overridden with new alternatives (Berber D. I., 2010, www.tdx.cat/bitstream/10803/8775/1/tesi.pdf).

Some of the best known and perhaps most widely used and taught tools and programs today are *Déjà Vu* – a translation memory tool and productivity system, combining translation memory technology and EBMT (example-based machine translation); *Trados* – terminology management and TM software (SDL Trados 2007); *Wordfast* – presented as the fastest TM tool on the market and the second most widely used (Wordfast 2008); and *STAR Transit* – an alternative TM system, that is both a tool and process management (Wassmer 2008 and STAR 2008) (Berber D. I., 2010).

From the above we can clearly see the variety of ICT that translators are benefitting from.

Thus, an intelligent synergy of man, machine and effective management mechanisms allow to improve the quality oftranslation, minimize costs and significantly save time. This «intelligent» MT is quickly and easily integrated in translation and its status becomes essential for content creation, maintain it up to date, and is managed as a general strategy of the institution and bilingual linguistic train system resources allow for the transfer of new combinations of languages. In addition, MT, followed by post-editing to quickly expand and update the translation memory and thus optimal use of existing linguistic resources. An important advantage of statistical machine translation seen in the possibility of their adaptation to the needs of the customer and the gradual improvement of translation quality by «learning» systems and automated quality control of translation of the algorithm TrustScore, and feedback from the customer is key to ensure the quality of translation MT and speed in general (Mishchenko A. L., 2013).

Conclusions. Thus, the combined model of translation using machine translation, post-editing, translation memory, terminology management activities and process promises to be «Solomon's solution» to achieve maximum effect in the minimum effort creation, and updating of global multilingual content. However, a prerequisite of this model is technologically complex architecture to create and translate content, and linguistic resources for bilingual education system, as one of the key challenges of the information society is in creation the language resources.

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КОМПЮТЕРНИЙ ПЕРЕКЛАД У ПРОЦЕСІ СУЧАСНОГО НАУКОВОГО І ТЕХНЧНОГО ПЕРЕКЛАДУ

Інформаційні та комунікаційні технології (ІКТ) мають істотний вплив на наше повсякденне життя, особливо у двадцять першому столітті. Загальновідомо, що ІКТ стають стандартними засобами роботи практично у всіх професіях; і перекладач не є винятком.

У статті розглянуто особливості використання нових інформаційних технологій у процесі перекладу; охарактеризовано дидактичні можливості інформаційних технологій у навчанні перекладу. У статті запропоновано модель технічного кореляції між системами пам'яті перекладів, машинного перекладу та редагування, що дозволяє досягти високу якість перекладу. Ця стаття висвітлює важливу і актуальну проблема: використання комп'ютерних перекладацьких програм у професійній підготовці майбутніх перекладачів.

Висновком з дослідження є, те що, комбінована модель перекладу з використанням машинного перекладу, постредагування, програм перекладацької пам'яті, термінологічних довідників є правильним рішенням, щодо досягнення максимального ефекту по покращенні якості перекладу і оптимізації процесу роботи перекладачів. Проте, необхідною передумовою цієї моделі є розвиток технологічної складової, яка надасть доступ до використання і створення лінгвістичних ресурсів необхідних у професійній діяльності майбутніх перекладачів.

На нашу думку цифрові та інтерактивні технології можуть збагатити процес навчання завдяки впровадженню інноваційних підходів та новітніх інформаційних ресурсів. Компетентне використання інформаційних технологій усіма учасниками навчально- виховного процесу дає можливість підвищити рівень пізнавальної активності студентів, а також бути потужним мотиваційним інструментом для підтримки і сприянню особистістно-орієнтованого навчання та самовдосконалення майбутніх перекладачів.

Ключові слова: *інформаційні і комунікаційні технології; майбутні перекладачі; машинний переклад; комп'ютерні перекладачі.*

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КОМПЬЮТЕРНЫЙ ПЕРЕВОД В ПРОЦЕССЕ СОВРЕМЕННОГО НАУЧНОГО И ТЕХНЧНОГО ПЕРЕВОДА

В статье рассмотрены особенности использования новых информационных технологий в процессе перевода; охарактеризованы дидактические возможности информационных технологий в обучении перевода. В статье предложена модель технической корреляции между системами памяти переводов, машинного перевода и редактирования, что позволяет сделать высококачественный перевод. Эта статья освещает важную и актуальную проблему: использование компьютерных переводческих программ в профессиональной подготовке будущих переводчиков.

Ключевые слова: *информационные и коммуникационные технологии; будущие переводчики; машинный перевод; компьютерные переводчики.*

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