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COMPUTER TERMINOLOGY TRANSLATION

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Nowadays computer terminology translation becomes more and more important in introducing and assimilating advanced technology abroad. The introduction of computer terminology to the Russian language has been rapid and chaotic, and brings with it many challenges. The aim of the article is to analyze the characteristics of computer jargons and the translation methods of computer terms.

Nowadays computer technologies have become essential in people's work and daily life. It is no longer possible to do high quality translation work without dealing with computer terminology.

There are two main challenges having to do with computer terminology: the speed with which it has become part of everyday language and the fact that most of it stems from English.

In terms of language development and evolution, the invasion of computer terms into languages around the world has been incredibly fast. Where normal language evolution, including the importing of words from other languages, usually takes decades or centuries, most of computer terms are now adopted almost immediately, and as a result there is nothing to be done but import the terms directly from English, usually with only minor adjustment in spelling or pronunciation.

English drives much of the technology being developed and utilized around the world, simply because American research and companies have long dominated the development and control of both the Internet and computers. English easily deals with abbreviations, acronyms, and the creation of words from compounds and borrowings – other languages do not, which makes high quality translation of these terms extremely difficult in many target languages, including Russian. Usually the target languages simply bring the English terms into their own vocabulary as-is, which can be workable, but when an actual translation is needed you often have to resort to imaginative re-uses of old words, and even poetic solutions.

For example, French has refused to officially allow these English terms to enter the language. Officially, in French the term "computer" is "un ordinateur" and "a laptop" is "un portative". These terms sound French; but they are confusing to everyone else in the world because they have little to do with the generally accepted English term.

So you cannot resist new words and new terminologies. This article deals with the characteristics of computer jargon and the translation methods of computer terminology [3].

1. COMPUTER JARGON AND TRANSLATION OF COMPUTER TERMINOLOGY

The formation of the Russian computer jargon might be divided into several stages.

In the first stage (before the mid-sixties), the computer industry in the USSR was evolving to a large extent independently from the worldwide industry. Along with new ideas, concepts, and technologies, new terms came into being as well. Security requirements and almost the entire absence of scientific communications between Soviet and worldwide developers resulted in the formation of an independent Russian jargon in the field.

Most terms were invented from scratch and thus were totally original. Instead of "computer" the abbreviation "EVM" – "ellectronno-vychislitel'naya mashina" which means electronic machine for calculations – was used at that time. The abbreviation pattern was very popular with the Soviet computer industry. The processor in those days was called "ALU" (Arithmetic and Logic Unit), and the hard disk was called "NZHMD" (an abbreviation for the Russian version of "Storage Utilizing Hard Magnetic Discs").

In the late 60s the implementation of high-level programming languages took place, and lots of English terms were incorporated into the Russian language. The adoption primarily involved words that had been previously included in the Russian language in some other forms (e.g. "process" was already a common Russian word, and at that time "processor" was also added) or words that had in the Russian language some non-computer meaning (e.g. "register" was already used in reference to several notions and its computer meaning was added at that time).

Following the "invention" of Russian mainframes very similar to those of IBM, many English manuals were translated, leading to the assimilation of numerous English terms (e.g. "assembler" was adopted and "hard disk" calqued). Some attempts were also made to invent special Russian terms based on Russian roots and word-formation patterns. For instance, some Russian authors used a newly created term "pol'zuha" (formed in accordance with the rules of Russian language from the same root as the Russian equivalent of the word "useful") to denote "utility (software)", however, the artificial word quickly died and now everybody uses "utilita" as a Russian word.

At this stage, the centralized approach dominated. The translations of English monographs (e.g. the famous Programming the IBM 360 by Clarence B. Germain) were accomplished by professional translators and edited by specialists in the computer field. Every term was seriously discussed and authorized.

At the end of the 80s, volume import of computer equipment started. The use of computers received wide acceptance in offices and as personal devices at home. At that time the state itself and most of its inner processes were entirely decentralized. The equipment was imported by numerous small businesses. Due to limited budgets they depended highly on quick turnover. One of the ways to make computer equipment popular was to provide the support documentation in Russian. So, small dealers undertook the translation of user manuals. To save money, the job was usually done by various employees of these businesses that mostly were not professional translators but rather IT specialists. Their main principle was not to invent Russian terms but rather to use as many English words (in the original form or in Russian transliteration) as possible. In order to be able to use the generally unalterable English words in normal Russian speech with its highly inflected forms, they sometimes replaced the original English terms by similar sounding Russian words that often had entirely different meanings (for instance, an archaic Russian verb "kliknite" that means "call" was often used to translate "click"). This resulted in multiple Russian equivalents for most English terms (e.g. Russian equivalents of "pictogram" and "badge" are used in parallel with "icon").

The next stage was initiated by the official entrance into the Russian market of the major international computer companies which started to localize the software. In particular, Microsoft made great localization efforts that helped them to get the greatest market share. Today, most of the computers in Russia are using MS software, most of which is localized. As a result everybody use the terms suggested by Microsoft.

Currently, IT professionals tend to use original English terms, slightly modifying them. For instance, using Russian cases for English terms ("softa", "softom", etc.). Typical is the life story of "Internet". When it was invented, it was called "Internet" in Russian. It was written with Latin letters and uninflected (unlike the majority of Russian words). In the next stage, it was written in Cyrillic though still uninflected. Now it came into use as a standard Russian word subordinate to all the rules of the Russian language.

Thus, following the new technologies, new terms are coming from abroad and at first are incorporated into the Russian language as they are. However, 2 to 3 years later newcomers either die out or somehow assimilate into the Russian language. Some of them are replaced by the terms constructed from Russian words, some are calqued, and some are adopted.

This rapidly changing environment is a great challenge for the Russian translators who specialize in the IT field. Every day brings us new English terms and the only way to cope with them is to understand the underlying concept and to try to express it using Russian words. Dictionaries are not of great help, as they often either lack the newest terms or give obsolete Russian equivalents [4].

Jargon is always difficult to translate, because you need to understand both the source language as well as the jargon, which can be viewed as a sub-dialect of various languages. But computer jargon can be particularly challenging because of the number of collocations it uses. A collocation, in language terms, is two or more words that, when used together in a specific context, have a meaning separate and distinct from their individual definitions. The computer term "hard drive", for example, is a collocation. Hard drives are in fact hard, but if you translate this term literally you will sound ignorant and ridiculous – the word "drive" here has to be understood as distinct from the actual definition of the word. Another good example is "hot link". You may know what the words "hot" and "link" mean in normal context, but in the realm of computer jargon they combine to mean something else entirely. As a result, you need special skills to work on anything that uses computer jargon. You also need a deep familiarity with computer terms and how these collocations work so you

can offer a sensible rather than literal translation: e.g.: bomb (used of OS failures), bug (means unwanted and unintended property of a program or piece of hardware, especially one that causes it to malfunction), flood (means sending a huge amount of data to another user in an attempt to annoy him, to overflow his network buffer) [5, 6, 7].

The challenge is that much of this jargon was devised by a small group of specialists initially working in a very small, tight-knit group of high-level expertise. Much of the jargon consists of in-jokes and purposefully colourful or even off-colour references, corruptions of existing technical terms, and terms adopted from technical subcultures. All these terms and names are fascinating in their unusual etymology. For instance, the word "bug" (n.) – since 1620s it had referred to "bedbugs" from earlier "beetle". However, use of the term to describe defects in mechanical systems dates back to at least the 1870s. Thomas Edison used the term in his notebooks and letters. Later while Grace Hopper, a pioneer of computer programming, was working on the Harvard Mark II, she traced the cause of a glitch in the computer to an actual moth trapped in a relay. The mouth she found can still be seen on display in the Smithsonian Museum. Or let us consider the word "wiki" – a wiki on the Internet is a group of interconnected sites that is built from user interaction. Wikipedia, Encyclopedia Dramatica and Metapedia are all examples of the "wiki" model. In Hawaiian, "wiki wiki" means "quick". Creator Ward Cunningham decided that a "wiki" online would be a quick, easy way to access and manipulate multiple sites and information [8, 9].

Translating the terms it is important to pay attention to the fact that computer terminology can be divided into several groups. Many of them only make sense in computer science field, they are called pure computer words (table 1); others are linked to some fundamental subjects such as mathematics and physics, they are called fundamental words (table 2); computer terms derived from common everyday words are called extended words (table3); and, finally, translators often face abbreviations and acronyms because they are very common in computer English for their economy and convenience (tables 4 and 5) [10].

Table 1 – Pure computer words

English equivalent	Russian translation
Pixel	Пиксел
Interface	Интерфейс
Mainframe	Мэйнфрейм, главный сервер, большой компьютер
Spooling	Спулинг (способ применения буферной памяти при организации ввода и вывода данных в компьютерах с многозадачной операционной системой)

Table 2 – Fundamental words

English equivalent	Russian translation
Matrix	Матрица
Binary	Двоичный, бинарный
Integrated circuit	Интегральная (микро)схема

Table 3 – Extended words

English equivalent	Original meaning	Extended meaning
Mouse	Мышь (вид грызунов)	Компьютерная мышь
Field	Обширное пространство	Элемент графического интерфейса
Buffer	Амортизация	Буферное запоминающее устройство
Server	Причетник (помощник священника)	Сервер (компонент сетевой операционной системы, предоставляющий клиентам доступ к сетевому ресурсу)

Table 4 – Derivative words

Micro:	Microsoft, microcomputer
Multi:	Multiprogramming, multimedia, multiprocessing
Hyper:	Hypertext, hypermedia.

Table 5 – Acronyms

RAM	Random Access Memory	Оперативная память, оперативное запоминающее устройство
CPU	Central Processing Unit	Центральный процессор
CASE	Computer-Aided Software Engineering	Автоматизированное проектирование и создание программ
RAID	Redundant Arrays of Inexpensive Disks	Матрица независимых дисковых накопителей с избыточностью

According to the word which is translated, there are four principal translation methods of computer terminology: loan translation (for untranslatable terms), transference (borrowing + transcription), approximate translation, and morphemic or lexical loan translation. It is important to treat the subjects at length:

1. Loan translation: this translation method is suitable for the corporate names ("Nvidia", "IBM", "Intel", "AMD", "Microsoft"), for technological standards and software ("KDE", "Bluetooth", "Adobe Photoshop", "Gimp").

2. Transference is suitable for translation of majority of terms, e.g.: "printer", "scanner", "file", "click", etc. Also the corporate name written above ("Intel") can be translated with this method – that is bad for arising difficulties: we have to choose which one should be used here [11].

3. Approximate translation – in that case a translator finds the Russian root, which corresponds to the English term. E.g.: "network" – сеть, "data" – данные, "router" – маршрутизатор, etc.

4. Morpho-lexical loan translation (when the structure of the term is loaned, and individual components can be a transcription or lexico-semantic substitution). E.g.: "application server" – сервер приложений, "hyperlink" – гиперссылка. This method combines three previous translation methods [1].

And whichever of the methods above is selected, the main task of the translator is to convey the subject-logical meaning of the term adequately. At the same time the term should stay unambiguous and nominative [2].

Actually, computer terminology easily deals with abbreviations, acronyms, jargons and the creation of words from compounds and borrowings, which makes high quality translation into the Russian language extremely difficult. It means that computer terms should be the object of linguists' attention. The proper translation of computer terminology will give a stimulus to develop science and technology.

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PECULIARITIES OF TRANSLATION OF PHRASEOLOGICAL UNITS AND PROVERBS AND SAYINGS FROM RUSSIAN INTO ENGLISH ON THE BASIS OF FAIRYTALES

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Phraseological units (PUs) and proverbs are regarded as minimal units of translation. The article reveals their certain semantic properties and peculiarities of their translation.

Centuries-old communication experience of people, writing and speaking different languages indicates that a qualified translator must not only understand the sense of the text he translates but also know the phraseological resources of the target language.

Here it should be mentioned that the nature and the ways of using of PUs and proverbs equivalents are determined by their semantics. The semantics of such units is a compound informative complex which comprises object-logical and connotational components. The most significant, from the point of view of equivalent choice in the target language, are the following:

1. Extended or figurative component of meaning;
2. Real or objective component of meaning;
3. Emotional component of meaning;
4. Stylistic component of meaning;
5. Ethnic component of meaning.

Usually we call such components meaning of a figurative unit. Based on what has been said before while translating phraseological units into another language we should always render their figurative meaning, at the same time the direct meaning, which is the basis for creating an image, recedes into the background, but predetermines the choice of the equivalent. In a similar way the translator should take into account the other semantic peculiarities (emotional, stylistic and ethnic ones).

As for proverbs and sayings, the difficulty with their translation has always existed. Taking into account the peculiarities of different languages, it is difficult to translate everything which is part of people's culture. Similarity between structural and semantic PUs and proverbs peculiarities allows us to use the same ways of translation.

In our research we used the classification of ways of translation suggested by V. Komissarov [1, p. 170 – 176]. The ways of translation of figurative units are the following:

- Search of an identical PU in the target language. But we should take into account that the number of such units is limited;
- Search of a similar PU which has the same meaning but is formed on a different basis;
- Loan-translation or word-for-word translation;
- In some cases double or parallel translation is used (especially in cultural and historical texts), which presupposes the combination of a translation-loan and the explanation of its figurative meaning in a brief way.
- Descriptive translation when a set expression is transformed into a free word group in which the figurative meaning of the set expression is described.

As for the translation of PUs and proverbs from Russian into English, so in this case we use the classification of the Russian linguist S. Kuzmin. From his point of view the translator has several ways of translating them:

1. Translation with the help of a mono-equivalent, i.e. an English PU or proverb whose meaning coincides with the meaning of the Russian PU or proverb, for example: *«складывать оружие» = to lay down one's arms, «хитрый как лиса» = be as cunning as a fox,* etc.
2. Translation with the help of a comparative equivalent (which is also called "analogue").