

Computer assisted technology - comparison of programs

Eliška Mikuličková

Bachelor Thesis
2010



Tomas Bata University in Zlín
Faculty of Humanities

Univerzita Tomáše Bati ve Zlíně
Fakulta humanitních studií
Ústav anglistiky a amerikanistiky
akademický rok: 2009/2010

ZADÁNÍ BAKALÁŘSKÉ PRÁCE

(PROJEKTU, UMĚLECKÉHO DÍLA, UMĚLECKÉHO VÝKONU)

Jméno a příjmení: **Eliška MIKULIČKOVÁ**
Studijní program: **B 7310 Filologie**
Studijní obor: **Anglický jazyk pro manažerskou praxi**

Téma práce: **Počítačem podporovaný překlad – porovnání programů**

Zásady pro vypracování:

Teoretická část

Na základě studia literatury popište principy překladu.

Charakterizujte strojový překlad z různých pohledů.

Specifikujte základní typy počítačem podporovaného překladu (CAT).

Analytická část

Shromážděte informace o komerčně dostupných programech pro CAT a porovnejte je podle zvolených kritérií.

Metodou dotazníkového průzkumu zjistěte hodnocení CAT programů jejich vybranými uživateli.

Vyhodnoťte získané údaje s doporučením vhodných programů pro různé účely.

Rozsah práce:

Rozsah příloh:

Forma zpracování bakalářské práce: **tištěná/elektronická**

Seznam odborné literatury:

Malmkjaer, Kirsten. Linguistics and language of translation. Edinburgh: Edinburgh University Press.2005.

Knittlová, Dagmar.K teorii i praxi překladu. Olomouc: Vydavatelství UP.2000.

Gentzler, Edwin.Contemporary translation theories. Clevedon: Multilingual matters.2003.

Nida, Eugene A., and Charles Russel Taber.The theory and practice of translation. Boston: Brill.1982.

Austermühl, Frank.Electronic tools for translators. Manchester: St Jerome Publishing.2001.

Quah, Chiew Kin. Translation and technology. Basingstoke:Palgrave Macmillan.2006.

Vedoucí bakalářské práce: **doc. Ing. Anežka Lengálová, Ph.D.**
Ústav anglistiky a amerikanistiky

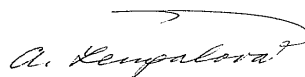
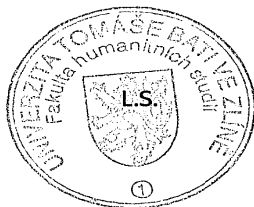
Datum zadání bakalářské práce: **7. ledna 2010**

Termín odevzdání bakalářské práce: **7. května 2010**

Ve Zlíně dne 7. ledna 2010



prof. PhDr. Vlastimil Švec, CSc.
děkan



doc. Ing. Anežka Lengálová, Ph.D.
vedoucí katedry

PROHLÁŠENÍ AUTORA BAKALÁŘSKÉ PRÁCE

Beru na vědomí, že

- odevzdáním bakalářské práce souhlasím se zveřejněním své práce podle zákona č. 111/1998 Sb. o vysokých školách a o změně a doplnění dalších zákonů (zákon o vysokých školách), ve znění pozdějších právních předpisů, bez ohledu na výsledek obhajoby ¹⁾;
- beru na vědomí, že bakalářská práce bude uložena v elektronické podobě v univerzitním informačním systému dostupná k nahlédnutí;
- na moji bakalářskou práci se plně vztahuje zákon č. 121/2000 Sb. o právu autorském, o právech souvisejících s právem autorským a o změně některých zákonů (autorský zákon) ve znění pozdějších právních předpisů, zejm. § 35 odst. 3 ²⁾;
- podle § 60 ³⁾ odst. 1 autorského zákona má UTB ve Zlíně právo na uzavření licenční smlouvy o užití školního díla v rozsahu § 12 odst. 4 autorského zákona;
- podle § 60 ³⁾ odst. 2 a 3 mohu užít své dílo – bakalářskou práci - nebo poskytnout licenci k jejímu využití jen s předchozím písemným souhlasem Univerzity Tomáše Bati ve Zlíně, která je oprávněna v takovém případě ode mne požadovat přiměřený příspěvek na úhradu nákladů, které byly Univerzitou Tomáše Bati ve Zlíně na vytvoření díla vynaloženy (až do jejich skutečné výše);
- pokud bylo k vypracování bakalářské práce využito softwaru poskytnutého Univerzitou Tomáše Bati ve Zlíně nebo jinými subjekty pouze ke studijním a výzkumným účelům (tj. k nekomerčnímu využití), nelze výsledky bakalářské práce využít ke komerčním účelům.

Prohlašuji, že

- elektronická a tištěná verze bakalářské práce jsou totožné;
- na bakalářské práci jsem pracoval samostatně a použitou literaturu jsem citoval. V případě publikace výsledků budu uveden jako spoluautor.

Ve Zlíně 28. 4. 2010

M. Hlíchová Elová

1) Zákon č. 111/1998 Sb. o vysokých školách a o změně a doplnění dalších zákonů (zákon o vysokých školách), ve znění pozdějších právních předpisů, § 47b Zveřejňování závěrečných prací:

(1) Vysoká škola nevydělečně zveřejňuje disertační, diplomové, bakalářské a rigorózní práce, u kterých proběhla obhajoba, včetně posudků oponentů a výsledku obhajoby prostřednictvím databáze kvalifikačních prací, kterou spravuje. Způsob zveřejnění stanoví vnitřní předpis vysoké školy.

(2) *Disertační, diplomové, bakalářské a rigorózní práce odevzdané uchazečem k obhajobě musí být též nejméně pět pracovních dnů před konáním obhajoby zveřejněny k nahlížení veřejnosti v místě určeném vnitřním předpisem vysoké školy nebo není-li tak určeno, v místě pracoviště vysoké školy, kde se má konat obhajoba práce. Každý si může ze zveřejněné práce pořizovat na své náklady výpisy, opisy nebo rozmnoženiny.*

(3) *Platí, že odevzdáním práce autor souhlasí se zveřejněním své práce podle tohoto zákona, bez ohledu na výsledek obhajoby.*

2) *zákon č. 121/2000 Sb. o právu autorském, o právech souvisejících s právem autorským a o změně některých zákonů (autorský zákon) ve znění pozdějších právních předpisů, § 35 odst. 3:*

(3) *Do práva autorského také nezasahuje škola nebo školské či vzdělávací zařízení, užije-li nikoli za účelem přímého nebo nepřímého hospodářského nebo obchodního prospěchu k výuce nebo k vlastní potřebě dílo vytvořené žákem nebo studentem ke splnění školních nebo studijních povinností vyplývajících z jeho právního vztahu ke škole nebo školskému či vzdělávacímu zařízení (školní dílo).*

3) *zákon č. 121/2000 Sb. o právu autorském, o právech souvisejících s právem autorským a o změně některých zákonů (autorský zákon) ve znění pozdějších právních předpisů, § 60 Školní dílo:*

(1) *Škola nebo školské či vzdělávací zařízení mají za obvyklých podmínek právo na uzavření licenční smlouvy o užití školního díla (§ 35 odst.*

3). *Odpirá-li autor takového díla udělit svolení bez vážného důvodu, mohou se tyto osoby domáhat nahrazení chybějícího projevu jeho vůle u soudu. Ustanovení § 35 odst. 3 zůstává nedotčeno.*

(2) *Není-li sjednáno jinak, může autor školního díla své dílo užit či poskytnout jinému licenci, není-li to v rozporu s oprávněnými zájmy školy nebo školského či vzdělávacího zařízení.*

(3) *Škola nebo školské či vzdělávací zařízení jsou oprávněny požadovat, aby jim autor školního díla z výdělku jim dosaženého v souvislosti s užitím díla či poskytnutím licence podle odstavce 2 přiměřeně přispěl na úhradu nákladů, které na vytvoření díla vynaložily, a to podle okolností až do jejich skutečné výše; přitom se přihlédne k výši výdělku dosaženého školou nebo školským či vzdělávacím zařízením z užití školního díla podle odstavce 1.*

ABSTRAKT

V této bakalářské práci se zabývám nástroji pro počítačem podporovaný překlad zvané CAT programy a jejich srovnáním.

Teoretická část práce se zabývá principy, teorií a funkcí překlalu. Dále představuje proces překladu spolu se základními přístupy k němu. Další část se soustřeďuje na mechanický překlad a další druhy počítačem podporovaného překladu, tedy jeho charakteristiky, funkce a jiné vlastnosti. Na závěr teoretické části se práce zaměřuje na technologii – počítačem podporovaného překladu, kde charakterizuje její vlastnosti, výhody, nevýhody a její vliv na práci překladatele.

Praktická část se zabývá srovnáním konkrétních CAT nástrojů z několika pohledů z hlediska ceny, podpory formátů, uživatelské rozhraní apod. V závěru práce se na základě dotazníků nachází vyhodnocení získaných údajů spolu s doporučením těchto programů pro různé účely.

Klíčová slova: překlad, počítačem podporovaný překlad, automatický překlad, překladová paměť, terminologická databáze.

ABSTRACT

The bachelor thesis aims at technology of computer assisted translation especially CAT programs and its comparisons.

The theoretical part of the bachelor thesis is concerns about the principles, theories and functions of translation. Next, the paper introduces general process of translation together with basic approaches to him. Moreover, the paper is interested in machine translation and other kinds connected with computer assisted translation, so its characteristics, functions and other features. At the end of theoretical part the paper is focused on computer assisted translation itself – it means its characteristics, advantages and disadvantages and its impact on translator's work.

The practical part concerns about a comparison of particular CAT tools from several points of views such as price, support of file formats, user interfaces etc. Finally, the bachelor thesis evaluates acquired data, which are based on questionnaires and recommends these programs for various purposes.

Keywords: translation, computer assisted technology, computer assisted translation, machine translation, translation memory, terminology database.

ACKNOWLEDGEMENTS

I would like to take this opportunity and thank to my supervisor doc. Ing. Anežka Lengálová, Ph.D., who really helped me during my writing of this bachelor thesis. I would like to thank to my whole family who has always supported me during my studies at Tomas Bata university. I would also like to express my thank to Mgr. Stanislav Pokorný for providing some materials and pictures connected with this subject matter.

CONTENTS

Introduction.....	10
I THEORY.....	11
1 PRINCIPLES OF TRANSLATION.....	12
1.1 Translation theory.....	12
1.2 Approaches to translation.....	13
1.2.1 Process of translating.....	13
1.2.2 Linguistic approach to translation.....	14
1.2.3 Descriptive approaches to translation.....	14
1.2.4 Functional approaches.....	14
1.2.5 Cultural approaches.....	15
2 TRANSLATION TECHNOLOGY.....	16
2.1 Definiton of terms.....	16
2.2 Machine translation.....	17
2.2.1 Brief history of MT.....	18
2.2.2 MT approaches.....	19
2.2.3 Direct translation approach.....	20
2.2.4 Rule-based approach.....	20
2.2.5 Corpus-based translation.....	21
2.2.6 Problems in MT.....	22
2.3 Human aided machine translation.....	23
2.4 Machine- aided human translation.....	23
3 TRANSLATION TOOLS.....	25
3.1 Computer assisted tools.....	25
3.1.1 Workbenches.....	25
3.1.2 Translation memory.....	26
3.1.3 Benefits of TM.....	27
3.1.4 Translation memory features.....	27
3.1.5 Termbase features.....	30
3.1.6 Terminology management systems.....	31
3.1.7 Segmentation and alignment.....	33
3.1.8 The impact of translation memory tools on quality of translation.....	33

4	IMPORTANCE OF CAT TOOLS FOR TRANSLATOR	34
II	ANALYSIS.....	36
5	INTRODUCTION TO ANALYTIC PART	37
5.1	Identification of compared CAT programs.....	37
5.2	Comparison from price point of view	40
5.3	System requirements.....	42
5.4	Supported languages.....	43
5.5	Feature comparison	43
5.6	User interface.....	46
5.7	Supported file formats	47
6	THE PILOT SURVEY	49
6.1	The Evaluation of the survey.....	49
6.2	The conclusion of the pilot survey	56
6.3	Recommendation of CAT programs for particular use	57
	CONCLUSION.....	58
	BIBLIOGRAPHY	59
	APPENDICES.....	62

INTRODUCTION

Translation has always played a key role in a world culture and has been developed throughout the centuries, based on business, cultural and social needs. Translation became something like “medium” through which communication between a source language and a target language can be produced. In other words, owing to translation, people can communicate among themselves. This medium may be represented by a human translator or some machine translation program, or by a combination of both. The function of translation, though, is timeless: to pass a message from one language to another.¹

The ancient Roman scholar Cicero (106-43 BC) and Horace (65-8 BC) were among the first who dealt with translation issues. Their works dealt mainly with the translation of literary and philosophical texts from Greek to Latin. The Bible, which has been translated multiple times over the centuries, is also an important benchmark in the field of translation studies. Many other famous authors and works are connected with the history of translation, but it was the Roman scholars and the numerous Bible translators who most influenced translation theory.²

In the mid- 20th century scholars started to think about a combination of technology and translation. The first companies which started to be interested in this kind of translation were for instance Systran or Eurotra. They were mainly supported by the U.S. government, which began to invest in such companies in response to the Cold War. The first program based on machine translation was developed in 1954 by IBM, but it was not taken seriously. These programs were only able to translate single sentences. However, thanks to a rapid technical progress, nowadays programs are able to translate a text with 96% exactness. These kinds of programs represent big advantages for translators thanks to components such as translation memory, terminology database, glossaries and other similar functions. They make translator’s work more efficient and save time. On the other hand, concerns remain over whether texts translated by computers are as high quality as the texts translated by human. This thesis deals specifically with this issue.

¹ Malmkjaer, Kirsten. *Linguistics and language of translation* (Edinburgh: Edinburgh University Press, 2005), 18.

² *ibid*, 2.

I. THEORY

1 PRINCIPLES OF TRANSLATION

The linguistic approach to translation appeared in the second half of the 20th century. Before the second half of the 20th century it was used rather literal-aesthetic approach to translation. Both of these approaches are sometimes still in competitive contention, but the crucial point is the pragmatic aspect.

In terms of linguistic's share on translation and its theory, the main importance has textual linguistics in all its aspects. Also a confrontational linguistics should be contributing for translation theory namely in grammar, lexicology and stylistics. Another contributing role for translation has sociolinguistics (examination of language spreads), pragmalinguistics (especially theory of speech acts) and psycholinguistics (in the case of mutual dependency of language, experience and mind). The most substantial sense has naturally stylistics.³

1.1 Translation theory

The core idea of translating is “to transfer a message from source language to target language. Translation serves as a medium through which a source piece of information is processed. This can be just a human translator or some machine translation program.”⁴

A contemporary translation theory is divided into three areas:

- a) interlingual translation, is based on transferring of some signs to different signs, but in one language. Gentzler called it “rewording.”
- b) intersemiotic translation, verbal signs in one language are interpreted by other signs in another language.
- c) interlingual translation, also called “transmutation”. Signs in one language are transferred to non-verbal sign system in another language.⁵

As Newmark says in his book “the translation theory represents huge amount of generalisations of translation problems. Translation theory consists of four parts: firstly, the translation problem is identified and defined, secondly translation theory have to take note of all factors connected with translation problem, which help to solve it. Thirdly, all possible translation procedures are listed and finally the most convenient and appropriate procedure is chosen.”⁶

³ Knittlová, Dagmar. *K teorii i praxi překlada* (Olomouc: Univerzita Palackého, 2000), 3.

⁴ Malmkjaer, Kirsten. *Linguistics and language of translation* (Edinburgh: Edinburgh University Press), 18.

⁵ Gentzler, Edwin. *Contemporary English theories* (London: Routledge, 1993), 1.

1.2 Approaches to translation

According to Newmark the translators should choose between two approaches to translation.

Firstly, the translator can begin translate sentence by sentence and then only review the result. The second way how to translate is to read the whole text fewtimes and try to look for the purpose and tone. In other words, start the process of translating when the translator is sure about aim of the text. The first method is partly dangerous, because the translated text needs too much revision which can lead in time-wasting activity. Therefore the first method is suitable for translators, who believe their intuition and the second method for those, who trust in their ability to analysis.

The second method is usually prioritizing, the translation may be mechanical and needs text analysis, which is useful thanks to reference. The translator can use the first method for rather easy texts while the second method is convenient for harder one.

The translation process means that the translator try to find or establish equivalences between SL and TL. In other words, the translation process can be formulated as “ interpreting the meaning of the original text and re-encoding this meaning in the target language.”⁷

1.2.1 Process of translating

Newmark’s description⁸ of translating procedure is operational. Firstly, a method of approach is chosen and then four levels are used in translation.

- 1) the source language text level focus on the level of language
- 2) the referential level means the level of objects and events, which are necessary to be visualised despite the fact if they are real or unreal. It is an essential part of comprehension and reproduction progress
- 3) the cohesive level concentrates on various presuppositions of the SL text. This level gives the feeling tone (whether it’s a positive or negative) and follows the process of thoughts.
- 4) the level of naturalness focuses primarily on reproduction. In other words the translation should make sense and sounds naturally.⁹

⁶ Newmark, Peter. *A textbook of translation* (London: Prentice Hall, 1988), 23.

⁷ Translation schools. “*Translation process.*” <<http://www.translationschools.org/translation/process/>>

⁸ Newmark, Peter. *A textbook of translation* (London: Prentice-Hall, 1988), 19.

⁹ *ibid*, 20.

1.2.2 Linguistic approach to translation

In translation studies appear four main approaches to translation: linguistic, descriptive, functional and cultural approaches.

Linguistic view on translation is considered according to Malmkjaer as “the replacement of textual material in one language by equivalent textual material in another language.”¹⁰

Malmkjaer’s ideas concerned mainly with ‘translation equivalence’. She brought out the concepts of types and shifts of translation, which was her main contribution in field of translation theory.

1.2.3 Descriptive approaches to translation

Malmkjaer pointed out the difference between “on the one hand, translation equivalence as empirical phenomenon, discovered by comparing SL and TL texts, and on the other hand, the underlying conditions, or justification, of translation equivalence.”¹¹ The underlying conditions represent not only surrounding of the texts, but also recipient’s feature and perception of the texts.

The translator should be interested more in either source culture (place of origin) or in the target culture (place of reception). Generally, this approach stressed the importance of situation, literary the culture background of translations.

1.2.4 Functional approaches

The base for functional approach is the purpose which the initiator of the translation acts. It means the initiator becomes a primary determinant.

The good example could be a translation of advertising materials, whose purpose is to advertise and consequently sell the goods. Obviously, it is more important to make the product attractive to the potential customers than to only copy the source text as closely as the target language allows.¹²

¹⁰ Malmkjaer, Kirsten. *Linguistics and language of translation* (Edinburgh: Edinburgh University Press, 2005), 25.

¹¹ *ibid*, 32.

¹² *ibid*, 35.

1.2.5 Cultural approaches

This approach is interested in the aspects of culture which definitely shape aspects of texts. The cultural approaches emphasize the relationship between translation and ideology. It means that translator should take account of cultural understanding during the process of translation. It is necessary to be aware of cultural groups, patterns of thinking and behaving of people as well as their beliefs, codes of conduct or political and economical surrounding in which they live.¹³

¹³ Bassnett-McGuire, Susan. *Translation Studies* (London: Routledge, 1991), 110.

2 TRANSLATION TECHNOLOGY

During the development of translation and also development of technology there appeared idea to combine both - translation and technology. It means that translation can be supported or helped by technology, which represents very radical step in evolution of translation. This idea about the new systems supporting translation started expanding all around the world. One of the most crucial steps in translation represent machine translation systems. There appeared two terms which are often misleading: Machine translation (MT) and Computer assisted technology (CAT).

Machine translation can be defined as “an automatic system which translates from source language to target language.”¹⁴ The crucial distinction between MT and CAT is that MT is able to work with no human involvement contrary to CAT. MT serves as software with goal to replace human translator. The first attempts of machine translation appeared shortly after World War II, but these attempts failed unsuccessfully. The first machine system was launched at 7th January 1954 by IBM. This program was able to translate only 49 selected sentences from Russian to English and its glossaries contained only 250 words. In spite of the simplicity and faultiness of the program it invoked a considerable attention among people and media.¹⁵

2.1 Definiton of terms

There exist more acronyms connected with translation technology:

- Machine translation (MT)
- Machine-aided/assisted human translation (MAHT)
- Human-aided/assisted machine translation (HAMT)
- Computer-aided/assisted translation (CAT)
- Machine-aided/assisted translation (MAT)
- Fully automatic high-quality(machine) translation (FAQHT/FAHQMT)
- Fully automatic machine translation (FAMT)

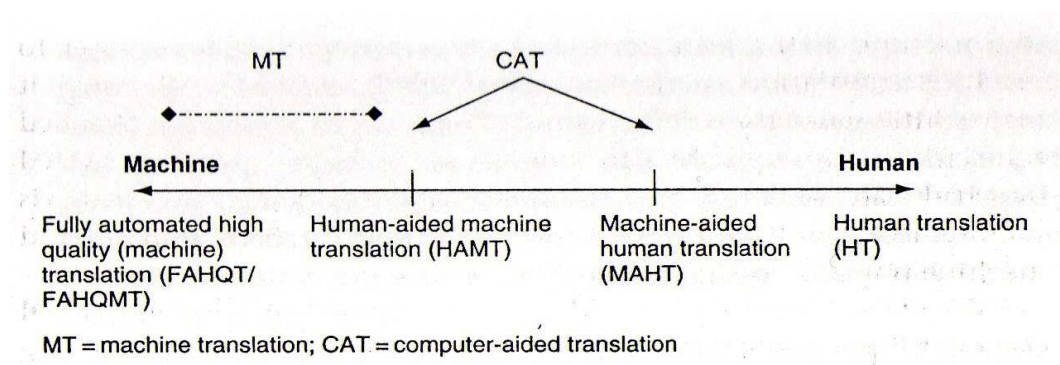
The differences among these terms are not always clear. The good example could be computer-aided translation or CAT is a term used in Translation Studies, whereas software community which developed this tool rather call it “machine-aided translation”.

¹⁴ Hutchings, John W. “*Machine translation: A brief history.*” <<http://aymara.org/biblio/mtranslation.pdf>>.

¹⁵ Aüstermuhl, Frank. *Electronic Tools for Translators* (Manchester: St. Jerome Publishing,2001), 10.

The following Figure 1 illustrates four types of translation concerning human and machine involvement.

Fig. 1 Classification of translation types



2.2 Machine translation

Austermühl gives the following definition of MT:

“Computerised systems are responsible for the production of translation from one natural language to another without human assistance.”¹⁶

The machine translation is often misled with technology of translation memory system, but the crucial distinction is that MT system works with no human involvement.

The important part of MT systems are dictionaries, syntactic analysis and synthesis components. The ability of system depends on the size of dictionaries, capabilities of the syntactic analysis and synthesis components. .¹⁷

The nowadays MT systems are Babylon Online Translation or Google Translate. Babylon is free of charge and is able to translate from or to Czech and other 26 languages. Google Translate is unique contrary to another MT system because it is based on huge database of web sites of known Google locator.

The first goal of MT was to create a fully automatic high-quality machine translation, which do not need human intervention.

¹⁶ Austermühl, Frank. *Electronic Tools for Translation* (Manchester: St. Jerome Publishing, 2001), 157.

¹⁷ Quah, Chiew K. *Translation and Technology* (Basingstoke: Palgrave Macmillan, 2006), 11.

These systems were based on the unrealistic idea that MT systems are able to produce as quality translation as human translator, but it was naturally rejected. In other words, the most suitable text for machine translation is the informative text. These types of texts are for instance: an instruction manuals, technical articles, abstracts, minutes or weather reports. The reason why the informative text are most cost-effective for MT is that they have common features. Such as any conflict of aims, objectivity, factuality, neutrality and usually they are clearly written.¹⁸

2.2.1 Brief history of MT

The first notion of ‘mechanical translation’ appeared approximately four hundred years ago. In 1629, René Descartes had an idea to represent language by codes. It means to find one code in one language and consequently find an equivalent in other language, which has same meaning.

The first term of machine translation was ‘automatic translation’ or ‘mechanical translation.’

It was only after the Second World War (1939-45) when was explored a possibility to use stored-program computers, recent invention at that time.¹⁹

In 1930, two researchers George Artsrouni and Petr Smirnov-Troyanskii developed the idea that automatic translation have to include three stages: an editor (who analyze and convert the words from SL), a machine (which find equivalents between SL and TL), a second editor (which is familiar with TL and corrected this rough translation process). However, their work remained unknown till 1950.

Another significant figure who is worth to be mentioned was Warren Weaver. In 1949 he published his thoughts and ideas concerning on use of computer in process of translation. His interesting ideas were attractive for many American universities, which immediately started to research this area. In 1954, University of Georgetown and IBM has developed a project focusing on this matter.

First machine translation versions were based on bilingual dictionaries which even accepted a word order. There were need of syntactic and semantic function, so the developers still tried to improve these kinds of programs. Unfortunately, the researchers began to be pessimistic because of semantic barriers, which became an insuperable obstacle of MT.

¹⁸ Quah, Chiew K. *Translation and Technology* (Basingstoke: Palgrave Macmillan, 2006), 89.

¹⁹ *ibid*, 60.

International Business Machine Corporation and a University of Washington introduced Mark II, an operating system, which was not successful, because it did not fulfil semantic and syntactic function. During 1964 the US government started to be interested in this incapable translation programs and introduced ALPAC (Automatic Language Processing Advisory Committee) with the purpose to evaluate these systems. Then in 1966 the ALPAC wrote a report, which criticised the slowness, incapability and expensiveness of MT. It was not worth to put money in this senseless research for them. This critique caused that many researchers gave up their exploring in this field.

However, the researches from France, Germany and Canada continued in their research and after few years they brought out two MT systems. The new systems were called Systran (used by the European Union Commission) and Taum-météo created by University of Montreal in order to translate a weather forecast from French to English.

During 1980 the business expansion increased the demand of MT. Countries such as German, Japan, France and Canada still continued in developing of these systems and came with a new MT system called Logos, which enabled translation from German to French.

In 1980 appeared vast access to personal computer, companies such as Globalink, Mitshubishi, ALPS, Sharp and many others needed these programs for their business.

From 1990 the development of MT experienced a revolutionary change. The translation was not so limited only by grammatical rules but also took account of bodies of the texts and examples. The translation was not so fixed by rules but became more dynamical and adapted to the usage. Not only to usage, but also to user and changed according to time, cultural and social changes.²⁰

2.2.2 MT approaches

Quah distinguishes three basic approaches to MT:

- a) direct translation
- b) rule-based translation
- c) corpus-based translation²¹

²⁰ Craciunescu, Olivia, Gerding-Salas, Constanze, Stringer-O'Keeffe, Susan.

“Machine Translation and Computer assisted translation: A New Way of Thinking?”

Translation Journal, vol 3 no.3 (September 2000) <<http://accurapid.com/journal/29computers/htm>> (accessed November 14, 2009)

²¹ Quah, Chien K. *Translation and technology* (Basingstoke: Palgrave Macmillan, 2006), 69.

2.2.3 Direct translation approach

Direct translation is considered to be the first approach used in machine translation systems. In addition, it is regarded as the first generation of MT systems. This kind of approach is basically a dictionary-based system, which matches words from SL to their TL equivalent. The translation is carried out in a direct way from SL to TL. Another disadvantage is that the use of syntactic analysis is very basic. Also, semantic analysis is rarely used. So that the result outputs are poor despite the fact that the approach is simple and cheap. Another reason for poor output results is that this approach only functions well with a couple of words of nearly related languages that have comparable grammatical structure. The first direct MT systems are, for instance, Météo, Weidner or old Systran.²²

2.2.4 Rule-based approach

To analyse SL text and synthesis of TL text uses the rule-based approach application of semantic, morphological and syntactic rules. This kind of approach analysis and represents the SL text meaning to create equivalents in the TL. Rule-based approaches distinguish another two approaches: an interlingua and a transfer.

The interlingua approach means that the SL text is changed into an abstract form. This form includes all basic syntactic and semantic information, which are transferred to several TL. In other words, the term interlingua stands for all sentences with the same meaning without reference to language. That is the reason why the interlingua approach can be called a “language-independent approach.” The interlingua works in stages using the aid of dictionaries and grammar. It serves as the intermediary between natural languages.²³

The transfer approach consists of three stages. Firstly, the analysis stage transforms a SL text into an abstract SL text representation. Consequently, the conversion of SL representation into its equivalent TL representation takes place and finally the TL text is generated.²⁴

²² Quah, Chien K. *Translation and technology* (Basingstoke: Palgrave Macmillan, 2006), 70.

²³ Leonardi, Vanessa. “Equivalence in translation: Between myth and reality.” *Translation Journal*, vol 4 no. 4 (October 2000) <http://accurapid.com/journal/14equiv.htm> (accessed September 15, 2009)

²⁴ Quah, Chiew K. *Translation and Technology* (Basingstoke: Palgrave Macmillan, 2006), 73.

2.2.5 Corpus-based translation

The corpus-based translation is also called 'reference translation', which contains texts and their translation in SL. The SL and TL are joined and their equivalent translation is obtained by an extraction based on statistical models. The corpus refers to electronically stores texts in one language (monolingual corpus) or in more languages (multilingual corpus). The corpus-based translation can be divided into two different methods: a statistical and an example-based. The statistical method focuses on bilingual text corpora and on statistical models. Basically, the sentence from SL can have many translations, and each of these translation has some probability of correctness. It follows that the probability is calculated according to frequency in the corpus.

This approach is mainly without problems, but in case that the bilingual corpus is too small, the process of translation does not have to be capable in doing good translations.²⁵

The example-based approach needs for its function a bilingual corpus which contains pairs from sentences. Its matched pairs are called 'examples'. If there are not close matches in the bilingual corpus, the example-based approach is improbable to have success.²⁶

It is important to realize that MT cannot produce target (final) text of the same quality as human translator. In reality, the translation consists of two stages. Firstly, the translator produces a rough text into TL, in which are many mistakes and which is not nearly perfect. Secondly, the translator revises the text and makes some correction. The first stage of the process can be assimilated to MT, then the translator can continue to the second stage to make revision of the text. However, the problem could be that now the translator is confronted with text, which was not translate by human mind, but by machine. So that it is necessary to unite the MT with human thinking, experience and ability of estimation.

From this fact results the idea that MT could be for translators and aid or a trap. The help represents the first stage, which has been already mentioned, and a trap represents the ability of translator to keep his/her critique and be impartial from text which has been already translated at least in fundamental way.

²⁵ Quah, Chien K. *Translation and technology* (Basingstoke: Palgrave Macmillan, 2006), 76.

²⁶ *ibid*, 81.

It means that many mistakes do not have to be fixed. In other words, the translation could be considered as final.²⁷

2.2.6 Problems in MT

Practically, MT systems are rarely able to solve problems such as ambiguity, syntactic complexity, idioms and anaphora resolutions.²⁸

Ambiguity means that one word can have more than one meaning. Syntactic complexity is a common mistake during MT analysis. If the system does not analyze the sentence completely, it will only translate word-by-word and copy the structure of the source sentence. It is created a translation which lacks a grammatical rules. Idioms are “expressions whose meaning cannot be completely understood from the meanings of its components.”²⁹ For example:

English idiom: ‘kick the bucket’ (i.e. to die) is translated word-by-word into German as: ‘den Eimer treten’, which does not make sense. MT should use English idioms as single units of translation. It means to include them into system’s dictionaries.

Another major difficulty for MT system is anaphora resolution. Anaphora is used in linguistics “to refer to the use of a word that has the same reference as a previous word.”³⁰ This represents especially the problem with pronouns. To resolve pronoun references it is necessary to identify a pronoun’s antecedent (i.e. the noun to which the pronoun refers). To identify the predecessor is especially important in languages, which take the same grammatical gender as the antecedent, such as German. The problem is shown in following sentences:

- a) The monkey ate the banana because *it* was hungry.
- b) The monkey ate the banana because *it* was ripe.

The pronoun *it* represents something different. In the first sentence the predecessor is the monkey, whereas in the second sentence the predecessor is a banana.

²⁷ Craciunescu, Olivia, Gerding-Salas, Constanze, Stringer-O’Keeffe, Susan.

“Machine Translation and Computer assisted translation: A New Way of Thinking?”

Translation Journal, vol 3 no.3 (October 2000) <http://accurapid.com/journal/29computers/htm>(accessed (September 14, 2009)

²⁸ Aüstermuhl, Frank. *Electronic Tools for Translation* (Manchester: St. Jerome Publishing, 2001), 170.

²⁹ Arnold, D., L.Balken, L. Humphreys, S. Meijer and L. Sadler. *Machine Translation: An Introductory Guide* (London: NCC Blackwell, 1994), 122.

³⁰ Aüstermuhl, Frank. *Electronic Tools for Translators* (Manchester: St Jerome Publishing, 2001), 173.

In view of German pronouns, which use the same grammatical gender as their antecedents, the system must recognize that hungry in the first sentence must refer to an animal. So that, it is necessary for MT to use linguistic knowledge.³¹

2.3 Human aided machine translation

Human aided machine translation (HAMT) is essentially “a form of MT with an interactive mode, the principal contribution to the translation is made by the machine but a human can intervene during the translation process.”³²

The human participation is required either at pre-editing or the post-editing stage. The purpose of pre-editing is to find for example odd phrases, idioms or typographical errors. Post-editing focuses on correction of translated text.

The disadvantage of HAMT system is that the most systems are able to work only with limited number of types of SL texts. It means texts with restricted grammar and vocabulary e.g. technical texts (legal briefs), manuals or laboratory reports. HAMT systems are for example MaTra Pro or Lite.

2.4 Machine- aided human translation

The translators use the computer to” perform part of the process of translation.”³³ This process is called Machine aided human translation (MAHT). It is a system known as workbench or workstation which can use other tools. The Figure 2 below shows that the focal point in this type of translation is a human translator, who uses other tools as spell checker, dictionaries, database of previously translated texts, etc.³⁴

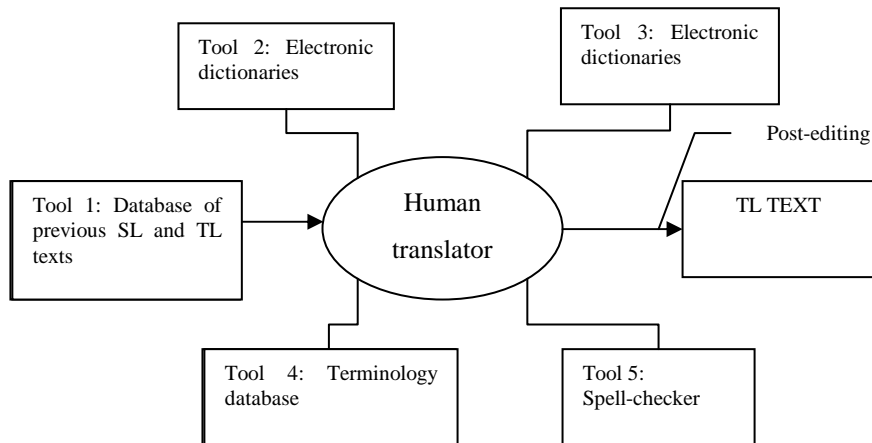
Examples of known MAHT system are Translator’s Workbench by Trados, Transit by Star or Déjà Vu by Atril.

³² Quah, Chien K. *Translation and Technology* (Basingstoke: Palgrave Macmillan, 2006), 173.

³³ *ibid*, 12.

³⁴ *ibid*, 13.

Fig. 2 MAHT model.



The boundary between MAHT and HMT are particularly unclear. As the Figure 2 shows both terms are regarded as computer assisted translation.

Theoretically, “the principal translator for HMT is machine, whereas for MAHT the principal translator is a human.”³⁵

³⁵ Schadek, S., Moses T. *Machine translation: An introduction and some history, language and computers seminar*, Gernaby: < http://www.uni-gessen.de/ga1007/language_and_computers/machine_translation.ppt >

3 TRANSLATION TOOLS

Computer-assisted translation (CAT) includes translation tools, linguistic tools and localization tools such as translation memory systems, electronic dictionaries and concordances. It means that translator can use a broad range of various tools during a translation to make his/her work more efficiency.³⁶ The computer becomes a 'workstation', in which the translators create their own working environment thanks to access to these tools or programs.

3.1 Computer assisted tools

The market offers a spectrum of electronic translation tools that includes a wide range of high-tech tools or computer applications. It is worth to mention that not all tools are suitable for all translators. Localization tools are more suitable for professional translators who are interested in localization industry, whereas tools such as parallel corpora and concordances are helpful for translators, who would like to improve their productivity and a quality of the translation.³⁷

But it is individually to each translator and to each translation. It depends on translators which tool they consider as beneficial and useful.

3.1.1 Workbenches

Workbench is also known as 'workstation' which is an integrated system consisting of various tools and resources use by translators. These are for example: translation memory, electronic dictionaries, an alignment tool, terminology databases, terminology management systems, spell and grammar checkers and others. Two of these tools are the most crucial in workbench: translation memory systems and terminology management systems.³⁸

³⁶ Quah, Chiew K. *Translation and Technology* (Basingstoke: Palgrave Macmillan, 2006), 174.

³⁷ *ibid*, 93.

³⁸ *ibid*, 94.

3.1.2 Translation memory

A translation memory (TM) is a “multilingual text archive containing (segmented, aligned, parsed and classified) multilingual texts, which store and retrieve aligned multilingual text segments against various search conditions.”³⁹ In other words, TM stores all source texts and their translations which are called ‘translation units’. As you can see in Figure 3 the translation unit consists of 2 segments: the source segment and the target segment. A segment can be represented by a word, a sentence or a whole paragraph. The form of segment depends on the segmentation rules.

Fig. 3 Translation units with 2 segments

By adopting a silent chain with a small pitch and using smaller sprockets, the camshaft drive system has been made compact and lightweight, thereby reducing the noise in the camshaft drive system.

Prizpůsobením tichého řetězu s malou roztečí a použitím menších ozubených kol došlo ke zmenšení a odlehčení celého pohonného systému klikového hřídele, a tím i ke snížení hluku, který tento systém vytváří.

Contrary to machine translation (MT), which makes translation automatically, TM permits translator’s decision to accept or refuse an equivalent or segment, which is proposed by translation memory system.

Some text type are more suitable for TM than the others. The most suitable texts for TM are texts with repetitive content for example some technical documents, software programs, lab reports or catalogues and many others. The more repetitive terms the text contains, the more suitable TM is.⁴⁰

Translators have to create their own TM step-by-step. It means they enter a SL text as a complex. The text is presented segment by segment. Then, when the translation is completed, the source and target are automatically saved as pairs. Finally, these texts create TM database.

³⁹ Eagles. “*Evaluation of natural language processing systems.*”
 <<http://www.issco.unige.ch/en/research/projects/ewg95//ewg95.html>>

⁴⁰ Austerlühl Frank. *Electronic Tools for Translators* (Manchester: St. Jerome Publishing, 2001), 139.

3.1.3 Benefits of TM

Generally, TM is regarded as cost-effective tools, which definitely enhances translator's productivity.

The usage of TM includes these benefits:

Increase in income – a translator is able to accept more tasks or projects because he/she can save time.

Elimination of repetitive translation tasks. It means that translator let the TM do the most repetitive tasks of translation.

Consistency. Consistency is increased owing to recycle of existing translation. This possibility gradually improves the quality of translation. TM has quality contents only when its database is maintained. To maintain database means "removing of errors from the source-text entries and target-text translations and updating terms that have changed."⁴¹

3.1.4 Translation memory features

- **Reusing previous translation (recycling).** Whenever a translators translate sentence or a segment which they have already translated before the TM will suggest them the old segment or sentence found in database (in TM). This is called Exact Matching or so-called Perfect Matching (see fig. 4). Exact match, occurs when the term from new SL is identical to old term, which is found in the TM database.⁴²

Fig.4 Example of exact matching

By adopting a silent chain with a small pitch and using smaller sprockets, the camshaft drive system has been made compact and lightweight, thereby reducing the noise in the camshaft drive system.

Prizpůsobením tichého řetězu s malou roztečí a použitím menších ozubených kol došlo ke zmenšení a odlehčení celého pohonného systému klikového hřídele, a tím i ke snížení hluku, který tento systém vytváří.

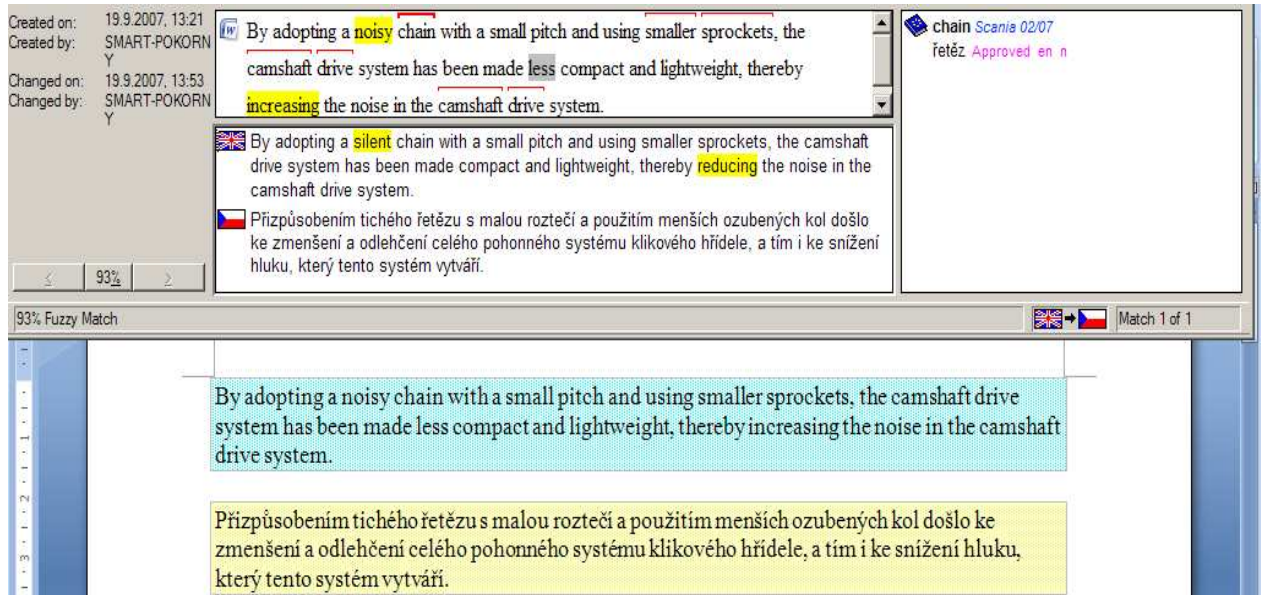
- **Receiving suggestions.** If the translators translate a sentence similar to one which has been already translated, the TM also gives them a suggestion, indicating all possible differences. This is called Fuzzy Matching (see Figure 5).

⁴¹ Austermühl Frank. *Electronic tools for translation* (Manchester: St. Jerome Publishing, 2001), 140.

⁴² Pokorný, Stanislav. "Computer-aided translation" (lecture, Tomas Bata University, February, 2010)

Fuzzy matching is contrary to perfect matching less exact. It occurs when an old and new source terms are similar, so not exactly identical.⁴³

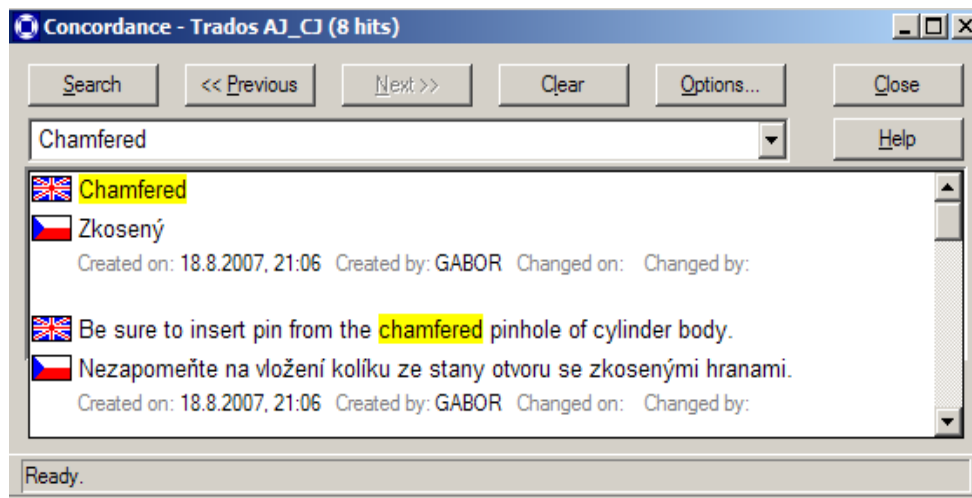
Fig. 5 The example of fuzzy matching



- **Concordancing.** The concordance is a tool which is used in case that translator cannot find an appropriate translation to the term or phrase. Translators use a concordance to search a term which is already stored in TM and then they will get some result which they can use.⁴⁴ The example of concordance search results is visible in Figure 6.

⁴³ Pokorný, Stanislav. "Computer-aided translation" (lecture, Tomas Bata University, February, 2010)

Fig. 6 Concordance search results



- **Active terminology recognition.** The translators can take advantage of other specific terminology databases which are created by themselves. It means they can connect the TM to this termbase. Because of each single customer demands specific conditions for text which will be translated. For example, in automobile industry the translator can use different termbases: for Nissan, Toyota or Mercedes-Benz. The reason is that a same terms have to be translated in two different way. For example ‘bearing house’ can have different translation: obal ložiska, kryt ložiska, pouzdro ložiska.

It means that for example Scania demands a translation of “bearing house” as – obal ložiska, whereas Toyota demands – pouzdro ložiska.

In information technology the word ‘chain’ mean - řetězec but in engineering it is translated as – řetěz. That is the reason why the termbases are so important. It is not possible for translator to remember all alternatives of terms.⁴⁵

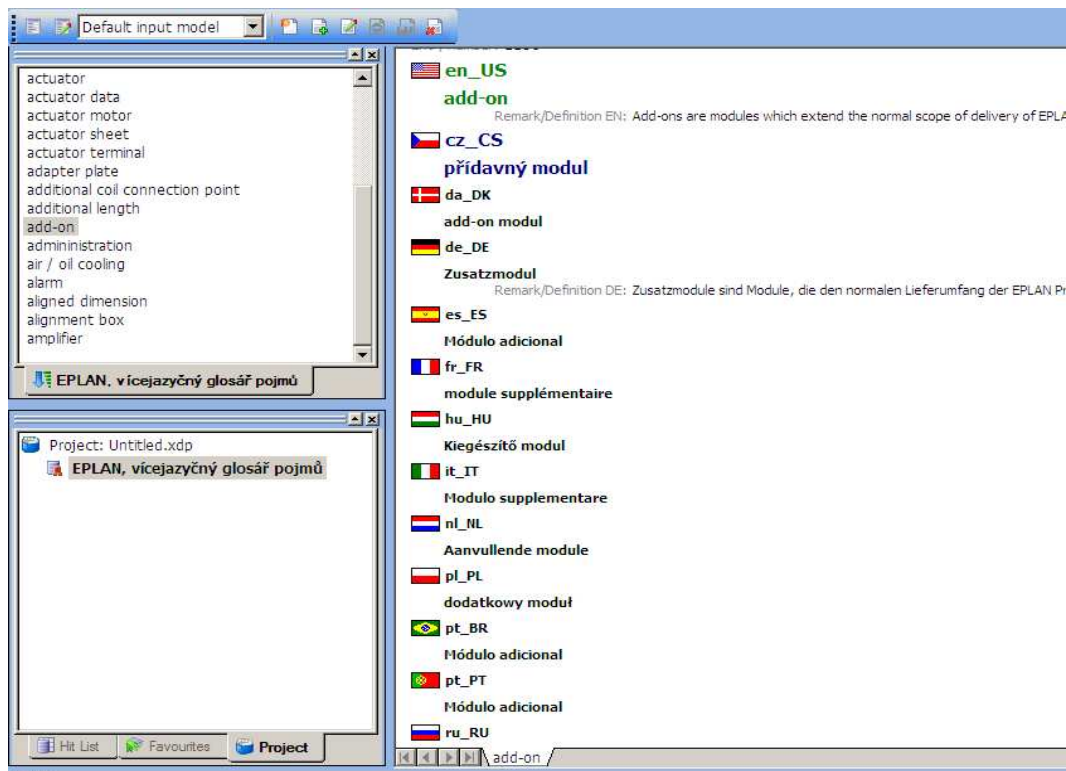
⁴⁴ Pokorný, Stanislav. "Computer-aided translation" (lecture, Tomas Bata University, February, 2010)

⁴⁵ Pokorný, Stanislav. "Computer-aided translation" (lecture, Tomas Bata Uuniversity, February, 2010).

3.1.5 Termbase features

- **Managing multilingual glossaries.** Termbase is able to maintain multilingual glossaries or so-called ‘termbases’ which are connected to TM. Thanks to this function consistency of terminology is ensured also throughout multiple translation projects.⁴⁶ Figure 7 illustrates an example of a multilingual termbase.

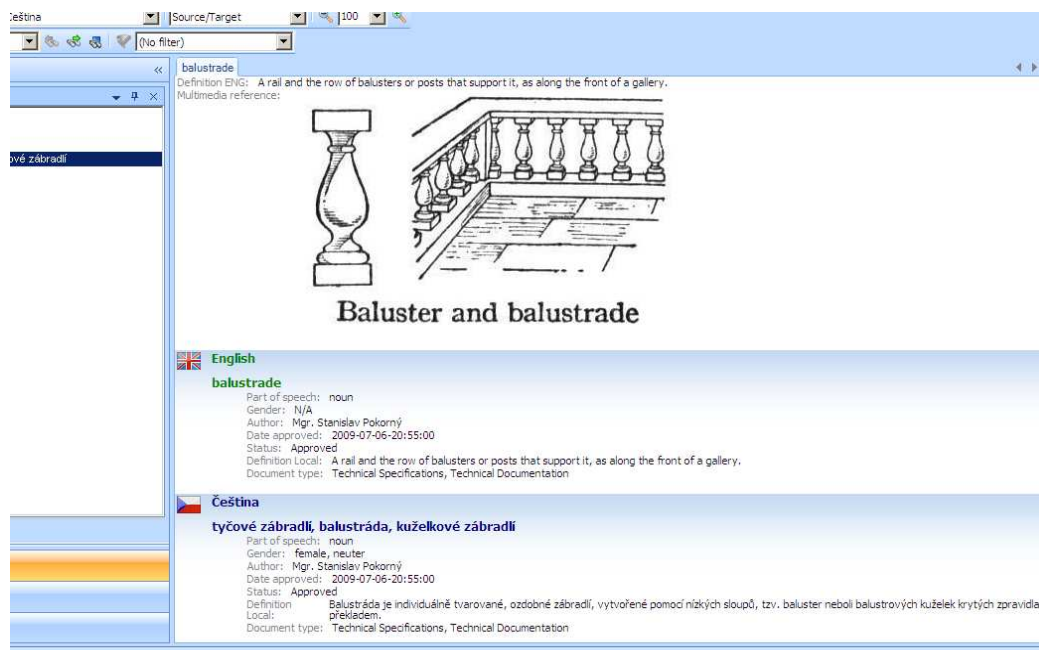
Fig. 7 A multilingual termbase



- **Use of multimedia aids.** It is possible to insert images (see Figure 8) or sounds to each term. This possibility is very beneficial, because the translator has better imagination about the term. This function is very beneficial especially for technical translators.⁴⁷

⁴⁶ Pokorný, Stanislav. "Computer-aided translation" (lecture, Tomas Bata University, February, 2010)

Fig. 8 Illustration of multimedia aid



3.1.6 Terminology management systems

Each translation project needs an identification of equivalence which is associated with the specific field. These subject fields can be for example: law, medicine, computing and many others. It is clear that searching of every specific term would be time-consuming for translator. Terminology management system ensures consistency and stores, retrieves and updates term entries.⁴⁸

The main functions of terminology management systems are:

- organization and maintaining of a database called termbase
- manipulation with terminology resources
- identification of multiple equivalents
- establishment of terminological resources for dictionaries and glossaries
- exchange of terms efficiently

⁴⁷ Pokorný, Stanislav. "Computer-aided translation" (lecture, Tomas Bata University, February, 2010).

⁴⁸ E-Colore.Tool-Terminology Management System. <http://www.ecolore.leeds.ac.uk/xml/materials/tools>

The translator has possibility to use online term banks in order to find terms for specific subject fields. The one of a well-known term bank is called Inter-Agency Terminology Exchange (IATE), which combines multilingual data from three major existing databases: The European Commission Terminology Database (EURODICAUTOM), Terminological Information System of The General Secretariat of the Council of the European Union (TIS) and Exploitation Unifiée de la Terminologie au Parlement Européen (EUTERPE). The IATE offers nearly one and half million entries. Each entry includes a term itself, a description, a synonymous and other notes.

Another well-known term bank is the Terminology of Telecommunications (ACRoTERMITE) which offers data from telecommunication field.⁴⁹

⁴⁹ IATE: Inter-Agency Terminology Exchange. <http://ec.europa.eu/idabc/en/document/2294/16#what>

3.1.7 Segmentation and alignment

Owing to segmentation the text is broken into several units, which are comprised of a word or a string of words. Segmentation is necessary because it helps to TM to do matching process. It means fuzzy and perfect matching. The pairs of old source and TL texts are usually segmented in format of sentence. Not each text can be formatted into sentence. The exceptions are headings or lists.

Another main part in translating process is an alignment. The main task of alignment is to create a new TM or to add to an existing one. It ensures a correspondency between SL segment and TL segment.⁵¹

3.1.8 The impact of translation memory tools on quality of translation

The quality of translated text is ensured owing to translation memory, which preserves pairs of terms of texts and use them whenever the SL term appeared again in any position in the translated text. Despite the fact that the text translated by CAT is quality, it is recommended to accomplish the following operations. Firstly, it is necessary to proofread the text before printing. It means to remove typographical errors such as incorrectly separate words at the end of line, double blank, the need of moving of a picture or of the text. Secondly, a stylistic proofreading or also called editing is necessary. This editing represents the checking of the word order in the sentences or the order of whole sentences in the text, and also understandability. In addition, the translator should check the readability for defined purpose, for target reader and country.⁵²

⁵¹ Quah, Chien K. *Translation and technology* (Basingstoke: Palgrave Macmillan, 2006), 85.

⁵² Drugan, Joanna. "The Effects of CAT tools on Translation Quality." <http://www.leeds.ac.uk/cts>

4 IMPORTANCE OF CAT TOOLS FOR TRANSLATOR

Nowadays, a majority of translators and translation agencies use these CAT tools for their work. These people can find a wide range of CAT tools on the market. CAT tools have become a developing phenomenon of contemporary trend of translation. The translators need to translate fast and the CAT tools are the best aid for it. The more text the translators translate, the more projects can they accepted, which mean to obtain more money. Because of huge increase in technological developments, more technical and business documentation are produced and so that there is a need to do translation in short time. CAT use and provide several tools in purpose to help the translator to work efficiently and more quickly.

The term computer assisted technology includes a range of tools such as spell checkers, terminology managers, terminology database, concordance, dictionaries on CD-ROM (unilingual or bilingual), translation memory etc. It becomes an everyday part of translator's work. On the Internet the translators find a large-scale of dictionaries, glossaries or databases, which serves for help with specific terminology. The CAT tools are definitely beneficial for translator's efficiency, but it is important to professional translators to discover which tool would suit for their work.⁵³

The significant advantage of CAT technology is definitely the ability to save translators' time and make their work more efficiency. The crucial and the most beneficial tool of CAT is absolutely translation memory, which is based on segments created by translator himself/herself.

These segments represent sentence or other self-contained texts, which assure that the totally bad translations cannot be produced. Contrary to the single programs, which only translate individual words and are unable to use grammatical cases or tenses, CAT is able to work with whole sentences, where is included a declension as well as conjugation.

Thanks to CAT tools a translator can achieve a high-level of corectness of terminology and formats, together with noticeably low time and financial costs. The translate agencies take advantage of these savings and may offer their clients much quicker, more quality and cheaper services.

⁵³ Sánchez M. Pablo. "Electronic Tools for Translators in 21st century". *Translation journal*, vol 5 no.5 (November 2000) <http://www accurapid.com/journal/38tools.htm> (accessed December 1, 2009)

In addition, the CAT programs are not only useful for translators, but also for customers. It means if there are repetitive passages in the text, the translator will use a CAT programs and the customer has possibility to get discount from 40% to 85%.

The discount depends on the company and also on the frequency of the repetitive words.⁵⁴ It is obvious that use of CAT tools bring more pros than cons.

One of the cons is that the translator see only few sentences or one paragraph on the screen during translation, for that reason he or she translates without context. It resulted to his or her additional revise of the translated text, which can mean wasting of time. It naturally depends on how much revise is needed. Another cons could be an excessive consistency in translation. It means that translators are unfavourable influenced by TM. In other words, they are limited to use the same equivalent through the text rather than to search other or better equivalent. Next disadvantage is the investment, substantial amount of money to get this software and also spend some time by learning how to use these CAT tools. It is said that TM tools are suitable only for technical texts, where is quite often ensured repetition of the words. Documents like manuals, brochures or balance sheets have a great number of repetition and their updating is often necessary. On the other hand, it is obvious that CAT programs are not suitable for literary texts, such as novels, plays and other beletries, where the context plays an important role.⁵⁵

⁵⁴ Pokorný, Stanislav. „*Příručka odběratele překladatelských služeb.*“
<http://www.czech-translations.de/downloads/prirucka_zakaznika.pdf>

⁵⁵ Webb, Lynn. “*Advantages and disadvantages of translation memory.*“
<<http://www.tradulex.org/Bibliography/Webb.htm>>

II. ANALYSIS

5 INTRODUCTION TO ANALYTIC PART

The following part focuses on particular CAT programs, which are the well-known and the most spread programs among translators all around the world. These are Wordfast, SDL Trados, Déjà vu, Star Transit and Across. Next, the analytic part concerns about comparison of these CAT programs from several aspects such as prices, support of languages, support of file formats, system requirements and other characteristics. The analytic part is also interested in pilot survey and its evaluation, which is based on questionnaires.

The following pieces of information came from websites of particular CAT programs, technical manuals and other commercial sources. It was difficult to find all needed pieces of information about CAT programs, so it was necessary to personally communicate with companies' consultants and technicians via emails

5.1 Identification of compared CAT programs

The company SDL Trados technologies offers for their customers a wide range of products as can be visible in Figure 6. The crucial product of this company is well-known CAT program SDL Trados Studio 2009. The customers can choose from four types. Each of these types is somehow specific. The SDL Trados also offers two terminology tools such as SDL MultiTerm Extract or Desktop and software localization called SDL Passolo 2009.⁵⁶

The following chart overviewed the SDL's products.

Fig. 6 Products of SDL Trados

Translation memory	Terminology tools	Software localization
SDL Trados Studio 2009 Starter	SDL MultiTerm Extract 2009	SDL Passolo 2009
SDL Trados Studio 2009 SP2	SDL MultiTerm Desktop 2009	
SDL Trados Studio 2009 SP2 Plus		
SDL Trados Studio 2009 Professional		

⁵⁶ SDL Trados technologies. Identification of products. <http://www.translationzone.com/en/products/>

Wordfast LCC is another provider which puts on the market several translation tools (see Figure 7).

Wordfast Pro is designed for freelance translators and represents customizable interface, which offer shortcut key maps, pre-translation and allow to users to share TM and collaborate. Wordfast Pro Plus is suitable for professionals and corporations. Wordfast Classic is further translation tool which can be used only in MS Word whereas Wordfast Pro Plus is independent platform which is able to work in other formats. Wordfast Server ensures collaborative work among the translators. It means that the tool connects the one or more translation memories simultaneously. Wordfast Anywhere is a web-based translation memory which provides an access to TM assets in online translation environment. Next tool is a VLTM that represents Very Large Translation Memory for translators. It is in server-based TM environment and it is available on the internet.⁵⁷

Fig. 7 Products of Wordfast

Translation memory tool	Application
Wordfast Pro	Wordfast Server
Wordfast Pro Plus	VLTM
Wordfast Classic	

⁵⁷ Wordfast LCC. < <http://www.wodfast.com>>

Déjà vu (DV) offers to translators three versions (see Figure 8) of TM systems: Déjà vu X Editor, Déjà vu X Standard, Déjà vu X Professional and Déjà vu X Workgroup. Each of the program is also somehow specific. DVX Editor, Standard and Professional is suitable for freelance translators and DVX Workgroup is best for corporations and translation service providers. Free DVX Editor is an evaluation program which users can use for 30 days, then they will request a code.⁵⁸

Fig. 8 Products of Déjà vu

Translation memory tools
DVX Editor
DVX Standard
DVX Professional
DVX Workgroup

Another CAT program is made by company STAR Group. The latest version is called Transit NXT, which is typical translation tool. Next, but older versions, which are still available are: Transit XV Professional, Transit XV Workstation and Transit XV Freelance Pro. Professional version is the complete package for project managers and translators, who work with multilingual translation projects. Workstation is the translation environment for translators, who work with clients via networks.⁵⁹

Across offers two products: Across Personal edition (PE) for freelance translators and Across Language Server, which is an universal platform for professional, industries and service providers.⁶⁰

⁵⁸ Déjà vu. < <http://www.atril.com/>>

⁵⁹ STAR Group. <http://www.star-transit.cz/PDF/TransitNXT_mail.pdf>

⁶⁰ Across. < <http://www.star-transit.cz/Software/Transit-prekladova-pamet-a-fuzzy-logika/>>

5.2 Comparison from price point of view

The following chart (Figure 9) overviews the price of complete product with the opportunity to buy some extra tools.

Fig. 9 Price of particular products

Translation memory systems	Versions	Prices
SDL Trados	SDL Trados Studio 2009 Starter	99 €
	SDL Trados Studio 2009 SP2	676 €
	SDL Trados Studio 2009 Plus	700 €
	SDL Trados Studio 2009 Professional	2 295 €
Wordfast	Wordfast Pro / Wordfast Classic	300 €
Déjà vu	DV Standard	250 €
	DV Professional	660 €
	DV Workgroup	2 250 €
Star Transit	Transit NXT Professional	2 950 €
	Transit NXT Workstation	995 €
	Transit NXT Freelance Pro	599 €
Across	Across Personal Edition	unknown
	Across Language Server	unknown

* the VAT are not included

Across is for freelance translators free of charge. Contrary to translation agencies or other similar companies, which have to pay for Across. The prices of Across are not available on Across web pages because the system is too expensive to publish the prices. Moreover, the implementation of program is individual in terms of specific demands of each customer so it is not possible to release unit price list.⁶¹

⁶¹ Across. <http://www.across.net/en/index.aspx>

The customers have opportunity to work with the program before the purchase it means they can try a demo version. The chart below (Figure 10) is illustrated demo versions of individual programs. The sellers of TM systems offer demo versions which works for 30 days. After 30 days the users have to buy a licence key for full price in case they would like to use the program. Wordfast offers two demo versions Wordfast Pro and Wordfast Classic. Wordfast Pro runs for 500 translation units without paid a license.⁶²

SDL Trados gives the opportunity to try SDL Trados Studio 2009, which is demo available only in 6 languages. The next demo is Déjà vu X free evaluation which also runs for 30 days.⁶³ After registration on Across websites, the registered translators can download Across free version called Across Personal Edition. If the register users are not not a freelance translator, they will violate the licence terms.⁶⁴ Star Transit also provides to try a demo version of translation memory system, especially Star Transit NXT Freelance Pro. As well as the others programs this demo is also time limited.

Fig. 10 Demo versions

Translation memory system	Demo versions
Wordfast	Wordfast Pro, Wordfast Classic
SDL Trados	SDL Trados Studio 2009
Déjà vu	Déjà vu X
Across	Across Personal Edition
Star Transit NXT	Star Transit NXT Freelance Pro

⁶² Wordfast LCC. <http://www.wordfast.net/>

⁶³ SDL Trados. <http://www.translationzone.com/en/products/>

⁶⁴ Across. <http://www.across.net/en/fdb-register.aspx>

5.3 System requirements

From the chart below (Figure 11) is visible that all CAT programs have similar operating systems, which are recommended to CAT programs to work properly. All programs are compatible with Microsoft Windows 95, 98, 2000 and Windows XP. SDL Trados⁶⁵ and Across⁶⁶ can be used with Windows Vista contrary to the remaining programs. In terms of system requirements, the most demanding program is the Across, which needs Intel pentium IV and 1 GB RAM. On the other hand, the less demanding is Wordfast⁶⁷ and Déjà vu⁶⁸, which need at least Intel pentium II and not less than 64 MB of RAM.

Fig. 11 System requirements

CAT program	Supported platforms	System specifications
SDL Trados Studio 2009	Windows Vista, Windows XP, Windows 2000 and 2003 Server	Intel pentium III or compatible processor 512 MB of RAM
Wordfast	Windows 95, 98, NT 4, 2000, Windows XP, Windows Vista	run out on any computer that supports Microsoft Word
Déjà vu	Windows 95, 98, NT 4, 2000, Windows XP	Intel pentium II 64 MB of RAM
Star Transit	Windows 95, 98, 2000, NT,	Intel pentium 128 MB of RAM
Across	Windows 2000, 2003, XP, Windows Vista,	Intel pentium IV 1 GB of RAM

⁶⁵ SDL Trados. <http://www.translationzone.com/en/landing/downloads/sdl-trados-studio-2009-product-brief.asp>

⁶⁶ Across. http://www.across.net/documentation/SystemRequirements_v50_en.pdf

⁶⁷ Wordfast. http://www.wordfast.com/support_specifications.html

⁶⁸ Déjà vu. <http://www.atril.com/docs/DVX/DVX%207.5.pdf>

5.4 Supported languages

In view of supported languages of SDL Trados⁶⁹, Wordfast⁷⁰, Déjà vu⁷¹, Star Transit⁷² and Across, there is not necessary to make comparison because all programs support each of the languages supported by Microsoft Windows. For example:

- European languages – English, German, French, Greek, Swedish
- East European languages – Russian, Slovak, Romanian, Serbian
- Asian languages – Japanese, Chinese, Thai, Korean
- Right-to-left languages – Arabic, Hebrew
- numerous minority languages

It is obvious that these CAT programs are able to translate all languages thanks to Unicode. There is no limitation, even, if it is complex language such as East Asian double-byte languages (Chinese, Japanese and Korean) or right-to-left languages.

5.5 Feature comparison

Computer assisted translation is a term covering a range of tools, from the fairly simple to the more complicated. In this case the comparison is not needed, because the functions of these programs are very identical.

SDL Trados, Wordfast, Déjà vu X, Transit and Across have these basic tools and function

- Spell checkers, built into word processing software or add on programs
- Grammar checker, also built into word processing software or add on programs
- Terminology manager allows the translator to manage his own terminology bank in electronic form
- Dictionaries on CD-ROM, unilingual or bilingual
- Terminology database, on CD-ROM or on the Internet
- Concordancers
- Reference search
- Pre-translation
- Alignment tool

⁶⁹ SDL Trados. <http://www.translationzone.com/en/landing/downloads/sdl-trados-studio-2009-product-brief.asp>

⁷⁰ Wordfast. http://www.wordfast.com/support_specifications.html

⁷¹ Déjà vu. <http://www.atril.com/docs/DVX/DVX%207.5.pdf>

⁷² Star Transit . http://www.startransit.cz/Download/novinky_TransitNXT.pdf?phpMyAdmin=

Despite of the fact that functions are almost identical, there are some differences in terms of network use, capacity of TM or number of glossaries, which can be use simultaneously (see Figure 12). When the translator buys some of these programs, the translation memory and terminology database are always empty. The user creates the terminogy database manually or by importing terminology data, which already exist. On the other hand, TM is built automatically during the process of translation and it is also possible to use alignment program to create TM from existing translations. The translators have opportunity to buy some additional tools like glossaries with general or technical terminology, but it of course means extra expense.

Wordfast as the only one of the programs provide to only 20 users to share same TM over a LAN (Local Area Network), contrary to other programs, where is no limitation in the amount of users. Users of Wordfast can use simultaneously only three glossaries and the size of TM is up to 1 000 000 translation units per TM.⁷³

Transit is not limited in network usability as well as in the amout of glossaries, which are used simultaneously. In view of capacity of TM there is no limitation. The barrier could be only hardware limitation, especially the capacity of disk, but the capacity of nowadays computers are very satisfactory, so there could not be a problem.⁷⁴

SDL Trados allows to 3 – 5 users employ TM simultaneously. If the number of users is over 3, it is recommended to use TM Server, a server for connecting translators and other internal or external worker. In terms of glossaries SDL Trados uses as glossary so-called Multiterm Termbase, for which is SDL very known. Multiterm is a program designed especially for building and maintaining terminology databse. Each entry to Multiterm is called “entry”, which can be one or more words. These terms are always indexes in all languages, so the translator can easily switch from one language to another. Multiterm is specially adapted to network use, so the users can all read from or write to the same database. “Entry level locking” is a function, which prevents from trying to change same entry at the same time, which is very admirable function. Multiterm is can be either a stand alone terminology management program or a part, which is included with Trados´workbench.

There is no limitation in the amount of Multiterm Termbases, but if the translators use too many termbases, it will take a hit. Translators usually employ 1 – 2 Term databases.⁷⁵

⁷³ Wordfast. http://www.wordfast.com/support_specifications.html

⁷⁴ Star Transit. <http://www.star-transit.cz/Ke-stazeni/>

⁷⁵ SDL Trados. <http://www.translationzone.com/en/landing/downloads/sdl-trados-studio-2009-product-brief.asp>

Déjà vu offers no limitation in the number of entries in the TM. The only limitation is related with databases file size, which is 2 GB per file. Network access can gain users of Déjà vu X Workgroup, which thanks to server allow to users share TM and TD simultaneously. The limit of users depends on the server features, but usually it is about 20 users.⁷⁶

Unlimited TM units are also provided by CAT tool **Across**. Across does not work directly with glossaries, but translators can import unlimited amount of glossaries into crossTerm database. From network point of view, the Across Personal Edition has quite important drawback, so that it network is not possible with this edition. Across company offers Standby Remote Client, it means networking with client, who installed the Across Language Server. This Across Language Server represents something, which make Across unique contrary to the rest of programs. It is suitable for industries and language service providers. It serves as a central platform for all corporate languages resources and translation process. In addition, it provides a workspace, where are included all people, who are involved into translation process. For instance editors, project managers or freelance translators and many other. Thanks to this uniform platform it is possible to have controll over content, processes and integrate corresponding systems. So the network communication is possible only with Across Language Server contrary to Across Personal Edition. In other words, the disadvantage for users of Across Personal Editions is that they have to buy Across Language Server to share data and other pieces of information.⁷⁷

Fig. 12 Features comparison

FEATURES	SDL Trados	Wordfast	Déjà vu	Transit	Across
Size of TM	unlimited	1 000 000 translation units	2 GB per file	unlimited	PE to 4 GB
Networkability	3 – 5 users	20 users	unlimited	unlimited	impossible with PE
Glossaries	unlimited	3	unlimited	unlimited	unlimited

⁷⁶ Déjà vu. <http://www.atril.com/docs/DVX/DVX%20Editor.pdf>

5.6 User interface

SDL Trados has easy-to-use dashboard and the users have possibility to create, manage and track his or her translation projects in one location. The interface is designed to be familiar to users of MS Office applications, with a simple yet informative dashboard-type layout and easy point-and-click functionality.

In addition, the interface has also easy-to-navigate tool bar, which increases user's productivity. This comprehensive dashboard displaying current project status information and key milestones.⁷⁸

Wordfast has intuitive and customizable user-interface. It is quick to learn and easy to use for users. Wordfast uses MS Word as its user interface, so learning Wordfast comes naturally. The wordfast is installed into your Word, so the its manipulating is very easy. User just clicks on the icon Wordfast and choose an action. For somebody the interface of Wordfast seems to be quite boring and unattractive with comparison of Across or SDL Trados.⁷⁹

Déjà vu has user-definable menu bars and keyboard shortcuts, which are well-arranged. The user can redefine color schemes and freely places tools windows. The interface of Déjà vu is similar to MS Excel, which make old and flat appearance.⁸⁰

Transit interface is easy-to-navigate and intuitive for new users, thanks to colours, uniform use of icons and improved synchronisation. The interface is distinguished by ergonomics and great number of powerful functions.⁸¹

Across has user-friendly and comprehensive interface owing to integration of crossTerm (terminology software), crossTank (TM database) and crossDesk (translation environment) in one single window, which allows to user to control all aspects of translation from a single place without a series of windows floating on the screen.⁸²

⁷⁷ Across. <http://www.across.net/en/index.aspx>

⁷⁸ SDL Trados technologies. <http://www.trados.com/en/>

⁷⁹ Wordfast LCC. www.wordfast.net

⁸⁰ ATRIL. Déjà vu X Editor user's guide. <http://www.atril.com/docs/DVX/DVX%20Editor.pdf>

⁸¹ STAR Group. <http://www.star-group.net/star-www/description/transit/star-group/eng/star.html>

⁸² Across Systems Inc. <http://www.across.net/en/about-across.aspx>

5.7 Supported file formats

The chart above (Figure 13) shows that all programs supported file formats of basic MS Word, MS Excel and MS Power Point. In view of number of supported file formats the worst program is Wordfast, which supports only MS Word, MS Excel and MS Power Point, because Wordfast used MS Word as a text editor, it takes only formats recognised by MS Word. In association with web sites it supports only HTML and SGML formats contrary to the rest of programs. The rest of programs have similar range of supported file formats. SDL Trados and Transit are capable to work with SVG (scalable vector graphics), which automatically handles bidirectional text (combination of English and Arabic text) and other texts.

It is markup language for describing two-dimensional vector graphics. The only program which receives AutoCad (software application for 2D and 3D design and drafting use for drawing, modeling, projecting and construction) is Star Transit. All programs receive formats of Adobe Frame Maker as well as Adobe Page Maker.

Adobe Frame Maker is a software suitable for large documents, especially for technical documents and Adobe Page Maker is a program for business, education and home-office professionals which creates high-quality publications such as brochures and newsletter. Similar to Adobe Frame Maker is Interleaf/Quicksilver which is a software for large technical documents, these formats support all programs with exception of Wordfast and Across. Another file format which is supported by all programs is QuarkXPress, which serves as a complex page layouts used by magazines, newspapers and similar materials. In conclusion, it is obvious that there are not so many differences in view of supported file formats, only Wordfast does not support some file formats, which represents one of Wordfast's weakness.⁸³

⁸³ Adobe Frame Maker. <http://www.adobe.com/products/framemaker/>

Fig. 13 Overview of supported file formats

	Supported file formats
SDL Trados ⁸⁴	Adobe Acrobat, Adobe Frame Maker, Adobe InDesign, HTML, Interleaf, Java, MS Word 2000-2007, Open Office, Page Maker, QuarkXPress ⁷ , Quicksilver ⁸⁵
Wordfast ⁸⁶	MS Word, MS Excel, MS Power Point, HTML, Adobe Frame Maker, SGML, QuarkXPress, Adobe Page Maker
Déjà vu ⁸⁷	XML, Plain Text, Open Office, Adobe Frame Maker, Adobe Page Maker, Interleaf/Quicksilver, InDesign, SGML, MS Access, MS Excel, MS Power Point, MS Word, QuarkXPress, Java source files, Java Properties, Java Script
STAR Transit ⁸⁸	HTML, XML, SGML, SVG, MS Word, MS Excel, MS Power Point, QuarkXPress, Adobe Frame Maker, Adobe Page Maker, Interleaf/Quicksilver, Adobe Indesign, AutoCad
Across ⁸⁹	MS Word, MS Excel, MS Power Point, HTML, XML, Plain text, EXE, QuarkXPress, Adobe Frame Maker, Adobe Page Maker

⁸⁴ SDL Trados. <http://www.translationzone.com/en/landing/downloads/sdl-trados-studio-2009-product-brief.asp>

⁸⁵ SDL Trados. http://www.sdl.com/en/Images/File%20filters%20and%20languages%20v2_tcm16-32469.pdf

⁸⁶ Wordfast. http://www.wordfast.com/support_specifications.html

⁸⁷ Déjà vu. <http://www.atril.com/docs/DVX/DVX%20Editor.pdf>

⁸⁸ STAR Group. <http://www.star-group.net/star-www/description/transit/star-group/eng/star.html>

⁸⁹ Across Systems Inc. <http://www.across.net/en/about-across.aspx>

6 THE PILOT SURVEY

The following part focuses on survey which is based on questionnaires. These questionnaires were sent to translators in the Czech Republic and also in the Great Britain. The total number of questionnaires, which were sent via the Internet was 150. However, only 20 complete questionnaires were returned, so that the results are considered as pilot. This amount of respondents cannot be taken statistically. Most of the respondents did not answer at all and the rest do not use CAT programs during their translations. The survey evaluates each question independently according to participants' answers, which are represented by percentages. The questionnaire consists of 9 questions. In questions 1 to 5 respondents could have chosen more than one answer. The questions 1, 2, 3, 4, 5, 9 are transformed by percentages and questions 6 to 8 are illustrated in graphs.

6.1 The Evaluation of the survey

The first question found out which CAT programs the respondents use in their translations. The pie chart (Figure 14) shows how many respondents use particular CAT program.

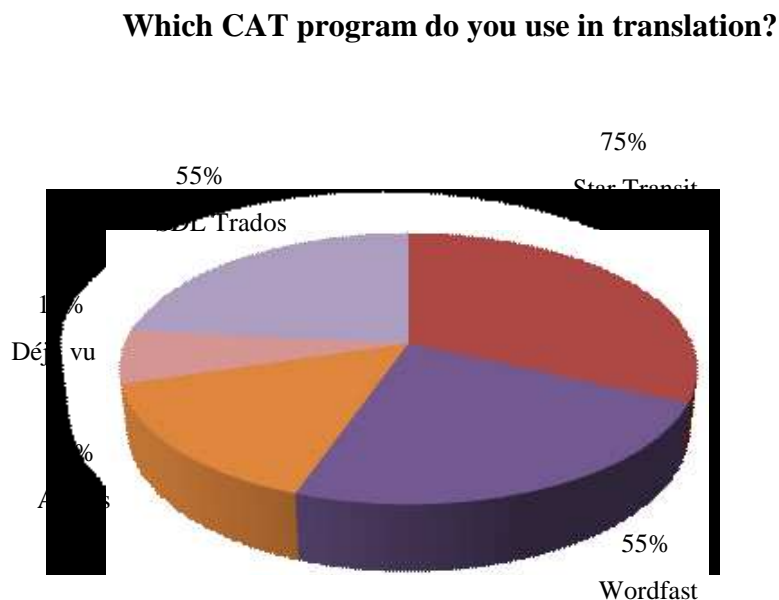


Figure 14 The CAT programs the respondents work with

The majority of answers represent Star Transit, which is used by 75 % of respondents. The second position gained Wordfast as well as SDL Trados, which represent 55 % of answers.

Across was marked by 35 % and the worst position has Déjà vu with only 15 %. In view of use it is obvious that the most prefer programs are Star Transit, Wordfast and SDL Trados. This result can support the fact that Star Transit, Wordfast and SDL Trados are currently the most famous and market leaders translation programs in the Czech Republic.

The respondents had also opportunity to mention other programs except Wordfast, Trados, Transit, Déjà vu and Across. The most frequent programs which were mentioned were : Logoport, Catalyst, Passolo, Memo Q, Helium and Idiom.

In the second question the participants were asked which program is best for them, in case they use more programs.

This questioned was answered only by 65 % of respondents, it means 13 participants use more than one program. The others did not focus on the second question, because they use only one program, which was marked in previous question

Star Transit is definitely best according to answers, which represents 35 %. The next place represents SDL Trados with 15 % and the Wordfast with 10%. Last but one program which was marked was Across with 5 % and the worst position got Déjà vu without any answer.

The third question examined for what kind of translation participants use the programs. They had possibility to highlight more than one answer.

There were choices such as technical texts (manuals), legal texts, business texts (contracts), web sites or other kind of translation, which might have been defined by respondents.

Majority of respondents (as you can see in Figure15) reported 85 % use of CAT programs in technical texts. The second position got business texts with 65 %. The third position belongs to legal text with 45 % of answers. The last positions represent legal texts with 45% and web sites with 40%. The rest of participants (10%) mentioned other kind of texts such as software and localization.

For what kind of translation do you use these CAT programs?

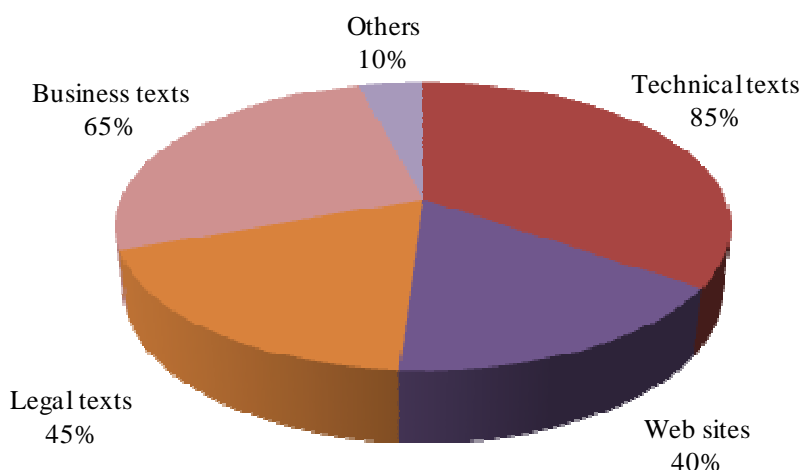


Figure 15 The usage of CAT programs for different types of texts

In forth question were participants asked what are the advantages of the programs which they use during their translation? The Figure 16 shows that the substantial majority of respondents (85%) reported the translation memory is the best advantage. Translation memory is followed by higher efficiency with 70% and ensurance of terminology (65%) is also consider as one of the most useful advantage of CAT tools. Wide support of file formats is appreciated by 45% of answers. The precise and well-arrange are useful advantages for 40% or respondents and 35% appreciate that programs are easy-to-handle. The last position obtained appropriate price with 10% of answers.

What are the advantages of the programs which you use for translation?

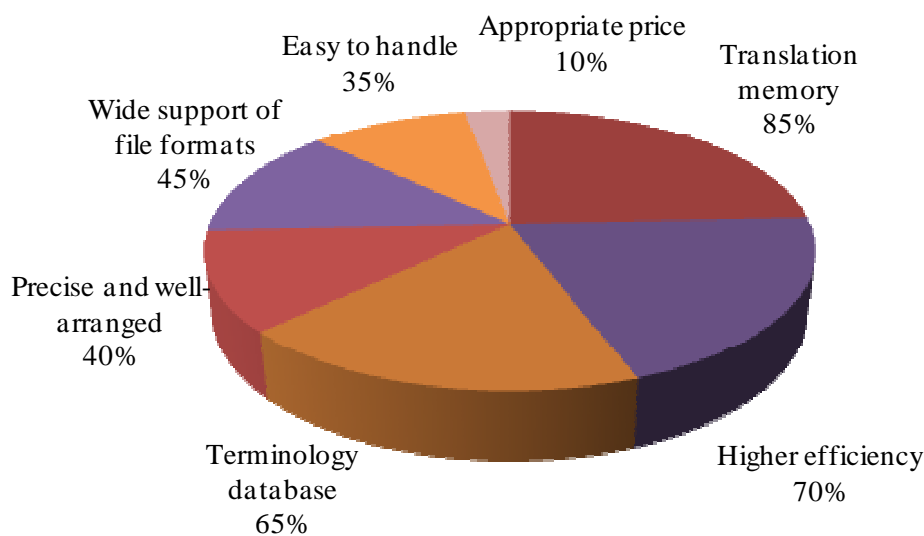


Figure 16 The particular advantages of CAT programs

The fifth question was interested in the cons of programs, which they use during translations. The majority (55%) of users claimed that the significant disadvantage is a high price (see Figure 17). The second position occupied missing tool with 20% of answers. A small-scale support of formats, hard-to-handle, inexactness and poor arrangement have the same number of percentages (15%).

What are the disadvantages of the programs which you use for translation?

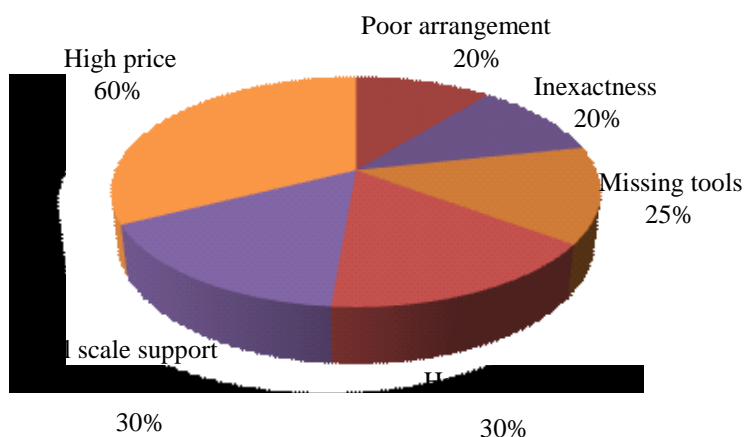


Figure 17 The pros of CAT programs according to respondents

Asked about the price (see Figure 18) most of respondents (55%) marked, that price of CAT programs is high. It provides evidence to the fact that CAT tools are generally regarded as very expensive. However, from general point of view if the translator want high-quality and reliable program, he will have to invest to it, but it is clear that the money will return to translators in case they get advantageous order from customer. The rest of respondents (50%) considered price as appropriate. The graph above illustrates the answers of respondents, which are expressed in percentages and how many respondents marked either B or C. The choice A it means that CAT programs are cheap was not marked by anybody.

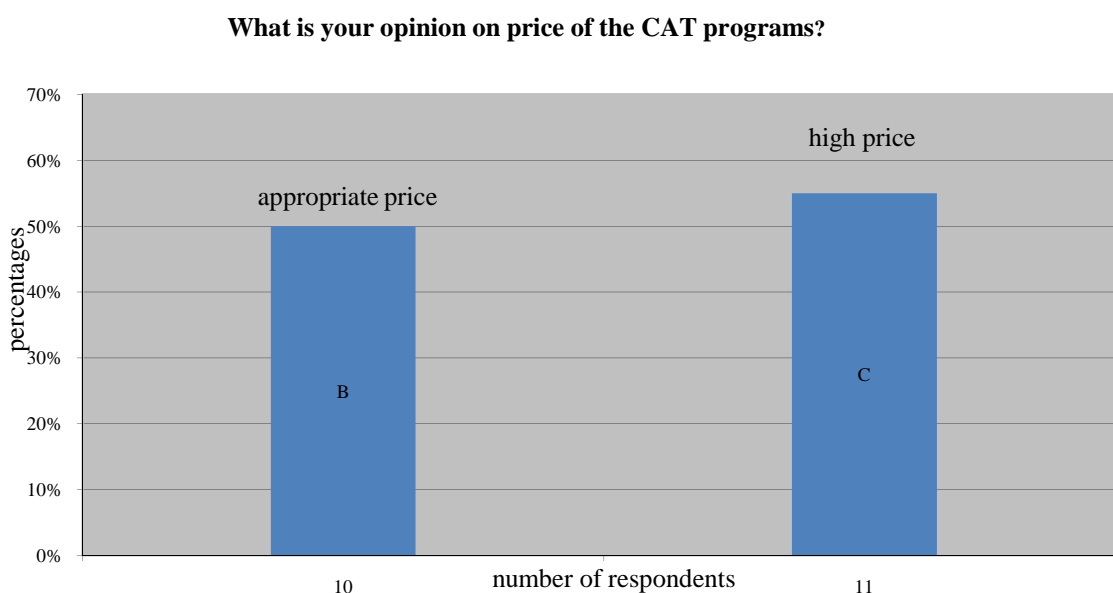


Figure 18 The opinion of respondents on price of CAT programs

The eighth question (as illustrated in Figure 19) revealed in this survey that the CAT programs are able to work with 5 and more world languages (80%). 2-4 languages was highlighted by 10% of participants and the last position obtained 1 language with only 5%. For clarity, the results are also show in the following graph. Nowadays CAT programs are able to work with huge number of languages, it surely depends on which program translators use. However, the market offers some programs which work with only one or two languages, these programs are explicitly cheaper than other programs.

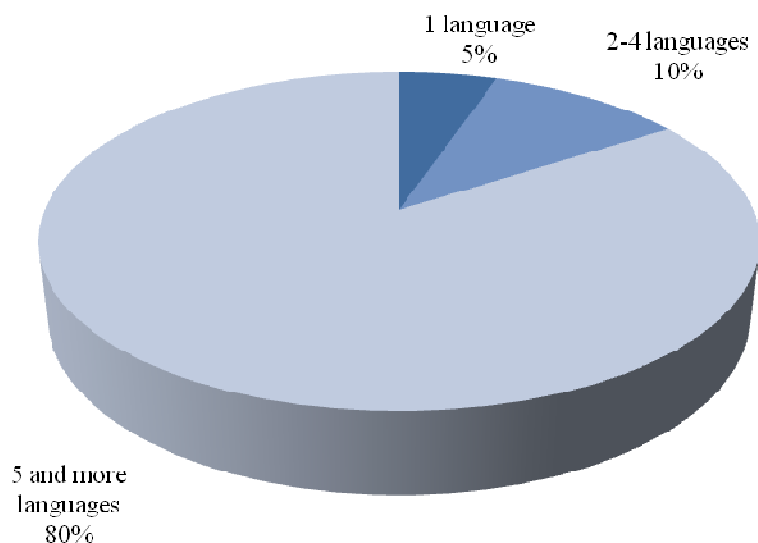


Figure 19 Number of world languages the programs work with

In last question participants were answered the question if it is necessary the translated text proofread or somehow correct it. The results are visible below in Figure 20. The majority (90%) of the respondents claimed that they have to proofread or correct the translated text. The most common answers were that it is necessary to do “common proofreading”. It means that translator should check for example: format of text, graphic emendation (check if it is identical to original text), editing or check of numbers. It is obvious that the translated text should be proofread before sending it to customer. The translators also check stylistic and language features. The rest of respondents (10%) claimed that it is not necessary to somehow correct the text on condition that correction is a part of the program. Even if the correction is accomplished by program, it is recommended to proofread the text. Any program is not able produce perfect translation without human intervention. In other words, the program is not able to compare for example graphic visage or is not possible to ensure right formatting of the text between original and final outcome.

The whole translation depends on specific demands of customers, so the translator should fulfill customer’s requirements. If the text includes some pictures or graphs, the translator will have to check their right location in the text.

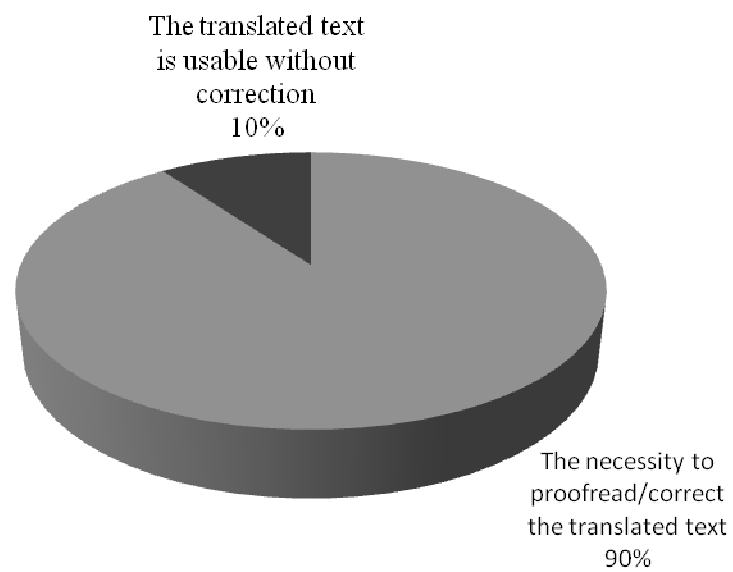
Is it necessary to proofread/correct the translated text?

Figure 20 The necessity to proofread the translated text

6.2 The conclusion of the pilot survey

To sum up all data from the pilot survey it is clear that the winner as the most used program among the respondents is definitely Star Transit. The next worth position has got SDL Trados and Wordfast. The survey also has explored what the CAT programs are used mainly for technical and business texts, which supports the fact, that CAT programs are most suitable for texts with frequent repetition of words. As a cardinal advantages of CAT programs are considered translation memory and terminology database. This result has proved the fact that TM and TD represent the fundamental parts of CAT tools. Most of the respondents have appreciated mainly translation memory and the fact that usage of CAT tools increase their efficiency.

Regarding the disadvantages, the greatest number has got high price and missing tools. In price point of view, the results of the pilot survey has supported the fact that CAT tools are generally considered as an expensive matter for translators, but it is necessary to mention that the investment to these programs will return back. The more customers are satisfied with translation, the more orders translators can have. In other words, thanks to CAT the translators has achieved higher efficiency of their work, they work quicker, so that they save time and costs. In addition they are able to translate more extensive projects or translations. All these pros mean to manage more orders and hereby gain more profits. In terms of number of world languages it is obvious that majority of the CAT programs have provided 5 and more languages. Some CAT programs offer only few basic languages and translators could buy extra set of other languages.

Finally, the last question has informed about necessity to proofread or correct the translated text. According to majority of answers the translated text have to be proofread before handing back to customer. No matter how much are CAT programs perfect, there can always appear some mistakes so the translated text should be check. The result has shown that the most common correction is check of format, spelling, grammar and layout.

6.3 Recommendation of CAT programs for particular use

If the translators consider buying of CAT programs, they should focus on following features: excellent terminology management, fast database searching, flexibility, robustness (not easy to crash), user friendliness and wide support of file formats.

In view of use the CAT programs for particular purposes it is important to mention that all CAT programs are most suitable for text with frequent repetition of words e.g. technical texts (instruction manuals), business texts (contracts), web sites or documents connected with the European Union etc. It is obvious that CAT programs are not suitable for texts such as fiction, novels, detective stories, novels, plays, horror or similar literary stories, where CAT does not come in useful.

CONCLUSION

If the results of the pilot survey are faced-off with the comparison of several features from analytical part, it proves the following general facts about CAT programs. The CAT programs are most effective for texts with repetitive content such as technical or business texts. As the most useful tool is considered a translation memory because without this crucial tool the CAT program would not be able to work at all. The most significant disadvantages associated with CAT programs are undoubtedly the high price, which influence the decision of potential customers to buy or not to buy this kind of program. On the other hand CAT programs does not only mean investment of money, but also to spend time to learn how work with it. Especially advanced translators are not willing to learn how to use the CAT tools, but they have to adapt to the contemporary level of translations.

Translation memory tools have become an indispensable and useful helper of translator's life and work. These programs definitely save time, money and increase the quality and efficiency of translations. It is clear that CAT tools have great impact on contemporary quality of translations. As well as development of computer assisted technology, the quality of translation has been still progressing.

This work gives the general overview about computer assisted tools and hopefully help to translators or other potential customers in decision-making which program they should choose.

BIBLIOGRAPHY

Books:

Austermühl Frank. *Electronic Tools for Translators*. Manchester: St Jerome , 2001. Publishing.

Arnold, D.,L.Balken, L. Humphreys, S. Meijer and L. Sadler. *Machine Translation:An Introductory Guide*.London: NCC Blackwell, 1994.

Basnett-McGuire, S. *Translation studies*. London: Routledge, 1991.

Malmkjaer Kirsten. *Linguistics and Language of Translations*. Edinburgh: Edinburgh University Press, 2005.

Gentzler Edwin. *Contemporary English Theories*. London: Routledge, 1993.

Knittlová Dagmar. *K Teorii i Praxi Překladu*. Olomouc: Univerzita Palackého, 2000.

Newmark Peter. *A Textbook of Translation*. London: Prentice-Hall, 1988.

Nida, Eugene A., and Charles Russel Taber. *The Theory and Practice of Translation*. Boston: Brill, 1982.

Pokorný, Stanislav. "Computer-aided translation"(lecture, Tomas Bata University,February,2010)

Quah Chiew K. *Translation and Technology*. Basingstoke: Palgrave Macmillan, 2006.

Web sites:

Craciunescu, Olivia, Gerding-Salas, Constanze, Stringer-O'Keeffe, Susan. "Machine Translation and Computer assisted translation: A New Way of Thinking?" *Translation Journal*, vol 3 no.3 (September 2000)
<http://accurapid.com/journal/29computers/htm> (accessed November 14, 2009).

Dèja vu. <http://www.atril.com>

Drugan, Joanna. The Effects of CAT Tools on Translation Quality.
[http:// www.leeds.ac.uk/cts](http://www.leeds.ac.uk/cts)

E-Colore.Tool-Terminology Management System.
<http://www.ecolore.leeds.ac.uk/xml/materials/tools>

Eagles. Evaluation of Natural Language Processing System.
<http://www.issco.unige.ch/en/research/projects/ewg95//ewg95.html/>

Hutchins, John W. Machine translation: A Brief History.
<http://aymara.org/biblio/mtranslation.pdf>

IATE: Inter-Agency Terminology Exchange.
http://ec.europa.eu/idabc/en/document/2294/16_what

Leopardi, Vanessa. "Equivalence in Translation: Between myth and reality." *Translation Journal* vol 4 no. 4 (October 2000)
<http://accurapid.com/journal/14equiv.htm> (accessed September 15, 2009).

Pokorný, Stanislav. Příručka Odběratele Překladatelských služeb.
http://www.czech-translations.de/downloads/prirucka_zakaznika.pdf

Sánchez M. Pablo. "Electronic Tools for Translators in 21st century". *Translation journal*, vol 5 no.5 (November 2000) <http://www.accurapid.com/journal/38tools.htm> (accessed December 1, 2009)

SDL Trados Technologies. <http://www.trados.com/en/>

Schadek, S., Moses T. *Machine translation: An introduction and some history, langure and computers seminar*, Gernaby:
http://www.uni-gessen.de/ga1007/language_and_computers/machine_translation.pp

Soget's language service. Computer Aided Translations.
<http://www.soget.com/en/translation/77/Computer-aided-translations>

STAR Group. <http://www.star-transit.cz>

Transhorsa. Machine-assisted human translation.
<http://www.transhorsa.org/wordpress/2008/12/machine-assisted-human-translation-its-definition>

Translation schools. Translation Process: Computer Translations.
<http://www.translationschools.org/translation/process>

Webb E. Lynn. Advantages and disadvantages for translation memory: a cost/benefit analysis.
<http://www.tradulex.org/Bibliography/Webb.htm>

Wordfast LCC. <http://www.wodfast.com>

APPENDICES

P I The questionnaire

P II The second appendix.

APPENDIX P I: THE QUESTIONNAIRE

Dear Sir or Madam,

I would like to ask you to fill the following questionnaire, whose aim is to find out translators' opinions and experience with the use of CAT (computer assisted technology) programs. The questionnaire is part of my Bachelor Thesis "CAT programs and their comparison".

I hope you will find the time for me, even if I am sure you are very busy. Thank you very much for your answers.

(Please highlight your answers. In questions 1 to 5 you can have more choices).

1. Which CAT programs do you use in translations?

- a) Wordfast
- b) SDL Trados
- c) Star Transit
- d) Déjà vu
- e) Across
- f) others (define).....

2. If you use more programs, which is best for you? (please order the relevant letter, e.g. c, a, b, e, d)

- a) Wordfast
- b) SDL Trados
- c) Star Transit
- d) Déjà vu
- e) Across
- f) others (define).....

3. For what kind of translation do you use these programs?

- a) technical texts (manuals)
- b) legal texts
- c) business texts (contracts)
- d) web sites
- e) others (define).....

4. What are the **advantages** of the programs which you use for translation?

- a) wide support of file formats
- b) well-arranged
- c) precise
- d) translation memory
- e) terminology consistency
- f) easy to handle
- g) appropriate price
- h) higher work efficiency
- i) others (define)

5. What are the **disadvantages** of the programs which you use for translation?

- a) small scale support of file formats
- b) poor arrangement
- c) inexactness
- d) missing tools (e.g. spell checker, quality checker, concordance)
- e) hard to handle
- f) high price

6. Is it difficult to work with CAT programs?

- a) yes, definitely
- b) more likely
- c) I cannot say
- d) more unlikely
- e) definitely not

7. What is your opinion on the price of the programs?

- a) cheap
- b) appropriate
- c) expensive

8. How many world languages is the program able to work with?

- a) 1
- b) 2 – 4
- c) 5 and more

9. It is necessary to proofread/correct the translated text?

- a) yes, (how?)
- b) no, the translated text is usable without correction

Once again, thank you very much for your answers.

Eliška Mikuličková

Tomas Bata University in Zlin

Faculty of Humanities – English for Business Administration course