Social and economic actors in the evaluation of translation technologies. Creating meaning and value when designing, developing and using translation technologies

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Evaluation of translation technologies is a social activity, which involves the establishment of knowledge communities as well as the creation of competition to produce better tools. Companies developing translation technologies need to encourage the evaluation of their tools (through online forums, discussion lists, blogs, product communities, community translation, etc.), since evaluating the technology implies spreading and sharing knowledge about it; and sharing the same knowledge or the same modes of thinking and operation, rather than sharing the same material resources, represents the basis of future economic competition. When exchanging knowledge about technologies, translators engage in social activity: they express their opinions and feelings about the technologies they are using, they make judgments about the worth or value of a specific technology, they influence others' decisions or they believe their thoughts will have an impact on decisions companies will make. This article investigates the use of translation technology evaluation criteria as they are represented in several translators' communities and it calls for a multidisciplinary approach when analysing translation technologies adoption, use and evaluation.

1. Introduction

To be highly competitive on the market, translation technology developers need to build strategies for spreading knowledge about their technologies, within and outside the organization. They also need to support the creation of collaborative environments where translators learn and exchange information and opinions about translation technologies. Yet, translation technology developers need to go beyond communicating contents so as to build social skills and change attitudes towards translation processes (which should be now crowdsourced) and towards translation technologies (move from individually oriented software to multi-user technologies, develop collaborative translation tools). The criteria and methods used for evaluating translation technologies[1] are not always the same when considering, for instance, freelance translators or translation agencies, on one side, and translation technology purveyors or translation technology developers, on the other side, since they have different sets of concerns and therefore need different sorts of information. However, it is essential for translation tech-

nology developers to understand translators' needs and try to respond to their concerns or explain innovation processes. This is what happened in June 2009, when many professional translators became outraged with a survey launched by LinkedIn aimed at determining translators' interest in collaborative translation *for free,* more precisely their interest in translating LinkedIn's website (a for-profit business) into other languages for free.

> The third question of the survey asked what "incentive" translators would prefer. However, the possible answers did not include payment. Choices included "because it's fun", "upgraded LinkedIn account", and "other" all of them indicating that LinkedIn was looking for volunteers to localize their website. (Selina 2009)

Following translators' reaction, Common Sense Advisory (an independent research and consulting firm), in a *Global Watchtower* posting entitled "Freelance Translators Clash with LinkedIn over Crowdsourced Translation" (Kelly, 2009), compared translators' perceptions with organizations' viewpoints and argued that crowdsourced translation (CT3) is not a threat to the translation profession. CT3 does not mean less quality, but faster, better end-user involvement boosts quality, global reach and community-building. While trying to convince translators of the advantages of collaborative translation (which implies the development of collaborative tools) and explain why translation practices are being overhauled, Common Sense Advisory stated: "A huge information gap separates the companies interested in carrying out CT3 projects and the enormous pool of professional translators who have yet to ever hear of such a thing." (idem). The analysis shows that while translators and translation technology developers may evaluate differently translation tools and processes, it is essential for organizations not only to develop user-oriented systems, but also achieve and implement innovation processes at specific times. Translators as users should therefore be able to participate in each of the steps of the technology lifecycle (product initialization, software development, product implementation and use, market penetration, product redesign). At the same time, translation technology developers and translators should have a concerted interest in the evaluation of translation technologies, throughout the entire software lifecycle.

While there are different evaluation methods for software in general, the methods are hardly standardized (Stowasser, 2006). The formal level of reflection includes theoretical evaluation methods (methods based on cognitive interaction models) and heuristic evaluation methods (expert appraisals based on a series of rules or criteria, such as checklists or guidelines). The empirical level of reflection includes subjective evaluation methods (where the user is called upon to give written or oral answers to questions regarding the software usability or user-friendliness) and objective evaluation methods (user behaviour observation, analysis of tests performed by the user). In this paper, we focus on subjective evaluation methods

(group discussions and reflections) of translation technologies, as they are represented in several translators' online communities. We start by presenting a series of translators' opinions about translation technologies so as to show that the choices translators make in terms of tools are often shaped by the beliefs and values of the stakeholders involved in the software design, development and use. The way technologies are perceived – for example as simple tools or as actors[2] – can influence the design, application, outcome, interpretation and use of technology evaluation. After illustrating how perceptions vary among translators, we present a series of criteria that are recurrent when evaluating translation technologies as tools *per se*, as 'technical' instruments. We go on by presenting translators' comments that illustrate not only the different stages in the technology adoption process, but also the role technologies play as social actors, as agents organizations use in order to spread knowledge, build value and competitive advantage and achieve innovation in terms of translation processes, translation competences or translation social skills. We also exemplify how innovation related determinants, adopter related determinants as well as the marketing strategy have an impact on how translation technologies are perceived and evaluated by the users and on the decisions and choices translators make. Finally, we call for a multidisciplinary approach when analysing translation technologies adoption, use and evaluation.

2. Constructive interaction of translators within translation on-line communities

Consider the following comments about translation technologies from translators communicating on ProZ.com, "a comprehensive network of essential services, resources and experiences" (www.proz.com) for translators:

(1) "Generally, the more you pay for a product, the more support and development there is behind it (e.g. Trados, Déjà Vu)."
www.proz.com/forum/translator_resources/93005-should_i_buy_a_tool_like_trados.html

(2) "If you do a lot of work for agencies with big and/or ongoing projects allocated over several translators, then it is probably worth it. If you have a combination of direct customers and agencies that do not require it, then you don't. I bought it this year, but so far have not made a return on the investment. At the same time, 2007 was a record year for me, so, at this pace, I will not renew or upgrade Trados since for me it has had negative value." (idem)

(3) "I am content (and have sufficient reputation and work!) to simply refuse jobs that insist on the use of CAT tools, and

stick with the more interesting and lucrative jobs that I know I am best at." (ibid.)

(4) "I keep telling people to resist the pressure to use CAT tools […] unless they are really interested in using them. In other words, don't you buy a CAT tool and painstakingly learn to use it only because your client said so. If you do it, do it for your own purposes - if you think a CAT tool can help you do your work better or faster, buy one. But it seems that the CAT tool end of the balance really is heavier because most of us bought the thing, afraid to miss out on opportunities. (ibid.)

(5) "I was forced to buy Trados by a translation agency, but they do not know how to handle it well." www.proz.com/forum/translator_resources/4371-is_trados_a_vital_tool_for_translating.html

(6) "When investing in any type of software, a translator needs to ask (at least) two questions: 1. Will it increase my productivity? 2. Will it provide me with access to work previously unavailable?" www.proz.com/forum/business_issues/120791-is_it_normal_to_be_asked_to_buy_software-page2.html

(7) "Translating is a business and you have to invest in your tools. […] It seems to me that some of us are still stuck in the past. Translating does not mean being an 'artist' anymore […]. The client has every right to ask for a specific tool; if you don't like it or don't want to pay for it, just decline the job. Translating has evolved immensely in the last few years and if you are happy with your luddite approach, then don't complain when clients go somewhere else." www.proz.com/forum/business_issues/110584-what_is_the_next_best_thing_to_trados-page3.html

(8) "Don't tell me that accepting to use the client's favorite CAT tool is added value. It doesn't in any case prove that your translation will be of high quality, as mentioned by several colleagues. Also, if you can give me one real world example of an agency paying you more because you did use their CAT tool, I'd really like to hear it." (idem)

These comments illustrate translators' attitudes, beliefs and behaviours related to translation technologies. They show variations in terms of technology adoption or use. They also show that a richer understanding of translation technologies use and evaluation is obtained when their implications for translators are jointly studied from social, economic, organizational and psychological perspectives. Comment 1 expresses the translator's conviction that paying/asking for more for the tool guarantees constant interaction with the company as well as continuous improvement of the

tool. More money normally means more insights in user preferences and the guarantee that technology will not fail because of too much attention given to technical features and less attention given to user needs. The translator's adoption decision involves a rational analysis of costs and benefits. Comment 1 also gives visibility to two specific technologies: Trados and Déjà Vu. Comment 2 shows a translator's ambiguity about the real value the technology has; the work environment (partners, social motivations) seem to influence the translator's decision to buy that tool, while the market's decisions appear to produce negative outcomes. Comments 3 and 4 articulate the pressure social groups may have on translators' decisions to adopt a specific technology (even when its results are not proven) as well as the potential impact of a deeper experience in translation and a large client database on the decision to acquire a tool. Comment 5 shows how technology adoption involves power games and conflict between agents. Comment 6 highlights the link between the decision to buy the tool and the misconception that the tool will quickly help translators be more productive and therefore, earn more. Comment 7 reflects the market's impact on the translation practices and the need for translators not only to fit into a new social milieu and an innovative working environment but also to manage their work and relationships and accept innovation generated by technology. Finally, comment 8 expresses the resistance and lack of trust of some translators with respect to buying and using translation technologies.

3. Factors in technology adoption and use: translators' perceptions and attitudes

Technologies are not only tools, but also social agents. They allow companies to communicate with existing and possible users, and thus to gain a competitive advantage. To be first on the market, companies need to perform thorough analyses of user preferences, needs, expectations and motivations. Companies need to understand or be aware of translators' attitudes towards technological innovations. At the same time, companies need to use specific communicative strategies to persuade translators that technologies have actually been developed for them.

Technologies are first of all hardware. What are the features of 'proper software' and user's attitudes towards such a tool, according to different translators communicating in the Getting established forum of ProZ.com?

Table 1: Features of proper software

1. I have used and bought SDLX and find it extremely good:	

a. it's fast, b. easy to learn, c. has efficient technical support, d. and can export files in TRADOS format if your client asks for a TRADOS translation.	**+ processing speed** **- complexity** **+ satisfaction** **+ flexibility/adaptability**
2. You could try WordFast. a. It is free. b. and supposedly compatible with Trados, Transit, Déjà Vu and Cypresoft.	**- cost** **+ compatibility**
3. I've been working with it for 3 months and it has already more than saved me the initial investment.	**+ optimism** **+ return on investment**
4. If you do get Trados, then you should seriously consider going to a seminar to have someone explain the workings of the system to you.	**+ complexity; whether training is available**
5. Yes, it has some glitches, but I have yet to find a software package that has none.	**+ product knowledge** **+ familiarity with similar products** **+ willingness to accept some imperfections**
6. Yes, it can be expensive (although I find that the Freelance version is not that bad).	**+ variants at different costs** **+ adaptation to user's needs**
7. Yes, you need training to fully use the functionality - try grouping with others to reduce the cost (or ask Trados about their in-house training sessions, provided that you happen to be physically near one of their offices.	**+ complexity for specific functionalities (need to be part of the group to understand)** **+ collaborative use (sharing licenses)** **+ in-house training** **+ remote training**
8. The open discussion group is at http://groups.yahoo.com/group/wfisher.	**+technology community available**

Some other technical features are highlighted by translators connecting on ProZ.com: file conversion, translatable text extraction, aligning method and format, word count, ignoring HTML tags when counting words, compatibility with all types of computers, ease of installation, no data loss or corruption, file formats handled, multiple languages, need/possibility of TM exchange and so on.

4. Perceived attributes of innovation and the process of technology adoption

Most importantly, technologies are the information that goes with them, that is knowledge about how they can represent an advantage or a disadvantage in a specific work environment. This knowledge may remain coded, tacit and may therefore not be transferred[3].

When seeking information for improving a translation process, translators will adopt a technology faster if they are already **familiar** with other products in the same cluster (for instance, traditional translation memory systems versus context-based translation memory systems), if the technology shows **flexibility** and **compatibility** with other existing systems and if it offers the capacity of **adaptation** to customer specific workflows and company sizes. What is also needed in the technology adoption process is the presence of a **critical mass of adopters** who will convince the majority of the utility of the technology (Rogers, 1995). Here, this critical mass of translation technologies adopters could be represented by the *Top 25 Translation Companies* as identified in a Common Sense Advisory report[4], or by the key players in the translation technologies development industry, or by those companies that introduced new business models and technologies[5], or by some other "smaller firms like across, Alchemy, Lingotek, and MultiCorpora [that] will challenge the incumbent leader SDL-Trados on translation memory with rapid product turns and innovative distribution and market acceptance models" (DePalma & Beninatto, 2006). The critical mass of adopters could be also formed within virtual environments, such as social networks (DePalma & Kelly, 2008), (collaboration) translation portals/websites, translation communities, forums, discussion lists, or by independent market research firms.

The critical mass of adopters will be also able to influence organizational technological choices, asking for or imposing specific functionalities which can help translators perform better. They can be 'user-strategists' (Flichy, 2007, p. 90), that is "firms which negotiate with the designers within a formal framework" (idem), but also individuals who create pressure groups (for instance, translators communities) and modify technology frames of use.

In the light of the diffusion theory introduced by Everett Rogers in 1962, five characteristics of innovation form people's attitude toward a new technology and determine the timing of technology adoption decision: **relative advantage** (measured, for example, in economic terms, social prestige, convenience, or satisfaction), **compatibility** with the values of the community or past/existing experiences, **complexity** (the degree to which the innovation is perceived as difficult to understand and use), **trialability** (possibility to test it on a limited basis) and **observability** (the extent to which

results of an innovation are visible to others). The tacit knowledge that may not be diffused with the innovation is related to both the complexity and the observability of the innovation; the **tacitness** of innovation represents the extent to which an innovation may be conveyed or communicated to the final users (Rothman, 1974). In the following statements, translators question SDL's real intentions when it comes to SDL/Trados certification, which raises questions about the **transferability** of the know-how coming with the innovation:

> In my opinion, they are not making this test only to earn more money; it seems that they want to employ some experienced people who may help them solve the bugs in the program.
> If they care so much about us and our knowledge of the product, AND the object is not money-making, why not make it free? www.proz.com/forum/business_issues/51328-sdl_trados_certification_what_do_you_think.html

Innovation transferability could explain why people adapt differently to technological change. According to Rogers (1962), people may be:

Translators' comments	
innovators and early adopters select the technology first: they have a higher perception of relative advantage than the (later) adopters as well as a lower perception of complexity (contrary to the late majority)	If you already lost projects due to not having this software, there is no reason for any further delay. Look for the best offer you can get (quite often here on ProZ.com as TGB) and invest some money in your future. And please, don't come with "it is so expensive"... This is an investment and not a piece of clothing or so. You will use it on long term basis - and so it is cheaper than smoking. www.proz.com/forum/business_issues/110584-what_is_the_next_best_thing_to_trados.html
early majority careful but accepting change more quickly than the average	As many agencies require to have a CAT, I did some research and ended up with SDLX (about US$120)… www.proz.com/forum/translator_resources/812-any_opinions_about_trados.html

late majority sceptic people who will use new products only when the majority is using them	1) My output is already very high - do CAT tools increase significantly the amount you can translate in a day? 2) My quality is already extremely high (according to my customers at least!) - presumably CAT tools make suggestions, which helps jog one's memory, but also encourage you to hand over some of the 'thinking responsibility' to the machine, if that makes sense. […] 3) I have had agencies ask me if I use Trados, and say if so they would like to negotiate my rates... as a businessman, I see no reason to invest £500 (for example) in order to reduce my rates! Repetitions there may be in a text, but one still has to think 'is this the right translation'? In case it's not clear, I'm a little skeptical. www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=12184&start=1
laggards traditional people who will only accept technology or innovation if it has become ordinary or tradition	In the meantime, I will not change my mind about this: forcing translators to use CAT tools is viewed as an obligation by most agencies, and not as an added value. The day I manage to be paid better when using Trados than when not using it, I will be one happy freelancer. Meanwhile, I have a list of added values that I use that work much better than the argument that I use Trados. www.proz.com/forum/business_issues/110584-what_is_the_next_best_thing_to_trados-page3.html.

The process of technology adoption passes over time: 1. from first knowledge of an innovation (the Knowledge stage – what is the information available to people), 2. to forming an attitude toward the innovation (the Persuasion stage – this attitude is created through a variety of communication channels, the interpersonal channels influence network having a much stronger impact on the forming and changing of attitudes that the mass media channels), 3. to a decision to adopt or reject (the Decision stage), 4. to the implementation of the new idea (the Implementation stage), and 5. to the confirmation of this decision (the Confirmation stage).

The technology adoption process as defined by Rogers shows us that companies developing translation technologies need to go beyond communicating intentions, contents and methods (the *Knowledge stage*) and stimulate cooperative technology evaluation and innovation in, for instance, web-

based environments. By adopting a strategic thinking about the role technologies play, companies need to consider learning and evaluating capabilities as a way of creating value, and as a key competitive advantage. Companies therefore need to find ways of building social skills and technology perceptions (the *Persuasion stage*), enhancing translation competence (the *Implementation stage*), changing attitudes and values about translation processes (the *Decision stage*), which should be "collaborative", "simultaneous", "crowdsourced" or performed in "communities" as well as present confirmatory evidence (for instance, case studies) that the decision to adopt or reject the technology was the right course of action.

5. Attitudinal factors and the impact of the marketing strategy on technology adoption

Other theories approached the process of technology acceptance and use and included several other attitudinal factors that influence user's decision about how and when the technology will be used.

The *Theory of Reasoned Action* (TRA) (Fishbein, 1967; Fishbein & Ajzen, 1975) suggested that a person's behaviour is determined by their intention to achieve this behaviour. The intention is influenced by the **individual's attitude** (a series of beliefs about the consequences of performing the behaviour multiplied by a person's valuation of these consequences) as well as by the **subjective norm** (a combination of perceived expectations from relevant individuals or groups along with motivation to comply with these expectations). In other words, if people evaluate the suggested behaviour as positive (attitude), and if they think their reference groups wanted them to perform the behaviour (subjective norm), this results in a higher intention (motivation) and they are more likely to follow that behaviour. In the context of translation technologies use, the *subjective norm* would be the amount of influence translators' social networks, translation technology companies, translation agencies would have in influencing a choice to adopt and use a technology. In the following conversation, the translator is less motivated since he evaluates the suggested behaviour as negative, while the reference group wants him to perform that behaviour:

> Some of my clients specify the use of Trados. I always accept such jobs, translate them using an alternate TM-based program, produce a bilingual Trados compatible dirty - sorry, uncleaned - file and return it to the agency. Never, not once, has the agency reprimanded me for not using Trados. In fact, there is really no way for them to know whether I have or not. They have their uncleaned version, with which they can, I presume, update their client TM, and I have used a user-friendly program which has caused me considerably less headache than I suffer when using Trados.

> www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=12184&start=11

The *Technology Acceptance Model*, developed by Fred Davis and Richard Bagozzi (Bagozzi et al., 1992; Davis et al., 1989), introduced two new technology acceptance factors: the **perceived usefulness** of the technology that will be used to enhance job performance and well as the **perceived ease-of-use** (the use of technology will not require an effort). In the context of translation technologies use, the *perceived usefulness* can be interpreted as whether or not translating texts by using translation technologies would help the translator achieve job outcomes (better quality, more efficiency, and even better quality of life):

> One of the first benefits I noticed was that the pain in my neck - from constantly consulting hard copy next to my keyboard and then looking up to the screen - disappeared! Stupid reason for using a CAT tool - but I really found it helped having the source text on the screen in front of me. […] The benefits of the translation memory vary according to the job you are handling. […] Then there is the business of terminology. […] And one final thing: a good CAT tool will allow you to replicate the layout of the original source document - and that can save a lot of time.
> www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=12184&start=1

Ease of use, in the context of translation technologies, can be construed as whether or not the translation tools are easy to work with in order for the translator to invest in such a technology, use it and accept to change his or her *translation behaviour*. One should notice in the following example not only the expression of this acceptance factor, but also the tacit competition between tools and behaviours: "I love Metatexis, as it is easy to work with, very stable and rarely crashes. You can convert the end result into an unclean Trados file and most agencies don't even notice it." (www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=13129&posts=3)

The *Theory of Planned Behavior*, developed by Ajzen (1985; 1991), introduced the idea of "**perceived behaviour control**" and stated that the individual does not always have full control on behaviour: external factors may facilitate or constrain the performance of a specific behaviour as well as the individual's perception or confidence in self-efficacy and in achieving expected outcomes. In the case of technologies, the perceived behaviour control could have an impact on the intention to adopt or reject a technology. A translator observes:

> Also, if the main point of using a CAT tool is to help the translator, I really wonder why the agencies are requiring it... It's like forcing

> me to take vitamins when I say I'm fine without them. There must be some other reason why so many agencies require the use of Trados... like CAT rate schemes, that is, rebates on our work. Can somebody contradict this? Does anybody work with an agency who requires the use of Trados AND pays the full rate for every single word?
> www.proz.com/forum/business_issues/110584-what_is_the_next_best_thing_to_trados-page2.html.

Verdegem and De Marez (2008) extended the list of technology adoption determinants and distinguished ten innovation-related characteristics (perceptions), eight adopter-related characteristics, and the impact of the marketing strategy. They showed that the "perceived cost" and "tangibles" are the most important dimensions of "relative advantage". They also included in the list of determinants the perceived enjoyment of using the technology and the reliability understood as a performance risk, as well as several other factors, such as the person's 'optimism' towards technology, 'product knowledge', 'willingness (and ability) to pay', the 'perceived impact on one's personal image', the 'perceived control', 'impact of social influences' and the 'impact of marketing, advertising and promotional strategies'. And they stated that it is important not only to know why a technology is adopted, but also why people do not use a specific technology or why they lag behind in the adoption and use of new technologies. One translator says:

> There is the insidious phenomenon started by Trados, that tries to dictate the working relationship and economics of translators and clients. They have invented a formula whereby we go by "matches" and they – the software salespeople – are deciding what my quotes should be like. Moreover, they are telling my potential client that they have the right to impose a quote formula on me. (…) To some degree it is insulting to the work we do. www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=12390&start=21.

We will quote here a series of translators' comments that express some of the adoption determinants identified by Verdegem and De Marez, for which we have not offered examples so far.

Table 2: Innovation related characteristics

Compatibility	
Complexity	
Cost	

Enjoyment	You will find several online tutorials that will help you to get familiar with the software pretty quickly. You will also have the possibility to attend online sessions for free. www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=10108&start=11
Observability	Trados is the market leader. It's reasonable to suppose that many translators who work mainly or exclusively for agencies use Trados for that reason, which is fair enough. http://arm.proz.com/forum/translator_resources/93005-should_i_buy_a_tool_like_trados-755233.html
Relative advantage	
Tangibles	They [CAT tools] allow you to get regular work from agencies using them. www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=12184&start=1
Trialability (try out the software on a temporary or test basis)	Wordfast is the tool you may invest in. It is not at all expensive, you get unlimited period trial (with glossary limited to 500 words) and once comfortable go in for paid version. www.proz.com/forum/translator_resources/83225-can_we_share_a_tm_ietrados_as_a_group_of_community_translators.html
Visibility	Wordfast […] has an excellent online user support community, including direct e-mail support from Wordfast's developer, Yves Champollion. www.translationdirectory.com/article511.htm

Table 3: Adopter related characteristics

Control/Voluntariness	I'm new to the CAT tool concept - and am willing to try. www.proz.com/forum/translator_resources/118211-demo_cat_tools_for_mac_os.html
Image/Prestige	My main reason for investing in such a tool is to become a more attractive partner for translation agencies. www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=12184&start=11
Innovativeness	SDLX is the first CAT tool to support bi-directional languages such as Arabic and Hebrew. The program is highly robust and reliable. It has built a reputation over the years for these very characteristics. www.proz.com/forum/translator_resources/6726-cat_tools_comparison.html#41855

(product) knowledge	Being a legal Trados user since 2003 I decided to take this Trados certification and found it quite useful. First, it made me to go through some tough sections of Trados software (like DTD-settings files, etc.). Second, I raised my rates from 0.08 Euro per word to 0.10 Euro per word (quite a lot for English to Russian translations) and more and more clients agree with this rate seeing I'm Trados certified. The reason is many translators say they know Trados, but only some of them know "ins and outs" of it. And I must admit, the exam is not an easy thing to pass although I've been using Trados for a long time. www.proz.com/forum/business_issues/51328-sdl_trados_certification_what_do_you_think.html
Opinion leadership	That is why you are SDL Trados Workbench Certified. Thanks a lot! www.proz.com/forum/sdl_trados_support/73452-is_it_possible_to_batch_translate_to_fuzzy_in_sdl_trados_2006.html#574600
Optimism	Heartsome works with Linux and Mac. And that's the good thing about it. www.proz.com/forum/across_support/57014-does_anyone_have_experience_with_across_translation_suite_and_heartsome_translation_suite.html#431794
Social influence	If I pay Trados a considerable sum of money, I get accredited and have the right to give them free advertising on my business card and website… www.proz.com/forum/business_issues/51328-sdl_trados_certification_what_do_you_think.html
Willingness to pay	

Table 4: Impact of marketing strategy

Marketing (impact)	Certainly I share your objections to the growing tendency of agencies to demand both an investment in costly software and, when you have made that investment, expect you to charge less than you did before! How did this situation arise? Simply because SDL has adopted an extremely intelligent marketing approach: convince end-clients that they can reduce their translation costs if they insist on the use of Trados; get these end-users to put pressure on agencies and demand deductions for repetitions and fuzzy matches; get the agencies to use only those translators with the software; create the impression among the translator community that unless you have Trados you won't get any work. www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=12390&start=21 Keep your head cool when you are attacked by overly aggressive marketing experts. www.proz.com/translation-articles/articles/222/1/Trados---Is-It-a-Must%3F

6. For a multidisciplinary approach when evaluating translation technologies

Konanaa and Balasubramanian (2005) introduce the Social-Economic-Psychological (SEP) Model to account for the need for a multidisciplinary approach when studying technology adoption and usage. While this model is used to study behaviour of online investors, we can use several of these determinants to analyze translational behaviours before, during and after adopting a specific translation technology:

(1) The *perceived operational competence* explains the responsiveness of translation technology companies (speed and means to provide feedback, customer support, and accurate information).
(2) The *convenience* explains translators' ability to quickly grasp knowledge about the technological product and interact with the company at any time.
(3) The *overconfidence* may reflect translators' misconceptions about a quick return on investment after buying the technology.
(4) The *risk attitude* determines how translators value a specific technology in terms of possible gains:

> I have seen surprisingly little monetary benefit from using Trados – other than the ability to work with clients who request that I do so. And with the varying economic conditions of the various countries where my contacts are located added into the mix, I know I have lost work because of rates and Trados discounting. www.proz.com/forum/business_issues/110584-what_is_the_next_best_thing_to_trados-page4.html

(5) The *normative social pressure* refers to the influence relevant groups (employers, translation agencies, translation communities) may have on the translators who have to fit into a social milieu: "The use of TM software is a must for every freelance translator working on domestic or worldwide markets." www.proz.com/translation-articles/articles/222/1/Trados---Is-It-a-Must%3F

(6) The *embarrassment avoidance* can explain translators' need to have a perfect technology and avoid uncomfortable situations (no bugs, same payment as without using technologies): "CAT tools have two sides - on one hand they facilitate your work, but on the other hand customers and agencies are using this argument to push down prices." www.proz.com/forum/translator_resources/4371-is_trados_a_vital_tool_for_translating.html

(7) The *pursuit of social class membership* captures translators' desire to become part of a social network using the technology.

(8) The *illusions of knowledge and control* express translators' belief that they can influence decisions made by companies or that they control the technology in their respective environment. "I do hope that newer CAT tools be developed to help more the translators' job. We translators do not care if those companies are spending billions of dollars to be first in the market; we do not want to be their sponsors!" (idem)

(9) The *perceptions of fairness* refer to the belief of different translators' communities (freelancers, small and mid-size companies) that they are treated in the same manner as large companies by the translation technology companies, which means they will participate in different activities (learning, training, buying) in a relaxed way.

(10) *Trust* captures the different ways translation technologies companies persuade or assure translators of positive outcomes when using their technologies and manage to develop relationships with translators. This is done without a face-to face or physical interaction.

(11) The *social/institutional safeguards* may explain the credibility strategies translation technology companies build when addressing translators.

While the technology acceptance models focus on the adoption of a new technology and the usage behavior, the sociology of innovation approaches (Science and Technology Studies and Actor-Network Theory: Bruno Latour, 1987, Michel Callon, 1989; Madeleine Akrich, 1987) focus on the specific moment of the development of innovations which presupposes a process of making decisions as well as social, technical, cultural or economic choices. These approaches try to identify the interactions between different social actors participating in the process of innovation and see innovation as the result of a competition between several projects, as a series of transformations and confrontations (for instance, usability tests or user performance tests may be considered as 'confrontations') which create links between human and non-human (technical) actors and generate knowledge. The absence of competition is equivalent to the absence of choice: "Several respondents worried that this deal creates an effective monopoly in the tools area and that SDL could do as it pleases", writes DePalma (2005) in an article reporting on the results of a Globalization and Localization Association (GALA) survey of language service providers about the impact of SDL's acquisition of TRADOS on 20 June 2005. "Some [language service providers] are afraid that SDL could limit access to the tool, give preferential levels of support, or even increase the price of tools and drive competitors out of business" (idem).

Developing an innovation implies knowledge about competitors and their products: "[…] before competitive strategies can be formulated, decision makers must have an image of who their rivals are *and on what dimensions they will compete*" (Hodgkinson, 2005, p. 2; italics ours). It also implies integrating in the technical device a definition of what the users are, of their identity, of their possible profiles. Transferring knowledge about an innovation towards the final users (by means of user guides, web-based training, web presentations, advertising printed material) is a didactic and strategic activity constrained by psychological conditions (who are the users – translators, terminologists, reviewers, project managers, what are their individual motivations and intentions, what are their competence levels in translation technologies, what are the tools they already use or they use most frequently) as well as by socio-cultural conditions (the situation in which the users are embedded, ranging from freelancers to language service providers, company owners, company employees, translation communities and large companies). In his paper "Rethinking the Dissemination of Science and Technology" (Woolgar, 2000), Steve Woolgar argues that technology transfer is not a solely technological process, but also a cultural, social, managerial and economic one, affected by the competition between representations and beliefs about people beyond the organization (the users) and the mediation between what different entities participating in the

process think about the users: the success of technology transfer depends on the communication between producers and consumers (here, the communication between companies developing translation technologies and the users or the translators). This means that transfer will only occur if what is known separately about the users eventually becomes a well-defined body of users or 'configured users' (a *model*, a *pattern of relationships*) who have more confidence in the technology that the designers themselves.

7. Conclusion

Focusing on communication about translation technologies within translation communities (ProZ.Com, TranslatorsCafe) as well as on the role companies have in conveying and transferring knowledge about computer-assisted translation tools, we stated that a more complete understanding of translation technologies evaluation criteria is obtained if translators' attitudes, perceptions and behaviours related to technologies are jointly studied from sociological, economic, organizational, cultural and psychological perspectives. In presenting possible evaluation criteria for synthesizing translators' perceptions and attitudes, we appealed to different models of technology adoption and use as well as to other approaches able to explain the conflicts arising when developing and transferring innovations. Future work in the framework of this research could focus on detailed online surveys with different technology users, ranging from freelancers to language service providers, company owners and company employees, as well as on the strategies translation technologies companies use when teaching or training translators.

Bibliography

Ajzen, I. (1985). From intentions to actions: A theory of planned behaviour. In Kuhl & Beckmann (Eds.), *Action Control: From Cognition to Behavior*. Berlin, Heidelberg, New York: Springer-Verlag, 11-39.

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and the Human Decision Process*, 50, 179-211.

Akrich, M. (1987). Comment décrire des objets techniques. *Techniques et Culture*, *9*, 49-64.

Bagozzi, R. P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the Association for Information Systems 8*, 244-254.

Bagozzi, R. P., Davis F. D. & Warshaw P.R. (1992). Development and test of a theory of technological learning and usage. *Human Relations 45(7)*, 660-686.

Callon, M. (1989). *La science et ses réseaux*. Paris: La Découverte.

Dautenhahn, K. et al. (Ed.) (2002). *Socially Intelligent Agents: Creating Relationships with Computers and Robots*. Series: Multiagent Systems, Artificial Societies, and Simulated Organizations, vol. 3, Norwell, Mass. / Dordrecht, The Netherlands: Kluwer Academic Publishers.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly 13(3),* 319-340.

Davis, F. D., Bagozzi R. P., & Warshaw P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science 35*, 982-1003.

DePalma, D. & Kelly, N. (2008). *Translation of, by, and for the People*. Common Sense Advisory, Lowell, Massachusetts.

DePalma, D. (2005). "SDL-TRADOS Language Service Provider Reaction to SDL's Purchase of TRADOS", report for GALA. On line at: www.commonsenseadvisory.com/members/res_cgi.php/050730_R_gala_sdl_trados.php (retrieved November 2, 2008).

DePalma, D. & Beninatto, R.S. (2006). Predictions for 2007: Business and Website Globalization, Technology, and Business Models. *Global Watchtower™*. On line at: www.commonsenseadvisory.com/news/global_watchtower.php (retrieved November 11, 2007).

Eid, S. (2009). LinkedIn Translation Controversy. On line at: http://site.interpretereducationonline.com/2009/08/18/linkedin-translation-controversy/ (retrieved July 2, 2009).

Fishbein, M. & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior. An Introduction to Theory and Research*, Reading: Addison-Wesley.

Fishbein, M. (1967). *Readings in Attitude Theory and Measurement*, New York: Wiley.

Flichy, P. (2007). *Understanding Technological Innovation. A Socio-Technical Approach*, Cheltenham/ Northampton: Edward Elgar.

Hodgkinson, G.P. (2005). *Images of Competitive Space. A Study of Managerial and Organizational Cognition*. Basingstoke/New York: Palgrave Macmillan.

Kelly, N. (2009). Freelance Translators Clash with LinkedIn over Crowdsourced Translation. *Global Watchtower™*. On line at: www.globalwatchtower.com/2009/06/19/linkedin-ct3/ (retrieved June 19, 2009).

Konanaa, P. & Balasubramanian S. (2005). The Social-Economic-Psychological model of technology adoption and usage: an application to online investing. In *Decision Support Systems 39*, 505– 524.

Latour, B. (1987). *Science in Action : how to follow scientists and engineers through society*. Cambridge, Mass.: Harvard University Press.

O'Neill, H.M., Pouder P.W. & Buchholtz, A.K. (2002). Patterns in the diffusion of strategies across organisations: insights from the innovation diffusion literature. *Academy of Management Review 23*, 98–114.

Rogers, E.M. (1962, 1995). *Diffusion of Innovations*. New York: Free Press of Glencoe.

Rothman, R. (1974). *Planning and Organizing for Social Change: Action principles from social science research*. New York: Columbia University Press.

Stowasser, S. (2006). Methods of Software Evaluation. Karwowski (Ed.), *International Encyclopedia of Ergonomics and Human Factors*, 2nd edition, 3rd volume, 3249-3253.

Verdegem, P. & De Marez, L. (2008). Conditions for technology acceptance: broadening the scope of determinants of ICT appropriation. *Proceedings of ICE-B, International Joint Conference on E-business and Telecommunications*, Porto, 26-29 July.

Woolgar, S. (2000). Rethinking the dissemination of science and technology. On line at: www.cirst.uqam.ca/PCST3/PDF/Communications/WOOLGAR.PDF (retrieved November 15, 2008).

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[1] We are referring here to computer-assisted translation tools (conventional translation memories, advanced leveraging tools, terminology management systems, translator's workstations).

[2] "Tools react only when interacted with, while agents act autonomously and proactively, sometimes outside user awareness." (Dautenhahn (2002, 21)

[3] "Where knowledge is tacit, strategies will not travel well … visible elements of the strategy may travel across organisational borders, but the embedded context of the innovation stays with the originator." (O'Neill *et al*. 2002, 108)

[4] www.commonsenseadvisory.com/research/report_view.php?id=64.

[5] "This Quick Take describes four creative companies that are poised to shake things up in the language services space -- Adaquest, CSOFT, DotSUB, and ProZ", announces the report *Language Industry Movers and Shakers* by Common Sense Advisory. (www.commonsenseadvisory.com/research/reports_category.php?year=2008&id=0).