Abstract: The integration of an international or intercultural dimension within all the activities of an educational process – be it teaching or research - enables both students and faculty develop their cultural capabilities as well as provide access to a better selection of courses. Being provided in a multicultural environment, education triggers a competitive component for those interested in keeping up with the best institutions to offer knowledge all over the world. What is the basic ingredient for all this? The ability to communicate internationally, to be able to drop the language barrier and frontier. In terms of a Virtual Learning Environment that means Machine Translation tools employed in the complex use of standard or mobile LMS, to cut through all nations and help us study irrespective of place, time or ...Mother-Tongue. The present paper looks at how MLT systems can answer the question of meeting the needs of those who want to study in their own language but still take courses abroad, or teach basic guidelines in how to contexts, irrespective of the user’s first language. Can this spare us from learning foreign languages? Will foreign language centers become obsolete and fade away after all?

Keywords: machine language translation, mobile devices, languages, virtual learning environments.

I. STATUS QUO

Speaking about the importance of languages, linguistics and area studies, professor Mike Kelly, director of the Subject Centre for Language, Linguistics and Area Studies at the University of Southampton, UK, considers that there are strong signals that attitudes are beginning to change among policy makers and civil society in what comes to be the field of foreign languages\(^1\). The power is shifting away from English while its international role is seen both as a threat and as an advantage. Reports have highlighted the growing importance of languages (let us just mention the British Academy’s statement „languages matter more and more”) in shaping the international profile of universities, helping tailoring the global graduates for the increased future employment perspectives, to better find an advantageous career while being as multi-cultural and multilingual as possible, to be interoperable.

Culture itself, along with languages, plays a very important role as it represents a particular field that safeguards and promotes national heritage to pave the way for creativity and foster mutual understanding through intercultural dialogue.

The accelerated globalization process that breaks the boundaries among cultural stereotypes and builds bridges through for knowledge transfer irrespective of country, policy, nationality or language, has yet now become part of our unfolding lives, a companion all the way, flowing along and

\(^1\) Liaisons- issue 6, march 2011
through with our lives, placing the intercultural competences at their best, as they enable us manage cultural diversity more effectively and monitor cultural change. Hence, „misunderstandings rooted in identity issues are liable to proliferate” as the UNESCO document stated, will no longer be valid due to multilingualism florishing and intercultural development. It is a fact that differences in cultures and languages can bring conflict, ignorance and misunderstanding. Nonetheless, cultural diversity and openness are related to dynamic processes where cultures change while remaining themselves, in an endless openness to one another. UNESCO is but one of the international organizations to create an environment that is prone to universal access to information and knowledge, setting standards and raising awareness to grant general access to information and knowledge by trying to speak a common language or by finding ways to a common set of communication rules.

Here is where Machine Language Translation to be deployed into various Virtual Learning Environments, be they on standard or mobile LMS comes into the limelight as VLEs are the solutions for ubiquitous learning and information, especially when it comes to mobile LMS.

The truth is that we go global but the language requirements have many gaps. We no longer need English to French or the other way round translation. By employing communicative methods, cooperative learning and collaborative classrooms, we need to translate from one into many other languages, especially the lesser taught ones now, in order to inter-relate with people inside the Virtual Learning Environment irrespective of their nationality and mother-tongue.

Language Technologies, Technology Enhanced Learning and ICT for access to cultural resources are but few of the EU FP 7 R&D calls. What is in focus for the EU commission is to:
• Leverage and embed the language tools in a new concept and system for faster access to resources;
• Approach and develop the new sides and features for the existing MLT or language acquisition tools;
• Focus on the new and future EU languages;
• Build on benefits of multi-language data MLT based;
• Provide eLearning system MLT based for SMEs’ benefits;
• Widen access to education, knowledge and information.

Consequently, research should provide capabilities to react to learners’ abilities and difficulties, and provide feedback based on pioneering ways of interpreting the user’s responses—particularly in relation to deep/shallow reasoning and thinking.

Solutions should exploit advances in natural language interaction techniques (dialogues), in rich and effective user interfaces and should have a pedagogically sound instructional design, in order to unlock the potential of the individual by a better personalization of educational technologies.

Thus, in order to enhance ubiquity in formal education and lifelong learning, eLearning systems—MLT based are more and more in focus and projects have been spinning around:
- Multilanguage content and eLearning object repository
  - Intelligent tutor MLT based
  - Learners – tutors communications tools in native language
  - MLT embedded into LMS
different types of MLT for personalized activities (MLT adapted to learner’s needs).

Besides, to completely break the boundaries and speak about ubiquitous learning or training, mobile translation has become quite a feasible tool, as the use of mobile phones and other portable devices is beginning to have an impact on how learning takes place in many disciplines and contexts, including language learning. Learners who are not dependent on access to fixed computers can engage in activities that relate more closely to their current surroundings, sometimes crossing the border between formal and informal learning. Considering mobile learning as the setting within which developments in mobile-assisted language learning may be understood, it is needless to say that mobility can lead to new perspectives and practices.

Machine translation applications have also been released for most mobile devices, including mobile telephones, pocket PCs, PDAs, etc. Due to their portability, such instruments have come to be designated as mobile translation tools enabling mobile business networking between partners speaking

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3: http://cordis.europa.eu/technology-platforms
different languages, or facilitating both foreign language learning and unaccompanied traveling to foreign countries without the need of the intermediation of a human translator.

By having a look at the EU funded projects on this issue we can see that 322 projects covering these requirements have emerged. A few examples could be:

EUROMATRIX (2006-2009) aims at a major push in machine translation technology applying the most advanced MT technologies systematically to all pairs of EU languages. Paying special attention to the languages of the new and near-term prospective member states, it designed and investigated novel combinations of statistical techniques and linguistic knowledge sources as well as hybrid MT architecture, addressing urgent European economic and social needs by concentrating on European languages and on high-quality translation that uses technical, social, legal and political documents.

ETNOKA.COM is to create a multilingual platform for European students, based around the central concept of multilingual chatting. The project has four main objectives and it is expected to represent a multi-lingual gateway available in 5 European languages (English, French, German, Italian and Spanish) Multilingual content on education, employment, travel, etc relevant to students. The information will be translated from the language of origin to the other 4 languages using the Systran system community services and activities.

As far as mobile translation is involved in projects, the EMIME project is worth being mentioned, as it will help overcome the language barrier by developing a mobile device that performs personalized speech-to-speech translation, such that the a user's spoken input in one language is used to produce spoken output in another language, while continuing to sound like the user's voice. Since personalization of systems for cross-lingual spoken communication is an important, but little explored, topic, it is essential to provide more natural interaction and make the computing device a less obtrusive element when assisting human-human interactions. Using a common statistical model framework for automatic speech recognition and speech synthesis will enable the use of common techniques for adaptation and multilingualism, thus collaborative international lessons and training will be enhanced.

It is important to mention though that since Machine Language Translation as a tool is adaptive to mobile devices either on a mobile LMS or web-based mobile, then not only can we attend classes overseas no matter the course language, but we can also interact with other attendees, wherever we find ourselves, by a simple click on our mobile.

However, none of the projects already use Machine Translation effectively when it comes to delivering courses interactively, fostering real-time international connection, by breaking the language barriers. This is still impossible as learners are still culturally embedded and their language is programmed as such when it comes to interaction, communication in a rule and custom-free vocabulary. There are idioms, there are affective ways to express things, which a machine Translation cannot still cover.

II. ON MACHINE LANGUAGE TRANSLATIONS

Since the VLE is international, a more performant MT has to be engaged compared to what there already is in use, something that draws on features of Transclick, Linguanet, Systran, Multicity altogether, for ex.; deep understanding and disambiguation must be considered as most of the existent MTs draw on shallow understanding and this is where disfunctionalities occur. (i.e. Polite acknowledgements for disagreements, etc). Also, translation confirmation as an optional element is another key issue for multicultural environments that use MT, along with conversation supplementation.

The MTs generally analyze a source text and by human intervention produces a target text with pre and post editing. This includes terminology work, preparing source text for the MT (pre-editing) and rework the result of the MT (postediting). Of course there are a lot of unedited MTs – Babel Fish and others, that only give the gist. Yet, communication in human language is context.

embedded and the best version of a MT is one that is reviewed by human, as ambiguities must be dealt with, the ones brought by grammatical and lexical exigencies of the target language. Interactive translations with pop-up windows are frequent and these tools show one/more possible equivalents for each word.

Current MTs allow for customization by domain/profession improving output; this is particularly effective where formulaic language is used (government, legal, etc) as usable output is larger than conversation.

There are different types of MT:
- Rule-based, that includes transfer-based, interlingual and dictionary-based ones. From these, the transfer-base type can go for superficial transfer (syntactic), for languages in the same family, and for deep transfer (semantic) for more distantly related languages.
- Statistical based, which are better than the above, for better use of resources and more natural translations. They have problems yet with compound words, morphology, word-order.
- Example based which use parrale texts as their main knowledge and they can be seen as an implementation of case-based reasoning.

A performant MT has to build on a combination between the rule-based and statistical based ones.

Systran’s tool uses a tried-and-true translation technique called rules-based translation. Statistical machine translation is a newer technique that’s not yet in widespread use. It uses collections of documents and their translations to ‘train’ software. Over time, these data-driven systems ‘learn’ what makes a good translation and what doesn’t and then use probability and statistics to decide which of several possible translations of a given word or phrase is most likely correct based on context.

As far as automated translation in the corporate world is concerned, it succeeds to the extent that users are willing to carefully customize systems to their unique needs and vocabularies.

Hybrid systems, which combine translation memories and machine translation based on rules or statistics or both, are the wave of the future, researchers say, and they are becoming more sophisticated and complex. In essence, current research considers that to do machine translations with the best available rules-based and statistical-based systems, and then have another system that ‘adjudicates’ among them in real time to find the best translation is the solution for an improved MT. Examples as such can be WordLingo and Hybrid Systran that go both rule and statistical based.

SYSTRAN’s hybrid engine combines the predictability and language consistency of rule-based MT with the fluency and flexibility of statistical MT to reach customer quality requirements.

Customizing the software to a particular domain involves a variety of resources - dictionaries, glossaries, translation memories, and existing monolingual and bilingual data – to improve overall quality. SYSTRAN's hybrid engine leverages all available language assets to reach the quality threshold for each target domain, reducing customization costs. It can be trained on existing corpora and integrated glossaries. It also leverages corpora to generate translation models and reuses them to build custom dictionaries.

Translation predictability is enhanced and quality is improved with a limited initial investment. Ongoing maintenance of resources ensures incremental quality while customization costs are contained.

SYSTRAN's hybrid engine delivers high performance with standard hardware per the recommended system requirements. Human translators save significant time revising proposed translations instead of translating from scratch, which guarantees highly consistent and reusable translations. Post-edition results are easily re-integrated into the software through the dictionary or by additional training so the system never makes the same mistake twice.

The new Language Weaver partnership with WordLingo might be worth being looked into asWordLingo also uses both rule based and statistics for translations.

We mentioned versions of MT – in plural, as for different activities triggered by different types of learners, as well as for different fields of expertise, some MT could be faulty. Moreover, the one but last of the lowest scores in unfolded projects’ feedback was given by the MT performance. Needless to say thorough research should be done in this respect- MT software, to find the best solution for all types of communicators such a collaborative platform would entail.
Let us not forget that as far as education is concerned, we should provide learners with hands-on training, as the accent falls more and more on competence and skill than on wordy input.

III. MACHINE TRANSLATIONS INSIDE VLE, COURSE-ORIENTED

All of the above naturally triggered an uprising of collaborative platforms or workspaces that have been integrated with MLT either on standard or mobile LMS, so that participants can have the ability to communicate in a multinational, multilingual environment for different purposes by accessing instant messaging, e-meeting, web conferencing and chat tools (by means of Lotus products) to give better way to interactivity; whether they are instructor-led or not, certain things should be brought into question in order for us to stay put for improvement:

1. Related to the chat interaction in a multinational environment, automated translation is provided based on language pair. This is an issue in question as where different cultures are involved, we cannot speak of perfect matching, in terms of semantics, to cover the full interoperability factor - different types of reception might be involved, related to codes of interpreting messages.
2. In the case where accent falls on a thorough needs of analysis to tailor information for each and every individual according to his own learning style, different types of activities or teaching strategies occur - for the visual, the kinesthetic and the auditory individual, videos or slideshows or even listening sequencing are at stake, which - obviously need to be accompanied by a translated version in different languages, so that people would later meet online, via web conferencing or chat. If for the first activities – tutor input – an easier/simpler MT could do, for the simultaneous one a more complex MT would be needed.
3. Transclick has been used for Sametime contact but with poor results. We believe the bad results come from the fact that its ability is restricted to BUSINESS, LEGAL, MEDICAL, COMPUTER fields but also because it goes by pair, rule-based; consequently it is obvious it could not perform properly in a chat style, where formal and informal language is used, from fields other than what it is designed for. Therefore, a new improved MT should be brought to light, to widen the horizon of instant translation in a multinational environment.
4. Should we consider environments like security, politics, education, administration, governance, research should be drawn to create the best MT to best cover these domains in conversations.
5. Since we have in mind different types of learners, it is no use unless we fully adjust the learner-centered approach – Students should feel no hindrance in communicating with people whose language they do not know. Language barriers should be dropped.

IV. MACHINE TRANSLATION AND LANGUAGE LEARNING

Incorporating machine translation in a second language teaching methodology is a relatively unexplored area, probably for two main reasons:

1. Machine translation itself was once disavowed and regained public interest only recently (Hutchins 1999);
2. There has been no place for translation to fit in under the reign of the Communicative Language Teaching approach since it emphasises meaning-based communicative activities rather than static and conscious language practice.

The question is – will language learning lose ground and foreign language courses turn to being obsolete in case MT will be successfully employed in ubiquitous learning especially with its deployment on mobile devices?

Some best practices would give NO as an answer to this question yet future is unpredictable.
Quite clearly, machine translation has revolutionised international communication, and systems such as Systran are incredibly sophisticated and constantly improving. It would be a parochial teacher indeed who did not encourage students to view this as a positive step! It is therefore important to give them a sense of the power of a service such as Babelfish from the early stages. A simple but effective exercise consists of having students translate a short, grammatically accurate article from L2 to L1, and to compare their translation with a machine-generated one. The usual reaction is one of surprise – both at what the machine is capable of doing, and at what it fails to recognise. From this they can develop an appreciation of the Systran system’s capacity to perform what Lockwood (1999 p. 10) terms ‘gisting translation’ (i.e. ‘translation purely for the purpose of understanding, rather than for publication’), also called ‘draft translation’.

These students once used to this difference and convinced of the MT’s performance currently, would later grow into attending courses aborad, courses tutored by a foreign academic, courses they would translate into their own language. They will all find this handy as they grow with finding Machine Translation processing quite a handy tool.

There was an interesting research Brian McCarthy unfolded in 2004 on whether the translation exercises were still to be applied during foreign language teaching activities or not.

The handout distributed to students provides the following explanation:

“In the attempt to communicate in French many ideas that are expressed by simple and commonplace expressions in English, intermediate foreign-language students, quite reasonably, have recourse to word-for-word translation, only to discover that the basic grammar and vocabulary they have already mastered let them down. There are expressions, an integral component of most of the old-fashioned grammar-translations, which continue to pose problems for genuine foreign-language learners who are scarcely exposed to the written and spoken norms outside of the classroom.

The study compares the human translation to Systran and Babelfish MT. In their translation class, students are shown the mixed success of Systran in handling even these basic problems (Figure 1), and are encouraged to discuss the source of the various problems.

<table>
<thead>
<tr>
<th>English</th>
<th>Acceptable translation(s)</th>
<th>Babelfish translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>thirty francs a kilo</td>
<td>trente francs le kilo</td>
<td>trente francs par kilo</td>
</tr>
<tr>
<td>They are writing letters.</td>
<td>Ils écrivent des lettres. • Elles écrivent des letters.</td>
<td>ils sont des lettres d'écriture</td>
</tr>
<tr>
<td>the house I like</td>
<td>la maison que j'aime</td>
<td>la maison I comme</td>
</tr>
<tr>
<td>They have many ideas.</td>
<td>Ils ont beaucoup d'idées. • Elles ont beaucoup d'idées.</td>
<td>ils ont beaucoup d'idées.</td>
</tr>
<tr>
<td>He doesn't talk very much.</td>
<td>Il ne parle pas beaucoup.</td>
<td>Il ne parle pas beaucoup.</td>
</tr>
<tr>
<td>They read a lot.</td>
<td>Ils lisent beaucoup. • Elles lisent beaucoup. • Ils ont lu beaucoup. • Elles ont beaucoup lu.</td>
<td>Ils ont lu beaucoup</td>
</tr>
<tr>
<td>They run fast.</td>
<td>Ils courent vite. • Ils courent rapidement. • Elles courent vite. • Elles courent rapidement.</td>
<td>Ils fonctionnent rapidement.</td>
</tr>
<tr>
<td>a fast train</td>
<td>un train rapide</td>
<td>un train rapide</td>
</tr>
<tr>
<td>I am tired.</td>
<td>Je suis fatigué.</td>
<td>je suis fatigué.</td>
</tr>
<tr>
<td>We are hot.</td>
<td>Nous avons chaud.</td>
<td>nous sommes chauds.</td>
</tr>
<tr>
<td>This coffee is hot.</td>
<td>Ce café est chaud.</td>
<td>Ce café est chaud.</td>
</tr>
<tr>
<td>the first of June</td>
<td>le premier juin • le 1er juin</td>
<td>le premier juin</td>
</tr>
<tr>
<td>the ninth of September</td>
<td>le neuf septembre • le 9 septembre</td>
<td>le neuvième septembre</td>
</tr>
</tbody>
</table>
After reading the book, I went out.

Après avoir lu le livre, je suis sorti.

après lecture du livre, je suis sorti.

**Figure 1.** Babelfish use compared to human translation

No matter how sophisticated machine translation has become, they system does not think and does not respond to the broader environment. Studies have shown the faulty rendering of different versions, no matter how sofisticated the system entailed. Backward translation is just a mere example of those.

This can be demonstrated with absolute clarity by repeating the process of what Richmond (1994 p. 73) terms ‘backward translation’ – i.e. translating back into L1 a document that has been translated into L2 – and comparing the back-translated version with the original. Thanks to the speed of online machine translation, this activity can be repeated ad infinitum in a process known as ‘ping-pong translation’.

Students very quickly understand that a culturally sterile, contextually restricted, socially and gender neutral, formula driven machine is capable of delivering ludicrous absurdities with the same speed, authority and equanimity as it generates intelligible draft translations. They see that they can beat the machine hands down when it comes to intuitive recognition and accurate interpretation of semantic units and cultural context in spite of unconventional grammar, punctuation and spelling.

V. **CONCLUSIONS**

Research should be drawn extensively on the effectiveness of different types of MT, to then find or design the proper one to cover a collaborative space in the realm of administration, governance, military, education.

Important texts can there be translated in no time, courses can be delivered by a tutor who is Romanian for ex, teaches in his mother tongue, but he has 10 different students online, who are all from different countries. Having the process of clear communication for once then easier MT can be employed, then when students meet and share space, the more complex culturally related and idiom/slang/informal language should be envisaged within a MT. Well, that could be the challenge as shallow, pair or statistics –based ones might not find a seat in here, when we use idioms, slang, culturally related words.

Also, for chat translation disambiguation is a very important factor. An anthropological and cultural research should also be run to find stereotypes, and their ways of interpreting them, as decoding messages might sometimes hinder the process of communication (idioms, collocations).

The next stage is implementing a new, improved version of MT, to later check its effectiveness within courses per se. When courses will be accessible anytime anyplace –you might say they already are- but also any language, irrespective of the original language it entailed in the description, and when the tutor will become international by mere employing the MT – based dialogue and academic support, then we can say Machine Translation will replace the language classrooms, with all the nuances and intricacies one can get by studying a foreign language per se.

To end with an answer for the question we addressed at the beginning, in the abstract, we believe this whole article stands for what it is to be done until foreign language teacher will become extinct, if ever.

**References**


