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September 2005 FEATURE

# The Next Generation of Localization Tools

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# technology spotlight LTC Communicator

An in-depth look at web-based multilingual communication projects.

Once, a letter sent to the editor at CSN summarized a technology article as something like "a thinly veiled attempt at making a sales pitch look like a technology discussion." No doubt, the author of the letter felt he had been tricked into reading nothing more than a sales pitch.

Unfortunately, most new technologies happen to be introduced in the form of a new product. Few companies advertise their new technologies before they have been packaged as goods or services to be sold. And when they do reveal a new technology to the market, they naturally

## By Dr. Adriane Rinsche

want to reveal it in a manner that convinces the market of the technology's value-add.

This month's technology article might strike you as being a bit of a pitch. But we encourage you to read beyond that and pay attention to this exciting new approach to on-demand translation that brilliantly combines our industry's most current technologies with our most conventional resources—translators.

#### **M**ULTILINGUAL HELPDESK FACILITIES

Until recently, there were basically three possible strategies for a helpdesk to offer multilingual support:

- Maintain a separate support centre in each target country. This is very expensive and only really feasible for a large organization with an established international presence.
- Run a centralized helpdesk that employs multilingual support staff. This model is also potentially expensive; people with the right technical and linguistic qualifications are not easy to find, and user numbers might not justify experts for every language. A variant of this is the distributed "virtual helpdesk" with remote support staff connected to a central database.
- Use telephone interpreting services to offer multilingual support from a central location.





This solution is expensive on a case-by-case basis, but perhaps is justified where the volume of multilingual support is small and the demand sporadic.

The LTC Communicator by The Language Technology Centre now offers a fourth possibility: use translation software to incorporate multilingual capability into the helpdesk software itself, and integrate the software with a web-based workflow and knowledgebase facilities—thereby reducing dependence on human experts to manage communication.

#### **B**USINESS CASE

LTC Communicator allows a software vendor (or any service organization) to run a centralized support centre without the expense of training and equipping local support desks in different countries, and without the expense of employing multilingual staff. In fact, the enduser and the support engineer do not need to share a common language.

For example, for an English web-based helpdesk that supports German users:

1. The user enters a trouble ticket in German, via the software company's web-based support portal.

- The trouble ticket is routed through the LTC Communicator translation components.
- The request is displayed to the support engineer in English.
- The engineer prepares the solution, also in English, to be automatically routed back through the translation environment.
- 5. The user can then view the solution (or status information) in German.

This solution can integrate with any existing web-based e-communication system that is capable of communicating via XML and that can be configured to provide flexible workflow. Incoming messages that are in the company's native language pass directly into the normal communication workflow, while foreign-languages messages are routed through the LTC Communicator automated translation environment. Similarly, response messages may be directed straight to the requesting user or translated first, as applicable.

LTC Communicator also can be integrated

with established knowledgebase functionality, supporting user "self-help" with multilingual query facilities against existing documentation and FAQs, and continuously enhancing the contents of the knowledgebase with new queries and solutions.

#### TECHNICAL ARCHITECTURE

2.

3.

4.

At the technical level, LTC Communicator itself comprises several components:

- A translation memory populated with relevant bilingual material.
- An interface to a machine translation program (for example, SYSTRAN), including a custom dictionary holding key terms relevant to the industry.
- A workflow server responsible for workflow management consisting of the following components:
  - an automation server that interfaces external translation services with the translation bus
  - a web server that receives the translation request wrapped in XML messages
  - an optional post-editing service that routes machine translated text to

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available human revisers, if high quality and publishable output is required, as opposed to understandable output.

Together, these function as a "black box," with input and output in XML format. There are few changes that have to be made to an existing application to integrate with LTC Communicator:

- Generate (and read) XML messages in the specified format.
- Tag the messages with meta information, such as source and target languages and the necessary quality and speed, to route them correctly through the automated translation environment.

In principle, the system can handle any language combination,

limited only by the capabilities of the machine translation software that is available. Existing machine translation systems cover all the major European languages, plus increasing numbers of non-European languages.

Once the system is set up, it is relatively easy to add further languages, with the workflow server ensuring that each incoming message is directed to the appropriate machine translation module within the translation environment. A single helpdesk can then support users in many different countries at little additional cost.

#### Use of machine translation

Machine translation is particularly well suited to helpdesk and other ecommunication requirements:

• Output needs to be intelligible, but not generally of publishable quality.

- The subject matter is usually quite restricted (for example, to a software product or to a small variety of products), and custom dictionaries delivered with the machine translation software can be tailored to the specific domain.
- Existing material can be reused. Translation memories can be created from databases populated with bilingual documents, from localized software or from existing FAQs, etc.
- Similarly, each new solution is potentially reusable; it can be added to existing FAQs or to a multilingual knowledgebase, enabling users to resolve an increasing number of queries without calling the helpdesk at all.

Moreover, the LTC Communicator architecture allows results to be optimized in a number of ways:

- Input can be structured by providing pick lists for key items such as application or version, type of fault, severity, etc., producing more matches against the translation memory, and minimizing the amount of free text to be translated.
- Style guidelines can be applied to produce more consistent input, enforcing standard use of terminology and avoiding complex or ambiguous constructions that the machine translation software might resolve incorrectly.
- Spell checkers can also be used to improve input quality, further increasing TM hit rates.
- Where output of "publishable" quality is required (for example, to populate a multilingual knowledgebase, or to be incorporated in formal documentation), a post-editing option is available. Post editing is also recommended when the system is first installed, to help "tune" the TM and machine translation dictionaries.
- Post-edited output is automatically fed back into the TM.

#### OTHER APPLICATIONS FOR LTC COMMUNICATOR

The AMBIENT LEARNING project is a market validation study. Funded 50 percent by the European Union, the consortium supporting it consists of technology partners and private and public training institutions from various European countries. The project started in August 2004.

The objective of the AMBIENT LEARNING project is to provide a pragmatic, easy-touse eLearning web service, one that allows access any time, anywhere, and anyhow to personalized, high quality learning content. The AMBIENT LEARNING service is based on stable and mature technology and offers ambient, multimodal, multilingual, personalized, and context-sensitive access to learning at work, at home, at a training institution, or on the move. The main purpose of the project is the market validation of the AMBIENT LEARNING service by demonstrating the various services in several European regions and therefore preparing the ground for successful market development.

LTC has proposed to adapt the LTC Communicator to include multilinguality in the eLearning environment as proposed in the AMBIENT LEARNING project. Users can request eLearning material via the personalized user interface provided by one of the technology partners, and then users will be notified which material is available in which languages, or which can be translated as part of the current request.

# Where would you like to go for dinner tonight?



Los Angeles 110 US Dollars Madrid 110 Euros USD 143 Buenos Aires 110 Pesos USD 38

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#### THE FOLLOWING ASPECTS ARE RELEVANT:

Multilingual keyword search: In order to be able to return information about materials available in other languages, the current structure of the context manager and the semantic tagging applied needs to be adapted in order to provide an appropriate multilingual key word search.

Translation workflow and output quality: It is to be decided in a user trial during the course of the project which of the following possible workflows will be most suitable:

- A. User receives raw translated document within a couple of minutes.
- B. User orders documents that will be machine translated, routed to the human post-editing services, and returned

in good quality. The revised language strings will be saved in the translation memory. The next time the same document is requested in the same target language, the translated version will be immediately available, either directly from the knowledge database or via the automated translation process where the translation memory contains all translated strings.

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The disadvantage of this high quality approach is the cost for the post-editing. Plus, depending on the size of the document, a time delay will certainly be encountered. The advantage, however—aside from the high quality output—is the increase in speed and quality to the TM, style guides, and glossaries over time. THE EUCAM PROJECT

The EUCAM project examines multilinguality in eLearning for the automotive industry. Daimler Chrysler developed a production learning system that now needs to be localized and used in various countries with customized content. Germany's IG Metall and the European Metal Workers Federation have been involved from the very beginning, as learning by doing-having access to learning content via terminals at the workplace-needs to be acceptable to the workers, as opposed to more traditional learning methods through offsite training institutions. The project aims to build a technical communication and multilingual learning infrastructure by optimizing these forms of communication:

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 horizontal technical communication among manufacturers, suppliers, and engineers—especially by integrating small suppliers into the learning environment.

• vertical technical communication among engineering, production planning, quality management, and the shop floor level.

LTC will provide a localization strategy for the user interface of the production learning system. The use of highly restricted language (although not "controlled language") suggests that machine translation is an option, including human post-editing for guality control. Machine translation through LTC Communicator would enable users to add content and enable managers to interact with their (possibly international and multilingual) team members. A decision regarding the use of tools will be made after a detailed evaluation of the required content.

#### MULTILINGUAL DESTINATION MANAGE-MENT IN THE TOURIST INDUSTRY

The ALADDIN project is a cooperative research effort of five different subject matter experts (SMEs), of which three are technology partners and the other two are providing a test bed for the completed prototype. The project is of considerable relevance, as European SMEs in the tourism and travel industry are facing serious challenges from large international companies. Incoming tour operators, tourist offices, restaurants, hotels, museums, and comparable establishments are typically small or medium enterprises that need to provide different services for the same customer-the tourist-in a cost efficient, but attractive way.

The multilingual requirements in this industry are quite obvious. First of all, within the scope of the ALADDIN project, tourists and incoming tour operators can be nationals of any European country, interacting with nationals of any other country. Therefore, the user interface of the planned mobile workspace needs to be localized into a number of relevant languages.

Secondly, content relevant to tourists needs to be made available in their own language either on the fly or with only minor delay.

By including necessary transnational cooperation aspects in the tourism area, by perfecting tourist relationship management (through mobile CRM features), and by including localized content through the use of LTC Communicator's web-based translation service, ALADDIN will hopefully lead to a sustainable enhancement of the competitiveness of European SMEs in the tourism area.

#### MULTILINGUAL E-MAIL EXCHANGE

One of LTC's long-standing clients sells golf equipment via the Internet. LTC localized the client's website into several languages, and this led to e-mail enquiries in all the languages in which the website was made available. Initially, foreign language e-mails that arrived at the customer's service inbox would be forwarded to LTC's service team for translation. And before a reply could be sent back to the website customer, the reply had to be translated back into the customer's language. Obviously this workflow was rather awkward and time consuming, particularly because such e-mails tend to be quite short.

By implementing LTC Communicator's automatic e-mail translation facility with a custom dictionary of golf terminology, which is integrated with Microsoft Outlook, most of the manual e-mail handling and human translation can be eliminated. If the quality of the machine translation is not sufficient, for whatever reason, the e-mail is forwarded to a reviser by a simple mouse click. The human revision is done within a few seconds, and the e-mail is then automatically forwarded back to the requester.

#### CONCLUSION

The awesome growth of the Internet and the increasing use of mobile technology means that more and more applications are becoming truly global in reach, and companies have to operate in an increasingly international—and multilingual—environment. The demand for instant translation threatens to outstrip the capacity of human translators, who are a comparatively expensive resource in any case.

A highly efficient workflow that automates as many steps as possible saves time and resources—and machine translation is part of the answer. LTC Communicator offers an innovative combination of technologies that minimizes the reliance on human translators.

Although the focus so far has been on helpdesk systems, LTC Communicator will fit into any workflow application with the need to support users in more than one language. LTC Communicator can also be used to add multilingual capability to technical search engines and knowledgebase products, both of which play an increasingly central role in corporate IT environments.

#### ABOUT LTC

The Language Technology Centre is a limited company based in the UK, specializing in building multilingual websites, software localization, consultancy in language technology, technical translation and software development. Clients include telecommunications companies, software developers, mechanical engineering businesses, the medical and automotive industries, as well as European and international institutions.