The Guide from MultiLingual Computing & Technology

LOCALIZATION

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Localization World brings together industry experts, novices, customers and vendors to learn and share knowledge. It is comprised of preconference tutorial and management sessions, an extensive selection of workshops and discussions, and an exhibit hall of products and services.

Presentations on a wide array of subjects, including designing with localization in mind; special applications and emerging needs; tools and technology; maintaining quality; the business of localization; and localization for regions and global marketplaces.

The conference venue is the Bell Harbor Conference Center on the shores of Puget Sound in the center of Seattle, Washington.

More information is available at www.localizationworld.com
In this supplement to MultiLingual Computing & Technology, we explore the topic of localization. In its simplest form, localization means the process of orienting locally.

We computer-age people tend to think that concepts we discover are new. But Robert Burns commented in 1796: “Songs are always less or more localised (if I may be allowed the verb) by some of the modifications of time and place.” Isn’t it interesting that songs, which were quite often used to tell stories and news before widespread print and literacy, were adapted to the local audience? That is, they were localized. And now we have entire industry built around localizing our newest forms of communication so that it is meaningful and acceptable to different cultures and countries.

In this supplement, we feature five articles on the localization industry and its tools, the economics of localization along with some sample case studies of the localization process.

Bert Esselink describes the evolution of localization as we know it today. His narrative begins with the ancient history of the 1980s and continues through predictions for the future. This is an interesting read, especially for someone new to the localization process.

A localization professional could, if necessary, perform tasks one at a time and quite often repetitively. The job would get done, but in today’s competitive environment, the lack of capitalization on previous work and inefficiencies would be very costly. What sorts of tools and technology are available to help streamline the process? David Shadbolt takes a look at various localization tools and how they can be used.

Moving to the managerial level, Damian Scattergood looks at localization tools and their use in a successful localization project.

Don DePalma encourages us to look at localization as a “C” level executive would. And in so doing, he presents some impressive arguments for localization that can be taken to those “C” level people.

How does a localization project work? Is there a menu-driven process that can be applied to most projects? Dan Johnson presents four case studies to show how various localization projects were accomplished differently. The important factor in these examples is that a general project plan must be malleable to meet the needs of unique projects.

While we like to think that our current day communications and products are much more sophisticated than eighteenth-century songs, we still find ourselves faced with the desirability, the necessity, of adapting them to a local audience.— Donna Parrish, Publisher

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It seems like ancient history to me sometimes, but I entered the world of localization just over ten years ago. In 1993 I joined International Software Products in Amsterdam, a small and specialized localization vendor that still exists under the same name. I had recently graduated as a technical translator, using an article on the launch of Windows 3.1 as my thesis subject. The seemingly incompatible marriage of language and technology has intrigued me ever since. Still, this is the core characteristic of what today we have come to know as localization.

In a nutshell, localization revolves around combining language and technology to produce a product that can cross cultural and language barriers. No more, no less.

In this article, I will explore the fundamentals of localization: what it is, where it started, how it progressed, what it is today and what it may be tomorrow. Against this historical background I will discuss developments in the localization services business, translation technology and general trends.

Where It All Started: The 1980s

Desktop computers were introduced in the 1980s, and computer technology slowly started to make its way to users who did not necessarily have a background in computer programming or engineering. The early 1980s also saw the first international ventures of US-based computer hardware and software firms. Sun Microsystems, for example, began operations in Europe in 1983, expanding to Asia and Australia in 1986. Microsoft had started international operations earlier, opening its first overseas sales office in Tokyo in November 1978 and beginning its expansion into Europe in 1979.

The shift of computer hardware and software use away from corporate or academic IT departments to “normal” users’ desks called for a shift in product features and functionality. Not only did desktop computer users now need software that would enable them to do their work more efficiently, but the software now also had to reflect business processes that reflected local standards and habits, including local language. Word processors, for example, now needed to support input, processing and output of character sets in other languages; language-specific features such as hyphenation and spelling; and a user interface in the user’s local language. The same expectations applied to hardware. For example, in 1985 the Spanish government decreed that all computer keyboards sold in Spain should have the ñ key.

Internationalize to localize? The international expansion of software and hardware developers automatically triggered the need to localize the products for international markets. Initially, software vendors dealt with this new challenge in many different ways. Some established in-house teams of translators and language engineers to build international support into their products. Others simply charged their international offices or distributors with the task of localizing the products. In both cases, the localization effort remained separated from the development of the original products. Development groups simply handed off the software code and source files for supporting documentation to those responsible for localization.

This separation of development and localization proved troublesome in many respects. Microsoft, for example, asked its then-distributor ASCII in Japan to localize Multiplan (predecessor of Excel) into Japanese. According to a Microsoft director responsible for localization at that time, “we’d finish the product, ship it in the United States, and then turn over the source code library to the folks in Japan, wish them luck and go on vacation.”

Not only was locating the translatable text embedded in the software source code quite difficult, but the requirement for additional language versions of the code made update and version management increasingly complex. Moreover, the localizers often had to return the products to the development teams to first build in support for localization or international computing standards. With these requests, the concept of internationalization was born.

Internationalization refers to the adaptation of products to support or enable localization for international markets. Key features of internationalization have always been the support of international natural language character sets, separation of locale-specific features such as translatable strings from the software code base, and the addition of functionality or features specific to foreign markets. Without internationalization, localizing a product can be very challenging.

Outsourcing localization. Initially, many software publishers, such as Microsoft and Oracle, established in-house localization teams who had to adapt the products for key international markets. A large portion of this effort was obviously the translation of the software product itself and supporting documentation. US companies often decided to place the localization teams in their European headquarters, many of which were based in Ireland.

Even though it seems that localization vendors are now moving activities to many locations across the globe, Ireland established itself as the leader in the localization industry during the 1990s. Over the past 10 to 20 years, the Industrial Development Authority (IDA), a semi-governmental body, had the mandate to move Ireland forward industrially by attracting foreign investment.

In the 1980s, a high concentration of manufacturing companies started in Ireland, including some high-tech companies. The Irish government provided what it called turnkey factories, where a large multinational was offered a certain amount of government subsidy per employee, plus facilities, grants and a corporate tax rate of 10% as an incentive to invest in Ireland.

After some failed investments and the increased competition from manufacturing in cheap labor markets, the Irish government...
before new product releases, very quiet after — contributed to this problem, as did the difficulty of keeping translators in another country for a long time because localization really wasn’t very exciting (imagine two months of translating on-line help files) and not always well paid.

Software publishers increasingly realized that localization was not part of their core business and should ideally be outsourced to external service providers.

One of the first companies to realize there was a service offering to be built around this need was INK, a European translation services network established in 1980. INK became one of the first companies in the world to offer outsourced localization services. In addition to translation into all languages required by software publishers, this service included localization engineering and desktop publishing and, most importantly, the project management of these multilingual localization projects.

Translation technology. INK was also one of the first companies to create desktop translation support tools, called the INK Text Tools, the first technology commercially developed to support translators. As a historical note, the present company Lionbridge was “spun off from Stream International, which itself had emerged from R.R. Donnelley’s acquisition of INK,” said Lionbridge CEO Rory Cowan in 1997. In 1987, a German translation company called TRADOS was reselling the INK TextTools and a year later released TED, the Translation Editor plug-in for TextTools. Shortly thereafter, TRADOS released the first version of its Translator’s Workbench translation memory (TM) product. TRADOS continued to establish itself as the industry leader in TM technology throughout the 1990s, boosted by Microsoft taking a 20% stake in 1997.

Initially, TM technology could only deal with text files. Hardly any technology was commercially available for the localization of software user interfaces. Most software publishers built proprietary tools, which were tailored to their own source code format and standards and used by their internal teams. Development of these tools was often quite ad hoc and unstructured. As a result, early generations of software localization tools were usually quite buggy and unreliable.

1990s: An Industry Established

Throughout the 1990s, a large number of localization service providers were born, many of which were little more than rebranded translation firms. For the IT industry, the sky was the limit, the globe was its marketplace, and the localization industry followed closely in its footsteps.

After the initial pioneering efforts of translation companies adapting to the new paradigm of localization, the 1990s clearly saw the establishment of a true localization services industry. Software and hardware publishers increasingly outsourced translation and localization tasks to focus on their core competencies.

The need for outsourced full-service localization suppliers was growing rapidly. Within a localization services company, localization teams would typically be coordinated by a project manager overseeing schedules and budgets, a linguist to monitor any linguistic issues, an engineer to compile and test localized software and on-line help and a desktop publisher to produce translated printed or on-line manuals. A typical localization project consisted — and often still consists — of a software component, an on-line help component and some printed materials such as a getting started guide.

To localize a software application, localization engineers receive a copy of the software build environment, extract the
resource files with translatable text, prepare translation kits and support the translators during their work. Post-translation, the engineers merge the translated files with the build environments and compile localized copies of the software application. This always requires some level of bug-fixing, user interface resizing and testing. A similar approach is taken to produce localized versions of on-line help systems. The source files, mostly RTF or HTML documents, are translated, and a compilation and testing phase follows. Most on-line help systems and printed documents contain screen captures of the software, so including pictures of the localized software application can only be done once the application has been fully translated, built and tested. These dependencies and many others have always made the management of localization projects quite a challenge.

Consolidation and outsourcing. One of the developments that characterized the localization industry throughout the 1990s was consolidation. Localization service providers merged with others in order to "eat the competition" or to add service offerings, to reach a wider geographical spread — or they could merge simply because they had some money to burn. The list of companies that were acquired seems endless. From at least a dozen large multilanguage vendors in localization, we are currently down to a handful, with the main players being Bowne Global Solutions, Lionbridge and SDL International.

Consolidation also manifested itself in the emergence of a relatively standard production outsourcing framework. The larger multilanguage vendors (MLVs) took on multilanguage, multiservice projects, outsourcing the core translation services to single-language vendors (SLVs), one in each target country. SLVs normally work into one target language only, from one or more source languages, and either work with on-site translators or contractors.

Throughout the 1990s the localization industry further professionalized, including industry organizations, conferences, publications, academic interest and generally increased visibility. Obviously, the increasing number of companies jumping on the localization bandwagon resulted in fierce competition and increased pressure on pricing. As a direct result, benefits and cost savings from the use of TMs, for example, quickly shifted from the translator’s desk to the localization vendor and eventually to the customer. Today, no localization quote is sent out without a detailed breakdown of full matches, fuzzy matches and repetition discounts through the use of TM database technology.

From TM to GMS

TM technology plays a dominant role in localization for various reasons. First of all, most software companies aim for "simship" (simultaneous release) of all language versions of their products. This means that translation of the software product and supporting on-line documentation has to start while the English product is still under development. Translating subsequent development updates of a product is then greatly simplified by the use of TM technology. Moreover, after general release, most software products are updated at least once a year. These updates usually just add features onto a stable base platform, making it all the more important to be able to reuse — or leverage — previously produced content and translations.

Another type of translation technology commonly used in localization projects is software user interface localization tools. These tools are used to translate software resource files or even binary files and enable the localizer to not only translate but also resize and test the user interface. Examples of localization tools are Alchemy’s CATALYST and PASS Engineering’s PASSOLO.

By the end of the 1990s the Internet had changed many things in localization, such as the introduction of globalization management systems (GMS). Riding the dot-com wave, various companies offered revolutionary new ways of managing translation and localization projects, storing and publishing multilingual content and fully automating localization processes. Although this new technology had some impact on existing outsourcing models and processes in the localization industry, it became rapidly clear that although a GMS could be useful for content globalization programs (for example multilingual Web sites), the world of software localization still required a lot of "traditional" expertise and dedicated teamwork.

With Web sites containing more and more software functionality and software applications increasingly deploying a Web interface, we can no longer make a clear distinction between software and content when we discuss localization. The traditional definition in which localization only refers to software applications and supporting content is no longer valid. Today, even producing a multilingual version of an on-line support system, e-business portal or knowledge base could be defined as a localization project.

In other words, the turn of the century also introduced a new view towards localization and translation.

What Lies Ahead

So, what is so different now in localization compared to what we got used to during the 1990s?

Not as much as you might expect. After all, many localization projects fit the profile that we’ve grown accustomed to over the past years: Windows-based desktop software products with some translatable resource files, basic engineering and compilation requirements, HTML files to use for the online help and possibly some product collateral or manuals to be printed or published in PDF format.

Even though these typical software localization projects may still be the bulk of the work for many localization service providers, they are quickly being supplanted by new types of localization projects where the focus is on programming and publishing environments such as XML, Java and .NET. Also, content translation projects are now
It certainly looks that way. For the past few decades, content authors and translators may simply have been “distracted” by the possibilities and the features the new technologies had to offer — all those file formats, all those compilers, all these new tools, all the output formats, all those cool graphics and layout features! If content management fulfills all its promises, content creators may in a few years be writing text in a browser template with fields predefined by the CMS, and translators may all be working in a TM tool interface that only shows them long lists of translatable segments, possibly partly pretranslated. We have come full circle: authors author and translators translate.

Is this a bad thing? Not necessarily. Throughout the 1990s, one of the biggest “linguistic” challenges was to maintain consistency with “the Microsoft glossaries,” but today we see a new appreciation of all the core translation skills and domain expertise that we often considered no longer critical in localization. A localization service provider translating an ERP software package or an SAP support document had better make sure to use translators who know these domains inside out and should not rely on translators just looking at some glossaries. Localization companies now need to face these new challenges and higher customer demands.

### New Kids on the Block

The year 2002 included one of the largest mergers in the history of localization, as Bowne Global Solutions acquired Berlitz GlobalNET to become the largest localization service provider. Various new localization organizations were launched. And on the technology side, the main developments can be seen in server-based TM systems. TRADOS, for example, recently released its TM Server product, a new technology that offers centralized TM for client server environments. Teelinguas also introduced T-Remote Memory, a distributed computing architecture using Web services.

Software user interface localization tools now all offer support for Microsoft’s.NET programming environment. According to a white paper released by Alchemy Software, “while fundamental approaches to application design remain somewhat consistent with the approach traditionally chosen by desktop application developers, the localization service provider community faces a daunting challenge of up-skilling and retooling their localization teams while embracing this new Microsoft technology.” Coming to grips with the new open standards and learning the nuances of translating .NET technology will present both a financial and an educational challenge.

Based on this comment and other signals from experts in the field, it looks likely that while translators will be able and expected to increasingly focus on their linguistic tasks in localization, the bar of technical complexity will be raised considerably as well. This applies not just to software localization, but also to the wider context of content localization.

So the question remains, what have we learned over the past 20 years of localization and do the lessons that we have learned still apply to today’s new realities of content localization? It almost seems like two worlds are now colliding: software localization with a strong focus on technical skills and technical complexity for translators on the one hand, and content localization with a strong focus on linguistic skills and technical simplicity for translators on the other. With the Internet increasingly merging platform and content, the localization industry will have to rapidly adapt its processes, quality standards and resourcing approach to these new requirements.
Software companies and localization vendors share the same objective: outperforming the competition by getting new software rollouts to market faster and more competitively. For software companies, this means delivering high-quality localized versions at a competitive price without undue delay. For vendors or in-house localization departments, it means having the right software tools to do this. Neophytes to global markets might find it useful to have an idea of the tasks these tools perform and how they help meet corporate objectives.

Localization Tools

Localization tools such as WizArt’s WizTom or Alchemy’s CATALYST find and extract text and graphics from the code and place it into a common format suitable for translation. This is usually an interface showing translators both the original text and target text side by side in predefined segments. Tools are used by developers as well as translators.

Jean-Patrice Isaac, general manager of WizArt Canada, explains that “WizTom helps both development and localization teams. Developers don’t have to take into consideration the localization aspect when developing or updating their software. They just need to maintain one single set of source files and a single executable for an unlimited number of languages. In addition, functional testing of a localized application is minimized as the original application continues running beneath. Only the text visible by end users in the graphical user interface is changed to display a different language. WizTom is not limited to one programming language or development tool and works with virtually any of them through dedicated extensions. Therefore, previous translation work can be leveraged from project to project and across environments.” WizTom is available in versions for Windows, Web, Java and XML.

Tony O’Dowd, CEO of Alchemy, says, “CATALYST provides a visual localization environment that presents software applications to engineers and translators in a series of easy-to-use and extensible visual editors. Our solution also provides real-time validation of translation and engineering tasks. For example, it will alert the translator or engineer if a dialog panel or menu has a duplicate hotkey. As this validation is real time, it cuts back on post-translation testing, thereby reducing engineering time and cost considerably.”

Localization tools also provide mechanisms for budgeting and controlling costs. SDL International’s Localization Suite, for example, includes tools for analysis, content extraction and filtering. The filtering tool filters text from various formats, thus allowing translators to work in a common interface irrespective of the source document application. The analysis tool enables project managers to analyze single files or batches of files to find out the exact word counts that need translating.

Translation Memory

Hedley Rees-Evans, marketing director at SDL, says, “SDLX Translation Suite (a component of the Localization Suite) helps at a corporate level by automatically reusing previous translations where applicable for new documentation, thus reducing the time and costs taken to carry out updates. The segments are also color-coded to indicate to translators the degree to which the translation memory (TM) has already been used in the target text. The ability to quickly filter the text from its original format into a common format suitable for translation aids project managers, as does the ability to provide a costing model by analyzing the number of words needing translating. Translators benefit because SDLX offers an easy-to-use translation environment that gives them previously complete and partial translations to reduce the amount of effort required to carry out a translation.”

Like SDLX, TRADOS tools are used by language vendors to leverage previous translations, supporting all aspects of translation-related activities from pre- and post-processing of localization projects as well as the actual management, production and distribution of localized content. All steps in the translation and localization processes can be automated through application programming interfaces (APIs) as required.

The return on investment (ROI) of TM is measured upon the average reuse rate of translation. TRADOS claims most customers enjoy reuse rates in the range of 30% to 70%, and with time, as more translations go into the TM, reuse increases, thus resulting in a greater ROI.

TM is not effective for every localization project. Gordon Husbands, vice president of worldwide sales and marketing at Wordbank in the United Kingdom, says, “TMs have an effective role to play but must be used as a rifle rather than as a shotgun. When a persuasive message is required to differentiate a product or service from the competition, repetition and mechanical translation just do not make the grade, especially in marketing communications (marcoms) material, which is our main area.

“Major gains are possible,” Husbands says, “by introducing smaller tactical content systems or databases to meet very specific needs and by reengineering the multilingual marcoms production process to deliver projects faster and more cost effectively. An example of this is our development of a tool to create multilingual product packaging labels, which removes the need to localize and print multilingual packaging. All the necessary information such as the product description, box contents, bar code and so on in the relevant languages are assembled and printed on a customized label on a specialist label printer. Savings here are huge — the production and storage costs for packaging can be drastically reduced because only a few master packages need to be designed and print runs are much simpler.”

While Wordbank seeks to develop and deliver nontraditional language vendor tools, production processes still depend on the standard tools. Husbands says: “We rely on three main strategies: tightly integrating localization workflow with client content management systems using our own WordBase database and our XML handling tool called WordWeb; harnessing TMs to recover repeated content; and WAAB, a
workflow tool that automates the production of multilingual artwork and high-resolution PDFs for print on demand.”

**Machine Translation**

Machine translation (MT) takes the human element out of translation. Although it offers real-time translation at a low cost, the imperfect translated result makes MT far from ideal for many situations. However, integrating MT and TM technologies with a tool that also extracts, processes and manages terminologies is an improved performance option. One such tool is PROMT for TRADOS by PROMT in Russia. Svetlana Svetova, head of PROMT’s linguistics technologies department, says, “Our tool forms a seamless integration between TRADOSTMs and our PROMT MT technology — which, together with our terminology manager software, provides an efficient automated translation technology. It has proved especially useful for the translation of documentation, Help and training materials with our clients in the software, telecommunications and oil and gas industries. With SAP AG, Germany, for example, which had already translated eight million words into Russian, translation turnaround has improved by 30% and overall time and costs reduced by 40%.

**Other Tools**

Avral Tramigo software is a Flash localization tool that can be used by two categories of users: Macromedia Flash developers and translators. Andrei Link, director at Avral, explains, “It is a combination of a text filter and a translation tool that allows you to translate Flash MX .swf files into foreign languages. The SWF format is a leading multimedia standard for on-line and off-line delivery. Files of this format (.swf files) can be generated not only in Macromedia Flash but also in many commercial and open source products. According to Macromedia, over 98% of all Web users have a Flash player installed on their computers. This allows them to view .swf files delivered to them as Web content, a CD-based project or a desktop application.

“Tramigo allows you to translate Flash MX .swf files into foreign languages in three simple steps: extraction of translatable text from a Flash MX .swf file into a translation project, translation of the text into the desired language, and generation of a new translated .swf file or an external text file with translations that can be loaded at run-time.”

Globalization Image Assistant (GIA) from Austraat is an application specifically designed for translators, localizers, project managers and other language professionals. Bjorn Austraat, principal consultant and developer of GIA, says, “With GIA, users can quickly and easily analyze, annotate, transcribe, QA and create reports for hundreds or even thousands of graphics that are part of a Web, document, or help localization job. It covers the complete localization life cycle from the quoting-RFP stage through production and final QA. Language professionals can use the image selection module to quickly scan large directory structures for localizable images, continue with the convenient analysis panel to categorize and transcribe images with one-click ease, and ensure high-quality deliverables by using GIA’s unique quality assurance interface. Users can also readily share data with other team members by using GIA’s built-in XML support or the one-click data export feature to Word and Excel.”

**Usability**

As with most business sectors, the language industry has to keep abreast of new technology and applications. But according to Daniel Rissman, localization manager at Applied Information Technologies (AIT), “technology makes an unnecessary demand on translators who often lack the programming skills to get translated words and phrases back into the original software without introducing malfunctions. Our localization tool, Visual Localize.NET, works directly with the executable files such as .EXE, .DLL and .OCX and is independent of the source code, so no programming skills are required. Due to the simple handling and user interface, Visual Localize.NET is perfectly suitable for translators who are inexperienced in using software applications. Translators can learn the basics within one hour.”

Visual Localize.NET costs €639 to €1,395. The product is used by companies such as ABB, ADP, AGFA, AC Nielsen, Bosch, DaimlerChrysler, Druck, Honeywell, Schüco International and Siemens. In addition to the preparation of resource files by language engineers, it is used for the translation of 26-bit, 32-bit and .NET Windows applications, XML data and Microsoft databases and finally to adapt the layout setting — size and position of control elements of the user interface — for the target language. AIT claims that Visual Localize.NET can reduce the time-to-market from several weeks to only a few days.

In addition to cost, minimizing the learning time is a key factor when evaluating language tools. Schaudin claims that its RC-WinTrans localization tool requires no specific training and that it is more important that the user possess an understanding of the software being localized in order to translate it. The tool works as a graphical interface of Microsoft Windows Win32 and .NET software and Java properties. The next scheduled release will offer support for XML/XLIFF files. Tracy Lucas, public relations director at Schaudin, says, “Although RC-WinTrans is extensive and includes many features, it is essentially made up of Windows-like applications. There is also a comprehensive help section containing descriptions and many concrete examples. But training is available upon request both for the specifics of software and for the tool itself for translators who may be unfamiliar with software localization.” A single-user license for RC-WinTrans costs $1,300; a group license tops the scale at $3,400. Lucas says, “Volkswagen’s localization of its dealer software into 21 languages is one localization project.”

CATALYST ranges in price from free-ware for its Quickship model to $5,999 for its Developer/Pro version. “Training is pretty minimal since the product is so visual,” O’Dowd says. “Translation context is always displayed in a Visual Editor — that is, a dialog panel will be viewed in Alchemy CATALYST.
as it would appear in the running application. The provision of visual context dramatically improves ease of use, improves quality and allows translators to focus on the precision and accuracy of their translations rather than on the complexity of the translation tasks. For the more advanced features of our product, on-line tutorials are available.

“In addition to this, 25 colleges worldwide are teaching Alchemy CATALYST as part of their computational linguistics degree and diploma courses.”

Austraat says, “GIA’s intuitive interface is extremely user friendly. The included on-line help system thoroughly explains all program components and provides step-by-step explanations of image selection, analysis and QA. Most users require less than 30 minutes of training to be able to use all of GIA’s functions. Registered users receive free on-line and telephone support.” The cost of a single-user license is $295. Bulk licensing options are available at $1,200 for a five-license bundle and $2,000 for a 10-license bundle.

Avral states that the key concepts of Tramigo are covered in two tutorials provided with the software, each of which takes about 30 minutes to complete, and that the software is priced to deliver a short payback period for the user. A single license costs $95 and a five-user license costs $335. PROMT systems range in price from $800 for a bidirectional system to $1,500 for all language pairs. The company offers training courses ranging from three to seven working days.

WizArt claims that it takes three days of training for the person in charge of integrating WizTom localization studio into the target application and one to two days of training for the translator. More than 120 companies in Asia, Europe and North America use WizArt technologies, including Baxter Healthcare, British Telecom, Unisys and Fiat. Costs range between $30,000 and $300,000.

ROI

Even though internationalizing the code will reduce the costs of localization, vendors continue to find problems that result in delays and extra costs owing to the engineering rework required. Many potential problems can be avoided by verifying localization readiness with an internationalization testing tool. Rubric L10N Inspector is one such tool. Ian Henderson, director of engineering at Rubric, explains the advantages of the tool in two recent projects: “As part of Rubric’s standard process, we implement readiness testing at the beginning of the localization process. One customer relationship management (CRM) client recently handed off a new file convinced that it had fully internationalized its code, but L10N Inspector uncovered internationalization problems right away. This enabled the customer to go back and resolve these prior to launching the localization process, averting the cost of rework and the opportunity cost from a delayed ship date.”

Henderson points to another example: “For another customer, uncovering serious localization-readiness problems in the first week of the project enabled the customer to save more than $50,000 by avoiding a significant amount of potential engineering rework at the end of the process that otherwise would have resulted. In addition to the cost savings, we worked out an alternative localization process that enabled us to commence localization on other components of the project concurrent with such internationalization work. This enabled us to ship the entire project within the original deadline.”

O’Dowd at Alchemy measures ROI on two planes. “The first plane,” he says, “is the
amount of translation reuse created by using our ezMatch TM, which differs from traditional TM solutions in that it not only reuses translations but also the geographical layout information on dialog panels. A typical product of 125,000 words would have an immediate ROI of six if you leverage 75% of your previous translations for a single language. If you’re working on five languages within a single release cycle, your ROI is 30 on your first leverage.”

Frank Capozzi, senior technical communicator at Rockwell, confirms the benefits of translation reuse. “Whenever we come out with a new product version using CATALYST language capabilities, we can reduce a 100,000-word project to a 1,000- to 2,000-word project,” states Capozzi.

O’Dowd says, “The second plane is the amount of time saved in reengineering your product since ezMatch also reuses your layout information. This is where the most significant savings are created.” As an example, he referred to Philips Medical Systems’ presentation at the May 2002 Internationalization & Unicode Conference regarding the productivity that the company has gained from the visual environment provided by Alchemy CATALYST. The company had needed two weeks to sign off in each of 10 language versions of its new handheld medical device — a total of 20 weeks’ engineering. Using CATALYST 4.0 and a custom localization environment, they reduced that time by half. Since that time, even further improvements have been recorded.

While O’Dowd admits that “these gains may be at the top end of the spectrum,” he adds that “nobody will argue with the productivity gains that are garnered from using truly visual localization solutions. Just look at the development community and the gains they have made using visual development tools such as Visual Basic, Visual Studio and Borland Delphi. I believe the same to be true with visual development tools for the localization industry such as Alchemy CATALYST.”

Isaac at WizArt offers an example of a proven ROI for the use of WizTom: Baxter Healthcare, which localized its mission-critical software into 14 languages in just eight months.

Localization tools have demonstrated good — and in some cases stellar — results because they have improved management and workflow processes, although not the act of translating itself, which remains a highly skilled and time-consuming task. No doubt tools will evolve along with technology in general. In the meantime, sophisticated and project-tested tools exist to satisfy the needs of most corporations or language vendors. Ω
Localization Management: Practical Automation Solutions

Damian Scattergood

These are challenging times for the localization business. There is downward pressure on costs and increased pressure on time-to-market. How can we manage to successfully and consistently deliver? It’s a tough question, but many of us are asked it every day. We are all well aware that delivering excellent results this quarter does not guarantee successful delivery next quarter. You need to save money, manage people costs and maximize product output per dollar (or euro). The solution may be to automate your localization process.

When it comes to automating your process, there are a number of practical concerns to review, such as repeatability, consistency and scalability.

Your process has many steps, which are repeated again and again for many projects. And you pay for each transaction in that process again and again. It is important to understand what these steps are, where they are and how much they cost. Every action you repeat costs money.

Doing projects once is one thing, but repeating them on a regular basis is another. You may have many language products, and you may be working with teams around the globe. Can you remember how each project was done? Do the projects use different processes? Would you be able to repeat a project next month, next quarter or even next year? How would you maintain the consistency in process, management, quality and translation?

Automation delivers the benefits of delivering a repeatable, scalable and consistent process. A number of tools that can automate various aspects of your localization process are available today from various suppliers. I will discuss how you can automate tasks in your localization process today. Understanding how automation results can be achieved better arms us for discussion with our tools suppliers for future product implementations.

Mapping the Supply Chain and Localization Process

Successful management of costs and process across a global localization process requires an understanding of supply-chain management. When it comes to cost, most people look simply at what they spend internally or how much they pay their vendors. The true financial picture is much more complex than that. Mapping out your top-level localization process end to end from your site to the vendors and the many translators shows a complex map of interactions — the localization supply chain process map.

Why is it important? Your localization budget is spent across this map. When you spend your budget, each person in the chain performs tasks that are paid for from that budget.

Having produced your supply chain map, you next need to produce a map of your task-based process map for file transfer procedures between a source team and localization team.

Looking at the process in this manner, one can see clearly that a quite a number of the tasks should be automated.

Project Management and File Preparation Automation

Cost reduction exercises have traditionally focused on pure translation cost. This downward price pressure was mainly directed at translation vendors and translators. This, however, is only a small part of your complete localization supply chain, accounting for approximately 26% of the spending.

The real cost savings come from reducing the costs across your entire process — Producer -> Vendor -> Translator model.

When analyzing your localization supply chain, review the touch points (how often the files are opened or worked on); the time spent waiting for information exchange; and how much time/cost is spent on project transitions between global time zones.

When you total the cost of the many touch points and wait times, it becomes apparent that the transactional costs are very expensive compared to translation costs.

Consider that every time a file is touched in your process, you pay for that transaction, regardless of whether it is on your site or the vendor’s. Workflow automation reduces the transactional costs of your localization process.

Automated File Transfer and Project Management

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around the handover points between the various parties. How often are files FTP’d to vendors? How often are translation kits manually put together?

Here is one way to automate this process. You could have a single network directory for incoming jobs. Watchdog software can be developed to check periodically for incoming translation jobs placed into this directory. An XML data file could be used to store information about that job such as the client’s name, target languages and so on. XML is a good storage medium because its text-based file format makes it easily exchangeable between many tools.

The watchdog software would then automatically pick up the files and import that data into your current translation memory (TM) system. Using a script server to call your TM tool’s API can do this. During this phase, documents are automatically pre-translated from the TM store. This greatly reduces the project management and pre-engineering overhead in file preparation.

Using an automated system such as this, you can automatically have your TM tool create the word counts and file data required for purchase order (PO) generation. The next step would be to have that script tool pull translation cost information from a vendor database and automatically create a PO for approval. A simple message application program interface (MAPI) application could send this file to the vendor for approval.

The translation workflow system has automatically produced kits to be sent to the translators with the initial documentation. Another watchdog server could monitor your e-mail system for PO approval. Once received, the new translation work is then automatically distributed to the translators.

How much project management time would this free up? All of the laborious pre-work would be completed automatically, and the project manager could focus on the more value-adding activities of your process.

What I’ve outlined here is a rudimentary automated localization process, but it proves the case that you can automate a number of your manual tasks. So, just how much do you actually spend on these activities?

### Transactional Cost Model

To better measure how much automation can save you money, let us look at a simple transactional cost calculator. Let’s say that you are a mid-size software producer. You typically ship around 20 projects a year in four languages. Nothing special there. How much time and money do you spend on those manual tasks?

It is probably typical that most processes may have some 14 manual tasks involved in producing a translated product. You will have this number from your process map.

<table>
<thead>
<tr>
<th>Transactional Cost Model</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of projects per year</td>
<td>20</td>
</tr>
<tr>
<td>Number of languages</td>
<td>4</td>
</tr>
<tr>
<td>Number of files per project</td>
<td>250</td>
</tr>
<tr>
<td>Number of manual tasks in process</td>
<td>14</td>
</tr>
<tr>
<td>Average number of builds per project</td>
<td>5</td>
</tr>
<tr>
<td>Average time per transaction (minutes)</td>
<td>1</td>
</tr>
<tr>
<td>Number of yearly transactions</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Average manual transaction time (minutes)</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Average manual transaction time (hours)</td>
<td>23,333</td>
</tr>
<tr>
<td>Average engineering cost per hour</td>
<td>$20</td>
</tr>
<tr>
<td>Total Cost of Manual Transactions (Annual)</td>
<td>$466,667</td>
</tr>
</tbody>
</table>

If you estimate an average of 250 files per project and it takes about five builds to ship a project, then the numbers begin to add up substantially. This would equal some 1.4 million manual transactions per year at a cost of some $466,667, assuming that you pay an average of $20 an hour to our engineers. This shows that if you can automate even 50% of your manual tasks, you can save more than a quarter of a million dollars in spending. How much of your process can you automate?

### Consistency and Quality

In any sporting event, success is based on a single winner, but localization department success is based around everyone crossing the finishing line together. You cannot afford any losers or late finishers.

To achieve this, your automated system must deliver consistent statistics across your entire process. You should be able to monitor all your projects simultaneously. Items such as word counts should be consistent across the supply chain, producer, vendor and translator.

Consistent data is important, as you need to have visibility deep into the complete supply chain to understand in advance where your costs and bottlenecks are. Automatic “bottleneck alerts” can identify potential issues early in the process, and “delay alerts” can warn if jobs are late. If you are alerted to issues early, you can take the appropriate management steps to address them.

The system described to automate your file preparation kits and handle PO creation should also be mirrored in your vendors so that when files arrive at a vendor for translation, the vendor automatically receives the translation kit with your word counts and with a PO ready for acceptance. Your automated system could also have picked up a document from the translation team with translation instructions.

Did you not read the instructions? How often do files arrive back to you where someone along your process chain has not read the detailed localization and translation guidelines you sent? Measure the cost of rework and communication to solve these issues.

Your workflow system should deliver instructions to everyone requiring them. XML-based or SQL data file stores can be used to link both instruction and translation kits together. These databases maintain the instructions with the task jobs so that they are always delivered with the job. You no longer have to worry if the translation vendor has passed on the instructions to the translators. The workflow system should deliver this benefit and thus give
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**System-supported quality checks.** We use various tools in the business to maintain quality checks in the localization process. To name just a few, we perform word counts at many stages; we perform CRC checks on files; and we test files against original and previous translations. The majority of the time we perform the same tasks each time before we begin our work. We even go to the extreme of performing them on translation kits both before and after we send them to the translation teams.

**Couldn't this be automated?**

Here, again, we return to our script servers. First, we need to understand one key element about quality. The majority of errors is introduced manually. How often have you seen a forgotten file or missed line in a translation kit? With automation, manual errors are greatly reduced, and quality automatically improves. Before you add your system-supported quality checks, quality has already gotten better.

We already have seen how to build our kits automatically. Just as we have a watchdog software to watch for new kits, we should develop one to monitor incoming kits. When a new kit arrives from a translation vendor, your tool only needs to perform a number of simple tasks. First, it should call your TM tool or other error-checking tools to get the project’s current status. With automation, manual errors are greatly reduced, and quality automatically improves. Before you add your system-supported quality checks, quality has already gotten better.

We already have seen how to build our kits automatically. Just as we have a watchdog software to watch for new kits, we should develop one to monitor incoming kits. When a new kit arrives from a translation vendor, your tool only needs to perform a number of simple tasks. First, it should call your TM tool or other error-checking tools to get the project’s current status. We already know from our XML-based data stores what languages were requested and how many words were to be translated. By comparing the new data with old, we have verified kit integrity from the translators.

Tools such as Alchemy CATALYST allow you to verify DLL integrity of software kits. They leverage the translation from the old DLLs into your current ones. They carry your translation asset forward but ensure that you are always working with the correct code.

**STAR Transit,** for example, can be called from the command line to extract word-count data and project data. This can be used to verify that returned projects are correct.

Producers quite often have their own sets of file quality checks that they perform on receipt of files to/from vendors. With a configurable system, you can add your own system-supported quality checks to the process. It is a good idea to ensure that any tools you develop in-house can be called from other systems. Two simple ways to do this are providing a command-line interface or Web-service-enabling your tools. It’s a good idea always to consider the possible future use of any tools you develop. Open architecture enables integration with leading-edge workflow systems such as STAR Proactive, which takes advantage of such APIs for custom automation solutions.

If you use the same tools on both the vendor and producer ends of the supply chain, the value of file integrity is protected. Your automation system talks to the vendors, and you both have matching targets and results. Once your QA checks are completed, the translated files can be automatically reintegrated into the TM system through calling your TM’s API again. The resulting file information and quality-check data can then be returned to your project’s data store.

**Scalability, quality and elimination of risk.** Automation delivers the benefit that after you have performed an action once, that action can be repeated again and again. This eliminates the risk of introducing human error.
The benefit that scalability brings to your organization is future consistency. Once a task is done right, it will always be done right. A project completed weeks, months or even years ago can be updated at minimal cost.

Traditional quality assurance processes focus on ensuring that elements of a project are not broken. They essentially find problems introduced during the task stages. This costly task is repeated each time a product is updated. Testing in this manner maintains a direct relationship between the number of builds and quality tests performed. Wherever there is a direct relationship in your process between any two tasks, you will pay the full costs for growth. Automated workflow systems allow you to break this one-to-one relationship. The more consistent the process, the fewer bugs are introduced and the less rework and testing are required. Exponential quality improvements are achieved.

Imagine that a customer in Japan needs a file translated and sends it to you at 6:00 p.m., just after you leave the office. Your workflow system should now be able to pick the file up, perform a TM scan and new-word-count check, and send the file automatically to your vendor or project manager for quotation. When you arrive for work the next day at 9:00 a.m., you would then have a pretranslated file and translation kit and a quote ready for your approval. How long does this process take via e-mail or phone in your organization today?

Asset Security

Workflow automation systems must function 24x7x365 in a global environment. It is key to understand the factors around global communication, workflow support and stability, and file transfer integrity and security. Performing the translation work in a timely manner is one thing, but you also must ensure the security of your assets for future versions.

Using an automated system such as the one I outlined ensures that all your project data is centralized. You still maintain full control of your project assets. It always delivers the benefit that centralized data can be always updated and available to everyone in the supply chain. A Web interface could easily be developed to allow users to log in and check the status of their projects. XML- or SQL-based data stores ensure that you have complete ownership of your data in an easily accessible format.

Posing and answering the questions in this article should help you along the way in measuring the cost of automation and the returns it will bring to your organization. You can benefit from consistency, improved quality and faster time-to-market with higher-quality products. Global projects will be started and completed much earlier. Your overall total cost of ownership will be better, and you will ensure the security of your investment in technology and translation.

ΩΩ

Here is a sample task-based process map for localization kit transfer:

1. Prepare Alpha-build environment for transfer to localization engineering site.
2. Certify Alpha-build environment before release by independent load and test.
3. Notify the localization engineer of readiness for transfer of Alpha-build environment.
4. Monitor for a response from the localization engineer requesting transfer of Alpha-build environment.
5. If response is not received within three working days, elevate to project manager.
6. Transfer Alpha-build environment via network.
7. Monitor for acknowledgment of receipt of Alpha-build environment.
8. If response is not received within three working days, elevate to project manager.
9. Monitor for positive feedback that remote-build execution yielded identical executables.
10. If response is not received within three working days, elevate to project manager.
11. Prepare Beta-build environment for transfer to localization engineering site.
13. Notify the localization engineer of readiness for transfer of Beta-build environment.
14. Monitor for a response from the localization engineer requesting transfer of Beta-build environment.
15. If response is not received within three working days, elevate to project manager.
16. Prepare shipping Master-build environment for transfer to localization engineering site.
17. Certify shipping Master-build environment before release by independent load and test.
18. Notify the localization engineer of readiness for transfer of shipping Master-build environment.
19. Monitor for a response from the localization engineer requesting transfer of shipping Master-build environment.
20. If response is not received within three working days, elevate to project manager.

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Several months ago Renato Beninatto and I, the principals of Common Sense Advisory, interviewed the vice president responsible for training at a company that operates offshore oil rigs around the world. He told us “we found out the hard way that workers prefer being trained in their own languages."

Fortunately his firm learned this lesson through evaluating post-training test scores and knowledge retention, not by some huge blowout of a rig that polluted the North Sea when a Russian roughneck couldn’t read the English manual for shutting off the flow of oil from a damaged well. The potential for disaster in oil exploration, chemical production and other businesses dealing with hazardous materials obligates them to translate training courses, regulatory requirements, process models and other critical materials into the languages of the workers who use them.

Those of us in less dangerous professions, though, struggle with convincing our managers that localization makes good business sense. Absent the potential of a crashed Mars Lander or Chernobyl-like disaster but faced with a failed retail transaction or the loss of a prospective customer because she couldn’t read your packaging, we throw around traditional evidence such as the increased likelihood of purchase from prospects that are addressed in their own language. We complement this sketchy return on investment (ROI) analysis with some vendor-supplied data about the decreased cost of localization attributable to effective use of translation memory or a globalization management system. Ironically, in the final analysis, many of those responsible for sophisticated communication to customers and prospects have been unable to convey this value to the executives who sign the invoices and their paychecks.

First, the good news — here are two data points from our research that should show up in every analysis of localization ROI.

Global business means greater profitability. The companies whose managers we interviewed derive an average of 46% of their worldwide revenue from outside the United States. How do they compare to other businesses? According to the 2001 Oxford Templeton Global Performance Index, a detailed financial analysis of 246 of the top 500 multinational companies, global business accounts for an average 40% of assets at large companies, but 45% of corporate profits. The actual contribution of non-US revenue varies by industry sector.

Localization does not cost a lot of money. Our interviewees spent between one-quarter of one percent and 2.5% of their non-US, non-Anglophone-market revenue per year to localize products documentation and Web sites to support both off-line and on-line operations. We then reported on these interviews in a recent report entitled “Beggars at the Globalization Banquet,” complementing their experience with our analysis of how they could optimize the ROI of localization across the enterprise and help communicate its value to executives in the corner office.

Talking to Localization Buyers

Interested in progressing beyond the conventional wisdom that justifies localization projects, we interviewed 50 managers responsible for setting or implementing localization strategy at US-based organizations. We spoke only to companies that evidenced some global business activity on-line or in print, aiming for an equal split between services and manufacturing sectors. Our respondents included people in automotive, chemical, technology, publishing, pharmaceutical, hospitality and retail organizations. In our discussions, we asked them how they justified their efforts to localize products documentation and Web sites to support both off-line and on-line operations. We then reported on these interviews in a recent report entitled “Beggars at the Globalization Banquet,” complementing their experience with our analysis of how they could optimize the ROI of localization across the enterprise and help communicate its value to executives in the corner office.

Most of these managers, however, don’t succeed in making the case. While the cost of localization happens to be very small compared to the big international revenue it can help generate,
it will be no surprise to some readers of this article that most firms shortchange their localization budgets. Even though their work constitutes a relative bargain, practitioners still have to prove their value to corporate budgeters mindful of post-Enron accounting scrutiny and the morning-after Internet malaise.

A select few formally quantify return. Only 26% said that they could formally measure and calculate the return on their localization investment. Most simply applied direct multipliers on the initial cost as a way to measure return. For example, they wanted $30 or more back for every dollar they spent localizing. Few of those who measure ROI do so for the long haul, never cycling back to reevaluate earlier decisions or actual performance.

Most don’t measure, but feel they have no choice but to localize. Seventy-four percent of our respondents had a much less concrete sense of what their investment yields, often citing localization as “just a cost of being a global business.” Pressured by competitors or the needs of their customers, they know they must support global markets or country-units.

Intriguingly, we found that no one or country-units.

The Business Value of Localization

After interviewing our 50 subjects, we pondered what they told us. Most companies don’t measure ROI systematically. When they do, few make a concerted effort beyond the

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The Business Value of Localization

After interviewing our 50 subjects, we pondered what they told us. Most companies don’t measure ROI systematically. When they do, few make a concerted effort beyond the
initial calculation. Only a handful tally up localization costs company-wide. No one really knows what it costs to create the source content so that if they do measure the cost of localization, they do so against a phantom baseline. Decisions and knowledge get pushed far down the management stack.

Our conclusion: it's time for localization practitioners and suppliers to communicate their value in business terms. Most companies marginalize localization as a tactic for supporting international marketing, sales and customer support. Localization owners need to accept that reality and demonstrate payback in accepted, quantifiable terms such as these:

- **Key performance indicators (KPIs)**. If every other unit in the company talks about ROA (return on assets), RONA (return on net assets), OPEX (operating expenses), EBITDA (earnings before interest, taxes, depreciation and amortization) and so on, you should pull out your *Devil's Dictionary of Acronyms* and get with the program.

- **Other measurable business goals**. While "more revenue" typically tops the list in ROA analysis, nuanced KPIs such as productivity gains, customer satisfaction and cost reduction will rule. Localization teams should measure performance against goals such as boosting the profitability of international operations, grabbing share from competitors, improving customer loyalty, increasing lifetime value of customers and pumping up brand awareness in target regions. For firms dealing with hazardous products, avoiding the front page of major newspapers might be a reasonable goal.

Lost opportunities. Companies should eliminate the hidden use tax that unlocalized products levy on international customers — the diminished usability that increases the total cost of ownership for those customers. For higher GDP markets such as Germany and Japan and their demanding customers, comprehensive localization will become a basic cost of doing business. Lower GDP markets such as the Czech Republic will insist less on perfection today, finding satisfaction in your sincere albeit sometimes mediocre efforts. However, we predict that even these more tolerant markets will become less forgiving over time as they move from being prospects to buyers to supported customers.

### Avoiding Miscalculation

Reading the reportage of what I think of as this year's US-led "militainment," written by "embedded" journalists, I encountered a phrase that summed up the biggest problem with localization — "incestuous amplification." According to Jane's *Defense Weekly*, this is "a condition in warfare where one only listens to those who are in lockstep agreement, reinforcing set beliefs and creating a situation ripe for miscalculation."

Practitioners both inside companies and at the firms that supply their localization service and technology needs often justify their existence and paychecks to each other, each building on the same arguments and data. Few appeal in terms that budget owners can understand, thus compounding the irony of people responsible for communicating being unable to communicate.

I'm aware that it is hardly necessary to make a case for localization to the language-industry professionals who read *MultiLingual Computing & Technology*, but I hope that readers can carry the arguments contained herein to the corner offices where decisions are made. Ω

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### The Cost of Not Localizing Across the Sales Cycle

<table>
<thead>
<tr>
<th>Audience</th>
<th>Prospect</th>
<th>Buyer</th>
<th>Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Your Interaction</strong></td>
<td><strong>Marketing</strong></td>
<td><strong>Sales</strong></td>
<td><strong>Support</strong></td>
</tr>
<tr>
<td>Impact of Not Localizing or Bad Localization</td>
<td>Limited reach of marketing programs — prospects don’t know what you’re selling</td>
<td>Sales are limited to those who are comfortable in the nuances of the English language; incomplete transactions</td>
<td>Frustrated customers; bad reputation for usability; brand damage; higher support costs; expensive problem resolution through call centers</td>
</tr>
</tbody>
</table>

Bottom Line: Local, regional and more localized international competitors gain share at your expense; you experience a sudden loss of market share; customers develop loyalties to a competing brand.

Source: Common Sense Advisory, Inc.

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### GETTING STARTED

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## Localization Project Case Studies

**Dan Johnson**

The key to achieving high-quality, consistent results in localization is process. Since localization involves multiple platforms, publishing media, software tools, and of course languages, the consistent use of a robust process takes much — but not all! — of the mystery, variability and risk out of complex, multilanguage, multicomponent projects. One of the most interesting features of the localization business is that no two projects are the same.

The common denominator in localization is the translation of text from the source language to target languages, but the architecture and functional nature of a software application dictate the method and approach used by the localizer. Finding the right combination of the appropriate computing platforms, tools and process is key to successful software localization.

The descriptions in this article represent a variety of actual Lingo Systems projects, but identifying details have been removed. They expand on or are adapted from case studies published in Lingo Systems’ book The Guide to Translation and Localization.

### Product: Medical Device

Situation: In 2001, Acme Medical developed and released a revolutionary new consumer product, the Patient Analysis Tool v1.0. The Patient Analysis Tool is a Windows-based program that provides an easier way for patients to better manage their diabetes. It offers easy-to-use blood sugar readings.

Because the product is brand new, we assist Acme in coordinating in-country review of the localization (by interfacing directly with the company’s overseas market staff). Twelve weeks is an ample timeline for translation and testing, but the project team must be well organized and disciplined in executing terminology and in-country reviews of the materials.

<table>
<thead>
<tr>
<th>Project Closure</th>
<th>Product QA</th>
<th>Engineering/Testing</th>
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</thead>
<tbody>
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<td>Documentation/Translation</td>
<td>Software Testing</td>
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<tr>
<td>Testing</td>
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<td>Help:</td>
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</table>

The product: Acme Medical, Patient Analysis Tool v1.0. This is a PC-based consumer product localization.

**Project scope:** Languages: European English, German, Spanish, Italian, French, Dutch, Swedish and Polish.

User Interface: 34,000 words in .rc file format for Visual C++, for the platforms of Windows 95 through XP.

Help: 25,000 words, 250 topics, authored in RoboHelp, compiled help file deliverable.

Tutorial and documentation: 27,000 words, 100 pages in Microsoft Word format, 50 screen captures from graphical user interface, taken as .bmp files.

Testing: Functional testing of the graphical user interface (GUI) on native language operating systems, full testing for each language and operating system combination, followed by regression testing. Testing was performed on-site at Lingo Systems’ localization test lab. Testing included product install, uninstall, startup and shutdown; patient and physician setup and test cases; meter data transfer (supporting nine meters); data entry and import; report generation; and help links and other logging functionalities.

**Timeline:**
- Eight weeks for initial product localization, two weeks for localized product testing, followed by two weeks for in-country review and change implementation.

**Process:**
- After a period of extensive preparation and planning between the Acme and Lingo Systems teams, we decided on a process which featured three distinct phases: internationalization, localization and then functional testing.

**Internationalization:** Because of the extensive use of this third-party software and ActiveX controls, our team had concerns that some of the text requiring localization might not be found in our first translation pass. Time-to-market was a concern for Acme, and its project timeline was aggressive. "Address this potential problem, the Lingo Systems/Acme localization teams determined that a pre-localization test was necessary to ensure the product was sufficiently internationalized prior to localization."

As a dry run, we converted the application’s English strings to a linguistic markup language, then replaced English with pseudo-German translation knowing that German is a language that grows substantially over English. Following the pseudo-translated build, our testing team found several areas of the GUI that remained in English as well as areas where text expansion led to real-estate constraints. Eventually, our team recommended that all strings be marked with a language, rather than a pseudo-language, which would allow translation engines to mark and translate strings correctly.

**Localization:**
- The descriptions in this article represent a variety of actual Lingo Systems projects, but identifying details have been removed.
issues in buttons and menus. This indicated that our markup process was incomplete, and a minimal amount of interface redesign was necessary. Our team reconvened with Acme to create a process for extracting text from several of the third-party applications and identified problematic GUI areas where sizing was inadequate. These issues were addressed prior to the start of localization.

Localization: Following the final scheduling, project scope and budget finalization and budgeting steps, we began the overall localization process with terminology list development and approval. The Acme team nominated reviewers for each target language who reviewed our lead-linguist’s translation of the product terminology list, suggesting changes where appropriate. From there, we used our standard three-step translation process, which includes translation, then copy editing of the files, followed by a full linguistic on-line review of the draft target-language build. For each language, this process features three individual linguists and a design that meets the stringent quality requirements of medical device localization. Following the delivery of files for the target language builds, the in-country review process took place. Acme’s timeline did not allow extensive “fine tuning” and stylistic changing of the translations. However, Acme has a strong reputation for quality in foreign markets, so the product must be clearly understood and easy to use in order to minimize downstream support use. In-country review changes were received and incorporated into the application during the initial steps of functional testing.

Functional testing: Due to product compliance requirements with both FDA and CE marking, Acme had already developed a detailed testing plan. We modified this plan to also review localization functionality requirements. Full functionality testing was required for each language and operating system combination. Supported Microsoft operating systems included all commercially available versions of Windows from 95 through XP. Defect reporting and resolution tracking were provided using a customized tool, Word-based template at Lingo Systems. Testing of the target languages was performed at the Lingo Systems testing lab in Portland, Oregon. Any language-specific defects were typically resolved by Lingo Systems engineers, while system-wide, cross-language defects were resolved by the Acme development team.

Product: Application

Situation: The client’s banking software package has been available in the United States for several years. The software company needs a localized version of the product release for Latin America. The product contains a combination of legacy code and new modules that meet current customer needs. Content for translation is mostly isolated in resource files; some content is still mixed with legacy code modules.

Project scope: User interface: 150.rc files. Some content may come from legacy code. Total word count is approximately 12,000 words. Help files: 35,000 words in HTML Help file format. Documentation: Leveraged from help files using RoboHelp 2002 (providing 100% leveraging from the Help files). Timeline: Six weeks for initial localization, then two weeks of localized product testing.

Process: We “pseudo translate” the.rc files to examine all the user interface screens and determine whether the user interface content is limited to the.rc files or comes from legacy code. We insert machine-translated Spanish content into the user interface; then the client provides a built version to test for areas that are not yet translated. Next, we provide a list of areas that were not translated by the machine translation. The client can implement minor code changes to externalize that text into.rc files. This two-week phase is followed by our normal localization process.

Product: Operator Manual

Situation: The client company produces construction cranes and similar equipment. For the past six years we have provided localized operator manuals for 15 overseas markets, creating and maintaining translation memories.
for each target language. The client’s localization costs are typically one-third of what the company would be paying without the TMs. Up to 80% of a given operator manual’s content is shared with previously written manuals.

**Project scope: A typical manual is written using a standardized template in FrameMaker and consists of 15,000 to 25,000 words to be localized into 15 languages. Timeline: Because of the high amount of leveraging across the company’s product documentation, delivering a 25,000-word manual in 15 languages takes five to seven weeks.

**Process:** We modify our localization process to maximize the benefits of leveraging across various products and review the English master document in order to confirm that the writers adhered to the style template. Then we leverage the source text against our TM by language. These pre-translated files are forwarded to each target-language translation team. Once the team has translated the new text and copyedited the new and leveraged text, the files are formatted and proofread and go through our quality assurance (QA) review before delivery. After delivery, we update each target-language TM with the newly translated materials.

**Product:**

**Training Materials**

**Situation:** A large corporation is implementing a global, corporate-wide enterprise resource planning (ERP) system. Company authors have written training courses to teach the staff how to exploit the features of the system. The company has spent months of effort and millions of dollars on the implementation. In order to maximize its return on investment, staff in each country requires substantial system training.

**Project scope:** Source content has been written in the United States using Microsoft Word and PowerPoint. The training is segmented in courses, to be taught in target languages over twelve weeks. The total word count is estimated at 350,000 words of English source text, but may increase or decrease because all courses have not been completely written at the project start.

**Timeline:** All course content is to be localized over seven weeks. Two weeks of localization are planned for each course, and each course is to be delivered to the in-country training teams one week prior to its “teach-by” date.

**Conclusion**

All localization projects follow similar project process steps, but each individual project presents an opportunity to adapt the localization process to precisely match desired outcomes. Because each project is unique, a “cookie-cutter” approach to localization does not work. The fundamentals, represented by the localization processes described in this article, must be malleable enough to meet the requirements for each client so that budget, timeline and quality objectives are met.

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This supplement introduces you to the magazine *MultiLingual Computing & Technology*. Published nine times a year, filled with news, technical developments and language information, it is widely recognized as a useful and informative publication for people who are interested in the role of language, technology and translation in our twenty-first-century world.

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