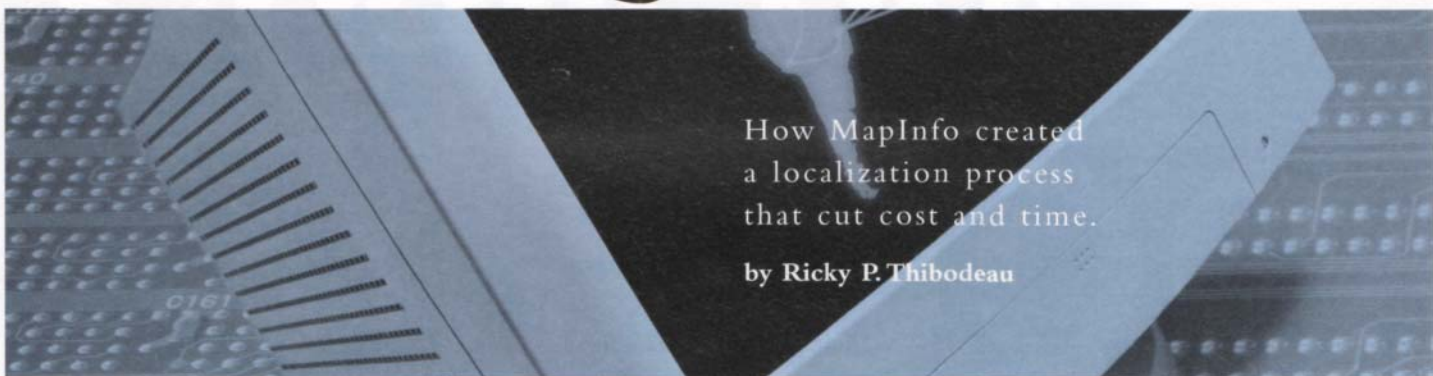


Translating for Success



How MapInfo created
a localization process
that cut cost and time.

by Ricky P. Thibodeau

In recent years, software sales outside the US have outpaced domestic growth. US software companies often report international revenues exceeding 50 percent of total sales. One contributor to this growth is software localization.

Creating a version of a program that is appropriate for a group of users in a particular part of the world entails not only translating text into the target group's language, but also recognizing relevant aspects of the local culture. Since "localize" means to adapt for a specific locale, it is more accurate than "translate." Localization entails the linguistic and cultural adaptation of the software and user-interface (UI), documentation (books, online help, tutorial), and packaging to accommodate requirements in foreign markets.

In this case study, we examine how MapInfo, a fast-growing US company, developed a successful localization strategy for worldwide distribution.

Localization Overview

A major reason for localizing software is economic. Initially, software localization may increase a company's sales by at least 25 percent. A product that is barely making a profit domestically can be a highly profitable venture overseas. All else being equal, a software product that is not localized is less likely to survive over the long term.

A localized product will help spread R&D dollars over a wider base, as a localized version can extend a product's life cycle. If the domestic market is declining, an international market may be emerging or still growing, and sales abroad will help finance the next generation of products. In addition, most products can be

more profitable overseas, since these markets often support a higher price level.

A localization strategy outlines the goals for product localization and helps determine which products to localize and which markets to enter. The strategy should fit into the company's overall sales and marketing plan to ensure that products planned for localization will enable the sales organization to penetrate the desired markets. Decisions can then be made about what languages to choose and when to release each language edition. Based on this strategy, some products may not be localized at all. At MapInfo, we use business models and do careful analysis for each language to determine if localization is warranted.

Value of Communication

Successful localization requires an entire organization to embrace the idea that its products are being designed for international markets, and to set up the appropriate procedures and channels of communication.

From the very beginning of the product-development cycle, communication channels need to be established with key people in each department. Product managers must bear in mind that each proposed product may also be marketed internationally. Developers should both understand and observe internationalization requirements while writing code. Documentation material must also be developed accordingly. Quality Assurance (QA) testing needs to include an international plan. Finally, shipping must be well coordinated with the overseas operations. When all key team members of product development proceed with international considerations in mind, localization can be successful.

Models

There are a variety of models that a company can use to implement a localization strategy, and it is imperative that a company choose a model that fits within its long-term goals. Below we outline the most common models used in our industry.

Distribution Network. The distribution-network model is often used for new and emerging markets, but serves equally well as a main global strategy. In this scenario, a company already has a worldwide distribution network in place. These distributors are then enlisted to participate in the actual localization of the product. The main advantages are that distributors already have a strong product knowledge base and an understanding of corporate plans, as well as low overall localization costs. Conversely, the distributor may not have the resources in place to meet schedules for deliverables, thereby prolonging ship dates.

Single Language Vendor. With the single-language vendor (SLV) model, localization is usually done "in-country" with native translators who can naturally observe the cultural requirements of the target language. This model can be used when testing markets and is more targeted than the distributor model. SLVs are more likely to meet localization schedules for deliverables, thereby allowing international product shipments to occur shortly after English product shipments. In the long run, the SLV approach may be more economical than the multiple-language vendor (MLV) approach discussed below.

Multiple Language Vendor. The multiple-language vendor model may be a good alternative, particularly if the goal is simultaneous release in multiple languages. In this approach, each project is supervised by a team leader who assembles a team of project managers, translators, editors, and proofreaders to coordinate and ensure a quality translation for each project. Centralization of product management can lower costs and raise consistency and leveraging. This model may not be cost-effective for smaller companies.

Mixed In-House/Outsourcing. The mixed in-house/outsourcing model is probably the most popular and flexible, since the publisher decides the strategy for each project. However, localization activities scheduled in-house may not be a viable model for smaller companies since they would need to secure in-house resources to do the localization during product development.

Localization at MapInfo

MapInfo provides Internet-enabled products and solutions for business-intelligence applications. By detecting and charting patterns in corporate databases, MapInfo products provide greater overall corporate efficiency. Over 300,000 users in a wide range of industries use MapInfo solutions to streamline business activity. Its products are deployed on the desktop, on enterprise servers, on the Internet, and as embeddable mapping objects in decision-support and enterprise-wide applications.

Headquartered in Troy, New York, MapInfo has over 450 employees worldwide (295 in North America). MapInfo products are available in 21 languages and are distributed in 58 countries by more than 1,000 partners.

The business has grown anywhere from 10 percent in the more mature markets of Australia and New Zealand to 31 percent in Southeast Asia and Europe. Direct sales versus indirect sales varies geographically, except for Southeast Asia, where all business is conducted through channel partners and local distributors.

To achieve simultaneous language releases, a company must develop localized versions in sync with original product development. This is often impossible, particularly for smaller companies, due to the additional resources required. MapInfo's goal is to consistently release the major languages as close to the English release as possible.

MapInfo's main European office is located in the United Kingdom, with Asia/Pacific support offices in Australia and Japan. We also have offices in Germany and Sweden, as well as a strong distribution network worldwide. The operations manager in the UK office is a key figure in overseeing the success of our European localization activities. Similarly, our corporate Asia/Pacific team and our Australian office are critical for our success in Asia/Pacific.

Upon deciding to implement localization at MapInfo in 1995, we concentrated our efforts on MapInfo Professional, our main desktop product, localizing it into 13 languages worldwide. This product is now available in 21 languages, including English, generating over 50 percent of our revenue in foreign markets. We have also started to localize many of our other products, including MapX (developer product), MapXtreme (Internet/intranet product), and SpatialWare (enterprise/client-server product).

These are the main roles we have defined in our localization process:

Localization Director: Manages the entire localization process (includes localization agreements, finalizing localization schedules for each product release, coordinating activities with international offices, and overseeing staff to meet corporate goals and objectives).

Software Engineer (fluent in Japanese): Internationalization-related activities (includes automating localization-kit builds, verifying localization kits, developing international Localization Automated Testing System [LATS], managing localization schedule, project managing for Japan, fixing localization bugs).

Localization Engineer (conversant in French, Spanish): Builds of each language, Notes administration, installer issues, assisting with localization-kit builds, coordinating documentation, testing language builds, debugging, beta program.

About the Case Study

This is an introductory excerpt from an extensive case study on MapInfo's localization strategy, and will appear in April 2000 in the ATA monograph series, published by John Benjamins. The book, *Translating Into Success*, features real-life examples of language-technology and management techniques at global companies, large and small.

Localization Engineer (fluent in Mandarin): QA lead, assisting with ATS, project managing for China/Korea, providing technical support for Asia/Pacific, testing of each language edition, fixing localization bugs.

International Team: Europe and Asia/Pacific support (includes production, shipping, selecting vendors/localizers, localization agreements, budgets).

Engineers: Internationalization requirements, fixing bugs.

QA Team: Running automated localization-kit builds, international testing plans, investigating bugs related to English products.

Localizers: Localization, local testing, overseeing local beta program.

MapInfo's Model

Localizing MapInfo Professional primarily entails the localization of books, online help, and software—but there are dozens of additional elements to manage, from sample data to media-label art. The NY-based R&D localization department distributes the English resource files (menu items, error strings, dialogs, bitmaps, etc.), books, and online help electronically to our international localizers, who are largely our international distributors. The localizer performs the translations and returns the localized files back to us via the Internet translated, compiled, and tested. These files are then substituted for the equivalent English files to produce the local-language editions of MapInfo Professional. We then return complete, installable image files to each localizer for final testing. We work with the distributor, our production department, and our international offices to coordinate duplication, assembly, and fulfillment of the full products. We separate our localization of 20 languages into the following two groups:

Full localization (14 languages). This includes the UI, books, online help, online tutorial, and third-party applications. Full production of the language-specific product is done. Full localization is necessary in the large European and Asia/Pacific markets.

Partial localization (6 languages). The UI is localized and occasionally online help is as well. Distributors ship our standard English version and include a diskette containing the localized resource DLLs and support files—a cost-effective plan when a company wants to enter a smaller market without incurring high localization costs associated with documentation. For MapInfo, these language markets include Arabic, Hebrew, Czech, Slovak, Dutch, and Turkish.

Prior Model

Early on, our strategy was to use MapInfo distributors as localizers. Our country managers from Europe and Asia first identified which distributors had adequate resources. MapInfo would then initiate a localization agreement, compensating them with sales credits. Very rarely did a distributor that we approached turn down the opportunity to participate, since they wanted to ensure product quality. Also, this model provided them access to corporate staff such as engineering, technical support, and quality assurance, via the localization department.

All 13 languages that we shipped in 1995 were localized by our distributors, with the exception of Japanese. Using the distributor model, MapInfo saved hundreds of thousands of dollars. The Japanese language was done by a very large MLV, costing six times more. This first foray into the MLV process has deterred us from using MLVs, although we do not rule out future work with them.

Current Model

Such cost-effective localization requires strong project management and communication with distributors and localization vendors. We use Lotus Notes as our main tool of communication with all localizers.

Currently, we still rely heavily on our distributors. We use 14 MapInfo distributors and six localization vendors, all of whom are SLVs doing the localization in-country. This hybrid model (distributor/SLV) works well. SLV companies tend to be better than distributors at meeting deadlines.

As our core product now includes multiple features from third parties, increasing the localization work, we have implemented a model with three of the languages whereby some distributors only localize the UI, given their strong product knowledge. Documentation (books, help, tutorial) is outsourced to an SLV, freeing up the distributor for marketing and sales, thereby increasing revenue while still meeting delivery dates.

Product Development: Emphasis on Internationalization

The localization team is very much involved with product development from the beginning of a project, and globalization is at its core. Although developers may realize that the product being built will be localized, it is still necessary to continually reemphasize internationalization standards. Some of the major standards we emphasize at the software-architecture stage include:

- writing software with localization in mind: dialogs, menus, text, and other localizable components should be stored in separate resource files (resource DLLs), not hard-coded into the source files for the executable;
- sort order and searching differences (e.g., Danish and Swedish alphabetize differently than English);
- double-byte enabling the code;
- testing source versions' internationalization features;
- requiring that third-party components be internationalized.

We usually assign a project manager to each product being built to ensure that all localization requirements are met. At MapInfo, product development and internationalization are so tightly integrated that they can be considered a single process.

Quality Assurance/ Worldwide Beta Program

For our English products, MapInfo has an extensive beta program that includes some international partners. Beta programs are crucial in helping QA ensure that a product meets corporate quality-assurance standards.

For each international release, we incorporate a similar program on a much smaller scale. For obvious reasons, we cannot rely on the company doing the localization to also perform QA. Our strategy is to enlist strong users in each country to participate in the beta program. We usually allow a few weeks of extensive testing and then collect feedback from the beta sites. This information is then analyzed to determine if any problems are localization- or core-code-related, and take appropriate corrective action.

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MapInfo Localization Development Cycle

To achieve simultaneous language releases, a company must develop localized versions in sync with original product development. This is often impossible, particularly for smaller companies, due to the additional resources required. MapInfo's goal is to consistently release the major languages as close to the English release as possible. In the past, for a major point release with new documentation, this could take eight to 12 weeks. Smaller maintenance releases without documentation rewrites would usually occur six to eight weeks after English shipments. We have instituted a strategy in which we use the product-development schedule as our main tool for producing deliverables. We call this the localization-development cycle. We can now ship major releases in six to eight weeks, and maintenance releases in four to six weeks.

Defining the Process. Product development is a documented process with specific schedule requirements and associated target timeframes. The outline gives us an overview of the entire localization process, in a form that is easily communicated to our international offices and localizers. To get a head start on UI localization, we release a beta localization kit three weeks before UI freeze. We then give the localizers the delta kit a few days later. By the time localizers receive documentation resources, the UI component and initial builds of the product should be complete and testing should be under way.

Tools: Lotus Notes and the Internet. Thanks to Lotus Notes, we now have a communications model that enables us to distribute localization-related resources (localization kits, installable images, etc.) to localizers worldwide. Notes enables the team to download localization files and updates, and saves us weeks compared with our previous model of shipping resources on diskette. In the past (1995), the only communication between localizers and Corporate was fax or mail. Now we can have "live" discussions and respond to problems the same day.

Since 1995, we have been using Notes as our main source of communication with our worldwide distributors and localization vendors. If they have access to the Internet, our systems can be configured to allow them access to our Localization System and Discussion databases.

Localization System Database. A Notes database was specifically designed for posting our installable image files and localization-kit resources. With access to our databases, a localizer can download the latest localization kits and start work immediately. Also, once we have built a specific language version for them, they can download the images immediately after we post them. They can then conduct internal testing and make changes as needed. This process continues until we are ready to produce a CD master.

Localization Discussion Database. A discussion database was also developed which enables open communication among localizers throughout the world. Due to our relatively small staff, this database became critical in resolving issues. To be an effective tool, the database must be monitored daily and localizers encouraged to participate. Someone must be designated as the database owner to ensure active participation.

Quantitative Analysis

A quantitative analysis of each localization model requires a separate examination of costs associated with each language and then an overall compilation for each model. Each table shows the cost

of the model as a percentage of actual translation cost of the full localization budget. First is a breakdown prior to 1996:

Model	Languages	% of Actual Translation Cost	% of Full Localization Budget
Distributor	12	55%	30%
SLV	0	0%	0%
MLV	1 (Japanese)	45%	25%
Total	13	100%	55%

Fifty-five percent of the full localization budget was used for direct localization cost associated with translating 13 languages. Twenty-five percent of that budget was for one language. The actual cost of the single language done by an MLV was about 80 percent of the entire amount for the 12 languages done by the distributors. For 1996 to present, the breakdown is as follows:

Model	Languages	% of Actual Translation Cost	% of Full Localization Budget
Distributor*	14	60%	40%
SLV	6	40%	25%
MLV	0	0%	0%
Total	20	100%	65%

*Documentation resources outsourced for three of these languages.

Sixty-five percent of the localization budget was used for direct localization cost associated with translating 20 languages. There is much better balance in our current model. The actual cost of the six languages done by the SLVs was about 60 percent of the entire amount for the 14 languages done by the distributors. Cost per language as compared to the previous model was reduced by 25 percent.

Note that had we not used distributors in our model, the cost of exclusively using the SLV/MLV model would have been 55 percent more for actual translation expenses, a savings of over US\$300,000. Additional savings have been realized by implementing Lotus Notes as our primary mode of data transmission.

Summary

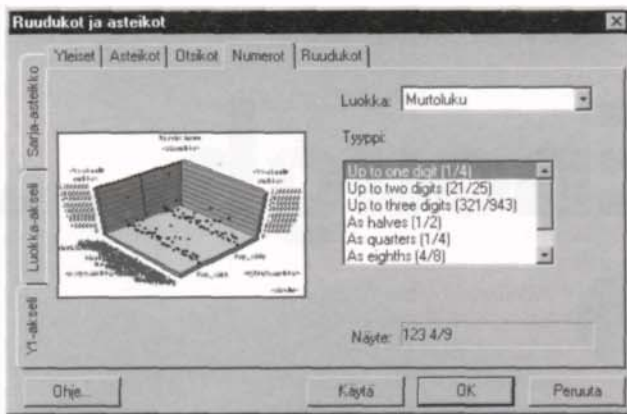
At MapInfo we have demonstrated the importance of a centralized localization strategy. Even a smaller company attempting to tackle international markets can, with some ingenuity and discipline, develop the systems and procedures needed to deal with localization and translation in a proactive, strategic manner.

We have also found that the latest technology, most notably the Internet and workgroup solutions such as Lotus Notes, can prove invaluable in speeding up the localization process and ultimately time-to-market.

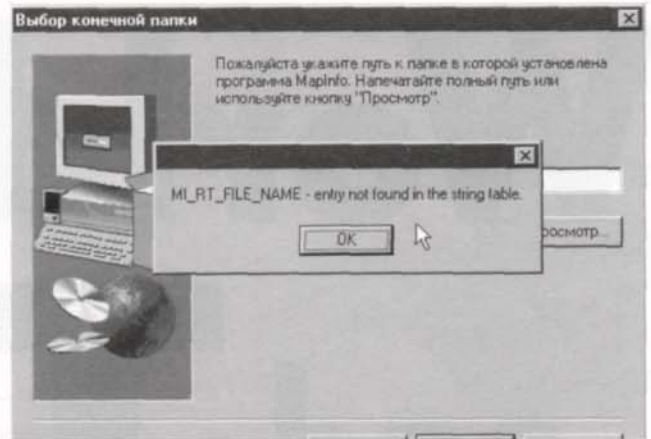
Finally, we have taken important first steps in attempting to develop quantitative models for gauging price and quality. Though much remains to be done, as of the present writing, we have turned localization and internationalization to a largely predictable process with predictable—and profitable—outcomes.

Ricky Thibodeau joined MapInfo Corporation in Troy, New York in 1995 and has worked there as software localization engineer, quality assurance supervisor, and international localization manager. He currently serves as international product release director at MapInfo, where he oversees localization in 20 languages. Contact him at rthibodeau@mapinfo.com

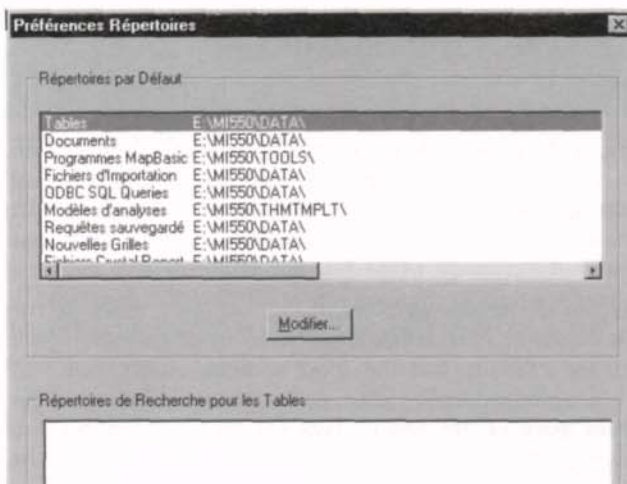
Internationalization (I18N) and Localization (L10N) Problems Encountered—and Solved—at MapInfo



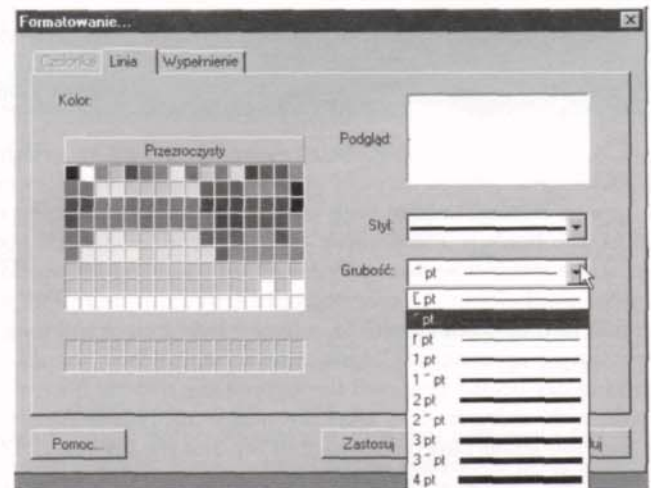
Third-party products: In a 3D graphics dialog, items in the “Type” field shown above as “Tyypit” are hard-coded in English. This may be due to an internationalization error, or might be localization-related if localizers forget to translate the strings.



Localizers do not always update the resources we send them. This shows up in many places such as a missing “Installer” string in the Russian example above.



In the MapInfo “Preference” dialog, there is no scroll bar in the directory list. Therefore some items are not accessible using the mouse. In the English dialog, all items are shown. However, some languages require more spaces to show all items.



Localizers must convert any characters above an ASCII value of 128 into their own character or use some other representations. For example, “half” can be written as 1/2 in Latin1. Internally this representation is 189 in the Windows Latin1 code page. But in Latin2, like Polish, 189 is the “double acute accent” illustrated in above. There is no 1/2 in Latin2, and localizers will need an alternate representation such as “0,5”.