

Presentation

LangBox International is a French company based in Nice, south of France, that has developed several Internationalization packages for the UNIX and Linux operating system. After more than a decade of research and development in the field of multilingual support, LangBox International introduced the support of Arabic, Persian, Hebrew, Greek, Cyrillic, Turkish and Thai languages for UNIX and Linux applications. The Arabic language represents near that 80% of the LangBox development effort. The support of these languages implies generally the management of a double alphabet and a *codeset* different of the common ISO 8859-1.

This issue cannot be directly handled by operating system localization supports. that provide support for Latin-based alphabets only.

Off-the-Shelf Product line

The LangBox International multilingual extension support may be divided in two main product families: **LANGBOX** and **XLANGBOX**, which are selected according to the application interface.

LANGBOX

The LANGBOX product provides the language support for UNIX character based application (running on remote terminal display or on a window terminal emulator). UNIX applications mostly used this interface.

This product is an extension to the TTY driver of the UNIX Operating System kernel. When loaded and activated into a standard release of the Operating System, the LANGBOX transforms the *English-only* environment into a bilingual or a multilingual environment by taking control on TTY Input/Output (dual keyboard management, screen and display management, NLS *National Language Support* files for the system, fonts, etc...)

This bilingual/multilingual environment is directly available for standard applications of the system which use "character based" interface (i.e. which can run on a regular alphanumeric terminal).

XLANGBOX

The second product family, XLANGBOX, has been developed in response to the growth of the UNIX workstation market. These UNIX stations normally use a graphic display driven by a graphic server. On this kind of platform, the most frequent environment is the X Window associated with a user-friendly GUI or *Graphical User Interface* libraries such as OSF Motif. Most of the applications running on these workstations are clients that communicate with a graphic server through network connection facilities. The main application routines work directly with bitmaps and the concept of character flow has disappeared.

A transparent Internationalization or Localization is more difficult to implement in the server level and the specific language treatment must be included at the high level of the GUI libraries. *By using the Dynamic Linking or Shared Libraries* at the runtime level (if the operating system allows it) the user may use his favorite application in his native language. However, some application concepts must be implemented to allow such correct behavior. For example, static link with GUI libraries must be avoided and application fonts could be selected through a *Resource Files* or a command line option.

The XLANGBOX package has been defined to allow localization of pure X Window and OSF Motif applications. It provides a comprehensive environment composed of an alternative version of X11 and Motif shared libraries, X font set and printing tools.

Globalization defined

While the problem your company solves may be global in nature (e.g. increase the efficiency of the hospitality business), it doesn't mean that a successful US product can be exported "as is". Each new country is likely to introduce a varying extent of technical, linguistic and/or cultural differences. Unless you adjust your product to take into account these differences, there may be a market but you have no product.

Product globalization includes all the activities necessary to bridge that gap, whether they are executed just once (e.g. enable the processing of Japanese data) or repeatedly (e.g. translate successive releases into French). Three types of activities are involved: internationalization, translation and localization.

Internationalization or I18N

Software applications (or Web sites) are rarely developed initially "for the world". When your home market is large, you don't necessarily worry whether you can handle Korean characters, format dates the Swedish way, or translate the user interface in German without touching the code. If you later want to sell or implement your product in these countries, you may discover that it doesn't function according to local expectations. The product must be *internationalized*.

Internationalization is not country specific: the objective is to create a single code base that functions everywhere you implement the product. In theory, you internationalize once and, from then on, make sure that engineering always produces truly global code. In reality, it may take a significant organizational effort and a few releases before you get to this point.

Translation

In general, people prefer to use software in their mother tongue (user interface, help, manuals, training, etc.). Depending on the type of product, local language availability may not always be a "make or break" sales factor, but it most certainly tips the balance in a tightly competitive situation, and becomes unavoidable for durable market penetration.

Translation is a full-fledged *development activity*, not an added "feature". Although the skills and tools are different, the processes match in complexity, involve equally intricate combinations of resources, require the same attention to quality, and grow in complexity with the number of languages handled.

Localization or L10N

There is quite some confusion around this term, because in theory it encompasses any modification made to a product to fit a specific market, including translation (e.g. localize *for* Brazil). However, most "localization vendors" only provide *translation* services. In this document, *localization* designates the functional changes a product may require to fit its target market.

The hospitality business has a global presence, but each country's laws, regulations and business practices have an impact on the way activities are performed. For example, tax calculations, discount practices, or payment means vary significantly from one country to the next. Product features that seem indispensable in the US may therefore be irrelevant in other countries.

Localization resolves this by either feeding these functional differences back into product design to obtain more functional flexibility (e.g. configurable tax calculation modes), or, when the functionality is very specific to the market, by interfacing with local solutions (e.g. a Dutch HR module, or a French accounting package).

Strategy

Situation

Your company wishes to deploy its products in Asia, Europe and Latin America. Through marketing analysis, or driven by multinational customers, you have identified a number of target countries.

Problem statement

Although the problem you solve may be global in nature it doesn't mean that your product can be exported "as is". You are likely to find technical, linguistic and cultural differences in every new country you target. You may have to produce "local" versions to address the needs and deliver the value your customer expects. While some markets may require little or no modifications, others may generate development- and maintenance costs that can seriously impact your expected revenues.

When your company develops its global strategy, it is critical to include the cost and implications of product globalization in the decision process. Lacking this information, you may invest in a local infrastructure and sales effort, only to discover that significant product changes are required to satisfy the targeted market. You may then be forced into unplanned, unbudgeted development work while you maintain an idle international presence at a significant burn rate.

Consulting service

LangBox International can provide your company with all the product globalization information it needs to define its global strategy in a realistic and informed way:

- analyze the "product offering" as a whole, in its current state and planned evolution (technology, functionality, documentation, services, education, distribution, support, etc.), compare against international requirements and identify the internationalization effort (i.e. common product base to address all target markets)
- per target market, analyze and describe the minimum translation and localization efforts needed to achieve revenues
- develop and justify globalization business cases, identify various approaches (minimal, recommended, ideal, etc.)
- produce a globalization master plan

Organization

Situation

Your company has defined a global strategy and identified the target markets it wishes to pursue. During the strategy phase, the cost and implications of product globalization have been taken into account. You now want to implement the most effective organization and processes to produce the local product versions.

OR (the more common situation)

Your company has already launched its products in the various target markets, you have run into local issues and some globalization work is on-going. However, the existing organization and processes seem to have reached their limits. You are facing quality, time-to-market and/or cost issues that hamper your international business or jeopardize further expansion.

Problem statement

Many companies adopt a “fix as we go” approach to international deployment. In a first stage, the same US product is sold in markets that seem linguistically and culturally close to the US (e.g. Australia, UK, Singapore) and to any company anywhere willing to accept US products (often international subsidiaries of existing customers).

At some point, product globalization becomes unavoidable. The demand can be driven by multinationals (need to deploy worldwide), local prospects (buy only adapted version), and local sales organizations (need to make quota). Globalization is organized reactively, processes are created on the fly, and resources are assigned ad hoc. Local versions are delivered, but the quality and release dates remain approximate or unpredictable, priorities fluctuate, and costs are identified after the fact (or not at all).

While this mode of operation may work for a while, it cannot be the base for a durable international expansion. Dedicated resources and responsibilities must be assigned. Repeatable, scalable processes must be implemented, monitored and fine-tuned. Appropriate translation tools and technologies must be used. Vendor selection and evaluation must follow standard purchasing techniques. Budgets must be allocated, monitored and justified against local revenues.

Consulting service

Starting from an existing situation, or from scratch, LangBox International can identify the globalization organization and the processes most suitable for your products, internal structure, company culture and target markets:

- consider pros and cons of centralized vs. decentralized operations, internal vs. external resources, global vs. local solutions, vendors vs. affiliates as development partners, upfront investments vs. deferred payments through royalties, etc.
- identify tasks & responsibilities and their distribution between internal and external resources
- describe required skills and select or hire corresponding resources
- research and select development partners and vendors, negotiate contracts
- identify translation and localization tools (glossary management, translation memory, machine translation, etc.), maximize automation
- develop internationalization, translation and localization processes
- define the interfaces and timing between globalization and other company processes (core engineering, QA, packaging, distribution, support, etc.)

Project management

Situation

Your company has defined its global strategy, identified the corresponding organization and processes, and wishes to launch the production of one or several local product versions. You need a dedicated driver for this project who can manage all the resources involved and take full responsibility for the quality, timeliness and cost of the deliverables.

Problem statement

Globalization is a full-fledged development activity, not an added "feature". Internationalization, translation, localization utilize specific skills, tools and processes that are quite different from those used in traditional product development. For efficiency and constant improvement, globalization-related knowledge must be maintained and updated. It is virtually impossible to achieve this with resources handling globalization "on the side".

Globalization projects must be managed by dedicated, experienced resources. In addition to standard project management skills, it requires specific technical knowledge (e.g. multi-byte processing for certain Asian markets), an in-depth understanding of translation and its pitfalls, and a solid experience dealing with external vendors (the most common source for translations).

Consulting service

LangBox International can manage globalization projects for your company under the following conditions:

- the proposed organization, processes, resources and tools have either been defined directly, or have been reviewed and acknowledged by LangBox International as part of the consulting engagement (see *Organization*)
- the objective is to demonstrate the reliability and performance of the proposed organization and processes, to allow the company to "hit the ground running" while it implements its permanent organization, and/or to train the resources who will manage the company's projects on an on-going basis

Project management performed by LangBox International includes:

- management of internal and external resources on a worldwide basis
- supervision of schedules and budgets, anticipation and resolution of issues, process tuning, communication with internal and external customers
- quality assurance, result measurement and management feedback

Education

Situation

One or more of the following:

- executive management wants international sales, but questions the need for globalization, is reluctant to allocate the necessary resources, has doubts about the cost, ROI, etc.
- globalization efforts are hampered by the architecture, technology, programming style of the product: the engineering department struggles to develop a truly global product
- technical communications delivered with your product (on-line help, manuals, training materials, etc.) are difficult to translate, or so voluminous you cannot afford translation
- internal or external resources in charge of globalization have a hard time doing their job correctly, complain about lack of direction, changing priorities, work overload, etc.

Problem statement

Globalization can only be successful if it is understood and supported by the whole company. Assuming that all operational areas of a company are essential to the success of the product in the US, it should be clear that the pursuit of additional, "foreign" markets requires at least the attention, and possibly some adjustments, from these same departments.

The need for globalization, its consequences, and the related activities are not always well understood by US-centric organizations. It is often perceived as "just translation", or its necessity is sometimes put in doubt (e.g. "everybody in Holland speaks English anyway"). As a result, lacking the information, corporate departments may involuntarily create significant roadblocks for globalization, and consequently for international revenue.

Resources in charge of globalization are the first ones to suffer from the company's lack of commitment or understanding. Too busy to deliver local versions, they may not have the time or the experience to actively influence this situation.

Consulting service

LangBox International can organize globalization education sessions for any functional group or department, including:

- *Engineers*: global architectures, character sets, multi-byte enablement, locale-based data processing, etc.
- *Technical writers*: design issues, volume management, terminology control, writing for translation, etc.
- *Globalization resources*: process development and control, internal communications, vendor management, etc.
- *Executive management*: business justification of globalization, possible strategies and implementations, costs, ROI, etc.

Based on proven frameworks, these education sessions are tailored specifically for your company based on information gathered upfront from the target audience (topics of interest, current situation, specific examples and customer situations, etc.)