



# An Executive's Guide to Internationalization

## Position Paper

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## Key Points

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- **Internationalization (I18N) is a critical element to your global success.**
  - **The complexity of issues associated with I18N exposes your organization to substantial risk.**
  - **A formal I18N plan can mitigate these risks and produce quantifiable return-on-investment (ROI) benefits for your organization.**
  - **Working with an I18N expert such as L10N Technology can ensure that you maximize your potential return.**
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## Introduction

There have been many papers and guidelines written for programmers developing international software products. This paper is written for the executive who is responsible for making the business decision to bring a product to international markets—whether your plans include one or sixty additional markets.

In most cases, the decision to go international or global with a product release is a result of market research that supports the levels of demand, pricing, and cost factors required to generate a positive return on investment (ROI) for a particular product line.

Once the business decision is made and the marketing team generates and delivers the requirements document, the folks in the development team simply need to produce - right? Not necessarily. Unless the requirements document was written or reviewed by an authority on software internationalization (I18N), chances are the requirements will not be complete. Most global firms today have neither the appropriate internal staff to assess product specification requirements for each intended market adequately, nor the knowledge to understand the underlying attributes that can create localization (L10N) nightmares and costly rework for the development team.

The objective of this document is to provide you, the responsible executive or senior manager, with a deeper understanding of I18N issues. This will arm you with the knowledge and insight to support your product development team with forward-looking budget and marketing strategies that account for I18N through the proper use of ROI calculations.



## First, Consider the Impact

There are many attributes inherent in a software product which dictate the complexity of the software I18N effort. Additionally, there are numerous market and business drivers that will impact the ROI:

- **Software Code**  
Do the code and the target operating systems support Asian or bidirectional (e.g. Hebrew and Arabic) character handling?
- **Graphics**  
Are the graphics on the website configured with layers for easy extraction and translation of text?
- **Currency transactions**  
The U.S. e-commerce site is configured to accept Visa, MasterCard, and Amex. Are there other popular forms of payment in other countries? Can this issue be dealt with generically so that the effort does not need to be reproduced in every market?
- **Time/date formats**  
Many of the latest operating systems are designed for international functionality. Does the product being developed take advantage of this?
- **Print (paper sizes, text expansion)**  
Translated text requires up to 40% more space than the original English text for some languages. Is there adequate white space in your manuals and other documents to accommodate such expansion?  
What about paper size? A4 paper size and B5 paper size are the standards used in Europe and Japan, respectively.
- **User Interface**  
Is locale-specific data externalized from the core functional code (e.g. in separate resource libraries) to reduce testing and simplify the L10N process and product distribution? Do the user interface and dialogs take text expansion (see previous item) into consideration?

When you stop to consider the number and complexity of the issues at hand and their potential impact on your product's success, the value of a properly executed I18N plan becomes apparent. But how do you quantify this value in terms your colleagues will understand and, more importantly, fund?

## Second, Quantify the Return

Developing a formal ROI analysis begins with the establishment of a core set of data points covering the market goals and potential of the product relative to your ability to adapt the product to meet the local requirements of the new target markets. Issues to consider in this first analysis include:



Market drivers:

- How many and which markets will be targeted for distribution?
- Will the localized product be shipped simultaneously into more than one market?
- How many and which operating systems and/or browsers will be supported?
- How frequently will new releases be generated?
- Are there any third party applications in the program? If so, are they internationalized?
- What services are available from I18N service providers and what are the associated costs?

Common software attributes:

- What degree of I18N does the product already support?
- Does the code support multibyte character sets for all languages of the target markets?
- How complex is the code, and how much of it is there?
- Does the product require I18N support for multimedia (e.g. audio, video, or animation)?
- Are there any third-party applications in the program? If so, are they internationalized?
- What experiences does the product development team have in relation to deployment into these markets?

Using this baseline data, you can derive a simplified ROI model using the following sample formula:

Cost of I18N = Sum (market & business drivers + software attributes)

Cost of L10N an I18N enabled product = Sum (Localization \* (Market<sup>1</sup> + Market<sup>2</sup> + Market<sup>n</sup>))

Cost of L10N without I18N = Sum (Localization \* (Market<sup>1</sup> + Market<sup>2</sup> + Market<sup>n</sup>)) +  
cost of I18n Workarounds + opportunity cost of being  
late to market + cost of deploying development  
resources from other projects to I18N workaround  
efforts

ROI = (Cost of L10N without I18N - Total cost with I18N)  
Cost of L10N with I18N



**Example:**

Cost of I18N = \$100,000  
Cost of L10N = 30,000\$ per market  
Number of markets = 6  
Total cost w/I18N = \$280,000

Cost of L10N = \$55,000  
Number of markets = 6  
Total cost w/o I18N = \$330,00

ROI = 18%

While this effort seems straightforward, it is important to note that each of the datapoints may involve numerous related issues and sub-issues. Good planning will address most of them, but it is unlikely that every I18N issue will be resolved at this stage. The situation is analogous to a carpenter estimating the cost of remodeling a kitchen without knowing the condition of the existing pipes, wiring, and framing—this will not be apparent until the old walls and floors are opened, which is not likely to happen until the project has started. So while the ROI calculation seems clear cut, it should be used as a guideline only and refined as additional details surface during the project.

In addition, this sample captures only the technical aspects of I18N, which provide only half of the cost benefit story of a successful product globalization strategy. Once the software is internationalized, L10N into multiple languages can be performed in parallel quickly and efficiently. Textual aspects of the application are translated into the target languages and engineering adjustments are made where necessary to accommodate the new text (e.g. resizing buttons, etc). Properly preparing for L10N during your I18N program eliminates the need for additional core application development. A L10N kit should be one of the core deliverables of an I18N engagement. A well-prepared L10N kit will help you implement an efficient process for the development of localized products, which in turn will significantly reduce costs, risk of errors, and risk of missing market deadlines.

### **Engaging LT for CE – Partnering for Success**

L10N Technology (LT) is the world leader in internationalization (I18N) and localization (L10N) services. Through our work with such respected global clients as Microsoft, Palm, Novell, and Oracle, we have developed and refined our best in-class methodologies and supporting technologies. With more than 2,000 experienced professionals operating in more than 20 countries, we have the breadth, experience, and scale to ensure that you achieve your objectives on time and within budget.

Whether you are launching a global product for the first time or seeking to expand your existing international revenues, LT stands ready to assist.



## Resources and Links

- Localization Industry Standards Association - [www.lisa.org](http://www.lisa.org)
- A Practical Guide to Localization (2nd Edition) - By Bert Esselink, John Benjamins Pub Co, 2000, ISBN 1588110060
- Multilingual Computing & Technology - [www.multilingual.com](http://www.multilingual.com)
- L10N Technology - [www.bowneglobal.com](http://www.bowneglobal.com)



## About LT

L10N Technology (LT) is the leading provider of translation, localization, technical writing and interpretation services that enable businesses to deliver locally relevant and culturally connected products, services and communications anywhere in the world. Companies throughout the world use our solutions to help grow their businesses in the Americas, Europe, Asia and Latin America.

Our scalable end-to-end solutions can help accelerate a company's time to market while improving the quality and consistency of the company's products and services. Our wide range of clients include leading businesses in information technology, automotive, e-learning, life sciences, entertainment, telecommunications, aerospace and power and utilities industries.

To learn more, contact us at [mcgcompany@naver.com](mailto:mcgcompany@naver.com) or find us on the web at [www.liontech.co.kr](http://www.liontech.co.kr).

