

Software Engineering Services

Product i18n and l10n services

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nextEDGE Technology, Inc.

Customer Globalization Needs

- Companies want to expand sales opportunities by delivering products in Asian markets, but...
- Most engineers do not have experience internationalizing or localizing applications
- Training existing engineering staff to architect localizable products is time consuming and costly
- Maintaining company resources to localize code is inefficient
- Language barriers often complicate product testing process



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Globalization services



- **Product Internationalization (“I18n”) Services**
 - Internationalization consulting services
 - Internationalization implementation services

- **Product Localization (“L10n”) Services**
 - Product translation services
 - Product testing services
 - Target languages
 - Japanese
 - Chinese, Korean (near future)

- **Product Consolidation Services**
 - Consolidation consulting services
 - Consolidation implementation services



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Product Internationalization



- Internationalization consulting services – Develop I18n best practices within your company
- Internationalization implementation services – Outsource I18n development to nextEDGE

- Internationalization process includes:
 1. Make sure product functions properly in target language environment
 - Use APIs that support multiple languages
 - Use coding techniques that support locale-specific information
 2. Ensure readiness for localization/translation
 - Message string isolation from core code
 - Enable message files in text, html, xml and other formats
 3. Enable product consolidation
 - Deliver one installation routine instead of many
 - Consolidate distribution media – everything on one CD

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Product Localization



- Product translation services – nextEDGE provides professional translation into target language
- Product testing services – nextEDGE ensures that product works in all target environments

- Localization process includes:
 1. Software and documentation translation
 - resource, source code, text file
 2. Functional verification testing
 - Ensure product functions properly in target environments
 - Ensure that usability characteristics are correct for target market

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Globalization Benefits



- **Faster time to market**
 - Speed introduction of products to Asian market
- **Improved product quality**
 - Deliver internationalized code based on industry best practices
 - Tested by engineers fluent in the target language
 - Tested in native environment
- **Improved engineering productivity**
 - Internationalization knowledge shared as requested
 - Remove need for local engineers to build expertise in internationalization and localization
 - Leverage one code base for multiple languages
- **Reduced cost**
 - Work on site with engineering teams
 - Faster resolution of product issues related to internationalization

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Globalization Solutions



- nextEDGE offers effective solutions in key areas such as:
 - Localizing existing product
 - Outsourcing approach: nextEDGE provides “take over” efforts. The work can be off site work. PM, development and QA are managed by nextEDGE.
 - Localizing existing product, and consolidate the enhancements to future product update
 - Outsourcing approach and Consulting approach: nextEDGE provides “take over” and “feed back” efforts. nextEDGE provides PM, development and QA management. All modifications for I 18n and QA plans will be prepared for future product update.
- Develop new product as Localization ready (“I 18n”) product
 - Consulting approach: In addition to above, nextEDGE provides technical consulting services to development and QA team. Co-work with customers team with providing necessary investigation reports, tools and Test plans.
 - Develop new product as consolidated product
 - Consulting approach: In addition to above, nextEDGE provides consulting services to consolidate product.

nextEDGE Globalization Solutions



Requirements	Localizing existing product	Localizing existing product, and consolidate the enhancements to future product update	Develop new product as Localization ready ("I18n") product	Develop new product as consolidated product
Solutions	Outsourcing	Outsourcing & Consulting	Consulting	Consulting
Services	nextEDGE provides "take over" efforts. The work can be off site work. PM, development and QA are managed by nextEDGE.	nextEDGE provides "take over" and "feed back" efforts. nextEDGE provides PM, development and QA management. All modifications for I18n and QA plans will be prepared for future product update.	In addition to above, nextEDGE provides technical consulting services to development and QA team. Co-work with customers team with providing necessary investigation reports, tools and Test plans.	In addition to above, nextEDGE provides consulting services to consolidate product.
Benefits	<ul style="list-style-type: none"> ■Effective approach for existing product localization ■Effective approach for onetime release or rarely release product 	<ul style="list-style-type: none"> ■Effective approach for existing product localization ■Effective approach for minimum impact to current process 	<ul style="list-style-type: none"> ■Effective approach for newly developing product ■Sharing technical skill for I18n and L10 	<ul style="list-style-type: none"> ■Maximize ROI for I18n and L10n efforts

ROI

nextEDGE Outsourcing Approach



■ Services:

- Implementation for internationalization
- Product translation
- Program management

■ Deliverables:

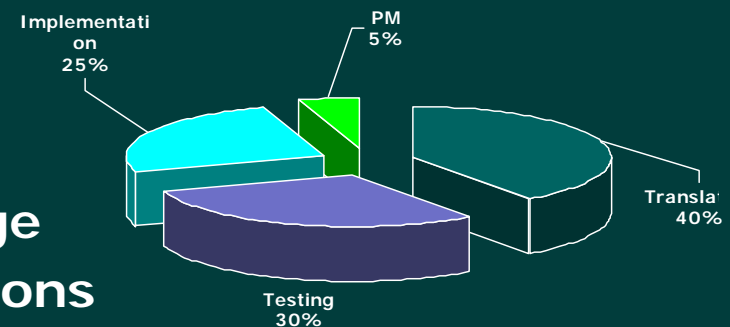
- Modified code and binary image
- Technical report for modifications
- QA specifications and results

■ Advantage:

- All efforts can be outsourced
- Low impact to existing process

■ Disadvantage:

- Cost will be higher than consultation approach



nextEDGE Consulting Approach



■ Services

- Implementation for internationalization consultation
- Quick translation
- Testing engineer resource

■ Deliverables

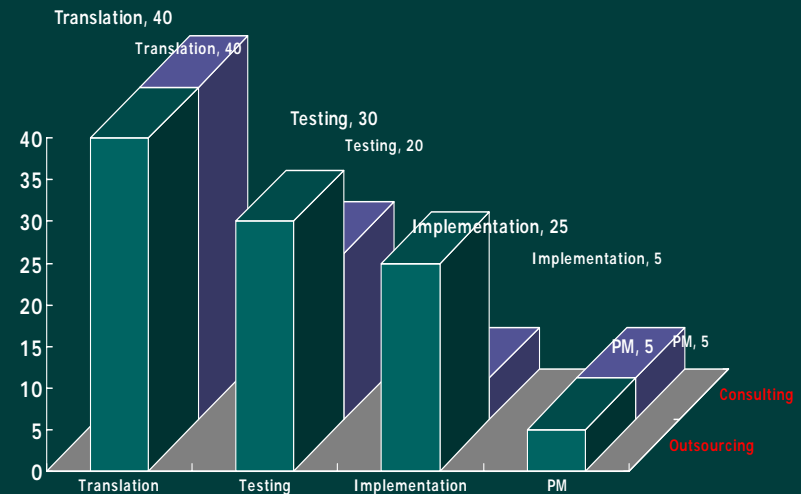
- Translations
- QA specifications and results

■ Advantage

- Higher ROI
- Improve productivity by working closely with product team

■ Disadvantage

- Increased engineering efforts



In addition to engineering services, deliverables include the following:

- Code assessment report – what needs to be done to internationalize the code
- Activity report - weekly and quarterly reports that outline progress on I18n and L10n activities
- Technical documentation for internationalization-focused code modifications
- Develop and provide tools for product development and testing
- Process improvement proposal
- Usability improvement proposal

Backup



Why outsourcing i18n and l10n?



- **Outsourcing this service provides high quality as well as a time and cost effective means of product localization and internationalization through onsite and/or offsite activities**
 - **Better cost efficiency**
 - hard to set up engineering team to work on i18n
 - different engineering skill sets are required from usual software development
 - **Improve current i18n process**
 - no reason to stop the product consolidation approach
 - inherit existing process and improve without reinventing the process from scratch
 - **Improve productivity by working closely with product team**
 - sharing i18n and l10n technology with customer
 - reduce the cost of future product development

Why i18n and l10n?



Situation:

- implementing Japanese and double byte support is no longer required specific knowledge
- development environment and tools for i18n and l10n are available
- technology has become global and internationalized

Fact:

- only a few engineering resources are experienced in i18n issue
 - technology is available but it is not commonly used
- i18n would be required when a product will be distributed worldwide
 - No one knows if the product is i18ned before starting localization.
- terms used for software translation are usually different from terms used in document translation.
 - inconsistency of terms will cause quality/functionality issues

Consolidation benefit



- Improve product quality to reduce the cost of international support and enhance customer loyalty
- Accelerate time to market and boost ROI through rigorous use of methodologies and collaboration tools
- Ensure compatibility and interoperability across global platforms

nextEDGE Advantage



- Focused exclusively on I18n and L10n engineering
- 12 years of I18n and L10n experience at leading computer manufacturer
 - i18n/I10n quality assurance
 - provide i18n and I10n technical skills and feedback for future product development or updates
 - upfront true i18n/I10n
 - keep product ownership at single point even if the product is localized
- focus on i18n and I10n service
 - process development for implementing i18n for customer
 - develop improved model for i18n and I10n
- location
 - our company is located in U.S.A to provide quick turn around to any requests

experiences(1)



Product: Compaq Insight Manager 7

Used technology: Java, html, SQL, SNMP, DMI, HTTP, SSL, XML, JSP

Required implementation for i18n/I10:

Resource isolation for property for Java

Encoding for shift_jis implement for Jigsaw (Java web server).

Design to manage multiple string data in SQL.

Encoding support for XML based communication between console service and server agents.

Multi-user session management with requested language.

It will provides multi-UI (English or Japanese) and help system depending on requested client's language.

Enhancement for SNMP trap message encoding for SJIS, JIS and euc.

experiences(2)



Product: Microsoft Windows drivers and application

Used technology: VC++, SDK, DDK, InstallShield

Required implementation for i18n/I10:

Resource isolation to resource file

Multi-language description in INF file

Product: Novell NetWare drivers and application

Used technology: NLM SDK WATCOM, CodeWarrior

Message isolation to msg file

Multi-language description in DDI, LDI

Product: PC Server System ROM

Used technology: 32bit ASM

Required implementation for i18n/I10:

Font and display driver development with small size.

Program's message isolation

Common i/o to display screen

experiences(3)



Product: Altiris Deployment Server 5.x

**Used technology: PXE, Wake on LAN, Windows scripting,
Linux scripting, SQL**

Required implementation for i18n/I10:

**Message resource isolation to resource file and generate
resource dll for each supported language.**

**OS installation script customize for Japanese OS
installation.**

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Technology