Automating Localization Management

HORIZON—Lomac's extranet-based localization support system

by Mariusz Kordas

Many translation and localization vendors aim to reduce costs and improve efficiency by building software applications that either automate and centralize in-house activities or create a portal for interaction with partners and customers. Lomac has done both and has been generous enough to share their internal technology developments with Language International.

Lomac's HORIZON is a multiple-division support system for localization project planning and monitoring. It covers task and resource management, allows for integration with other computer systems used by both customers and vendors, and provides a platform for embedding and accessing translation and localization tools, such as the file statistics analyses using TRADOS translation memory technology. The system also provides support for knowledge management and information sharing for project teams, departments, and company management.

Although potential commercial usage of the system can be recognized, it was not developed with commercial purposes in mind, but rather as an internal project support system for the growing needs of Lomac. As a company, Lomac has been growing organically—starting out as a single-language vendor (SLV), then as a multiple-language vendor (MLV) through partnerships, and now as an MLV with offices in its major language countries. The HORIZON system took shape along

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system, but also a *localization company* support system.

Localization vendors are traditionally project-based organizations, but we have observed in recent years a more process-like approach for translation and localization, where small batches of content are constantly processed, for example in multi-language websites with frequent updates or continuous development cycles of internationalized software. The HORIZON system also supports such a model, where each project can contain hundreds of components processed through repeated procedures and is defined in a suitable timeframe, and it also provides statistics and accounting data.

The system was also developed with an eye on cost efficiency in managing large and widely distributed pools of translators and other specialists. Easy access, quick information sharing, task handling features, work optimization and guidance features allow an unprecedented level of coordination of company resources, freelancers, and other specialists taking part in the localization effort.

Architecture, platform and technologies

HORIZON runs on the Linux platform and was developed using open source technologies. Choosing this way of development had several trade-offs—initial investments are low, but environment configurations require much more work at a later stage. Compared to commercial development packages, the final costs are comparable, but open-source-based platforms result in more flexibility and independence. Several dedicated libraries were developed for an optimal interface, web-browser communication and an access rights and session mechanism. These libraries, along with the database engine, provide one layer of the system, on top of which there is yet another layer that provides functionality for the user and defines several APIs for building interfaces with other systems and tools. The idea is to allow immediate system usage to users who access the system through a web browser, without the need for any installations on the user side. Sessions are secured through the SSL protocol, and some operations are allowed only for users with installed certificates in their web browsers. User authorization is integrated with directory services through the LDAP protocol.

Functionality and features

Project management

The core of the system is the project repository and a broad project definition that contains the following information:

- Components specification
- Budgeting/cost estimations (quick, and detailed)
- Quotes and orders
- Project plan (with navigator and scheduler modules)
- QA templates and reports
- Purchase orders
- Invoices

The project specification (called the 'components specification') does not describe the localization services, but rather the components to be localized. The idea is to gather all possible information about the source material, such as file type, subject matter, formats, volumes, target audiences, etc., and then decide what services should be offered for each of these components. Through this approach, the needs of a customer can be quickly recognized and service levels and process advice be provided.

Once sufficient details about the required services and the volumes is obtained, the budgeting section is used to calculate costs. We can select the most suitable vendors, freelancers, and internal resources based on the information in the system. The system then automatically generates prompts with minimum, average, and maximum rates found within the resources matching the specified criteria for the services needed. As an outcome from the budgeting section we receive statistics for the estimated minimum, average, and maximum costs of resources. After notifying and confirming availability of chosen resources, the exact resourcing costs can be generated.

The budgeting data, along with resourcing information, can be propagated directly to the project planning section. There are various methods for service decomposition and combination to allow for flexible task definition. Tasks can then be allocated, sequenced, and dependencies between tasks can be specified. Gantt charts are not available in this version, but are planned for the next release, along with an export feature of project plan data to Microsoft Project.

Quotes can be prepared after completing the components specification. If rates have already been agreed, an initial quote can be

based on a customer-specific pricelist. The quote can then be compared to the budget estimate, and any budget changes can be automatically traced and verified. Quote

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and order are basically the same documents, i.e. the quote becomes an order after reaching the appropriate approval status.

The system keeps a log of project changes, different versions of project documents, and all other historical data. An automatic data flow is provided from specification through quote and budget to project plan, QA templates and other documents. After allocating the tasks to vendors or free-

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lancers, a purchase order is automatically created. Any last-minute changes requiring the change of a purchase order (PO) that was just sent out results in a new version of the PO document with a new version number that replaces all previous versions. According to task-type, a quality assurance procedure is automatically scheduled along with the appropriate report template to be filled in. All QA reports are stored in the system and provide useful information for resource evaluation. They also signal needs for process improvements. Eventually, the system issues invoices for the project work. Invoice templates can be customized. Although the system is not designed to provide accounting services, the intent is to develop an interface with an accounting package through automatic data exchange.

Customers, Vendors, Users

To improve the adaptation of the system to customer needs, the customer-specific database is tightly integrated with the services and pricelists databases. As a result of this structure, we can define specific sets of services for each customer. These pre-defined services range from simple ones, which cannot be decomposed further, to complex services that can include procedures or combinations of the basic services. Rates for each kind of service are then entered into specific price lists for each customer. Through this model a detailed quote with all rates and services can be immediately generated once the components specification for a project has been entered.

The main role of the vendor database is to support project managers in choosing the optimal resource for any given project task. Advanced filtering functions allow searching for resources using many criteria, including source and target languages, specialization, location, type of service, and other attributes. Before making a final decision, the project manager can review a history of the projects completed so far, as well as QA reports and comments recorded previously for that resource. The vendor database features also include support for the recruitment process of new vendors and freelancers.

The system contains advanced access rights definitions, including different access rights for customers, vendors, employees, as well as for workgroups and divisions. The basis for defining access rights is a unified table of all system users, treated as *objects*. As a supplement to the users table, a table of relations is used, which enables us to define relationships between users within the system, such as a customer account manager, member of the workgroup, head of the department, etc.

Using these relations, we can define access rights, not only depending on a user group membership, but also on the functions (i.e. role) the users have in the system. For example, each department manager has access to all projects of his or her department, while project managers can only access their own projects and projects of the customers they deal with. Standard access rights (no-access, read, write, delete) can be applied either to entire objects (records) or only to their specific attributes (fields). Additionally, access rights can depend on the status of the object. For example, project managers can change the start date of a project until the project status has changed to 'active'.

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Project file server

The Project File Server has a special design for handling project folders—the folder structure is stored as part of the project configuration. We can choose a standard folder structure for a project or we can define a customized structure. It is used as a template for the project files directory tree. Initially, its structure is only virtual, and, physically on the disk, only those directories are created that are actually used. The aim of this configuration is to provide project managers with a quickly defined and adaptable framework for project file management. It ensures central storage of project files, it streamlines the flow of work and data within a project, and also provides dedicated access interfaces for
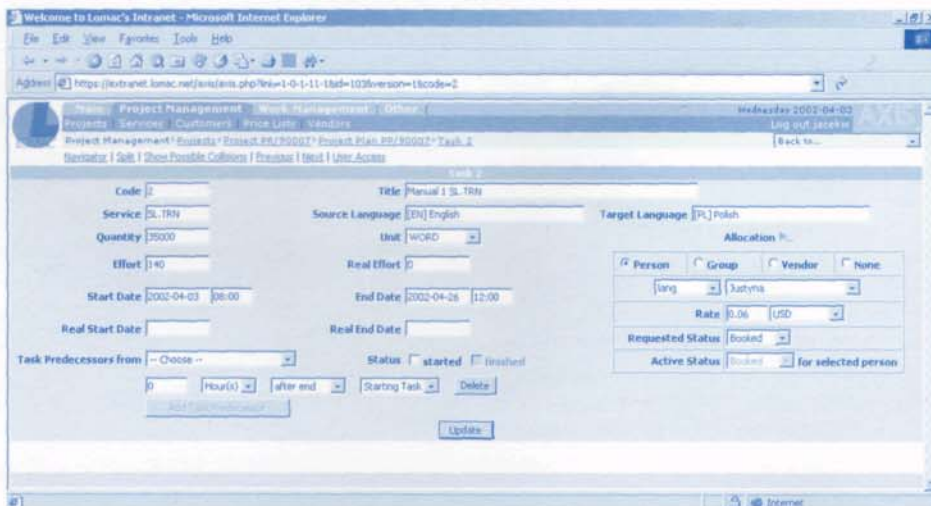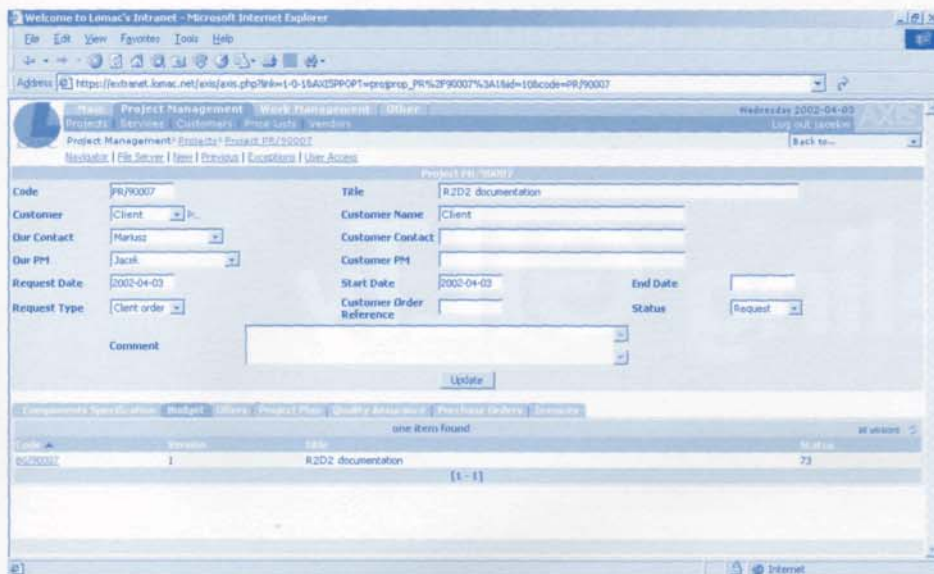
users. Available File Server interfaces include project managers, customers, and vendors.

All file sever features are available through a web browser interface, so there is no direct disk access, which simplifies the usage and improves security. File server operations can be divided into file management functions and the quick access interface. Through the file management interface, users can perform basic file operations such as upload, download, copy, move, and delete. A file compression/decompression mechanism is also integrated, which is particularly useful for projects

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with a large number of files, where it is easier to handle file packages than individual files. The file management interface looks similar to standard file handling tools, i.e. commands are activated by selecting files or folders and then clicking the appropriate icons on a toolbar. For quick file browsing, a tree-like structure of all current project files and folders can be displayed. Additional features include disk space management with automatic notifications to project managers and system administrators, and a fully automated project archiving procedure after a project has been completed and closed.

Allocations/Resource Management

The main effort in this area was concentrated on effective management of pools of resources, as well as detailed statistics and progress monitoring. Features of the system include:

- Possibility of defining group allocations

- Calendars defined for specific resources

- Definable metrics for project activities

- Tasks allocated to resources with *preferred* and *booked* statuses

- Conflict-resolution during resource reservations

- Support for resource reallocation

- Daily task reports

- All report data integration allows daily monitoring of work done and budgets

The HORIZON system enables us to determine the availability of human resources by defining calendars for vendors and remote offices. It also specifies the default working hours for offices and detailed working hours for employees. The levels of effort involved with each task are calculated based on a labor consumption ratio associated with the services. To provide flexibility and precise task effort calculation, multiple labor consumption ratios can be defined for a single service. The system allows for a two-fold resource allocation: Resources, if available, may be *booked* or tagged as *preferred*. This enables us to define preferred resources throughout the project and then automatically adjust the project schedule to the availability of selected resources. The system also pro-

vides features for actively supporting resource selection in order to accelerate the project completion time. Additionally, conflict-resolution and resource re-allocation models are available. The status of overdue tasks that collide with other task allocations is automatically changed to the *preferred* status. Then, an alternative resource selection mechanism can be used or the system automatically adjusts the schedule.

Future directions

We are not lacking ideas about future system developments. Interoperability is particularly a big issue, i.e. to prepare better interfaces allowing systems to "talk to each other". We are thinking about production and content management systems and other computer systems on our customers' side. Future directions include:

- Interfaces to other intranet/extranet solutions, content management systems, etc.

- Integrated services available through a web browser, such as automated TRADOS analysis, automated checks on files, etc.

- Integration with accounting systems (exchanging order and invoice data) through ODBC or any other data exchange format

- Definition of an end-to-end workflow with all processing managed through a web browser.

Also planned is standardization of all historical data during our work with a customer, i.e. all linguistic data, such as glossaries, translation memories, reference materials, as well as all other project data, such as resources used, QA results. Leveraging this knowledge can generate even better initial results for future projects of this customer than standard TM pre-translation only.

LOMAC is a translation company committed to providing top quality services in the traditional linguistic industry through the use of state-of-the-art IT technology. Mariusz Kordas, a co-founder of Lomac, has more than a decade of experience in localization production and management, and is now responsible for technology development for the Lomac Group.

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