



Client

A US-based leading online travel agency

Industry

Travel, eCommerce

Business Challenge

Client is a world leading travel agency, offering the best rates on airline tickets, hotel reservations, car rentals and more. In order to meet expectations of the travel price-hunters, the client's system has the following components:

- Functional web interface to search, book and advertise trips, based on a particular trip requirement;
- Back-end systems to manage deals and other business-related data;
- Interface for the suppliers' to fill in their offers.

Rapid growth and market expansion strained the company's in-house IT resources, while the need for technology upgrades and new architecture solutions continued increasing. Outsourcing the professional services became an obvious solution, allowing the core staff to stay focused on critical projects.

The outsourcer had to meet tough professional skills criteria and to have a proven track record.

It also had to be able to work seamlessly with the onshore team in an agile environment. The selection process narrowed down to vendors specializing in complex IT projects. Luxoft was considered thanks to their reputation for handling the sophisticated projects and a track record to prove it. Finally, Luxoft was awarded the project, thanks to their strong focus on engineering excellence, in-depth domain knowledge, solid track record and the global delivery capability. The project started with a pilot, involving only a couple of Luxoft engineers, until Luxoft won the client's complete trust and a full-scale Delivery Center was established at Luxoft.

Technology Utilized:

- J2SE 1.5: Xalan 2.7.0, Apache Commons (Pool, Collections, POI, BeanUtils, Math, Logging, etc.), ILOG JRules 6.7.1
- J2EE 1.4: Weblogic 10.0mp1, EJB 2.1, JMS 1.1, JTA 1.0.1
- Integration: Oracle Coherence 3.3.1, SOAP 1.2, JAX-RPC 1.1 / JAXB 2.1, JWSRP 1.6, Ant 1.6.5, Runway 2.4.2, LiveProcessor 4.3
- User Interface: Struts 1.3.8/Tiles, AJAX, JSP 2.0/Servlets 2.4, JSTL 1.1.2, XSLT/XML, Yahoo UI
- Database: Oracle 10g, Toplink 10.1.3, Oracle Financials
- Servers/OS: Sun / Solaris
- Security: Ingrian JCE 4.2, Bouncy Castle 1.30
- QA Testing: Segue SilkTest, MockEjb 0.6, TestNG 5.7, Dbunit 2.2hw, jDepend 2.9.1, QALab 1.0, Selenium Remote Control 1.0, Checkstyle 4.4, Smartbear 4.0



Over the span of two years 6 projects of different sizes involving different functional areas were accomplished by Luxoft engineers:

Deal "Extranet"

Full-cycle development of the new website that provides suppliers with functionality for managing their deal advertisements hosted at the client's site. This functionality also collaborates with the system for internal Deal Management. The system works as a strong operational leverage and a way to increase ad sales volume.

Customer Reviews

The scope of this project includes the new functionality that gives the end-users a new feature to review and rate the hotels they have stayed at. Collected data is used to help others make an educated choice, taking into account other users' reviews.

Deal Management Tool

A new Content Management System (CMS) must replace the existing legacy system. Client's own new CMS allows to expand the deal business significantly, starting from simplified newsletters distribution to another full-fledged site's development. The CMS support costs are getting reduced at the same time. Different components' delivery prioritization was essential for this project.

City Resolution

Improved mechanism of determining the geographical objects from user input that would resolve the ambiguous cases. This would allow reduce a number of users leaving the site when encounter resolution problems.

Site Redesign

Large-scale effort to change the look-and-feel of the client's site, involving page-by-page redesign.

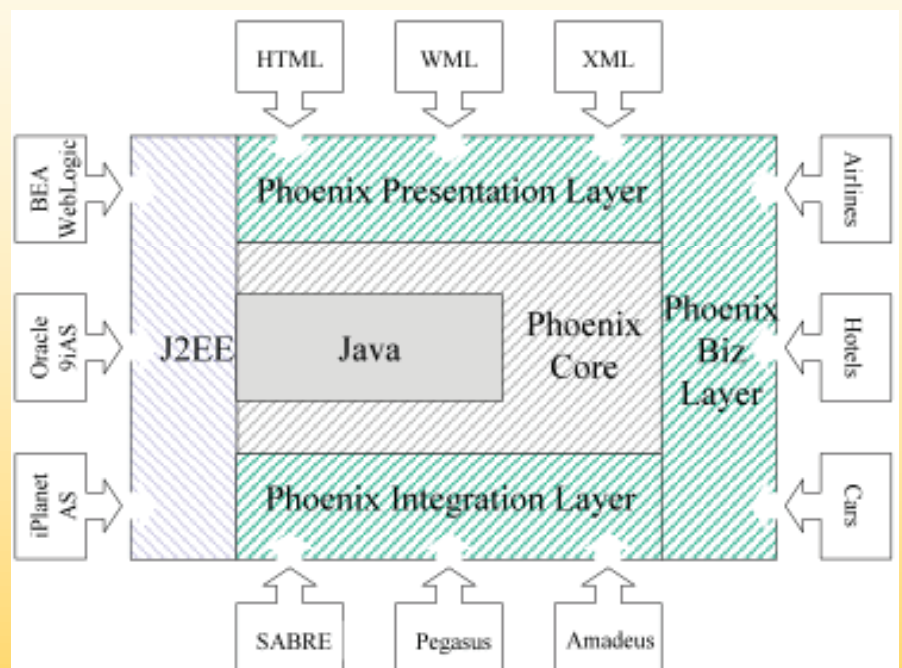
Test Automation Project

Extended initiative for the client's regression test catalog automation and execution.

Approach

The main challenge for the Luxoft team was to interact seamlessly with the ongoing client local software engineering process and fit all projects into the existing architecture. From the get-go all teams were making sure that they run on the same process and standards. It was crucial to work closely with both business and engineering teams in a format that they are comfortable with, so that everybody's expectations could be fully met.

Initial onsite trainings for the key technical specialists from Luxoft provided the immersion into the client's engineering culture, facilitated knowledge transfer and helped establishing an effective work process.





Solution

Luxoft developed a unique solution for each project, based on the existing business needs.

1. Deal "Extranet"

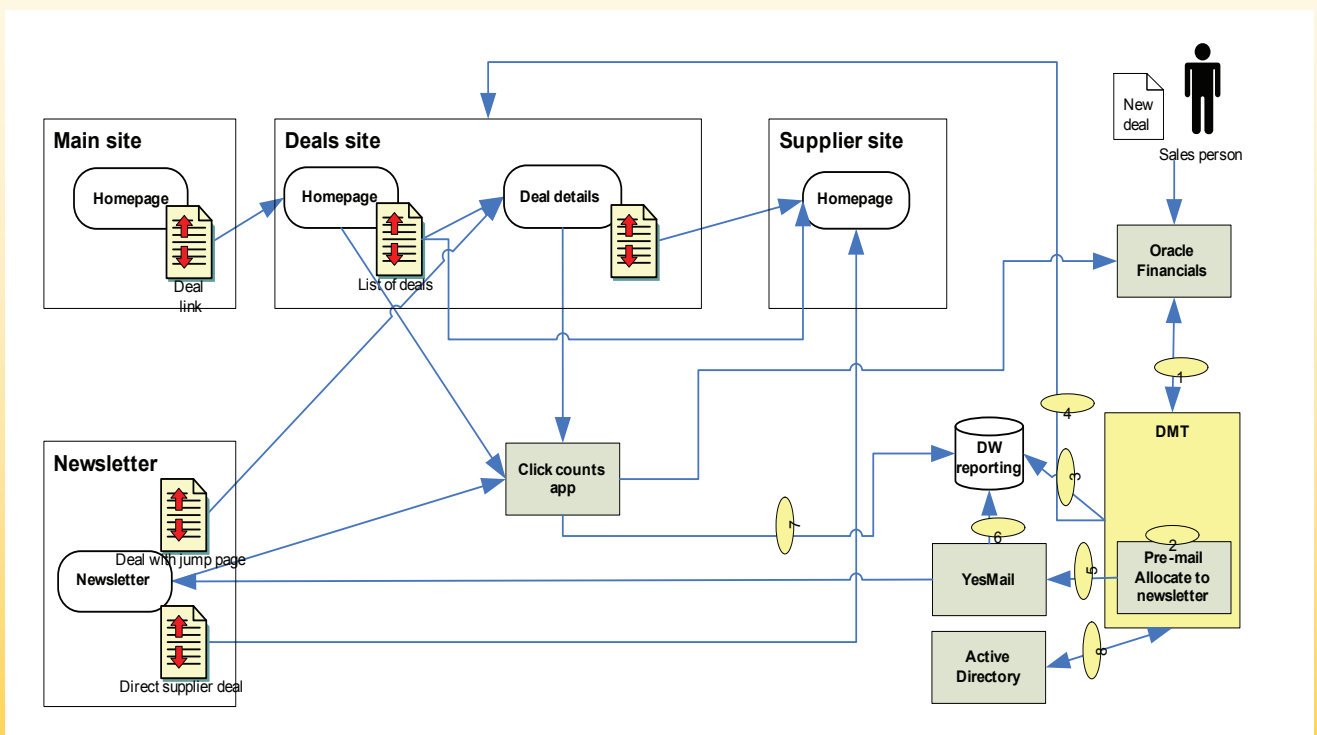
During the first project stage, Luxoft suggested an alternative approach by having the nearshore team handle business analysis and requirement development. This method guaranteed a very high level of cooperation with the local business team and specific system suppliers. Stakeholders were pleased with the resulting high quality of the delivered conclusion and the requirements' clarity.

From the Engineering perspective this project required highly detailed system design to cover all aspects of the external system: security requirements, financial traceability, functional requirements, technical knowledge transfer, etc. Luxoft provided about 300 pages of detailed project technical documentation where most of these aspects were covered. The following important functionality was developed:

- Web application designed for use by both sales persons and suppliers, which eliminated the extra cost of developing two separate systems.
- Support of sales agents who can work with multiple suppliers in addition to the direct supplier's organizational scheme support.
- Multiple alternative interfaces for supplier's data management
- CSV/MS Excel files support

Project Scope:

- Business requirements analysis and user needs elicitation
- Design and document front-end projects of various scope
- Creation and maintenance of the presentation layer of client's site
- Creation of the client's automated newsletters
- Integration with the client's web statistics and analysis tool
- QA and Test Automation





- Interactive “Web 2.0” interface
- Web Services interface
- Excel reports generation, distribution and filtering in order to increase system data flow visibility
- Email notifications
- Integration with Oracle Financials System
- WebDav protocol has been used for secure file access and management

2. Customer Reviews

A new functionality was required that would give the end-users a new feature to review and rate the hotels they have stayed at. Client developed the requirements for this project, but lacked the engineering resources to implement them. In order to speed up the project execution, Luxoft staffed the client’s development center with additional professional team in a matter of few weeks. They were quickly trained locally by the staff engineers, and the client’s site boasted the fully-functioning new feature in only in four months following the initial request.

Luxoft’s expertise in text analysis allowed them to propose and implement an improved mechanism for user-entered text validation. Sophisticated context rules were applied in addition to the straightforward search mechanism that was initially planned. This improvement helped the client reduce the team of reviews moderators and have a more interactive dialog with the review author.

3. Deal Management Tool

A new deal engine with a separate Intranet web application was created in order to better serve the rapidly evolving business needs.

- Deals, newsletters, deal packages and system user management tool - all unified under the same web interface concept
- Various search options that help find and access information quickly
- Multi-user transactional environment that prevents editing the same deal by more than one user at the same time
- Individual easy-to-change entries flow
- Email notifications of the deal status changes
- Active Directory integration meeting the security and usability expectations
- HTTPS

Beyond the full compliance with the client’s technical requirements, the system provides the following mission-critical benefits:

- Matches business processes requirements
- System’s user-friendly design eliminates the need for any special training
- High scalability simplifies the system’s future enhancements

4. City Resolution project

The improved City Resolution feature is based on state-of-the-art technology and, compared to its predecessor, has the following enhanced functionality:

- Improved resolution for cities with ambiguous locations, which allows user to unequivocally select between:
 - cities with same city name (examples: Portland, Maine vs. Portland, Oregon);
 - city, state, or country with the same name (example: Jamaica, NY vs. Jamaica country);
 - different airports of the same city.
- Auto-correct and auto-complete options that deal with the issues like misspellings, punctuation in the user input, abbreviations.



- Support for different logic for different services (air, hotel, car, cruise)
- Customization tool for the site administrators enabling them to update system information on demand

5. Site Redesign Project Stack

This project was broken down into small iterations, and delivered few pages at a time. The biggest technical challenges were to upgrade the site to Web 2.0 level by introducing the new interface, while keeping the existing functionality and extending some parts of it.

6. Test Automation Project

Luxoft provided offsite automation test design and testing of the product, while maintaining close collaboration between the client's development team and the Luxoft automation team. Luxoft introduced and implemented test automation for this project, which resulted in significant regression testing savings for the client.

The project scope included:

- Setting up of effective and transparent communication between the client's testing team in different geographic locations and time zones.
- Integration of Luxoft's offsite team into the client's environment, while maintaining all the client's development processes and automation tools.
- Working with test documentation already developed by the client.
- Product test design services with the complete traceability to requirements and controlling test coverage.
- Reduction of the efforts needed for regression testing due to the Segue-based test automation.
- Regression runs for every new release (monthly) during the entire product development cycle.

Benefits

Luxoft team delivered significant enhancements for the client's online booking system, seamlessly integrating new features into it. The entire project was completed on time and on budget. Luxoft's combination of nearshore and offshore development locations ensured smooth collaboration throughout the entire project. High professional level of Luxoft engineers guaranteed high quality output fully meeting the client's standards. The Test Automation project helped increase the application code coverage from 35% to 63% and the number of automated use cases went up from 500 to 1700.

Bottom line benefits include:

- The expected financial benefits of the improved City Resolution and Customer Reviews features are around \$30 - \$40k per month for each project.
- Compared to customization of an out-of-the-shelf CMS or implementation of an application from an ASP, the ROI of the Deal Entry Tool project is about 400%.
- Though not quantified yet, the intangible benefits like security, usability, data propriety, and increase in speed are likely to be even more significant.

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