

Case Study



New High-performance Enterprise Lead Solution Keeps Urban Science Ahead of the Curve

Abstract

A global retail consulting firm, Detroit-based Urban Science, has been helping automakers evaluate, streamline and revitalize their sales operations for three decades through superior analytics and marketing expertise.

With their customers' expanding presence in direct response marketing, Urban Science experienced increased demands that gave rise to the need for a new Lead Platform for its key delivery system – the Enterprise Lead Solution (ELS).

Toward this objective, Urban Science selected Microsoft's .NET Framework 3.0 as the platform and Infosys as its strategic development and implementation partner for the new ELS. Following a successful proof-of-concept, Infosys recommended that the new ELS be developed on the emerging Windows Workflow Foundation (WF).

A new ELS was architected, developed and implemented leveraging Infosys' proven processes and project management expertise. The new system exceeded the flexibility, scale, and high performance targets desired by Urban Science to compete in the global market.

Situation

With 400 employees across five continents serving almost every major global automobile manufacturer, Urban Science provides its clients actionable insights to help transform their sales channel performance.

One of their key delivery systems is the Enterprise Lead Solution (ELS), which does the following:

- Captures leads gathered from the Internet or other channels
- Scores leads based on “probability of sale”
- Assigns these leads differentiated treatments
- Distributes leads among appropriate sections of the organization for follow-up
- Reports on everything from the number of leads delivered, to the marketing steps taken, to close rate analysis

ELS allows Urban Science to predict optimal resource allocation at the customer level itself, helping improve return on investment (ROI) on their marketing and sales activities.

Lately, Urban Science had seen automobile manufacturers becoming increasingly involved in direct-response marketing and making greater investments in lead management. This clearly pointed to the need for a new Lead Platform for ELS that offered increased flexibility, extensibility and performance to meet the increasing demands.

These business drivers led Urban Science to evaluate alternative platforms for ELS. It ultimately zeroed in on the emerging .NET Framework 3.0.

Although Urban Science was originally inclined toward BizTalk Server 2006, Infosys’ comparative analysis identified Microsoft’s new Windows Workflow Foundation (WF) as the best fit for the client’s business and technology environment.

The Solution

Though WF had been rolled out only a few months prior to the project, Infosys had already evaluated its performance.

Throughout the project, Infosys demonstrated its expertise in dealing with WF in spite of the fact that the product was in its beta stage and there were no benchmarks.

As Urban Science was keen on BizTalk Framework 2006 instead of WF, Infosys decided to execute a pilot that would prove the efficacy of this innovative solution.

Proof of Concept

For the proof of concept, Infosys created and executed a performance testing strategy simulating real-world scenarios. It designed simulations to illustrate the methodology involved for meeting performance criteria through a hardware projection.

The Infosys team also demonstrated workflow activities like Rules Engine and Web Services Interaction proving that, with WF, Urban Science could achieve better flexibility, extensibility and performance in the new ELS.

Technology Edge

The solution was architected and built leveraging the following best-of-breed technologies:

- Windows Workflow Foundation/.Net Framework 3.0 – A new framework available with .NET framework 3.0 that supports the creation, integration and management of business processes
- Microsoft .Net Framework 2.0 – Version 2.0 of the Microsoft .NET framework that provides managed code execution for MSIL (Microsoft Intermediate Language)-based applications
- Visual Studio 2005 – The Integrated Development Environment (IDE) used to build solutions using .NET 2.0
- Web Services Enhancements 3.0 (WSE 3.0)
- Microsoft Message Queuing 3.0 (MSMQ 3.0) – The queuing infrastructure from Microsoft that helps send and receive messages via a queue, providing a reliable message store
- Internet Information Server (IIS 6.0) – The Web server from Microsoft that supports the creation of highly scalable web applications
- SQL Server 2005 – The relational database from Microsoft

The New ELS

The old version of ELS relied on sequential processing of data that bound it tightly to one manufacturer at a time making it relatively inflexible to quickly adapt to new customers. The catch lay in the tight binding of data with steps coded one after the other. This meant that the code needed to be re-factored and re-deployed for new business requirements, customers or prospects sequentially.

Using capacity projection techniques, Infosys predicted the environment requirement for deployment through load testing. A detailed User Acceptance Testing (UAT) of various functionalities established that the solution suggested by Infosys was aligned with the client's vision.

As a result, the architecture of the new ELS was demarcated on the basis of two vital processes of receiving and processing leads, as follows:

- Lead Receiver – Performs lead queuing, lead processing and prospect queuing. It also ensures high security while receiving leads from various sources.
- Lead Processor – Ensures accurate workflow implementation, workflow hosting and high flexibility while configuring files.

The versatile architecture has enabled the new ELS to receive and process leads from various channels such as Web Services, File Transfer Protocols (FTP), Hypertext Transfer Protocols (HTTP), emails, data received on a CD, and so on. Manual uploading of leads is also possible using this solution.

The new ELS is equipped to address key factors as described below:

Factor	Solution
Flexibility	WF based flexible design that allowed easy addition, deletion and re-arrangement of the order of activities
Reliability	MSMQ based queuing mechanism to ensure leads are not lost due to overload on web servers
Security	Authentication of providers to ensure secure communication
Performance and Scalability	IIS based WF hosting
Maintainability and Manageability	WF based solution is easy to maintain and modify due to rich set of designer tools that integrate with Visual Studio 2005

Benefits

In addition to greater flexibility, improved performance and scalability, Infosys' choice of WF for the new ELS also helped save costs that would have been significantly higher with BizTalk Framework 2006.

- **Greater Flexibility:** In the new ELS, workflows can be changed any time. Urban Science can now respond faster to dynamic business scenarios - quickly add new customers to the Urban Science database, customize workflows for existing businesses, and so on.
Urban Science Global Practice Director Mark Yuhn says, "There is a marked increase in customer satisfaction, as the ELS now processes more leads. This makes our data more accurate and reliable. We would like to commend Infosys for its efforts, as this feature has surpassed our expectations."
- **High Performance:** The solution exceeded the client's expectation of 100 Auto Data Format (ADF) leads per minute by 90 per cent – the new ELS is capable of processing 190 leads per minute.
- **Higher Availability and Scalability:** The new ELS has greatly reduced the number of lost leads. A key feature of this solution is that it sends alert mails to system administrators seeking their intervention in resolving workflow issues. "The auto generated mail system from ELS has made our work easier. Employees now refer to these mails to keep track of workflow issues," says Urban Science Global Director of Technology Mike Boumansour.
- **Ease of Maintenance:** The WF-based ELS allows Urban Science to quickly create new workflows or change existing ones with a significant reduction in maintenance costs.
According to Boumansour, "The workflow technology allows us to develop customer specific processes without the burden of significant ongoing maintenance costs."



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