

MICROSOFT WEB SOLUTION PLATFORM CASE STUDY

OpenTable

Microsoft® Web Solution Platform Improves Reliability, Enables Partnerships for Leading Provider of Online Restaurant Reservations



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Solution Overview

In 1998, OpenTable began offering online restaurant reservations to diners in San Francisco and since then has expanded its services to restaurant goers in cities across the United States and beyond. Like other thriving Internet companies, OpenTable owes much of its success to smart people, a smart idea, and, recently, a very smart move to the Microsoft Web solution platform. As a result of this move, OpenTable has managed to reduce its development costs, significantly improve the reliability of its solution, and position itself for major expansion through ambitious co-branding and partnership efforts.

Customer Profile

OpenTable is the leading provider of online restaurant reservations and other services to the hospitality industry and has partnerships with American Express, Zagat, AOL/Digital City, and more than a dozen others.

Business Situation

OpenTable's prior server environment presented the company with major challenges in finding experienced developers, controlling development costs, and maintaining reliability and availability.

Solution

By redeploying its server environment to Microsoft® Windows® 2000, SQL Server™ 7.0, and other technologies in the Microsoft Web Solution Platform and adopting the Visual Studio® development toolset, OpenTable has boosted its ability to find senior developers, reduced its development costs, and dramatically improved the reliability of its site.

Software and Services

Microsoft Windows 2000 Advanced Server, including Microsoft Message Queue Service, Microsoft Internet Information Server 5.0, and Microsoft Transaction Services
Microsoft Windows NT® Workstation 4.0
Microsoft Data Engine
Microsoft Exchange Server 5.5
Microsoft SQL Server 7.0
Microsoft Visual Studio 6.0
Microsoft SOAP toolkit

Partners

Vertigo Software Inc.
Digital Island (Web hosting)

Scenario

Business-to-business and business-to-consumer e-commerce

Situation

The world of e-commerce is still too young for anyone to know for sure what makes some dot-coms successful and others not. But the people at OpenTable, a rapidly growing startup providing online restaurant reservations and other services to the hospitality industry, have clearly done a good job of figuring it out. OpenTable began operations in San Francisco with a solution based originally on SunSparc Solaris Web servers with Apache on the client tier, BEA WebLogic Java EAS on the application tier, and an Oracle database. Growth was solid and steady. But as the company began expanding its operations to include restaurants in New York, Chicago, Seattle, and Los Angeles, problems began to emerge. For one thing, many of the Java technologies and supporting development tools were so new that the company had difficulty finding engineers with sufficient experience in using them. For another, those development tools tended to come from different vendors, with no guarantee they would work together.

OpenTable also was beginning to experience major reliability problems in the application tier. Because of what turned out to be highly unstable JDBC drivers, memory leaks became so severe that engineers had to equip all the servers with at least a gigabyte of RAM and schedule precautionary reboots every four hours. "This meant our technical people were spending more than half their time addressing functional failures," says Susan Lally, vice president of engineering. "Clearly, we needed to redeploy our solution using a technology more widely known in the engineering community, supported by an integrated set of development tools, and considerably more reliable."

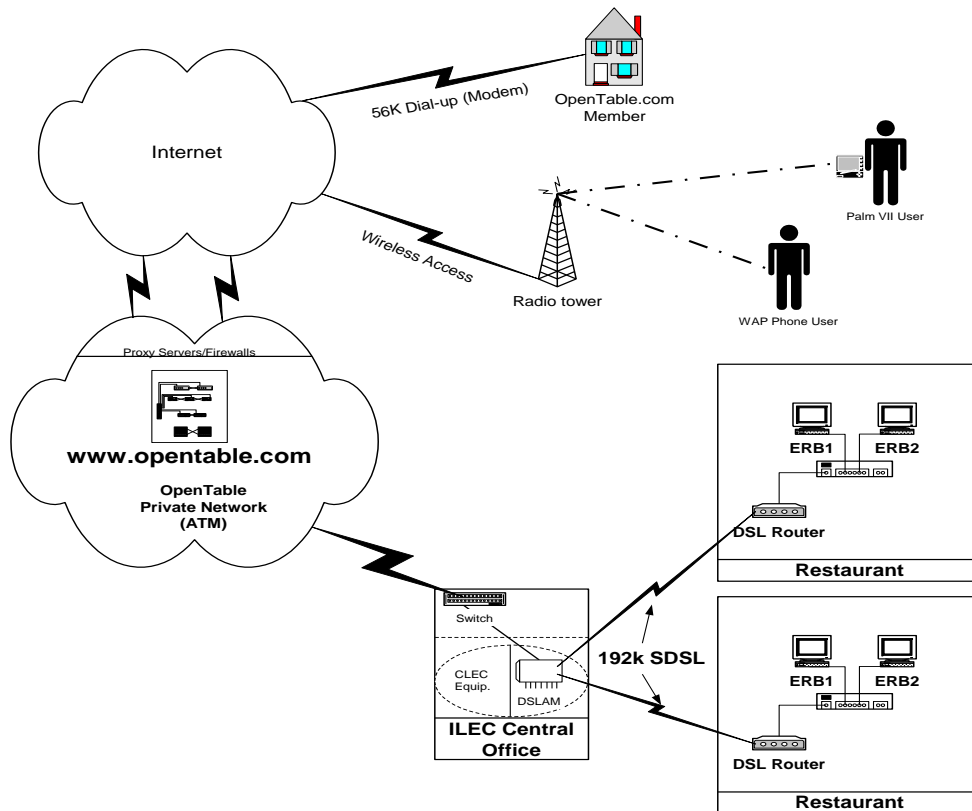
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Solution

In late 1999, OpenTable began preparing for the launch of a major co-branded site with AOL/Digital City that would expand its services nationwide to more than 20 million people. This meant the company had to implement its redeployment, and quickly, to ensure the scalability that such a move would require. After considering three other technologies, Lally and her colleagues decided the Microsoft Web solution platform would be the most capable of meeting the challenges her team faced. They began work right away. In ten weeks, working first with Microsoft Solution Provider Vertigo Software and then on their own, Lally's team redeployed the OpenTable solution to a virtually 100-percent Microsoft environment.

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Susan Lally
Vice President of Engineering
OpenTable



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Mark Deaton
Director of Information Technology
OpenTable

Figure 1 Architecture of the OpenTable online restaurant-reservation system, including Web-based server application and PC-based client application distributed to participating restaurants.

Today, that solution consists of a server side, which is the Web-based online restaurant-reservation system, and a client side, which is a desktop-based application tied into the online system and distributed to participating restaurants. The server side is supported primarily by the Microsoft Windows® 2000 Advanced Server operating system, including Microsoft Message Queue Service and Microsoft Transaction Services; Microsoft Visual Basic and Microsoft C++ COM+ objects (providing the business-logic tier); Microsoft SQL Server™ 7.0 (providing the data tier); Internet Information Server 5.0; Microsoft Exchange Server 5.5; and Microsoft Active Server Pages (providing the pages for users accessing the Web site).

The client side, which runs on touch-screen PC devices based on the Windows NT® Workstation 4.0 operating system, stores data in the Microsoft Data Engine, a database technology based on SQL Server 7.0 and fully compatible with it. For both server- and client-side development and enhancement, OpenTable relies on Microsoft Visual Studio®, including Visual Basic, Visual C++, Visual SourceSafe, Visual InterDev, and the Microsoft SOAP toolkit.

Benefits

Development Resources Easier to Find, More Productive

Now that OpenTable has been running its solution on the Microsoft Web solution platform, supporting a system that now includes restaurants in at least 20 U.S. cities as well as London and Paris, Lally and her colleagues consider their move to the Microsoft technology a major success. For starters, they're enjoying far greater access to development resources than they did under the prior technology. "There simply are more senior developers experienced in Microsoft server products and Microsoft development tools than in almost any other technology," she says. "This makes it infinitely easier for us to find top-notch engineering professionals."

In addition, once those engineers begin work at OpenTable, they can be far more productive than they might have been in the prior environment. Lally says there are three reasons for this. "One, the out-of-the-box integration provided by the Microsoft toolset minimizes the number of development variables. Two, using a set of technologies that spans both server- and client-side development means that engineers can more easily share knowledge. Three, integration between the server and client databases is a given because we're using SQL Server technology on both sides," she says. "As a result, development and maintenance costs are lower and time-to-market is shorter."

Ending the Instability, Scaling Easily and Cost-Effectively

OpenTable also has enjoyed increased reliability and scalability with the Microsoft solution. "With the Microsoft environment we're free of the instability problems and functional failures that plagued the previous system," says Mark Deaton, director of information technology. "Consequently, site availability is higher and engineers can spend less time fighting fires and more time enhancing functionality." Another benefit comes from the close integration of SQL Server with Microsoft Exchange Server, which has enabled OpenTable to automate the notification process for SQL Server alerts and thereby simplify site maintenance and quality.

Still other advantages of using the Microsoft Web solution platform are becoming especially apparent as OpenTable grows its business into an ever-expanding base of cities. For example, with the business-logic tier now based on COM+ objects instead of the unstable and memory-intensive JDBC drivers of the prior environment, the solution can support four times the number of concurrent users as before. Scaling up is a lot more cost-effective as well. "In the earlier environment we faced sharp increases in price as we increased capacity," explains Chuck Templeton, founder and vice president of product strategy. "In contrast, the Microsoft Web solution platform supports a continually scaling model."

No longer distracted by reliability problems, OpenTable developers are working on a major enhancement that will provide an easier way for the company's partners to access the restaurant-reservation system. To do this, the developers are using the Microsoft Visual Studio SOAP toolkit

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to develop an XML-based co-branded interface that will enable a partner to provide OpenTable reservations to users directly, through its own site. "This enhancement will give partners an added service they can provide to their customers," Templeton says. "It also will enable OpenTable to vastly broaden its visibility to the public."

Expanding Web Services

As for the tools to support other enhancements, OpenTable executives are considering Windows 2000 Datacenter Server and products in the Microsoft .NET Enterprise Server family such as SQL Server 2000, for its support of distributed partition views and enhanced scalability, and Microsoft Exchange Server 2000, for its integration with the Windows 2000 Active Directory and the cross-company resource-management capabilities offered by that technology.

Although it's too early to say what additional functionality OpenTable developers will be building into the solution, it will definitely be tied to the company's continuing growth. This makes Lally all the more satisfied with her company's move to the Microsoft Web solution platform. "It's a given that we'll be wanting to grow our solution pretty steadily in terms of functionality and capacity," she says. "So it's comforting to know that we're using a platform that will support that."

The Microsoft Web solution platform enables building and deploying integrated Web solutions that get to market quickly—from high-traffic e-commerce Web sites to corporate intranets to enterprise supply chain integration. It provides the fastest, easiest way to develop Web applications that integrate and interoperate with existing applications, suppliers, customers, and future applications and devices. The Microsoft Web solution platform consists of a set of complementary products that provide unmatched enhancement and adaptability of Web applications today and in the future. The core is Windows 2000, an operating system and application server with built-in Internet services that enables developers to focus on adding business value to their applications. Building blocks include Visual Studio, SQL Server, Site Server 3.0, Site Server 3.0 Commerce Edition, SNA Server and the COM+ component and programming model. All are best-of-breed products and technologies leveraging the skill and knowledge of more developers worldwide than any others.

For More Information

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