



Microsoft SOAP Toolkit and Visual Studio 6.0 Enable Firm to Deliver Popular Traffic-Reporting Application in Just Four Weeks



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Using the Microsoft SOAP (Simple Access Object Protocol) Toolkit for Visual Studio 6.0, a rapidly growing software-engineering firm based near San Diego has created an application that's becoming indispensable to many area commuters. By taking advantage of SOAP's ability to deliver Web Services in a form easily usable by a Web site, the application enables commuters to check the current traffic speed on any proposed freeway travel route from the convenience of a handheld device.

Situation

Recently, developers at the San Diego-area consulting and software-engineering firm of InterKnowledge LLC wanted to create something little different from their usual fare of complex Internet commerce and multitier business solutions. To be precise, they sought to address a simple question asked by their own employees and anyone else who commutes long distances on Southern California freeways: Right now, which route would be the fastest for me? Radio, the usual source of traffic information on selected roadways, can answer that question for only a fraction of the audience at any given time. What the InterKnowledge developers had in mind was an interactive, Internet-based application that drivers could query simply and safely in their vehicles by using an ordinary handheld device such as a cell phone.

Solution

Using the SOAP (Simple Access Object Protocol) Toolkit for Visual Studio 6.0, the development team got to work right away and in four weeks built and deployed a full production release of the application. Self-hosted at InterKnowledge headquarters, the application consists of a Windows 2000 Service, a Web Service, and an independently operating Web site (<http://trafficreport.interknowledge.net>).

The Windows 2000 Service connects every 60 seconds to the Caltrans traffic-information Web site where it accesses newly updated traffic data, parses the traffic-speed component of that data, and downloads that to a Microsoft SQL Server 2000 database. The Web Service, consisting of a COM+ component developed with Visual Basic 6.0, pulls the traffic-speed data from the database and, with the help of SOAP, exposes it as XML-formatted content that can be returned to the Web site according to parameters (selected freeway and direction of travel) entered into the site by commuters. The Web site displays that content (by now converted into WML, a

Solution Overview

Customer Profile

Software engineering, 31 employees, \$3.2 million in 2000 revenue.

Business Situation

Needed a way to deliver real-time traffic information over wireless devices to employees and other commuters in the San Diego area.

Solution

Benefits

Development and deployment of functional and successful application in just four weeks. Flexible way to deliver Web services. Ability to enhance application quickly and easily.

Software and Services

Microsoft Windows® 2000
Advanced Server including
Internet Information Services 5.0
Microsoft SQL Server™ 2000
Microsoft Visual Basic® 6.0
COM+
SOAP (Simple Object
Access Protocol) Toolkit 1.0

Hardware

Combined
Web/application/database
server: Compaq DeskPro EN
with Pentium III 500, 256-MB
RAM, and 10-GB hard drive.

Scenario

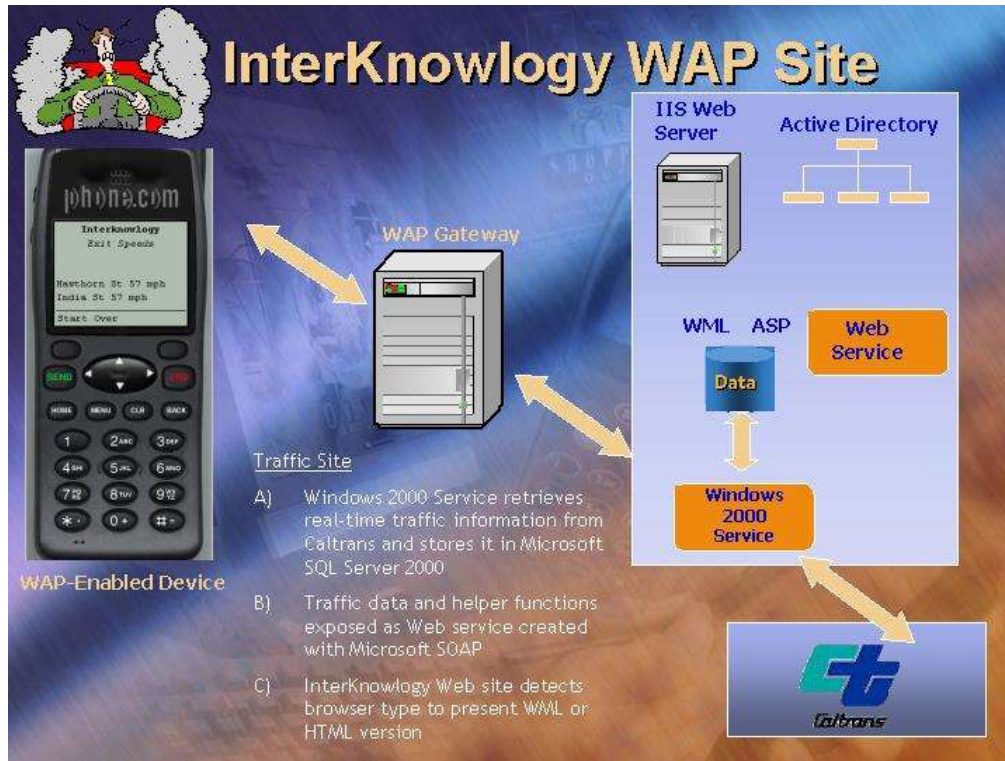
Web Services

markup language for mobile devices) in the form of average traffic speed on any device that is enabled for WAP (Wireless Access Protocol).

One of the team's two developers, Senior Software Engineer Terry Givens, is quick to point out that <http://trafficreport.interknowlogy.net> is not the only Web site that can consume the Web Services of the InterKnowlogy traffic application. Any company or organization can make the information available on its own Web site by accessing the Web Services Description Language at <http://trafficapp.interknowlogy.net/ctrafficapp.xml>, which programmatically exposes Web capabilities. "The data is public information, and InterKnowlogy is not interested in selling the service," Givens says. "So we're happy to make it available to any enterprise, such as a rental-car agency or a limousine service, that might consider it useful to their employees or customers."

"It's easy to keep our imaginations running on this because we know that with SOAP and its ability to convert data into Web Services, we have fast and effective way to implement all sorts of enhancements. If that's not a testament to the product's power, functionality, and ease of use, I don't know what is."

Tim Huckaby
President
InterKnowlogy LLC



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Senior Software Engineer
InterKnowlogy LLC

Figure 1 Workings of <http://trafficreport.interknowlogy.net>.

Benefits

Traffic Information When, Where, and How Commuters Need It

There's a good reason that commuters are finding the InterKnowlogy traffic-speed-reporting application so handy: While plenty of Internet applications monitor traffic, this is one of a rare few that can be accessed from a handheld device. That's not to say that users are restricted to using WAP-enabled devices or those relying on WML format to access the application, because the application can sense the browser capabilities of the client device being used for access and automatically deliver content in either WML or HTML. This means that commuters with handheld devices capable of displaying HTML, such as those running Windows CE, can access the traffic-speed data in a richer and more comprehensive format than that offered by the typical WAP



device. It also means that commuters without handheld devices can check the traffic-speed data on their desktop or laptop computer before beginning their drive.

A Fast and Easy Way to Convert Data Into Web Services

According to Software Engineer Marquis Howard, co-developer with Givens on the project, the advantage of using SOAP for this application was the ease with which it enabled his team to make data available in a Web Service. "The remarkable thing about the SOAP Toolkit is how quickly we managed to apply it to the challenge of building this application," he points out. "I had been programming professionally for barely four months when Terry Givens and I started the project, and yet we managed to deliver working code in just two weeks. That's how easy it is to implement this kind of functionality using SOAP."

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Software Engineer
InterKnowlogy LLC

Well-Positioned for Future Enhancements

Lately, the InterKnowlogy traffic-speed-reporting application has become so popular among both InterKnowlogy employees and other area commuters that the company has redeployed it to larger-capacity hardware and is considering implementing a Web farm for it. After that, the company will work on making the application available in cities beyond the San Diego–Los Angeles corridor and may incorporate traffic alerts or subscriber-based information that can be automatically e-mailed at a given time of day to a pager or a text-to-speech system.

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These are just a few of the possibilities currently being entertained by Huckaby, Givens, Howard, and their colleagues. "It's easy to keep our imaginations running on this because we know that with SOAP and its ability to convert data into Web Services, we have a fast and effective way to implement all sorts of enhancements," Huckaby remarks. "If that's not a testament to the product's power, functionality, and ease of use, I don't know what is."

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