



Microsoft Windows Mobile Developer Customer Solution Case Study

Enterprise Solution Provider Develops Mobile Business Process Application in Less than 45 Days

Overview

Country: United States

Industry: Information Technology

Customer Profile

Based in Dallas, Texas KLOTRON offers monitoring and management solutions. Based in Austin, Texas, Clotron develops fully customizable mobile software solutions for companies with mobile workers.

Business Situation

Based on its own experience going mobile with a help desk reporting system, Clotron saw tremendous potential business opportunity in extending solutions to mobile devices.

Solution

Clotron developed its Mobile Resource application, enabling mobile workers to work from anywhere and connect to business processes and existing systems using Microsoft® Windows Mobile™-based Pocket PCs.

Benefits

- Reduced development costs
- Faster time-to-market resulting from rich API support: Phase 1 total development time less than 45 days
- Flexible, unified platform architecture uses existing code, skills and tools. assets

“The Microsoft Windows Mobile development tools and other Microsoft technologies, including the .NET Framework, let us create a product with more features in less time.”

John Bowling, President and CTO, Klotron

In an increasingly mobile and information-driven world, replacing stacks of paper with inexpensive digital solutions is a challenge facing many companies—one that KLOTRON, Inc., a developer of software solutions that extend business processes to mobile users has surmounted more than once. Wanting to seize new business opportunities, KLOTRON, Inc., spun off an entirely new business, Clotron, to launch Mobile Resource, an application that puts affordable mobile solutions in the hands of any size business. Using the Microsoft® Windows Mobile™ development platform and tools, the company brought the initial application to market in 2001—in less than 45 days

“Palm provides no API [like Connection Manager], even in their newest OS. Instead, we would have had to buy a third-party tool and start coding and, probably, would have taken three weeks to get the same result we got in less than three days using the API provided with Windows Mobile Software.”

John Bowling, President and CTO, Klotron

Situation

Clotron helps large and small companies extend business processes to mobile workers quickly and cost-effectively. Clotron's fully customizable software solutions help companies increase data accuracy, uncover hidden revenue, and improve customer service by enhancing real-time collaboration between office and mobile workers. Clotron was founded in 1999. Its parent company, KLOTTRON, INC., achieved U.S.\$2.1 million in revenue in 2003.

Among its products and services, KLOTTRON provides network technical support and network management. Its initial procedure to report progress or obtain new assignments required its technicians to log on by using an Internet-connected computer—a step that was typically cumbersome when visiting a client site experiencing network problems. KLOTTRON wanted to improve customer service by giving technicians the ability to update progress and obtain new assignments—including detailed information—from the field.

John Bowling, KLOTTRON President and CTO, immediately saw additional potential beyond a help desk and monitoring reporting system. Bowling recognized that today's most successful companies need to extend business processes to mobile workers so that they can excel in an increasingly mobile and information-driven world. He wanted to create a data exchange solution that was flexible, customizable, and cost-effective while linking mobile workers directly to business processes so that the workers could capture data in real time and publish to existing systems.

Bowling and his team first looked extensively for a packaged solution that they could implement or modify, but found none that was cost-effective or that would scale adequately.

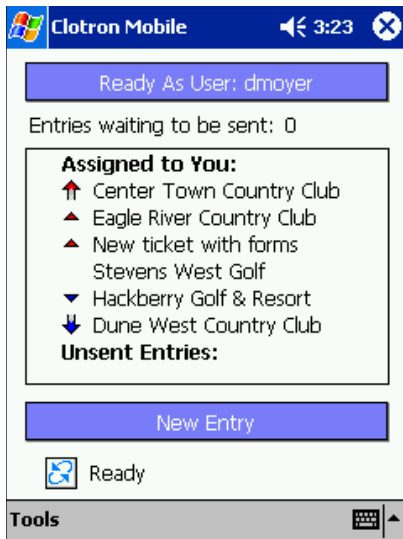
They also wanted a system that would be very easy to develop, would have standardized access from both the Web and mobile devices, would be easy to download to mobile devices, and be easy to deploy.

Solution

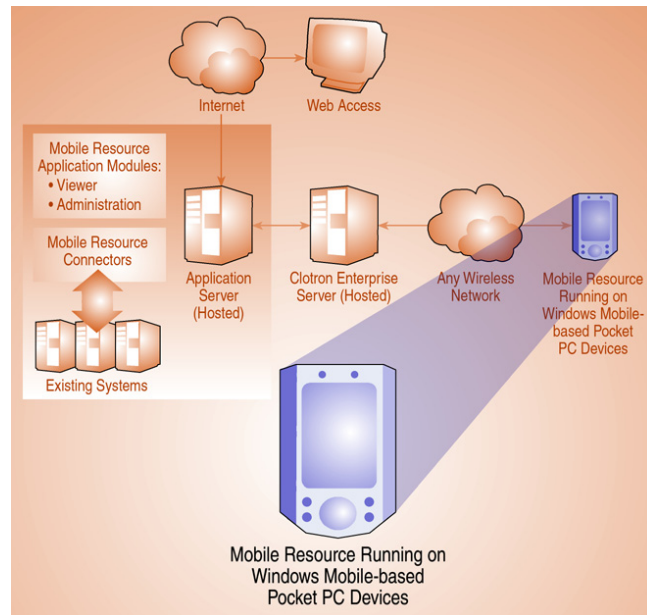
KLOTTRON first developed BIHS (Business Internet Help Services), which improves customer service by giving technicians the ability to update progress and obtain new assignments—including detailed information—from the field. BIHS has since grown into a complete monitoring management and reporting system that can be used in many industries.

BIHS led to the development of a product called Mobile Resource. In 2003, KLOTTRON founded Clotron solely for the purpose of developing a mobile offering. To use its existing code base, programming skills and tools, and take advantage of the flexible, unified platform architecture, KLOTTRON decided to develop Mobile Resource on Windows Mobile™ software using Microsoft® Embedded Visual C++® 3.0 and Visual Studio® .NET development systems.

Mobile Resource extends KLOTTRON'S monitoring and management solution to mobile devices, enabling mobile workers to connect to existing systems through Pocket PCs. With Mobile Resource, office-based employees can manage day-to-day workflow using a Web interface and keep up with its mobile workers in real time. New assignments or requests can be sent to workers in the field who use an application running on any Microsoft Windows Mobile-based Pocket PC. Mobile users can track their work and report back as they complete it, whether they're selling, installing, delivering, servicing, or monitoring a product or service. Customizable forms are the means for mobile-user interaction with the system. Examples of forms include a gas receipt,



The Mobile Resource client can be customized to show and record business-specific tasks, such as assignments newly issued, work progress, and work completed. Administrators can create new forms in minutes, using a defined seven-step process in the Administration Module.



vehicle maintenance record, order form, or a form for collecting customer or sales lead information.

The client application connects with a Web service on the Clotron enterprise server that uses Microsoft .NET-connected Web services provided by the Microsoft .NET Framework. The .NET Framework is an integral component of Windows® operating system that provides a programming model and runtime for Web services, Web applications, and smart client applications. The Mobile Resource software and Clotron server connectors run on an application server, which interacts with existing systems. The diagram shows the servers hosted by Clotron, but either server or both can reside at a client facility.

KLOTTRON'S experiences in development time were markedly better than even it had anticipated. In just six months, KLOTTRON went live and began testing a full beta version of its monitoring and management solution. Within that timeframe, KLOTTRON also started rolling out the monitoring

management portion of the system to customers.

Today, after initial rollout of Mobile Resource, Clotron's development progress continues to be impressive. Clotron developed the next version, Mobile Resource for Windows Mobile-based Pocket PCs, in only 45 days. In its version 2, Clotron developed three separate applications in eight months with a single developer working less than full time. Says Bowling, "We wrote our application in C++, but we are planning to migrate to the .NET Compact Framework now that it has become a standard offering on Windows Mobile 2003 software for Pocket PC."

Benefits

Clotron brought Mobile Resource to market quickly using Windows Mobile software for Pocket PCs, using their workers' skills in development for the desktop and using the Windows Mobile development tools to speed development and lower costs.

Faster Time-to-Market

“The momentum we gain using a Microsoft flexible, unified platform architecture allows us to save time and resources and speeds development.”

Brian Crowell, Software Architect, Clotron

Using the Windows Mobile development tools, Clotron was able quickly to capture market opportunities. Using existing code base, tools and desktop and server programming skills reduced time-to-market.

The application programming interfaces (APIs) provided with Windows Mobile are one example of how Windows Mobile makes life easier for Bowling's team. For instance, they were able to use the Connection Manager API that lets an application communicate in docked mode or wirelessly by way of General Pocket Radio Services (GPRS), 802.11 or 3G networks.

“Palm provides no such API, even in their newest OS. Instead, we would have had to buy a third-party tool and start coding and, probably, would have taken three weeks to get the same result we got in less than three days by using the API provided with Windows Mobile software,” says Bowling.

Brian Crowell, Software Architect, says, “Developing for phones that use Wireless Application Protocol (WAP) used to be difficult because it required careful testing on a wide variety of phones. ASP .NET Mobile Controls took the guesswork out of developing a site that would give a consistent user experience on any mobile device.”

Crowell, adds, “We have become die-hard fans of the Visual Studio .NET debugger, and so we were thrilled that we could take advantage of it to debug the Windows Mobile application as well. The Microsoft Windows Mobile environment is such a natural extension of the environment in which we're already working.”

Reduced Development Cost

Total development costs were well within Clotron's best expectations.

For its first version of the monitoring management and help desk application, KLOTRON'S development time was only 45 days and cost only \$45,000. Its second version, developed as three separate applications, required only one developer working less than full time for eight months. Bowling expects to cut development time “in half” for the next version while adding hundreds of features and add-ons. The next version will be developed using the .NET Compact Framework.

Mobile Resource out-performs similar solutions built on other platforms. Says Bowling, “I've seen our competitors' Java-based applications. In contrast, our product is very responsive; in fact, when field workers using a Windows Mobile-based Pocket PC access the forms and pages, there is no delay. It's fast and smooth, a tremendous benefit from a time-savings and usability standpoint.”

Richer Features and Data Connectivity

At a time when IT budgets are shrinking, Mobile Resource helps Clotron's customers extend their investment by providing rich features and connectivity to existing systems.

“We're looking forward to developing a single application that will run on both the Pocket PC and the desktop, using the .NET Compact Framework, as well as being able to build more real-time features into the product,” says Crowell.

The integration of using Microsoft .NET software for connecting information, people, systems and devices from the server to the desktop to the mobile devices puts everything on a common code base. Says Bowling, “The momentum we gain using a Microsoft flexible, unified platform architecture allows us to save time and resources and speeds development.”

For More Information

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For more information about Clotron products and services, call (866) 244-7266 or visit the Web site at: <http://www.clotron.com/>

“The Microsoft Windows Mobile development tools and other Microsoft technologies, including the .NET Framework, let us create a product with more features in less time,” says Bowling.

One of Clotron’s customers had this to say about Mobile Resource’s forms feature: “With Mobile Resource, we can set up new forms and, with one click on the field technician’s Pocket PC, implement those forms. That’s powerful!”

Bowling concludes, “Microsoft Windows Mobile development tools and the .NET Framework also lets us offer easier integration with customer systems. Our customers can’t believe it. They say, ‘How can you do this? How is this possible?’”

Microsoft Windows Mobile Developer

Microsoft offers developers a rich, flexible platform to build innovative applications for Windows Mobile-based Smartphones and Pocket PCs. The Windows Mobile platform offers extensive API support, integrated development tools, and familiar Windows programming models, so developers can use existing code and skills to quickly build and deploy applications. Comprehensive technical support and marketing programs, such as Mobile2Market, also help developers reduce time to market and capture new market opportunities. For enterprise scenarios, the Windows Mobile platform helps developers extend their PC and .NET programming skills as well as existing business systems, conserving time and money. Start developing today; visit

www.microsoft.com/windowsmobile/developer.

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Software and Services

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- Microsoft® Windows Mobile™ 2003
- Microsoft .NET Framework
- Microsoft eMbedded Visual C++® .NET

– Microsoft Visual Studio® .NET

Hardware

- Microsoft Windows Mobile-based Pocket PC

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