MCCi
Mason Computer Consulting, Inc.

BCD Business Computer Design Int'l Inc.

IBM

MCCI is a Web-application warrior, modernizing custom RPG code with WebSmart

BCD tool helps this consulting firm energize clients that love the simplicity and reliability of the System i platform.

Overview

■ Solution provider profile
Mason Computer Consulting, Inc.
- *Headquarters: Hagerstown, Maryland*
- *Founded in 1995, provides IS services on iSeries platform*
- *50+ clients in U.S. Mid-Atlantic States*

■ Challenge
- *Provide customized, affordable, Web-enabled applications*
- *Leverage RPG skills*

■ Solution
- *Use a rapid development tool for Web applications*

Key components
- *BCD ProGen WebSmart ILE*
- *ILE RPG*
- *CGI and HTML and IBM HTTP Server (or Java applets and servlets, and IBM WebSphere application server)*
- *AJAX*
- *SQL*
- *IBM DB2 UDB for i5/OS*
- *100+ free BCD templates/biz routines*
- *Built-in change management*

■ Benefits to solution provider
- *Reduces programmer effort up to 90%*
- *Delivers custom applications fast and cost-effectively*
- *Coders need no Java expertise*

■ Benefits to customers
- *Very affordable, customized applications*
- *Solutions run fast in iSeries batch mode*
- *Secure Web applications*

■ Tool provider profile
BCD International, Inc.
- *Sales Headquarters: Hinsdale, Illinois*
- *Technical Headquarters: Sidney, B.C., Canada*
- *30-year provider of application development tools*
- *10,000+ customers*
- *30,000+ product installations*
- *1 million+ users*
- *30+ industry awards*
- *100+ business partners worldwide*

Imagine delivering a large programming project ahead of schedule and at 70% less than the quoted $100,000. That is precisely what Chuck Mason, president of Mason Computer Consulting, Inc. (MCCI) did, thanks to a powerful development tool from Business Computer Design International (BCD). The client was so amazed that he happily spent the rest of the $100,000 on additional programming projects. This is the story of how MCCI solidified its strong reputation for delivering high value per development dollar spent.

Building MCCI's business with WebSmart

Mason is quick to attribute significant programming feats to BCD's ProGen WebSmart™ ILE (ILE RPG-CGI) tool. Of course, stories such as this travel fast, and according to Mason, continue to open many doors in the Mid-Atlantic States where the consulting firm offers its IBM® System i™ (System i5™, iSeries™, and AS/400®) programming expertise to small and midsized businesses. Mason credits WebSmart (a tool that

has evolved into an easy-to-use, visual Web application development and deployment environment) with literally having helped him build his consulting business back in 1998 when he began using BCD development tools.

Creating Web applications in 5 minutes

MCCI's four developers, as well as some of the firm's RPG-proficient clients, use the rapid application development processes included with WebSmart to build and maintain applications 8 to 20 times faster than when programming with traditional RPG coding methods.

Mason, whose style is to explain things with a mixture of understatement and exuberance, says, "The graphical interfaces we build with WebSmart are good enough to thrill our clients." However, without understatement, Mason swears that using the graphical development environment that allows programmers to switch between the code and the presentation, routinely cuts Web-application programming efforts by 90%. Developers do not need to understand Java™ coding techniques even though they are developing Web applications. They can use
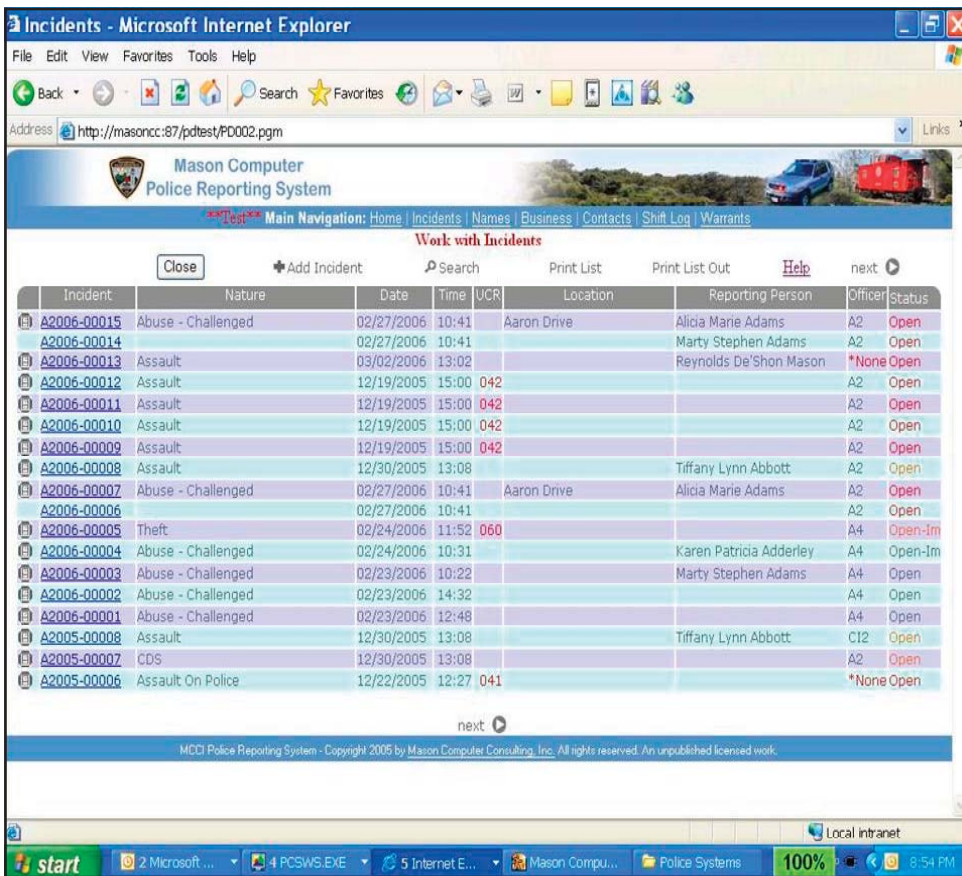
Figure 1: MCCI Police Reporting System is a Web-based application that is generated with WebSmart.

WebSmart wizards and templates to produce ILE RPG code that goes against the data in IBM DB2 Universal Database™ (DB2® UDB) for i5/OS. In addition to generating RPG IV code, WebSmart creates dynamic CGI (common gateway interface) and HTML code, automatically. The result is a Web application with a colorful, impressive interface that responds as the user expects a browser screen to. "The days of 80-column character, monochrome displays are over," Mason says with a smile.

Mason also states, "We can create a simple file maintenance application in less than five minutes. WebSmart is nothing like a screen-scraping technology. Its applications run in tandem with the IBM HTTP Server (Apache) that is part of the base IBM i5/OS®

operating system. The CGI logic can even cause the HTML to show or hide parts of the browser information, depending on the user ID."

Running dynamically in batch mode

MCCI clients tend to run their applications on smaller System i models that execute in batch mode. ILE RPG-CGI applications that are created with WebSmart run in batch mode, even though its applications are dynamically served to the user through a

browser. And running in batch mode does not mean that the generated applications run slow; in fact, they respond very fast.

Linking data in the interest of public security

Even though it is easy to store data in DB2 UDB for i5/OS tables securely by using encryption and conventional System i object security functions, one of Mason's more interesting clients, the police department for the City of Cumberland, Maryland, had a higher need for security. This police department wanted to send confidential incident-reporting information and other sensitive information over the Internet to provide its police officers with instant, on-the-beat access to critical suspect and criminal profile data. The security-related functionality that is packed into the WebSmart product through an easy-to-use wizard was able to fit the profile perfectly for this 24/7, Web-delivered application.

Word of the Internet-based project got around to neighboring police agencies, and they wanted to be included in the instant sharing of police records. Now completed, the MCCI Police Reporting System executes SQL calls from a

> *" Using BCD's WebSmart ILE tool routinely cuts our developers' Web-application programming efforts by as much as 90%, even though they do not know Java coding techniques. And because our delivered applications are so affordable, our clients keep coming back at an amazing rate. In any given year, WebSmart plays a part in 80% of our business. "*
>
> – Chuck Mason, President, Mason Computer Consulting, Inc.

WebSmart IDE

ILE RPG/CGI

JAVA Servlets

iSeries

Multi-server: Apache Tomcat, WebSphere & Others

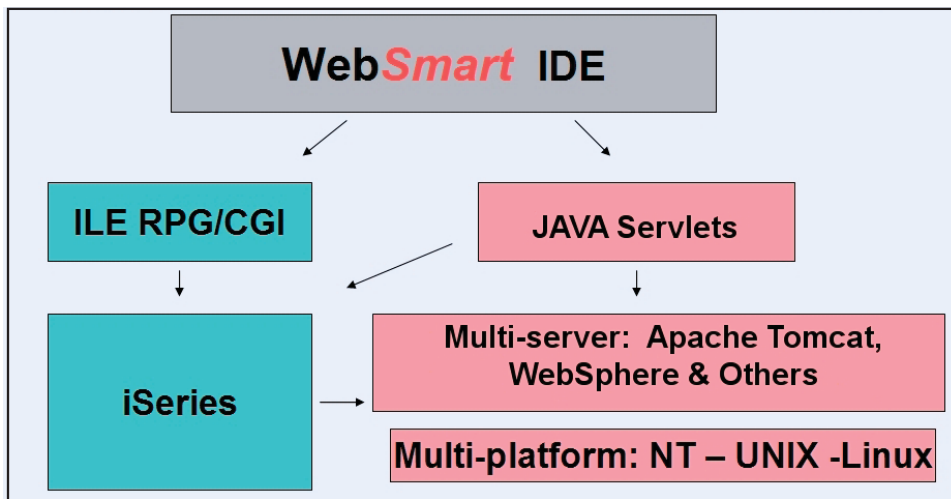**Multi-platform: NT – UNIX -Linux**

Figure 2 : Many technologiy advantages from one development effort that produces ILE RPG code or Java servlets

WebSmart application template for each search. The 911 Emergency Response Center uses the system to dispatch incidents to the proper agency and officer. Multiple agencies share all types of data via a secure, consolidated database that resides on an iSeries system. This secure data includes photos, videos, and even digitally recorded testimonies from victims, each tied to a relevant incident report. And, as the Internet promises, the information is available, in real time, to any authorized law enforcement official.

Mason explains that the police reporting system has even more impressive features. Users themselves can further customize the application as needed, for instance, to include a new drop-down menu item or to change their browser color scheme. WebSmart-generated applications use secure SSL and 128-bit encryption, thus maintaining the sensitivity of the data. The iSeries application associates a user ID and password with each person's security clearance level and agency affiliation. The MCCI Police Reporting System validates user profiles via the System i user profile. Each program is

rechecked to determine if a user has the required authorization. The MCCI application currently supports more than 200 police officers and dispatchers in nine agencies, and thanks to the scalability of the System i platform, Mason sees no logical restriction on the maximum number of agencies that can ultimately share police files. He jokes that, any day now, he expects a single-vendor Request For Bid (RFP) from the U.S. Department for Homeland Security.

Profiting from a continuum of happy clients

Reusing the WebSmart tool through the years has proven to be an excellent formula for steady business, repeat customers, word-of-mouth advertising, and high profits for MCCI. Mason explains, "We have seen many longtime RPG developers 'die on the vine' because of their resistance to learning object-based coding techniques. But at MCCI, we have not had to immerse ourselves in learning Java. WebSmart is RPG and SQL-based. Nor have we 'died on the vine.' Our clients seek us out precisely because of the robust,

Web-based solutions we can deliver in short timeframes and at small price points." In fact, MCCI has just picked up a new client with 600 to 700 RPG green-screen programs that Mason and one other developer expect to convert to Web applications in a short six-month timeframe. About 30% of these programs are report generators, which WebSmart will handle with ease. The CGI code will parse the HTML data to separate out relevant print parameters, which the IBM HTTP Server will provide to the RPG program it calls on the back end to execute the request. The resulting report can be printed as PDF output (by using IBM InfoPrint Server). The CGI code will also parse the same browser-based HTML input to determine which local printer the user wants to send the print output to. Additionally, Mason can invoke the Verisign technology built into the WebSmart applications for credit card orders related to this clients' online order processing needs.

Training is no hurdle

Mason has many stories to tell about how to train a programmer to work with the WebSmart tool and each story has a familiar ring. One RPG programmer was productive in one week; another was productive in just two short weeks. A third programmer who had only COBOL experience took a whopping three weeks to become proficient in the use of WebSmart for developing Web-based applications that access tried and true RPG business logic and DB2 UDB data.

These days, MCCI also hosts four-day training sessions for BCD users who reside along the east-

ern U.S. seaboard. "The learning curve is always fast; developers quickly get a sense of its power and flexibility. They learn HTML tag logic, parsing methodologies, and quickly grasp the process for calling into an RPG program from a browser to calculate taxes, look up pricing discounts, or for some other similar business logic task. Because of this, we provide custom WebSmart training classes and host basic and advanced BCD training courses. BCD is always right there with phone and Internet-based support," says Mason.

Supporting portability with Java servlets

MCCI's clients are typically "True Blue," or perhaps better stated, "True i5/OS and RPG." Because of this, Mason does not often encounter the need for application portability. However, this is not the case for many other application developers who need to write code that works equally well, regardless of the platform for the application server tier.

Eric Figura, BCD's director of sales and marketing, explains that portable application development is becoming much more important, especially for solution providers with a need to support one

development effort across multiple platforms. These providers can use ProGen WebSmart JSE (Java Servlets Edition) to generate the Java equivalent of ProGen WebSmart ILE (ILE RPG-CGI edition). The JSE tool produces Java servlets (instead of CGI code) that can run on any platform that supports a Java Web server. This includes all platforms that run IBM WebSphere® Application Server. Richard Prechtel, the BCD marketing and support contact for MCCI says the WebSmart JSE provides nearly all the same security features delivered with WebSmart ILE. The JSE product also interfaces with any database that is supported by the Java Database Connectivity (JDBC) standard. This makes it easy for application providers to select the particular BCD tool that best suits their needs. In MCCI's situation, any programming effort that has already been accomplished with WebSmart ILE could quickly be regenerated with the JSE tool. The ability to leverage existing design efforts in this manner is a very powerful and flexible alternative, ensuring Mason's ability to be responsive as the needs of his client base change and evolve. And all the while, Mason's developers have never needed to learn Java.

For more information

Contact your IBM sales representative, Mason Computer Consulting, Inc. (www.masoncci.com), BCD International, Inc. (www.bcdsoftware.com), or visit IBM at: **ibm.com**/server