REAL WORLD CASE 4 Mark's Work Wearhouse and Others: Using Java in Business

Growing numbers of retailers and other companies are deploying Java-based point-of-sale (POS) systems and e-commerce portals. Many said they like the fact that the software can run on any hardware or operating system and also noted that they're finding the Java code easy to modify as their needs expand.

Mark's Work Wearhouse. Robin Lynas, CIO at Mark's Work Wearhouse Ltd., a Calgary, Alberta–based chain, found himself peppered with questions from fellow retailers at the National Retail Federation Conference & Expo in New York recently. The Canadian retailer has rolled out its Java POS system from Retek Inc. to new Linux-based IBM terminals at 70 stores, with the rollout to the remaining 240 stores to be completed by the middle of 2003.

"My guys said, 'Do we really want to pay Microsoft licensing fees? Why don't you go to open systems?'" Lynas recalled. Once they proved that the POS system would run on Linux, he was sold. Mark's Work Wearhouse claims to have lowered store opening costs by 30 percent and maintenance costs by 50 percent, in part because it no longer needs in-store servers. The registers connect directly via frame relay to central servers at the home office, thanks in part to Java's networking capabilities, according to Retek Chief Technology Officer John Gray.

Another advantage that Mark's Work Wearhouse has found is the ease with which developers can bolt on new applications that connect to the POS system. Those include website, time sheet, business account, and Web reporting applications, Lynas said.

"Retek gives you the Java source code for their POS application," Lynas said. "You just take the objects they've got and extend them and write your new functionality."

Home Depot. Atlanta-based The Home Depot Inc., whose IT shop is heavily invested in Java, settled on a Java POS system so it would be able to migrate code between clients and servers running disparate operating systems, said Ray Alien, director of IT. The POS terminals run Windows 2000, and the servers run different flavors of Unix from Hewlett-Packard Co. and IBM, Alien noted. "POS applications typically live for 10 to 12 years, and they're very tightly integrated with whatever the retailer chooses to provide," he said. "So you're trying to make the best guesses for what might be going on five to six years down the road." Alien said changes can be made "much easier and faster with a component-based solution and object-oriented language like Java."

Jerry Rightmer, CTO at 360Commerce, Home Depot's Java POS system provider, said building a POS system in Java was "a fairly risky decision" in 1997 when his company began developing products. But, "The language is easier to work with than previous generations of languages, it's more productive than C or C++, and it has all the benefits of object-oriented languages without some of the traps and pitfalls of C++ in particular," he said. "Plus, it has an extremely rich set of application programming interfaces that has made it easy for us to integrate the POS software with middleware and database systems."

GE Power Systems. GE Power Systems used Java to develop an e-commerce Web portal called PartsEdge as an online resource that let GE Power's customers purchase parts from the company while giving them a single interface to its many business units and partners. One of the biggest challenges the Schenectady, New York–based company faced when building the portal was finding a way to share data across a variety of legacy systems, enterprise resource planning (ERP) software, and Web-based applications. The company, a subsidiary of General Electric Co., "had systems that had been built in silos that were not communicating" with one another, recalls Alan Boehme, former e-technology CIO at GE Power and now CIO at Best Software Inc. "The objective was to provide a seamless method for the selection of parts and service, with information being able to come into the system through multiple means, such as Web browsers, EDI [electronic data interchange], XML exchanges, or an ERP system," he says.

To address the issue, GE Power decided to build PartsEdge as a Web services application using Java 2 Enterprise Edition (J2EE). The J2EE framework lets GE developers use Java and XML to integrate the various applications that form the core of the PartsEdge Web portal. PartsEdge is the largest of 60 or so applications that are supported by GE's J2EE-based application development framework. The benefits of this Java platform include increased portability of applications across multiple operating systems, application servers and hardware; reusable application and legacy system business logic; a common presentation layer for business systems; and reduced costs and cycle times for application development and upgrades.

Case Study Questions

1. What are the benefits of Java as a programming language for retail POS applications compared to other programming languages?
2. What are the benefits of Java for the development of e-commerce portals for customers and suppliers like PartsEdge?
3. Why do companies like Mark's Work Wearhouse frequently team Java with the Linux operating system?

Source: Adapted from Carol Sliwa, "Retailers Explore Java POS Systems," *Computerworld*, January 27, 2003, p. 7; and Jaikumar Vijayan, "Application Framework Allows Easy Portal Access," *Computerworld*, February 24, 2003, p. 51.