

Prudential Adopts IBM Technology to Provide a Common Application Platform

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Executive Summary

Say the words “life insurance” and most people think “Prudential.” What many people don’t realize is that Prudential stands for a lot more than insurance. The venerable company offers everything from investment and brokerage services, to 401K and business benefits management, including group insurance, real estate and relocation services, financial planning and management. These services are accessed at Prudential.com everyday by a network of over 4,000 Prudential insurance agents and 6,000 Prudential financial advisors, along with hundreds of thousands of company benefit administrators and end-users.

Prudential wanted its many business units to present a united front to customers, agents, and service representatives. Yet each of these users had differing information needs, spanning the myriad of Prudential’s offerings. Every Prudential business unit had a different idea about what its customers required, or how the information should be presented. Each business unit also had its own ideas about the technology platform that should be used for its Internet offering, and each had a different timeline for bringing information access to the Web. The result could have been chaos. Instead, Prudential.com presents a clear, consistent, and concise interface to users. The secret is Prudential’s decision to adopt IBM technology as a corporate standard for Java deployment.

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The combination of IBM’s WebSphere Application Server and WebSphere MQ’s integration capabilities has given Prudential a common application platform that is secure and highly scalable — two factors of major importance to Prudential. The IBM RS/6000® SP™ cluster of AIX servers provides plenty of horsepower to ensure super fast response times demanded by users, even in periods of peak demand. Prudential relies on the high-performance computing power and heritage of the RS/6000, as well as the decided benefits of its good availability, manageability, and price/performance. The RS/6000 SP is an ideal computing platform for solving large, complex business problems. The network infrastructure, with its double firewalls, ensures the security so imperative for Prudential’s highly sensitive financial and personal applications.

Situation Analysis

Background

David Kennington, Prudential’s VP of Information Systems, recalls the early days of Prudential’s Internet offerings, “We deployed applications on many different platforms. Java application servers were in their early stages of development. We used this time as a learning period, studying how to develop and deliver Internet applications. But we could see that soon we’d have to streamline our infrastructure or the whole thing would become unmanageable. And we are very concerned about security.”

With several geographically dispersed business units engaged in a variety of activities, it was impossible to predict how many applications would eventually need to be deployed. Most applications were homegrown at the business unit level, using C, C++, or proprietary approaches. Early on, the company had decided to limit the use of Visual Basic for applications because of concerns over security. Even so, that still meant many applications ran on incompatible technologies.

Solution at a Glance	
Core Function	A secure, streamlined, common IT infrastructure that can be used by all Prudential divisions
Software	IBM WebSphere Application Server IBM WebSphere MQ (formerly IBM MQSeries) IBM DB2 Universal Database Lotus Sametime
Servers	IBM RS/6000 SP
Key Benefits	A secure infrastructure to deploy Prudential’s many financial applications Minimizes application code exposed to the Internet Faster deployment of new applications A “clearing house” for best practices across all Prudential divisions Self-service applications for Prudential agents and customers Convenient communication and collaboration for employees and agents Savings estimates have exceeded three times the investment

Prudential.com represents the company's face to many of its customers, who often conduct business with many different Prudential business units. Since internal agents and customer service reps also use it, the site needed to provide access to information and services across all of Prudential's many business units. Information had to be consistently presented across applications and rapidly available to both customers and service reps.

The Need

Each of Prudential's business units deals with very personal information about its customers, and is concerned to safeguard the privacy of this information. Customers want access to their account and benefit information over the Internet, and Prudential realized early on that its technology needed to provide the strongest possible security model to minimize exposed code, protect customer data, and retain customer trust.

Many of the Web-based transactions Prudential customers need access to are extremely time sensitive — stock trades, 401K account transfers, and benefit enrollments among them. If not completed in a timely manner, such transactions can have significant tax ramifications, or could leave an employee without adequate medical insurance. Prudential simply couldn't afford to have systems that weren't reliable. And when large-client companies with thousands of employees have a new benefit enrollment period, many end-users are likely to procrastinate until the last day. If the systems couldn't scale up to provide good response time during peak demands, Prudential might be faced with unhappy corporate customers. The Prudential team also knew that they needed to ensure that any technology utilized had to be highly reliable and highly scalable in addition to being secure.

Another important need was to streamline information maintained by the disparate systems. Many applications contained the same data, such as customer names and addresses. Information was not formatted the same from application to application, and there was no simple way to determine if an insurance customer might also be a brokerage customer. Furthermore, Prudential executives knew that if customer service representatives had easy access to information from all the systems, they could provide better service to customers who called in with questions on either their existing accounts or additional Prudential products. Prudential realized that a common technology infrastructure would make this access easier to provide and maintain.

As the proliferation of tools, technologies, and platforms in use across applications fielded by the different business units increased, maintaining the systems became more complex and expensive. Kennington notes, "In the early days, there was a lot of infighting around individual products such as iPlanet or BEA WebLogic. Each had its own advocates and experts, but we understood that a 'product du jour' approach would

lead to higher support costs and longer cycle times.” It soon became apparent that Prudential would need to standardize on a single product to ensure that all applications running on Prudential.com met the combined tests of security, reliability, scalability, accessibility, and easier maintenance. Prudential’s reputation for service and security rested on the decisions made by the IT teams.

Countdown to Success	
March to July, 1999	Requirements analysis
August 1999	Recommendation made to pursue vendor-based approach
January 2000	IBM selected as vendor of choice
February 2000	WebSphere standard submitted to IT teams
April 2000	IBM RS/6000 SP platform selected
June 2000	First application rolled out — Prudential P&C introduced a quoting application for providing auto quotes to customers at their workplace, through agreements with their employers. The application logic was exclusively on WebSphere.

Challenges

One of the biggest challenges facing the Prudential corporate IT group was to get the project funded. In most corporate environments, money isn’t allocated and spent until the business need is clearly defined. Prudential is no different in this regard than any other business; however, in this instance, Prudential needed an architecture that would support future applications that had not yet been defined, and therefore needed a great deal of flexibility. Kennington and his team needed to get approval for the project before the details of the specific need were clear.

The next big hurdle was to get all the IT groups from the business units to agree on a common architecture. Not only were the business unit IT groups in different locations across the country, but each of the technology platforms under consideration had advocates in various locations as well.

Action Plan and Decision Process

First Steps

An Internet Technology Steering Group of approximately 20 people was formed to represent the views of the various business units that would be affected by the decision, including real estate and relocation, banking, benefits administration, brokerage, and insurance. It soon became apparent to

the committee that the key to success was a single platform for deployment of the Java applications that would become the basis for Prudential's online presence at Prudential.com.

Kennington and his team sat down with each business unit's development team to gain a better understanding of their needs and skill sets. The groups talked through the entire application development process to be sure all the bases were covered. During this phase, many platforms and technology vendors had their champions, and each was evaluated on the merits of its current offering. Eventually, the teams realized that focusing on a specific product was the wrong approach.

As Kennington says, "Many members of the team wanted to select the product with the most advanced feature set. The problem with that approach is that the technology leaders change on any given day. We would have ended up with the 'platform du jour' if we used that approach. It became obvious to us that instead of focusing only on a current feature set, we needed to look to the future and examine each vendor's vision as well. We decided to bet on a vendor with a clear vision and a proven track record of executing on that vision."

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Based on its technology requirements, Prudential came up with a short list of vendors. After preliminary talks, it was evident that IBM's vision was the closest match. Prudential knew that IBM also had the resources to make the strategy a reality. Since its legacy systems were based on IBM technology, Prudential felt comfortable with the support and commitment that IBM would provide, both initially during the early stages of the project and later as new applications were rolled out. Kennington notes, "There was an element of risk when the decision was first made, as the product was a work in process. We took the view that IBM had the resources to make the platform work. Our decision has proven to be an excellent choice, with WebSphere a leading product in a market where there are now only two significant players."

Solution Profile and Implementation Strategy

Developing the Solution

First, Prudential engaged with IBM at a very high level, with an executive sponsor. Kennington notes, "That relationship continues, and our support has been excellent." Prudential also had access to people in IBM's labs to work with them on a detailed level. Customer advocates in the labs helped Prudential by identifying existing limitations in products, and helping Prudential find a work-around or get the product enhanced.

Each business application required a degree of scalability not often seen on the Web. For example, benefits enrollment is an employee facing application used for the annual benefits enrollment of over 50,000 employees. Traffic gets extremely heavy around enrollment deadlines. Over 200,000 of Prudential's 12 million customers have signed up to access their insurance, mutual fund, and annuity accounts. These transactions are often extremely time sensitive and require access to sensitive personal information.

Solution Architecture

Kennington laughs when he says, "The architecture we ended up with is like a sandwich! We have our Web Server in the middle, and our WebSphere Application Server is behind our second firewall. Our information is stored in an IBM DB2 database and we use IBM's WebSphere MQ for integration between the different applications provided by the business units."

Prudential's aim was to establish integration principles that are relevant to the needs of the enterprise as a whole, not only for specific applications. As a result, Prudential's IT team has developed a series of standardized methods for process integration, database drivers, and IONA/CORBA integration, among others. Prudential's mainframe centers are in New York City, Roseland, NJ, and Fort Washington, PA (see Figure 1). Some of the systems in use on these mainframes are nearly 30 years old, and contain customer history information. WebSphere MQ is the key integration component for routing and transformation as applications are Web-enabled.

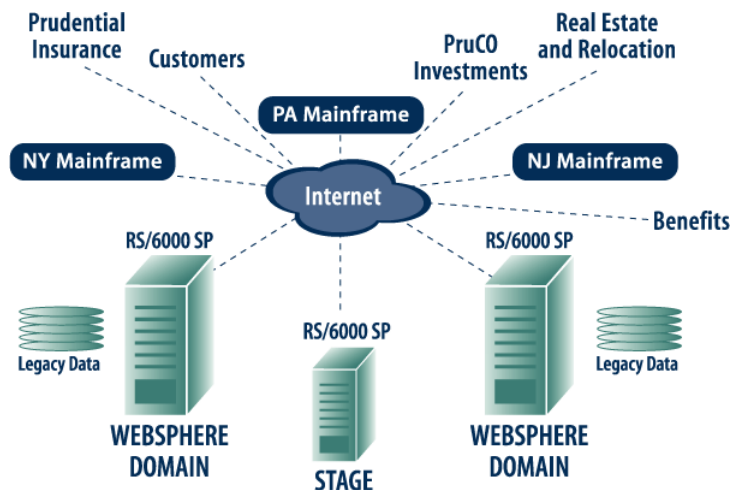


Figure 1. Basic Architecture of Prudential's e-business Solution.

All Prudential's Java applications now run on an IBM RS/6000 SP cluster, running AIX. While the legacy applications run on the back-end mainframes, the Web-facing applications are written in Java.

When deciding on a server platform, Prudential went out for bids with IBM and other vendors. Kennington states, "We were pleased to see that the IBM bid provided a significant cost advantage, along with the other benefits their technology brought to the table."

Business Results

The resulting technology architecture has served Prudential well. Kennington muses, "Prudential created a shared service without really deciding to. We viewed it more as a better way to support our business users. The decision has paid off, as our support people can now concentrate on supporting one solution really well."

The centralized technology infrastructure is funded by charge backs of actual costs to the business units based on their usage. At first, this approach met with a lot of resistance. Kennington notes, "Building the charge-back system was initially more difficult than it could have been. People don't like to see new charges. When they saw the actual costs, some people were outraged. Then we showed them the costs under the old approach, and they were amazed at the savings for the company as a whole. The developers hadn't been thinking of the costs of maintaining the different production environments." Kennington estimates that savings from the single vendor approach have exceeded three times the cost of the investment.

Business Results Achieved

- ▶ Developers learn from the experience of others who have developed applications before them. The IT group maximizes their skills by supporting only one platform. This reduces average development time on new applications. Over 70 business applications deployed to date.
- ▶ Specific tools can be cost effectively adopted to monitor and diagnose application performance.
- ▶ Costs of a single infrastructure are shared across multiple groups.
- ▶ Instituted a "constant deployment" model for keeping applications updated and fresh.
- ▶ Estimated savings have exceeded three times the cost of the investment.

The new infrastructure has also allowed Prudential's development staff to introduce new applications much more quickly by taking the technology decisions and learning curves out of the equation. The technology infrastructure also acts as a clearinghouse for best practices across Prudential's business units by allowing published standards and developers to learn from the experience of others who have gone before them. The stable environment enables the development teams to keep their applications in a state of "constant deployment" by adding new features and functions on a frequent basis to keep them fresh, well ahead of the competition's, and to continually improve customer service. Furthermore, specific tools can be identified and acquired to monitor and diagnose the performance of all applications, adding to cost savings and efficiency.

Prudential has also found other benefits to the approach. Technology Services now publishes a schedule of planned upgrades, which takes the decision and the responsibility out of the business user's hands. The application "owners" now have a framework to plan changes to their business functionality at will, to take advantage of upgraded infrastructure functionality, or to support changing business needs. Prudential now publishes a six-month notification window on planned major product upgrades. Prudential has also been able to provide a test environment for the business unit developers to test out their applications on new releases prior to production release.

Prudential understands that to get the most out of the environment requires a constant need to communicate across the entire development community, regardless of location. This used to mean a monthly trip to Roseland, NJ for all IT developers, to participate in the "Center of Excellence" sessions. Recently, Prudential has begun using Lotus Sametime to host frequent "Lunch and Learn" sessions taught by either internal employees or outside experts. Participants are able to participate from their own offices, saving on travel expenses while giving more employees access to the sessions.

Today over 30% of Prudential's mutual fund transactions happen online. Of the 12 million Prudential customers, 200,000 people have already registered for "Pru Online", and another 1,400 sign up every day.

Prudential provides benefit management services for over 60,000 employees of one of its customers. Over 40,000 of these employees did their benefits enrollment through Prudential's WebSphere-based Web site. When one of Prudential's accounts recently went through a re-enrollment period, 85% of the enrollments were done online. This self-service capability has saved Prudential and its customers both time and money, while enhancing the customer employee's satisfaction with the enrollment process.

Lessons Learned

“One important thing we learned was to listen to our people,” says Kennington. “You just might uncover something you don’t know! Give them an ear and you’ll gain a better understanding of how things are set up today, and how best to improve them in the future.”

Kennington also gives high praise to IBM and the strength of that relationship. “You need to partner. If you don’t — expect problems.”



Figure 2. Prudential’s e-business Stage: Integrating.

Case Epilogue

Prudential’s shared environment is not ubiquitous in the IT world, and coupled with the breadth of the financial products and services it provides, gives Prudential a leg up on the competition. Yet Kennington has no plans to rest on his laurels. “We’re always on the lookout for ways to make the architecture faster or more secure. IBM has been a great partner in enabling that constant improvement.” Next up is a layered model for application development to support Prudential’s “advice based” sales channel and to significantly improve cross-marketing opportunities to Prudential’s considerable customer base. Kennington is also examining ways to establish an enterprise presentation layer, using WebSphere Portal Server.

Prudential plans to stay well ahead of its competitors in the Internet services it offers to customers. Kennington and his team plan to use IBM’s WebSphere MQIntegrator in the next generation of its technology infrastructure to enhance integration capabilities by allowing multiple connections. Prudential also plans to add more flexibility to the environment by using XML widely. While Kennington says, “I can find very few companies that are ahead of us in the technology adoption curve, but I sure can find many that are behind us. Using IBM’s technology, our layered architecture puts us well ahead of the curve. “



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