

Ball State University captures revenue opportunities and streamlines operations with BPM and SOA

Overview

■ Challenge

Improve process efficiency and leverage existing investment in legacy applications

■ Solution

Implement IBM BPM Powered by Smart SOA solution to enable reuse of services across systems to eliminate data inaccuracy problems, enhance existing applications and deploy new ones

■ Benefits

- *Recapturing lost enrollment income*
- *Saving time, money and scarce human resources with reuse of services*
- *Improving problem solving by unifying .NET and main-frame IT silos*
- *Ability to access correct address information for students and parents*
- *Increasing student satisfaction with better customer service*



When Ball State University started down the BPM Powered by Smart SOA path, it did not envision that it would become a services-based developer—it just wanted to fix a problem it was having with addresses.

Recently rated the number-one wireless university in the United States, the 20,000-student institution in Muncie, Indiana, has encouraged a belief that it can solve many problems with technology. Therefore, when an irate parent complained that an invoice had been sent to the wrong address, whereas a solicitation for a donation from the alumni department had been sent to

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— *Fred Nay, Director of Computing Services, Ball State University*



the correct address, the president of the university responded with fortitude and resolve. The ball started rolling toward a major IT overhaul of the university's 30-year-old application environment that harbored overlapping address databases and many other problems.

The first project employed services to resolve name and address inconsistencies across 40 address databases. However, the service-oriented approach has provided BSU with a lot more opportunities for improvement than it had foreseen.

"By enabling services as an intermediate layer, separated from the presentation layers and residing within a coherent architecture, we were able to use our existing portfolio of business logic as well as introduce a focus on the business processes that are required to make the university work," says Fred Nay, director of computing services, Ball State University.

Preserving existing interfaces

Making these changes happen behind the scenes—a major goal of the project—meant running each update through an IBM WebSphere® Enterprise Service Bus that would mediate the changes coming from different systems. Virtually instantaneously, the service bus would apply the updates across the underlying applications, keeping them all in sync. From an architectural standpoint, this model preserved existing user interfaces in the application layer—whether Oracle, 3270 browser or something else—and added a layer beneath that routed the updates to the service bus.

The service bus analyzes the data to determine which systems need to be updated, then mediates and coordinates the application of the updates to the underlying databases—including a newly created master database for addresses. Rather than holding the data itself, for now the master database contains only the keys to the records and the rules that need to go along with the data.

"Eventually, if the president wants to write to a parent or Accounts wants to send an invoice or a refund, they will both use this same master database to find the address," says Nay. "We are still using the master database solely for synchronization between systems. So what is really happening now is that each time a letter goes out, the address still comes from one of the original data stores—but at least we know that all the data stores have the same address."

Recapturing lost revenues

The IT team is looking for opportunities to solve more difficult problems using IBM BPM Powered by Smart SOA. For example, with WebSphere Process Server, they have been able to choreograph the SOA services required to give students an end-to-end Web-based registration process. Today, students have online access to course information and course availability, plus any prerequisites or permissions required, and they can complete the registration process online. The student's registration triggers a search in multiple databases, such as enrollment records and student accounts. If the student owes the university more than \$50, the system will generate a notification to the student that the balance must be paid before registration is allowed.

The university and its students have both benefited from this new SOA-based capability. Students have near real-time information regarding the availability of and requirements for online courses, enabling them to quickly and easily make decisions about whether to register for a course, find a different course instead or wait until the next term. Waiting lists for courses are shorter as a result, and student satisfaction is higher. In addition, this project helped the university recapture lost revenues by increasing the number of successful enrollments.

"By using SOA services to tie together course availability, registration and accounts receivable applications, we are able to deliver greatly improved service to all, as well as reduce the semi-manual work previously required, giving university staff more time to spend on more valuable activities," says Nay.

The next major initiative for the team will be to introduce a registry and repository. "That looks as if it will be a challenging enterprise—finding all the metadata and the services and making sure they are correctly tied together so that if a change occurs in one area, then it is reflected accurately in other areas," Nay says.

Reuse of services saves time and money

SOA has been beneficial to the university in several ways; the common theme among the primary benefits of SOA is that it provides a metaphorical "view from above" that wasn't possible before—a view that's both higher and broader in perspective. And when combined with BPM, SOA can be even more effective.

According to Nay, the biggest tangible benefit that the university has seen from the SOA adoption is the IT staff's ability to work more closely together. "In the past, there had always been a .NET silo and a mainframe silo, and the two areas solved problems independently rather than coming together to solve mutual problems," he says. "Because they are now working on an SOA approach, I have them working together in ways that weren't common before."

Solution Components

Software

- IBM WebSphere® Business Modeler
- IBM WebSphere Enterprise Service Bus on z/OS®
- IBM WebSphere Integration Developer
- IBM WebSphere Process Server on z/OS

Server

- IBM System z®
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Another benefit comes from being able to solve problems with a process approach rather than a silo approach. “We are using business process modeling and the IBM WebSphere Business Modeler tool to describe flows and interactions within different areas,” says Nay. “WebSphere Business Modeler can then export into Business Process Execution Language (BPEL); BPEL can be pulled into the WebSphere integration tools, becoming part of the creation of integrated processes. This helps us focus on process issues across silos, instead of having to look at issues within siloed areas.”

Nay believes that by reusing services, logic previously usable in only one place can now be exploited wherever needed. “For example, we can create a service that performs a grade lookup for the Distance Education project,” he says. “We can reuse that service repeatedly across different systems to solve different problems, saving time and money. By adopting the SOA approach using WebSphere Business Modeler, IBM Process Server and IBM WebSphere Integration Developer, there is no application or information that we cannot reach.”

For more information

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