



# Optimizing Cost Savings with **Middleware**

**Middleware  
management  
solutions help  
lower costs, and  
increase service  
and availability**  
BY BETH SCHULTZ

As corporate data crosses the enterprise application infrastructure, weaving its way from one system to the next, the ability to identify and resolve problems immediately is a business imperative. Processing slowdowns, not to mention outright outages, can have a devastating impact.

The cost of an outage hour in the utility industry, for example, is estimated at approximately \$600,000. While a significant figure, that pales in comparison to the estimated \$1.5 million lost in an outage hour for the banking industry or the estimated \$6 million lost when a high-end, real-time trading operation grinds to a halt. “When we talk about avoiding outages, we’re really talking about avoiding lost business—and that has direct dollar value for a company,” says Jay Lipovich, director of data and performance management for BMC Software.

“We are an asset manager, the assets being the railcars we own and operate in a pool for the rail industry,” says Rob Zelinka, Director of Infrastructure for TTX, the nation’s leading provider of railcars and related freight car management services to the North American rail industry. “If the cars are in storage, we’re not generating revenue. We have to keep the uptime of our fleet at the highest percentage possible.”

Keeping uptime high is now much easier thanks to development of an open, distributed virtual infrastructure and middleware intelligence. “Historically, we would bring railcars in for standard, regulated visits to a repair center and give them once-overs,” says Zelinka. “Now with the types of data we can get out of our systems, we can take a deeper dive into all the components that make up a railcar

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and provide more granular information. For example, we can tell if a particular part within a car has a tendency to fail after a certain number of miles. Then, drilling down, we can see that the failure only affects parts that have been manufactured between this and this date.”

As the scope of TTX’s railcar maintenance application broadens, traffic flowing over the middleware layer grows. “We have a series of queues that we get millions of messages to in a given day, and it’s important for us to manage that flow of messages effectively. ... Managing the [WebSphere] middleware layer has been critical as we change our railcar maintenance operations,” Zelinka adds.

### **The Importance of End-to-End Middleware Management**

Middleware, always important in binding together the lower and higher levels of the OSI stack, becomes even more important when application processing gets distributed across disparate system types: mainframe, Windows, Linux, Unix, etc. The vast majority of companies—more than 75 percent, according to industry figures—use WebSphere, IBM’s message-oriented middleware, to bring together data from legacy mainframe data warehouses and the GUI experience of today’s distributed systems, Lipovich says.

“A company can just queue messages and let WebSphere manage the flow and make sure the handling at both ends of the queue is done properly. In this way, a company can start to leverage the strengths in distributed and mainframe environments,” he explains.

Of late, middleware has evolved into the glue holding together many business-critical transactions. “Think of online banking. Someone sits at his PC, and a request flows through a number of distributed system servers—for security, applications and such—but then flows into the mainframe to get the core account data,” Lipovich says. “And WebSphere sits right in the middle of that.”

Unfortunately, although many IT organizations have modernized their application architectures, middleware management is often stuck in the days of yore. Too many companies still handle business service problem-solving via “war room” meetings focused on technology silos rather than on the enterprise infrastructure as a whole. “Technologists walk into a conference room carrying stacks of reports designed to prove the fault isn’t theirs,” Lipovich says.

A recent BMC survey bears this out. Sixty-six percent of 1,500 respondents said WebSphere is a key part of their infrastructure for supporting business services. “But,” Lipovich says, “when it came right down to it, we found that they didn’t have the tools that enabled them to view the message flows across the platforms and had to use individual silo tools.”

### **Middleware Management for Modern Application Architectures**

What today’s service-oriented IT organization really needs is a unified view into the queue performance across the WebSphere backbone as well as the ability to conduct drill-down analysis on both the mainframe and distributed systems sides of that infrastructure. In addition, the service-oriented IT organization needs to be able to extend insight of the middleware to different constituents, says April Hickel, senior product manager at BMC.

For example, IT should be able to give business-service owners an application-centric dashboard that brings together all the middleware components associated with that service. This can lead to operational efficiencies. “IT can say, ‘Hey, don’t call us, our constrained group of 15 people. Instead, take a look at the dashboard first and that’ll let you either identify or eliminate middleware as the problem,’” Hickel says.

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Likewise, IT can benefit from providing a Web self-service capability to application developers or the scores of other staff members who interact with middleware as part of doing their jobs. "It's not enough to use middleware management to reduce risk and make sure everything is working OK," Hickel says. "You can't just hold that knowledge close to IT. Let others with middleware dependencies—such as application developers testing their work—to self-service themselves. IT managers simply can't be everywhere and do everything at once."

Besides application-centric dashboards and Web self-service capabilities, automation of routine tasks is also critical to any cross-enterprise middleware management strategy. "If there's a hiccup in the works with your middleware, 'Boom!' you want your tools taking action and bringing it back to the correct state before it impacts the application," Hickel says.

The advantage of such automation, according to Lipovich, is quicker mean time to repair (MTTR). Companies still operating with a war-room approach can see MTTR drop from hours or days to just minutes. Those that have done some coordination and achieved cooperation among silos can cut problem resolution from an hour or two to minutes with the use of middleware management tools allowing a cross-enterprise view, he adds.

## **The Benefits of Holistic Middleware Management**

With middleware outages capable of causing million-dollar losses, reducing MTTR brings hard-number benefits. But a company also can save on IT staffing costs. A centralized view and drill-down capabilities can improve a technician's productivity, enabling IT to shift resources from managing queues to initiatives that provide business value. What's more, as the middleware infrastructure grows—which it does, rapidly—IT can avoid hiring additional technicians. "You don't want to have to increase headcount or spend more money just because the infrastructure is growing, and automation can help with that," Hickel says.

"IT needs to be able to manage middleware without requiring management team members to be skilled in and knowledgeable about each platform type middleware touches," she adds. "Individuals should be able to interact from a single console with any of that infrastructure regardless of whether it's on the mainframe, a Windows box, AIX, zLinux, Tandem or HP NonStop. This is of direct cost-benefit to companies because they can use the same group of people to manage all that infrastructure. Any time you can automate tasks and reduce the number of operational teams you can improve efficiencies."

According to Lipovich, this speaks as much to the graying of the mainframe workforce as to the lack of depth in distributed systems management. "IT wants tools that help people know more, so the ability of middleware management to actively slot things and say, 'Hey, a problem is coming' or to know where to look if a problem does occur helps in both cases," he says.

Risk mitigation is another benefit of end-to-end middleware management. "Companies have to ask themselves, 'How much at risk are my critical business services flowing across WebSphere?'" says Lipovich. "[A company] needs to think beyond lost business, to intangibles such as loss of a company's good name. It needs governance in place to manage WebSphere, spot problems proactively and, when problems do occur, fix them quickly to mitigate business risk."

As an example, Lipovich points to a BMC Middleware Management customer that makes axle assemblies for car manufacturers. "It doesn't build an axle assembly until it gets notified that it is needed. Those notifications come through transactions flowing across WebSphere. If those transactions don't complete properly, the assembly may not get built and may not be at the car manufacturer when it needs to be, and if it's not there when it needs to be, the line idles," he explains.

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"You're talking about several thousand dollars per minute in direct costs of people on that line that don't have anything to do."

"Reducing costs, increasing service and availability, and mitigating business risk—these are the three cornerstones of middleware management," Lipovich adds.

A healthcare provider using BMC Middleware Management tools to watch its messaging infrastructure in real time and assure delivery of medical images requested by doctors as they prepare for surgery provides a similar example. "Doctors are pulling up X-rays and MRIs ... to validate what they're doing and where," Lipovich says. "If that transaction doesn't happen, the consequence could be life or death."

TTX's Zelinka agrees. "Using the BMC middleware tools, we get ease of management, a glimpse of what's happening in our environment and control—knowing when there's a problem and knowing where to go to solve it."

## Middleware Management: Beyond the Mainframe

As companies build complex enterprise application architectures, they must put together a well-rounded suite of management tools to ensure transactions don't get bogged down across the middleware backbone. BMC Software offers middleware performance monitoring across platforms and a broad range of technologies including IBM, Oracle, and TIBCO middleware.

"We have a solution that takes into account all the aspects of middleware management, through a lifecycle of application development, testing deployment and all the way to production monitoring on every platform," says April Hickel, senior product manager at BMC. "That one-stop shopping differentiates us."

Here's a look at the primary BMC Middleware Management portfolio for IBM's WebSphere line.

### **BMC Middleware Management - Performance and Availability**

With this tool, IT gets a complete view of a complex middleware infrastructure, enabling it to streamline processes, reduce costs and improve customer service delivery. The tool provides critical information to users within and outside of IT for proactive, on-demand management through dashboards, alerts and historical reports.

### **BMC Middleware Management - Administration for WebSphere**

This Web-based tool for WebSphere administrators and developers connects to WebSphere queue managers, allowing users to view and manage the full set of WebSphere objects. Defined projects let IT group infrastructure objects provide secure profiles of objects to users and to make navigation to objects associated with a particular business service/application faster and easier. Built-in security mechanisms ensure that only authorized users have access to the product and applicable projects.

### **BMC MainView for WebSphere**

An out-of-the-box solution, this tool easily integrates into the WebSphere environment to ensure WebSphere health and availability. From a single console, it provides complete control over WebSphere administration, configuration, performance monitoring and automation. Based on a scalable, tiered architecture, it is easily customizable to meet individual site requirements and manage the full range of z/OS system requirements.

