



Chicago Board Options Exchange

» Upgrade to latest BSM solutions provides a strategic management platform for supporting critical trading applications

BEFORE

- » Use of BMC applications as point solutions didn't allow IT to realize maximum value
- » Ongoing enhancement of custom ITSM applications consumed valuable resources
- » Custom integrations among IT management applications added complexity
- » BMC BladeLogic used only for release management, limiting its value
- » Hours spent searching through e-mail messages to track changes

AFTER

- » BMC solutions provide strategic management platform
- » Integrated ITSM suite offers rich, out-of-the-box functionality and simplifies management
- » Out-of-the-box integrations simplify implementation and ongoing maintenance
- » Full exploitation of BMC BladeLogic application management capabilities
- » Daily reporting keeps staff apprised of all infrastructure changes



GEOGRAPHY

North America

INDUSTRY

Financial Services

SOLUTIONS

BMC Atrium CMDB
 BMC BladeLogic
 BMC CONTROL-D
 BMC CONTROL-M
 BMC Service Impact Manager
 BMC Event Manager
 BMC Performance Manager
 BMC Remedy ITSM Suite

To an outsider, the floor of the Chicago Board Options Exchange (CBOE) may seem chaotic and frenzied. To the traders who understand the lingo and hand signals of open outcry auctions, it is a fast-paced, dynamic, and fair method for trading options publicly. When CBOE was founded in 1973, open outcry was the only method used for trading.

Over the years, CBOE has embraced information technology and set the bar for applying IT in innovative ways. The exchange was an early adopter of computerized price reporting, electronic order execution, and handheld terminals for its market makers.

CBOE has garnered numerous awards for technology leadership. *Forbes Magazine* named www.cboe.com "Best of the Web" five years in a row. *CIO Magazine* selected CBOE for its 2007 CIO 100 Award, citing in particular CBOE Hybrid, a sophisticated trading system that combines the functionality of electronic and open outcry trading.

CBOE's sophisticated IT infrastructure supports huge volumes. It has handled peak message rates exceeding 255,000 messages per second, with daily message totals approaching two billion. High availability and performance are critical, so careful management of the IT environment is a must. That's where BMC Software comes in. CBOE has used BMC's Business Service Management (BSM) solutions for many years. The exchange is now upgrading to new versions with the goal of creating a strategic IT management platform that enhances service assurance, automation, and support.

INCREASING THE LEVEL OF AUTOMATION

Because of the unique nature of CBOE's business, many of its critical applications – including CBOE Hybrid and the CBOE*direct* screen-based trading system – are developed in house. These applications are enhanced and upgraded regularly throughout the year. In the past, managing the rollout of new releases manually was a huge effort.

The staff wanted to automate manual repetitive tasks to boost productivity, eliminate human error, and reduce costs and risk associated with rolling out new releases. To achieve these goals, they turned to BMC BladeLogic, which is bringing a higher degree of automation to asset discovery, software provisioning, patch distribution, configuration management, and compliance auditing.

“The primary driver for implementing BMC BladeLogic was more efficient release management,” recalled John Strege, director of systems software at CBOE. “Our QA [quality assurance] people were struggling with the application installs, loads, and versioning tasks required to keep hundreds of critical application servers up to date with the latest application releases. BMC BladeLogic has greatly simplified the job and the QA staff is now completing rollouts faster and more reliably.”

CBOE expects to derive even more value as a result of the tight integration of BMC BladeLogic application release management capabilities with closed-loop change management capabilities in the BMC Remedy IT Service Management Suite.

ENSURING STABILITY AND AVAILABILITY

While CBOE trading hours align with those of the U.S. stock market, the IT environment must still run around the clock to handle backend processing and data loading. CBOE is addressing the need for 24/7 availability with the help of BMC Service Optimization solutions. Using these solutions, the staff has automated batch scheduling, the assessment of the impact of batch job failures, and monitoring to detect and prevent potential service disruptions.

BMC CONTROL-M, for example, has provided enterprise scheduling for nearly 20 years. “Our process for nightly data warehouse loads combines more than 100 individual jobs with dependencies among many different components, including internally generated business data and industry market data culled from other exchanges,” Strege explained. “BMC CONTROL M handles jobs like this with ease.”

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DIRECTOR OF SYSTEMS SOFTWARE

CBOE has used BMC Performance Manager, a BMC Service Assurance solution, for nearly 10 years to quickly identify and resolve application bottlenecks and performance issues. “Our homegrown applications all have different user interfaces, which could make life difficult for our operations staff,” Strege said. “By having the operations people use the BMC Performance Manager console to start, stop, and monitor these applications, we provide a consistent look and feel. That eliminates time spent on learning different interfaces and it speeds problem resolution.”

CBOE is moving toward additional Service Assurance solutions including BMC Event Manager and BMC Service Impact Manager. BMC Event Manager helps prevent service disruptions by detecting potential problems in the infrastructure. It filters, prioritizes, and correlates them, and even takes corrective action based on rules established by the IT staff. BMC Service Impact Manager works through the BMC Atrium™ Configuration Management Database (Atrium CMDB) to create business-aware service models based on the physical components that comprise the infrastructure as well as the relationships among them. On the Service Optimization front, BMC CONTROL-D provides a graphical interface for managing the report lifecycle and enabling IT staff to view reports online.

SUPPORTING CRITICAL SYSTEMS

BMC solutions are also assisting the IT staff in addressing service support needs. The staff implemented BMC Remedy Action Request System (AR System) to act as a consolidated platform for automating and managing service management business processes. The staff developed custom applications for incident, problem, asset, and change management. The applications leveraged built-in BMC Remedy AR System notifications, escalations, approvals, and workflow. In addition to addressing trouble ticketing and problem management, the applications provided a daily change tracking system to enhance the productivity of the operations staff. “Before we implemented the daily reporting,” Strege recalled, “operators had to scroll through hundreds of e-mail messages to understand when new software versions were implemented and when a particular server was changed. The tracking report put all that information at their fingertips.”

CBOE has begun to replace its internally written BMC Remedy AR System applications with the BMC Remedy IT Service Management Suite. The staff is implementing the asset, change, incident, and problem management components as well as the service level agreements component. This move will enable the exchange to take advantage of built-in IT Infrastructure Library (ITIL™) best practices and tight, out-of-the-box integrations with BMC Service Assurance and BMC Service Automation solutions through the BMC Atrium CMDB.

“By standardizing on BMC as a vendor, we expect to benefit from faster, easier implementation of the latest and greatest versions of our core enterprise management software as they become available from BMC,” Strege said. “Because the components are already tightly integrated, we’ll be able to roll out new and enhanced functionality more quickly. What’s more, we’ll have a single source to go to resolve issues and get the support we need.”

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POINT OF INTEGRATION

The BMC Atrium CMDB serves as the point of integration for all of the BSM solutions from BMC Software as well as BSM solutions from third parties, which will soon enable CBOE to create a seamless enterprise management environment. The CMDB captures and accurately represents the complex relationships that exist across the IT infrastructure and presents a comprehensive, business-service view that significantly enhances IT efficiency.

CUSTOMER'S FINAL WORDS

Even though CBOE had used BMC solutions for many years, when IT began working toward a strategic enterprise management platform to support the evolving IT infrastructure, the staff did consider other solutions. "We experimented with packages from several other vendors who claimed that they could provide the same level of business functionality and integration that we could get from BMC," Strege said. "We found, though, that because our critical applications are homegrown, none of the solutions from these other vendors were optimized for our environment. BMC was the only vendor that could provide the features, the integration, and the quality support we were looking for."

ABOUT CHICAGO BOARD OPTIONS EXCHANGE

Chicago Board Options Exchange (CBOE), the largest U.S. options exchange and creator of listed options, offers equity, index and ETF options, including proprietary products, such as S&P 500 options (SPX), the most active U.S. index option, and options on the CBOE Volatility Index (VIX), the world's barometer for market volatility. Other groundbreaking products engineered by CBOE include equity options, security index options, LEAPS, FLEX options, and benchmark products, such as the CBOE BuyWrite Index (BXW). CBOE's Hybrid Trading System incorporates electronic and open-outcry trading, enabling customers to choose their trading method. CBOE's Hybrid is powered by CBOE*direct*, a proprietary, state-of-the-art electronic platform that also supports the CBOE Futures Exchange (CFE), CBOE Stock Exchange (CBSX) and OneChicago. CBOE is home to the world-renowned Options Institute and www.cboe.com, named "Best of the Web" for options information and education.

BUSINESS RUNS ON IT. IT RUNS ON BMC SOFTWARE.

Business thrives when IT runs smarter, faster and stronger. That's why the most demanding IT organizations in the world rely on BMC Software across both mainframe and distributed environments. Recognized as the leader in Business Service Management, BMC offers a comprehensive approach and unified platform that helps IT organizations cut cost, reduce risk and drive business profit. For the four fiscal quarters ended September 30, 2008, BMC revenue was approximately \$1.83 billion. Visit www.bmc.com for more information.

