



Crutchfield Corporation

Largest U.S. Integrated Direct Marketer of Consumer Electronics
Maintains Hundreds of Customized Enterprise Applications with
BMC Application Problem Resolution

Geography

North America

Industry

Retail

Business Need

Crutchfield Corporation needed to streamline integration, migration, upgrades, and general problem resolution for an exceptionally complex, proprietary, 250-application enterprise system.

Solution

The company turned to BMC Application Problem Resolution to swiftly pinpoint problem root causes at every level, slashing diagnostic time and speeding time to resolution.

Results

- > Prepared contact center applications for Windows XP Service Pack 2 in one month instead of the three to six months estimated
- > Reduced root cause analysis cycle times by up to 70 percent
- > Improved internal client support, while also reducing support costs

As the first integrated marketer (catalog, call center, and Internet) of consumer electronics products in the United States, Crutchfield Corporation needed to streamline the integration, migration, upgrades, and general problem resolution for an exceptionally complex, proprietary, 250-application enterprise system. The company turned to BMC Application Problem Resolution to swiftly pinpoint problem root causes at every level, slashing diagnostic time and speeding time to resolution.

Early in Crutchfield Corporation's 30-year rise to become the nation's largest integrated direct marketer of consumer electronics, the company decided to develop its own proprietary enterprise applications whenever off-the-shelf solutions would cramp its style or compromise its commitment to customer service. This has had two far-reaching effects. First, it has helped make Crutchfield an acknowledged leader in customer service, with a friction-free shopping process. It has also turned Crutchfield into something of a software company, albeit one with a single customer: itself.

Today, the company's 500 employees rely on 550 desktop machines, 100 servers, and some 250 applications — for which Crutchfield's IT organization wrote about 85 percent of the code in use, excluding the base operating system, database, and e-mail. These applications include order entry, point-of-sale, a several thousand page Web site, general ledger, and warehouse management systems — all of which helps explain why the retail organization maintains 18 full-time developers.

THE PAYOFF OF INDEPENDENCE

"If you buy a product off-the-shelf, you're going to adjust your business processes to it. That works for well-defined applications, such as accounting, but for those areas that are unique to your organization, you can create something better than someone who doesn't know your space, environment, or business rules," explains Crutchfield's director of Information Technology, Steve Weiskircher.

One payoff of Crutchfield's homegrown approach is seamless integration between its retail stores, call center, and Web site. By creating and managing three coordinated systems, and feeding them all into the same unified business process on the back end, Crutchfield ensures that its customers in all domains experience a consistent look, feel, and message while enjoying equal access to special offers, consistent pricing, and up-to-date inventory information.

THE PRICE OF INDEPENDENCE

Keeping Crutchfield's systems running smoothly is a challenge on the best days. During times of change, the burdens can become huge because, for most applications, there's no third-party to take or share responsibility for compatibility and performance issues. This was the case when Crutchfield set out to migrate all of its applications to Microsoft Windows XP Service Pack 2 (SP2). The goal was to lower Crutchfield's vulnerability to spyware, viruses, and worms, and to liberate staff time tied up in combating these pests. However, a great hurdle stood in the way.

If Crutchfield applied SP2 blindly, it could cripple many of its applications, as they required OS access that SP2 would block in the name of security. On the other hand, wading through all applications to ferret out these problems was expected to take six months to a year. Instead, Crutchfield finished its troubleshooting inside of a month. The BMC Application Problem Resolution made all the difference.

BLACK BOX, BRIGHT OUTCOME

BMC Application Problem Resolution optimizes application development by automating problem resolution — a process that's estimated to consume 30 to 60 percent of a development team's time during testing and application maintenance. It can be used alongside automated testing tools in pre-production and for finding the root cause of issues that are escalated from the support organization. Analogous to a black box flight recorder on an aircraft, the patented BMC Application Problem Resolution Black Box software technology captures a synchronized, real-time log of user actions, system events, performance metrics, configuration data, and code execution flow when a problem occurs.

In Crutchfield's SP2 migration, reports Bill Hamilton, Crutchfield Client Support team leader, "The bulk of our problems resulted from permissions changes on specific portions of the file system or registry. Finding a specific key that had its permissions changed was like looking for a needle in a haystack. BMC Application Problem Resolution was like having a big red arrow pointing to the needle."

EVERYDAY BENEFITS

With Crutchfield creating so much of its own software, notes Weiskircher, BMC Application Problem Resolution adds value and lowers costs throughout the entire application lifecycle — from development and quality assurance to resolving problems in production. "BMC Application Problem Resolution gives us insight into our applications that isn't readily available with any other solution," he says. "It shrinks our time from problem discovery to diagnosis to virtually zero, which cuts our time to resolution. It focuses us on root causes, so we can move ahead faster, support our clients better, and cut support costs in the bargain."

FACING THE FUTURE

Crutchfield's impending system plans make their recent SP2 migration look like a mild warm-up exercise. Its mix of application codes now includes C, C++, C#, ASP, ASPX, Visual Basic 6, and VB.NET. Its system architectures include client/server in the call center, three-tier in the online retail store, and an n-tier architecture for the Web.

All this will change as Crutchfield drives toward a service oriented architecture and migrates to the Microsoft .NET framework to provide more business flexibility. This will require moving some code from VB6, which is procedurally oriented, to the more object-oriented VB.NET. Crutchfield's IT staff faces this latest challenge with confidence.

"Because BMC Application Problem Resolution enables us to find and fix such a wide range of application problems more quickly," Weiskircher says, "we can maintain a more reliable technology infrastructure as our business continues to expand and we aggressively advance our platform to support it."

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— Steve Weiskircher

Director of Information Technology
Crutchfield Corporation

Key Products Used:

> [BMC Application Problem Resolution](#)

About Crutchfield Corporation

Crutchfield Corporation is the nation's first integrated marketer (catalog, call center, and Internet) of consumer electronics products. Since its introduction in 1974, the Crutchfield catalog has been a respected authority on car and home entertainment products, winning multiple awards for quality, design, and usefulness. Crutchfield's Sales, Customer Service, and Technical Advisors are noted for their high integrity, product expertise, and technical support.

About BMC Software

BMC Software delivers the solutions IT needs to increase business value through better management of technology and IT processes. Our industry-leading Business Service Management solutions help you reduce cost, lower risk of business disruption, and benefit from an IT infrastructure built to support business growth and flexibility. Only BMC provides best practice IT processes, automated technology management, and award-winning BMC Atrium technologies that offer a shared view into how IT services support business priorities. Known for enterprise solutions that span mainframe, distributed systems, and end-user devices, BMC also delivers solutions that address the unique challenges of the midsized business. Founded in 1980, BMC has offices worldwide and fiscal 2007 revenues of \$1.58 billion. Activate your business with the power of IT. www.bmc.com.



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