



## Verizon Business

### EMC Smarts provides the technology behind Verizon Business' IMPACT fault management architecture

Verizon Business is borne from a heritage of innovation and excellence. It is also a leading provider of managed network services. In this highly competitive marketplace, Verizon Business differentiates its offerings by providing leading-edge network management to business customers around the world. Today, Verizon Business' patent-pending Rapid Fault Isolation capability and world-class IMPACT fault management architecture, using EMC<sup>2</sup> Smarts<sup>®</sup> technology, provides industry-leading time-to-repair service-level agreements (SLAs) to nearly 3,200 customers in 149 countries.

Achieving exceptional levels of network availability and performance required Verizon Business to take a new approach to network management. The company needed to move beyond traditional event management and began looking for a new solution that offered both root-cause analysis and a platform for advanced automation.

"As long as our operations team had to deal with the very large number of events generated by the existing IBM Tivoli NetView solution, advanced automation was not possible," says Steven Smith, Verizon Business senior manager, Enterprise Network Systems. "Event reduction through root-cause analysis was clearly our first step."

#### The importance of root-cause analysis

Verizon Business began to explore root-cause analysis solutions that could integrate with IBM Tivoli NetView.

"I had a single criteria—one ticket for one outage," says Mark Fontes, senior network consulting engineer for Verizon Business. "We were spending too much time reviewing bad tickets and doing manual event correlation."

As Verizon Business' Managed Network Service business grew to more than 1,000 networks under management, its system had to be highly scalable, support multiple technologies, offer ease in adding new devices, and have the ability to feed events into the Verizon Business main-frame in a standardized way.

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After extensive lab testing, Verizon Business made its initial Smarts purchase of Router Connectivity Manager, an early version of today's IP Availability Manager.

"The customer networks we manage are dynamic, and topology changes are often not within our control," says Smith. "We needed a root-cause analysis solution that was easy to monitor and maintain. Smarts' ready-to-use automated discovery, topology, certification of devices, and root-cause analysis worked 'out of the box' and were all instrumental in choosing EMC Smarts over other options."

In 2002, when Smarts released its Service Assurance Manager product, Verizon Business made the decision to retire NetView as its "Manager of Managers" (MoM) and convert to an all-EMC Smarts solution.

According to Smith, Verizon Business' findings were validated when Network Computing magazine published its "Hot MoMs" article that ranked Smarts Service Assurance Manager as the top product in its class, beating out Aprisma, BMC, and Micromuse.

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**Steven Smith**

**Verizon Business Senior Manager, Enterprise Network Systems**

### **Achieving advanced automation**

With the success of its root-cause analysis deployment, Verizon Business decided to take automation to the next level. A project was begun to integrate the company's internal IMPACT system to automate first-line fault management operations such as testing, maintenance verification, and ticketing.

"Ten years ago, when we saw that a device was down, we turned to our manual," says Mark Fontes. "Seven years ago, we looked it up on a Web page. Most recently, we use an Oracle database, but the process was still largely manual. Instead of acting as 'human modems,' we wanted to build a process where an event populates the ticket automatically. We wanted a system that could look at three to four alarms, automatically determine if they had a single cause, and open one ticket."

EMC Smarts provides this functionality, with automation improving mean-time-to-isolation by an average of eight to 11 minutes per event.

Today, automatic trouble-ticket generation is just one advanced feature of the IMPACT system. Integration with change management lets operators know if events are caused by a scheduled change in the network. The system also runs end-to-end circuit tests without operator intervention (required for 80 percent of tickets), updates tickets appropriately, and notifies the customer via pager, e-mail, and Web-based portal.

"This is a complex process," says Fontes. "Reliable identification of the disruption is the critical first step. Smarts pinpoints the root cause of network issues with amazing accuracy."

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## Reaping competitive advantage

Today, with Rapid Fault Isolation capabilities and Smarts-based IMPACT fault management, Verizon Business is offering customers an unparalleled set of SLAs for availability and restoration. The company's three-and-one-half-hour time-to-repair in the U.S (Verizon Business network), a four-hour time-to-repair for third-party managed networks in the U.S. and key global business centers, and a six-hour time-to-repair for remote regions of the world (all with Verizon Business maintenance) lead the industry.

Faster restorations translate to a significant bottom-line advantage for Verizon Business customers. With industry estimates putting the cost of downtime at \$4.5 million per hour for a large enterprise (Zeus Kerravala, Yankee Group), network availability and performance are absolutely critical.

"Advanced automation makes it possible for us to quickly restore networks when an issue occurs," says Smith. "With automated root-cause analysis, 99.7 percent of alarms can be identified in real time, which reduces time-to-repair, helps us consistently meet our industry-leading SLAs, and delivers the levels of network availability and performance our customers demand."



**EMC Corporation**  
44 South Broadway  
White Plains, NY 10601  
1-914-948-6200  
In North America 1-866-462-4274  
In Europe +44 (0) 20 8758 6750

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