Measuring and improving end-to-end availability

Implementing HP software enables ITIL-based approach to enterprise application availability and performance

> "To maximize the value of our IT assets, we need to track availability and performance in terms that are meaningful to our users' experience. With HP Business Availability Center software, we gain insights that enable us to focus our support resources on improvements that deliver the most value to the business."
> –Janet Gerdes, Service Manager, The Dow Chemical Company

HP customer case study: To fully leverage the value of its IT assets, The Dow Chemical Company set—and met—a goal to increase enterprise application availability.

Industry: Manufacturing

Objective:

The Dow Chemical Company needed better tools for capturing data on enterprise application availability to support its ITIL- and Six Sigma-based processes.

Approach:

Dow implemented HP Business Availability Center software to capture end-to-end data on enterprise application availability, then used that data to better manage its outsourced suppliers and improve uptime.

IT improvements:

• Availability of six core applications improved from 99 percent to 99.7 percent in the first year

• Mainframe application availability increased from 99.9 percent to 99.98 percent in second year

• Non-mainframe application availability increased from 99.2 percent to 99.4 in second year

Business benefits:

• Enterprise application value to business maximized

• User satisfaction has risen from 77 percent to 86 percent

• Business Availability Center tools support Six Sigma- and ITIL-based approach to IT management

• Improved ability to manage IT service providers

• Improved ability to support joint business ventures

• Dow positioned to support high availability during planned SAP upgrade

The Dow Chemical Company is a worldwide leader in science and technology, providing innovative chemical, plastic and agricultural products and services to many essential consumer markets. The $49 billion dollar company employs 43,000 people, and operates in 175 countries worldwide; its product portfolio is wide-ranging, including food and pharmaceuticals, paints, packaging, and personal care products. Dow continually adds to its offerings and capabilities via strategic acquisitions and joint ventures, and maintains a strong commitment to internal R&D.

Running an organization of such complexity requires stringent and sophisticated management tools, such as Six Sigma, which Dow implemented across its enterprise in 1999. And because Dow relies on key enterprise applications, the company's IT applies Six Sigma-based processes to drive quality in this area as well.

Measuring value

"Six Sigma is integrated into our culture," says Janet Gerdes, Service Manager, The Dow Chemical

Company. "It's what drives our decision-making across all business functions."

That includes processes for which Gerdes is responsible—processes that ensure Dow's enterprise applications—which the company depends on for everything from financials to customer relationship management—are always up and available when its users need them. Today that includes implementing IT Information Library (ITIL)-based standards, for which Gerdes relies on HP software, including HP Business Availability Center software and HP SiteScope software.

Even the decision to use HP software was subjected to formal scrutiny, Gerdes notes. Before Dow IT initiates any project, it first creates a two-part report called an Opportunity Analysis/Value Assessment. The Opportunity Analysis documents the opportunity, the project's business drivers, and the problem the project is intended to solve. The Value Assessment is the "dollars and cents" portion of the process: it attempts to translate the problem identified in the Opportunity Analysis into the value to Dow—for example, how much Dow might save by solving the problem, or whether the project might result in higher revenues. In some cases, the Value Assessment might document other reasons for the project, such as compliance or preserving value. But the objective is to ensure that Dow understands clearly the return on investment before approving any project.

The need to implement Business Availability Center software, Gerdes says, was rooted in Dow's increasingly complex environment, which included multi-vendor outsourcing. "We'd outsourced a big chunk of our services to different suppliers," she says. "And with so many different groups involved, we were not getting the service availability that we needed."

"We realized that no matter how many suppliers were involved in the support, we were still accountable. We needed to put tools and processes in place that would allow us to understand what was going on in our environment and ensure that our business needs were met."

Looking at IT through the clients' eyes
Dow also realized that it wasn't enough to monitor its IT environment at a component level. "If your server availability is high, but your networks go down, from the clients' perspective their applications are down.
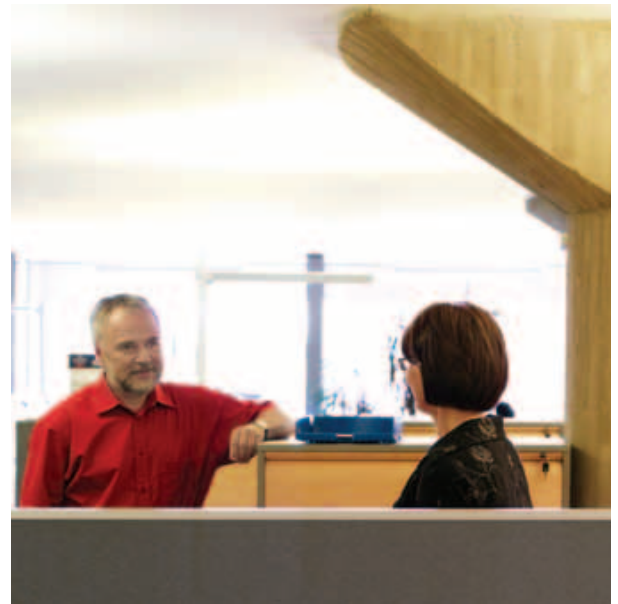
You might hit your service level agreements 100 percent on specific components, but still fail to deliver the required business value.

"We needed a way to measure performance end-to-end."

Implementing Business Availability Center software allowed Dow to capture data on end-to-end availability, Gerdes says—an approach consistent with the emphasis of both ITIL and Six Sigma on improving quality in ways meaningful to the end customer.

Gerdes' team started by implementing the software's business process monitor functionality at about 30 locations. Running on personal computers, the tool acts like a user—while continually monitoring IT transactions for performance and availability.

"We started with our larger sites, making sure to represent a wide range of geographical locations, and focused on our business-critical applications at Dow," Gerdes says, noting that as part of Dow's ITIL-based processes, application risk assessments were done to understand the level of criticality of Dow's IT systems. "We also monitored key smaller sites because of their strategic importance, including sites in India and China that Dow's business executives have targeted for future growth."

To understand how bandwidth at regional locations affects availability and response time, the team later implemented the tool even more broadly; today it is

approaching about 200 locations, each of which can comprise multiple measurements from business process monitors.

Gerdes augments the functionality of Business Availability Center with HP SiteScope software, which her team uses to monitor applications services. "It gives us a more detailed understanding of what's going on if we experience an outage." SiteScope is primarily implemented on pieces of the environment Dow has not outsourced, including application services and some Linux and UNIX systems.

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Bottom line: improved availability
Implementing Business Availability Center, Gerdes says, has delivered significant benefits to Dow.

First, it has provided Dow with the data it needs to more effectively manage its IT service providers. "We now have the ability to direct our service providers and identify problems that might not be reflected in how they meet their component-level service level agreements," Gerdes says.

Business Availability Center will also allow Dow to better manage its joint ventures. "When we acquire a company, we typically align their IT systems and processes to meet our standards," Gerdes explains. "It's fairly straightforward. But with joint ventures, we don't necessarily have that kind of control. If we provide IT services to a joint venture partner, this puts us in the role of outsourcer, which means we need to measure and document our service level agreements to our partner." Business Availability Center will give Dow the capabilities to provide ITIL-based service management to its partners, Gerdes says.

Another way Dow uses Business Availability Center is to address specific performance concerns. If someone comes to Gerdes with an application performance problem, her team can write a script to run until the problem is resolved, at which time the script is turned off. "It gives our IT a way to verify needed changes such as increasing bandwidth."

But the most telling benefit of implementing Business Availability Center in Dow's enterprise environment is how it has increased the environment's uptime and user satisfaction. "Our performance has improved dramatically since we started using Business Availability Center," Gerdes says. "It gave us the metrics we needed to document availability, to measure our progress in improving availability, and to report back to our clients." This, in turn, has enabled Dow to achieve reductions in performance variability which results in higher uptime.

"In 2005, we set a goal to reduce the number of defects of six core applications by 50 percent over our fourth quarter 2004 baseline," Gerdes says. "We were successful in meeting this goal, boosting the availability of those applications from about 99 percent to 99.7 percent." The team also increased the availability of another 27 applications by 35 percent over the 2004 baseline.

The following year, Gerdes' team had enough data to set up some standard service level agreements to further track availability trends; they decided to track the agreements by platform. Since then, Dow has achieved additional increases in uptime. Its mainframe application availability has increased from 99.9 percent in 2005 to 99.98 percent today. Non-mainframe application availability has gone from 99.2 percent in 2005 to 99.4 percent today. And Microsoft Exchange availability has risen from 99.8 percent availability to 99.9 percent.

Customer satisfaction has also risen. In the first quarter of 2005, for instance, 77 percent of Dow's enterprise applications users reported being satisfied. The most recent survey found that user satisfaction rates have now risen to 86 percent.

"Following ITIL best practices, we set SLAs with our key clients, based on their business needs," Gerdes says. "By improving application availability, we're able to better meet those SLAs so they can run our business effectively and productively."

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Broad range of HP solutions
Gerdes and her team are focused on ITIL and availability management. But Dow has also found value in other HP solutions, some of which have been implemented by Gerdes' colleagues elsewhere in the IT organization. Dow outsourced its service desk to HP

over 10 years ago. Under this contract, HP provides customized service desk technical support to more than 43,000 Dow employees worldwide while delivering cost reductions to Dow.

HP is also a longtime system supplier to Dow; Dow relies on over 2000 HP OpenVMS-based systems to support a range of process control and process automation applications at its global facilities. HP AlphaServer systems are Dow's enterprise data warehouse platform; under an HP availability partnership, HP has guaranteed 99.99 percent uptime on those systems.

Dow also uses a number of HP software solutions. It uses HP LoadRunner and WinRunner software to test its applications software, resulting in reduction in software test cycle times and better quality results. HP AssetCenter software is used to manage the physical, financial, and contractual aspects of Dow's IT assets, from request and procurement through retirement and disposal. To automate the discovery, mapping and inventory of IT hardware and software components, Dow is currently implementing HP Enterprise Discovery software.

In the future, Dow will continue to consider additional uses of HP software, particularly as it transitions to its Next Enterprise Architecture environment (NEA), a service oriented architecture (SOA) initiative that kicks off next year; as part of NEA, Dow will upgrade its 20-year-old SAP R/2 system with SAP's Netweaver and MySAP enterprise resource planning platforms. "This is a significant upgrade, and will result in an environment that is more complex than the one we run currently," Gerdes says. "We'll need software tools to help us fully understand the issues that could

potentially impact availability and to collect data to monitor the environment."

Gerdes also envisions a more integrated implementation of Business Availability Center software to enable Dow to drill down into its SAP system components, which will in turn enable Dow's IT staff to more quickly resolve availability issues.

Whatever the future brings, it will certainly continue Dow's track record of leveraging IT as a business asset. "For quite some time now, Dow has viewed its IT as integral to its business processes," Gerdes says. "By leveraging the capabilities of HP software, we ensure that our enterprise applications meet the needs of our business users and deliver the business value our company expects."

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