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CHALLENGE

The need to collaborate more effectively led business units within Dell to deploy their own instances of the Microsoft® Office SharePoint® Server, resulting in a decentralized infrastructure that contributed to higher costs and imperiled important business data

SOLUTION

Dell Services and Dell IT upgraded to centrally managed Microsoft Office SharePoint Server 2007 collaboration software deployed on Dell™ PowerEdge™ servers running the Microsoft Windows Server® 2003 Enterprise Edition operating system; to handle data access and storage, Dell IT deployed Microsoft SQL Server on Dell PowerEdge servers, as well as an EMC® Symmetrix® SAN and EMC® Legato® NetWorker® SharePoint Portal Server Client Connection software

BENEFIT

The new collaboration tool set provided by SharePoint 2007 helps employees share knowledge and work together on projects more productively; the centralized SharePoint infrastructure contributes to higher availability, better disaster recovery, and a lower cost of ownership, as well as better security and easier compliance with regulatory requirements

On-Point IT

Microsoft Office SharePoint Server 2007 deployed on Dell PowerEdge servers helps improve knowledge sharing and collaboration

At a large, global enterprise like Dell, collaboration represents not only a vital business asset but also an absolute strategic necessity. Employees need to work together and with partners and customers across business units, offices, and geographies. Tools that support effective sharing of resources and knowledge offer the potential for immense operational efficiencies.

In the past, Dell employees relied on traditional means of collaboration. "A lot of collaboration at Dell has been centered around e-mail, public folders, and file servers," says Thomas Sparks, Dell IT collaboration program manager. "Typically, somebody would start a folder on a file server, and everyone just started sticking documents there. Often, there was little rhyme or reason to where files were put or how they were named. Needless to say, this made it difficult to find and access information and led to numerous versioning problems."

In order to foster more effective knowledge sharing, many individual business units within Dell opted to deploy collaboration centers built around Microsoft Office SharePoint Portal Server 2003. "There were more than 300 individual instances of SharePoint that had been set up by business groups within Dell," explains Keith Fafel, practice lead for SharePoint in Dell Services. "At Dell, SharePoint 2003 was used for group calendaring, document sharing, maintaining contact lists, publishing meeting notes, and more—a myriad of collaboration needs."



Despite the fact that SharePoint had become a vital business system, the individual business groups were expected to deploy and maintain their own instances. "SharePoint 2003 was not centrally managed, and there was little in the way of operational procedures governing its use," recalls Fafel. "Critical business data was housed on the SharePoint servers, but because the data wasn't centrally managed, it was not necessarily backed up, and there was little, if any, redundancy. That posed a business risk because those systems are critical to the units that rely on them."

In the end, the decentralized SharePoint deployments resulted in an unnecessary waste of organizational resources. "Across the company, many teams worked independently to solve similar problems, which resulted in a lot of redundant effort," claims Andrew Gore, Dell Professional Services senior SharePoint architect. "Best practices were not being followed and the support process was disjointed, as each team owned its own SharePoint environment."

Dell implements a centralized collaboration tool set

In order to improve knowledge sharing, Dell recently resolved to build a new, centralized collaboration platform. "The scope of this project means that it affects every Dell employee," explains Marcus Brakewood, Dell IT engineering project manager. "In fact, we're not just setting up a whole new infrastructure, we're also developing the operational and use model for all Dell employees. The idea behind the project is to deploy an enterprise-wide, IT-managed SharePoint infrastructure that can address both internal and external customer needs."

As part of the project, Dell is upgrading to Microsoft SharePoint 2007. "We're looking forward to bringing in the new feature set available in SharePoint 2007," says Fafel. "The collaboration tools in SharePoint 2007 are much richer. Plus, SharePoint 2007 promotes a tightly integrated experience with user desktops and other Microsoft applications. In the end, we hope to make the SharePoint experience a little like *The Matrix*—it will be practically everywhere and integrated with almost everything."

According to the IT team at Dell, a centralized SharePoint infrastructure will help address many of the internal collaboration needs at Dell. "In the past, we didn't have an enterprise-wide platform to help the different business segments collaborate, so they went out and created their own SharePoint instances," Brakewood explains. "With a centralized system built around SharePoint 2007, we're really hoping to further team collaboration. SharePoint gives us easily customizable team spaces where people can share documents, tasks, calendars, and blogs. It also integrates with Microsoft® Office. Plus, it has project management features that allow you to manipulate timelines and access project scorecards."

Microsoft SharePoint 2007 will also deliver a wide range of much needed collaboration functionality to partners and customers. "Microsoft SharePoint 2007 will enable Dell teams to collaborate more easily with external customers and partners, wherever they happen to be located," explains Anu Mehta, Dell Professional Services project manager. "Dell will have the ability to create project-based collaboration sites to share documents, project plans, and status reports. Plus, a Dell IT-supported

solution will enable business units to focus on managing the business without having to worry about the underlying technology."

In fact, the new centralized collaboration tool set will be extended outside the enterprise to help Dell teams work more effectively with external customers. "For instance, for our Platinum Plus Enterprise Support program, Dell customer service representatives need to exchange voluminous information with customers," Fafel explains. "Often they need to exchange large files or reports, and e-mail isn't really able to handle the size of the file transfers. As part of the new collaboration tool set, we're building a way to give customers the ability to upload data, so our support technicians can view it and provide more timely information to our customers."

Dell PowerEdge servers and Dell|EMC storage support SharePoint

In order to support the SharePoint deployment—and provide for easy scalability as it grows—Dell decided to host the SharePoint application architecture on Dell PowerEdge 2950 servers running the Microsoft Windows Server 2003 Enterprise Edition operating system. "Dell really supports the scale-out mentality that we are seeking," reports Sparks. "The architecture we're designing is very expandable horizontally, so we can continue to grow by adding on one or two servers based upon our needs."

In addition to SharePoint, Dell IT plans to deploy Microsoft SQL Server 2005 on Dell PowerEdge 2950 servers to support the data access and availability needs of the new collaboration platform. "In the initial implementation, we plan to have 16 SQL instances, but it will also be very easy to grow," Sparks explains. "Our engineers are really excited about using the database mirroring capabilities of SQL Server 2005. Our primary data centers are located 10 kilometers apart in an active/active configuration. Our database administrators claim that the failover from the primary site to the mirror should actually take place faster than with a failover in Microsoft® Cluster Service."

Ultimately, mirroring offers both the benefits of high availability and low data loss. "With database mirroring, the transaction log records are sent directly from a principal database to a mirror database every time the principal transaction log buffer is written to disk, and this technique keeps the mirror database nearly-up-to-date with the principal—with no loss of committed data," Sparks explains. "If the principal fails, the mirror server may become a new principal and recover its database. With the release of Service Pack 1 in April 2006, database mirroring became a technology that delivers high-availability and high-performance solutions for database redundancy."

Plus, SQL Server 2005 offers a number of other attractive features. "SQL Server analysis services provide vital metrics on the SharePoint environment," says Sparks. "SQL Server 2005 also supports online 'creation of index' and 'rebuilding of index'—two features that really make life easier for administrators, especially when they are expecting database sizes between 80 GB to 200 GB for a SharePoint site. Plus, the SQL Server 2005 buffer manager supports hot-add memory, which allows users to add physical memory without restarting the server."

“The new SharePoint infrastructure will deliver high availability, disaster recovery, and standardization, which contributes to a lower total cost of ownership.”

— **Marcus Brakewood**,
Dell IT Engineering Project Manager



To support the systems architecture, Dell IT plans to deploy an EMC Symmetrix storage area network (SAN) with 35 terabytes of capacity. It is also investigating the use of a second SAN—a Dell/EMC CX700—to support the MySite data needs of SharePoint. For backup, Dell IT plans to implement an EMC Legato NetWorker SharePoint Portal Server Client Connection.

Microsoft, Dell Services, and Dell IT design and implement a scalable infrastructure

In order to help ensure a successful implementation, the Dell IT group enlisted the support of Dell Services and Microsoft to help architect, design, and deploy a SharePoint infrastructure that could meet current needs and easily scale to match future demand. “We were starting from scratch with zero assisting personnel, and we realized that we couldn’t deploy everything at once,” says Brakewood. “Microsoft contributed a dedicated high-level architect to our team to provide guidance and enable us to leverage Microsoft’s experience in deploying their own enterprise SharePoint platform. Dell Services really helped us build a core infrastructure that gives us the biggest bang for the buck out of the gate, as well as an operational model to help us scale the infrastructure.”

In fact, in many ways the involvement mirrors the approach Dell Services takes with customers—except, in this instance, the customer happened to be the Dell IT group. “Microsoft SharePoint Server 2007 is a brand new product,” explains Sparks. “Dell IT is looking to deliver it to internal customers, and Dell Services wants to provide it to external customers. So we decided to team up with Microsoft to develop a series of best practices with regard to architecture, scalability, and support. In the end, not only can we use this knowledge inside Dell, but Dell Services can provide the same expertise to our external customers.”

HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ 2950 servers
- EMC® Symmetrix® and Dell/EMC CX700 SANs
- EMC® Legato® NetWorker® SharePoint Portal Server Client Connection

SOFTWARE

- Microsoft® Office SharePoint® Server 2007
- Microsoft® SQL Server™ 2005
- Microsoft® Windows Server® 2003 Enterprise Edition

SERVICES

- Dell Services

SharePoint delivers more effective collaboration and a more efficient workplace

Ultimately, the new SharePoint implementation should provide a collaboration tool set that will help Dell employees share knowledge and work more effectively. “SharePoint provides capabilities that help our employees work together and collaborate on projects,” says Sparks. “It provides versioning control, improved security, and a better presentation of information and content than would otherwise be possible.”

Plus, by upgrading to SharePoint 2007 and centralizing on a single PowerEdge-based infrastructure, Dell as an organization will reap even greater rewards. “The new SharePoint infrastructure will deliver high availability, disaster recovery, and standardization, which contributes to a lower total cost of ownership,” explains Brakewood. “And importantly, it also helps create a higher level of security and a greater ability to meet compliance requirements because the system is centrally managed.”



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