Microsoft Server Product Portfolio
Customer Solution Case Study

Manufacturer Boosts Availability and Global Collaboration with Better Data Management

Overview

Country or Region: United States
Industry: Life sciences—Patient care devices

Customer Profile

Ferno-Washington is a privately held company that manufactures emergency, mortuary, and healthcare products. Based in Wilmington, Ohio, Ferno employs 475 people at 14 international locations.

Business Situation

Global engineers lacked an enterprisewide data management system, which restricted collaboration and slowed access to data. System stability and flexibility also hindered productivity.

Solution

Ferno engaged 3DVision Technologies to help deploy a design solution that includes SolidWorks Enterprise PDM. Bundled with Microsoft software, the system provides a central data vault to manage product data.

Benefits

- Delivers high availability
- Provides real-time data access
- Boosts collaboration
- Simplifies system administration and reduces costs

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Ferno-Washington wanted to simplify file sharing between engineers and suppliers, speed access to data, and support the reuse of parts between groups. The company also needed to eliminate unplanned system downtime. To address these challenges, Ferno engaged 3DVision Technologies to help replace its design tools with a comprehensive solution from Dassault Systèmes SolidWorks Corp. It includes SolidWorks Enterprise PDM, a flexible product data management system, and also Microsoft SQL Server 2008, Windows Server 2008, and Windows Explorer. Global employees use the solution to manage and share all file types including computer-aided design and Microsoft Office files. By deploying SolidWorks Enterprise PDM, Ferno has realized high system availability, provided real-time access to data, facilitated collaboration, and cut costs by simplifying software maintenance and boosting productivity.

Situation

Based in Wilmington, Ohio, Ferno-Washington designs medical devices such as ambulance cots, stretchers, and stair chairs. The company also creates immobilization equipment and specialized devices to support other medical services including water therapy. Ferno distributes its products to global emergency service organizations, mortuaries, veterinarians, and the military. The privately held company employs 475 people at 14 locations on five continents.

Thirty-two engineers design and maintain the company's products. Like at many other international companies, the engineers work in groups that sometimes include people in global locations. Before 2008, company engineers used several different applications for computer-aided design (CAD), computer-aided manufacturing (CAM), and computer-aided engineering (CAE). Engineers and other employees in the United States, the United Kingdom, Slovakia, and Australia struggled to share files—and many lacked real-time access to product data. Each location had stand-alone server computers that contained product design information including CAD drawings. To share a design file, employees manually sent it from one system to another using File Transfer Protocol (FTP). Because most files were 120–160 megabytes in size, file transfers typically took an hour or more. However, delays in communication between employees in different time zones often meant that people had to wait at least 24 hours to get the file that they needed.

Although their solution included some basic data management tools, employees lacked an enterprise solution that could provide comprehensive insight into global project files. For example, engineers could not view all of the files that contained design data about a specific part type used in multiple products, such as wheel assemblies. Employees also had no easy way to access file history, including who made what changes—and when.

Any reuse of parts between groups exacerbated these challenges. For example, some sites used unique product numbering schemas. If an engineer in the United Kingdom reused a part that was designed in the United States, that part would have two unique product numbers. Understanding which version of a file was associated with which product release could also be confusing and costly—and any design changes to shared parts were difficult to track. "There were a few occasions where parts were built that didn't function properly because they turned out to be the wrong version," explains Jon Brunke, CAD/CAM Administrator at Ferno-Washington. "These difficulties limited how often groups reused parts. Instead, they often opted to develop their own parts because, that way, they had greater control of the files."

The solution created additional challenges. Many suppliers could not access files because of the proprietary file format. When this happened, an employee had to manually convert the files into an appropriate format, which could take anywhere from minutes to hours. In addition, the proprietary solution was inflexible and required significant investments to customize.

System availability was also an obstacle that often restricted access to project files and hindered planned activities. Not only did the company lose approximately 500 hours in productivity each year due to unplanned downtime, but also IT personnel in Ohio had to invest 8–15 hours each month managing the databases and

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resolving system issues. Brunke explains, "About once a month, we had to take the database offline for maintenance because it had been corrupted. Generally, it took us between one and three hours to recover from these outages."

In 2007, Ferno sought a design solution that included a highly available data management system to facilitate collaboration, data access, and efficiency.

Solution

After evaluating multiple options, Ferno chose to implement an end-to-end solution from Dassault Systèmes SolidWorks Corp. (DS SolidWorks) that runs on the Windows Server 2008 Standard operating system. The customizable solution includes client applications to support CAD, CAM, and finite element analysis (FEA)—and it facilitates the exchange of design files with suppliers using the popular eDrawings format. The solution also includes SolidWorks Enterprise PDM. The product data management (PDM) system provides a centralized data vault to store global project files, which employees manage using Windows Explorer. In addition, because SolidWorks Enterprise PDM uses Microsoft SQL Server 2008 data management software as its database, each file can have extensive metadata associated with it, including product names, numbers, modification dates, and the names of people who have accessed and modified the file. "SolidWorks Enterprise PDM offers exceptional data management capabilities at a very reasonable price point," says Brunke. "It supports multisite data replication, and we can use it to share files globally in real time."

In May 2008, Ferno engaged 3DVision Technologies to help plan and implement the solution. IT personnel at Ferno managed the installation of the client applications on the desktop computers of corporate engineers. Consultants from 3DVision worked with IT staff from Ferno to deploy one database server in Wilmington, Ohio. It runs on a Dell PowerEdge 2950 server computer and uses Windows Server 2008, SQL Server 2008, and SolidWorks Enterprise PDM. IT personnel at Ferno moved all of the product files to the PDM vault, including CAD documents and other types of files created with Microsoft Office applications. They also took advantage of access-control features in SolidWorks Enterprise PDM to indicate which employees can view and modify each file.

Consultants from 3DVision customized some of the screens in SolidWorks Enterprise PDM to address the company's file management challenges. For example, each file has a data card that indicates which product it is associated with and which locations use it. Employees can add descriptions of each file version, and associate product files with part numbers and bills of materials. Employees can also assign a new part number to a product without the system recording this action as a change to the file.

To facilitate fast data access for global employees, the team deployed three archive servers in Wilmington, Ohio; Brisbane, Australia; and Cleckheaton, United Kingdom. Each system contains only replicated copies of the files in the PDM vault. Supported by server computers such as Dell PowerEdge 2950 systems, each archive server runs Windows Server 2008 Standard and SolidWorks Enterprise PDM. The archive server in Ohio supports 20 engineers in Wilmington and two engineers in Georgia. Three engineers in Australia use the archive server in Brisbane. In addition, four engineers in the United Kingdom and three engineers in Slovakia access files from the archive server in Cleckheaton. The

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company plans to implement an additional archive server in Slovakia and in Georgia.

To provide around-the-clock connectivity between employees and systems, the team installed a virtual private network supported by Cisco ASA 5510 and 5505 network security appliances.

In June 2008, employees in Wilmington began to use the new system. Soon after, IT personnel from Ferno began to provide remote access to SolidWorks Enterprise PDM for its other locations—a process that took approximately one week per site.

Benefits

With the new solution built with SolidWorks Enterprise PDM, SQL Server 2008, and Windows Server 2008, Ferno has increased system availability, sped data access, enhanced communication and collaboration, minimized administrative demands, and cut costs.

Delivers High Availability

Today, unplanned downtime no longer restricts productivity at Ferno. "Since we implemented SolidWorks Enterprise PDM, we have had zero unscheduled downtime," explains Brunke. "We would have lost 500–1,000 engineering hours over the past two years had we still been using our old system. I rebooted the SQL Server database and archive servers once after one year—only because I thought I should. It's wonderful. The system just runs."

Provides Real-Time Data Access

When employees log on to SolidWorks Enterprise PDM, they can view global product files in the PDM vault using Windows Explorer. Employees can search for files based on criteria including file name, product name, part number, or content. They can also peruse file listings and view files' data cards that detail content descriptions and change summaries, without opening the document.

To work on a file, an employee checks it out from the PDM vault. SolidWorks Enterprise PDM then sends the file to the employee using the version on the closest archive server. At the same time, the application changes the file's status in the vault—and on the other archive servers—to locked, and it records the time of the checkout and the name and location of the person working on the file. Meanwhile, other employees can view the most recently saved copy of the file, but they cannot modify it. Once the employee checks the file back into the vault, SolidWorks Enterprise PDM updates the file's status—to checked in—on the vault and archive servers.

Boosts Collaboration

Because employees can quickly share information, location is no longer an obstacle to collaboration. "We now have a global engineering work force that has the capacity to share workloads," says Brunke. "Our engineers in Ohio are at capacity right now, so engineers in Slovakia are developing products for them. By using SolidWorks Enterprise PDM, product managers in Ohio can look at files that an engineer in Slovakia just checked into the PDM vault—and they can discuss changes on the phone. That level of communication was just not possible before."

The enhanced clarity and insight that employees have about product files means that groups can effectively reuse parts. "An engineering department in one region might view the plans for a wheel assembly used in an ambulance cot—and decide to reuse it in one of the department's product lines," Brunke explains. "No one has to wait for files to be transferred or be concerned about tracking changes."

For More Information

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For more information about 3DVision Technologies products and services, call (800) 745-3136 or visit the website at:
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www.solidworks.com

For more information about Ferno-Washington products and services, call (877) 733-0911 or visit the website at:
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Exchanging data with suppliers is also easier. "Most of our suppliers can read SolidWorks files," Brunke says. "If not, we save the files using the eDrawings format."

Simplifies System Administration and Reduces Costs

The highly flexible solution costs less to maintain, in part because administrators manage only one centralized database for product files. (Archive servers only store replicated copies of files.) A high level of system stability also helps. "I no longer get calls about database corruptions," Brunke says. "Today, my administrative efforts include backups, user maintenance, and software upgrades." He adds, "Since we implemented SolidWorks Enterprise PDM, we've been able to reduce our annual software maintenance costs by 5 percent. We've realized these savings even though we have increased our design capabilities through FEA and with 2-D and 3-D prototyping."

Ferno has realized cost savings in other areas as well. "Just by eliminating file transfers, we estimate that the company saves more than $10,000 each year," says Brunke. "And because SQL Server 2008 has dramatically reduced the time it takes to search for information, we save $15,000 annually just at the Wilmington site by increasing productivity."

Microsoft Server Product Portfolio

For more information about the Microsoft server product portfolio, go to:
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Software and Services

- Microsoft Server Product Portfolio
  - Windows Server 2008 Standard
  - Microsoft SQL Server 2008 Standard
- Technologies
  - Windows Explorer
- SolidWorks Enterprise PDM

Hardware

- Cisco ASA 5510 and 5505 network security appliances
- Dell PowerEdge 2950 server computers

Partners

- 3DVision Technologies
- Dassault Systèmes SolidWorks Corp.

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