



Product Development SMBs:

Take Advantage of New SharePoint-Based Collaboration

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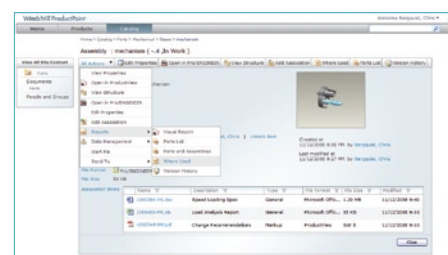


How SMBs are Building Powerful Collaboration Networks Using SharePoint®-based Solutions

In the early days of CAD, product development collaboration was somewhat simplistic—and very time-consuming. Engineers in Design, Testing, Manufacturing and Assembly walked around the plant to exchange paper files, or gathered around a workstation to review concepts. They talked in person frequently, then painstakingly recorded their ideas in reference notebooks that contained the group's common knowledge about each product: how it should be tested and assembled, where it should connect, and so on. It's no wonder product cycles lasted months—sometimes years.

Today, the fundamentals of product development are the same, but the world of collaboration has changed radically. Now, design teams from all parts of the world gather in virtual meeting rooms to discuss products that are far more complex than ever. Product update cycles, too, are far more demanding, since products can now go through four or five cycles in a year, compared to one or two in years past.

As well, massive volumes of product development information—which once existed in a single engineering workstation, now flow at Internet speed across a complex digital infrastructure. No doubt, as CAD has matured, so have the technologies, such as Internet-based networking, that support product development collaboration. Yet, collaboration can still be a significant challenge for any product development company, regardless of size.



Windchill ProductPoint offers rich reporting capabilities, including Where Used, Version History, and a visual representation of file dependencies.

Collaboration Challenges of Small and Medium Businesses (SMBs)

For small and medium enterprises, or SMBs, CAD collaboration poses unique challenges. Today, a product designed and built by an SMB must be just as sophisticated and innovative as competing products from larger companies, yet few SMBs have the resources to implement the type of cutting-edge, web-based collaboration system that larger companies—with deeper pockets—can implement.

Similarly, the development processes supporting that SMB product have to be on par with those in the larger companies, mainly because the SMB's product development infrastructure will be competing along with the product itself.

Today, the SMB product—just like the product from a Fortune® 1000 manufacturer—may require a global design team and offshore manufacturing; it may need integrated mechanical and electronics subassemblies; and it may need to be redesigned—or at least updated—every few months. For the product to be successful, these requirements must be supported by a powerful collaboration and data management infrastructure. The larger company is almost certainly going to have a product data management (PDM) repository to manage file versioning and team collaboration; the smaller company may not. And the more complex the product, the greater the difficulty SMBs will likely experience both in conducting effective collaboration and in getting the product delivered on time and on budget.

Collaboration and, in particular, file sharing are key for SMBs to compete with larger competitors throughout product development. Yet, most SMBs are using less-than-adequate tools for sending and sharing files. Some work by email, while others use shared network folders or FTP sites. Each method presents significant problems:

- **Searching.** At their most basic level, searches occur “opportunistically.” Searching for a part from memory or by part number is generally a hit-or-miss proposition. A usable part file may or may not be identified based on the quality of the CAD database. The time spent searching and scanning for designs by part number, and scanning paper documentation, deprives a company of product excellence. Even if the most recently produced part is located, it may not be the best variation to serve the current purpose.
- **Naming.** Without an automated naming mechanism, smaller companies are forced to track all design changes manually, and to create an ad hoc naming system for parts and assemblies. In practice, file names for parts and assemblies often become more random than consistent, as engineers resort to using either their own names, or file-save dates, original vendor part numbers, or other strategies to keep track of files.
- **Versioning.** Different users may be working on different components of the same assembly at the same time, so it is critical to keep track of the versions of files as they are checked in and checked out of the central repository. Also, it should be possible to roll versions back, because changes to one component may affect how other components function within the assembly.
- **Resolving Conflicts.** Without a multi-user conflict-resolution framework, shared files run the risk of introducing redundancy and errors into product designs, since it’s possible for multiple users to make conflicting changes simultaneously.
- **Robustness.** CAD files are not unlike MS Word® or PowerPoint® files, such that any given CAD file may contain thousands of dependencies on other CAD files. A part file may have relationships to 5,000 other parts that make up a single assembly, and an assembly may have relationships with other parts and other assemblies. A CAD designer (or test or manufacturing engineer) should be able to see, at a glance, all dependencies of the part being worked on. With standard email, shared network folders, and FTP sites, this is impossible.

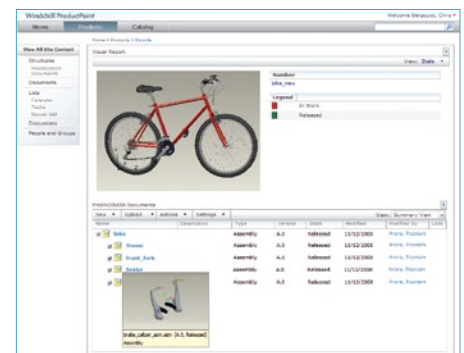
Vendor Perspective: PTC's SharePoint Solution for Product Development

For the millions of users who have already adopted it, Microsoft's SharePoint technology is bringing Web Services to content management applications. SharePoint features indexed search and other business-office collaboration functions, but these tools fall short in satisfying the demands of CAD file-sharing and collaboration.

What's needed, and what is now available, is file-sharing software that can extend the social networking capabilities of SharePoint for use with CAD-specific applications. This software, PTC's Windchill® ProductPoint®, creates a CAD collaboration infrastructure for SMBs that can rival the product development abilities of large, PDM-equipped manufacturing companies.

Windchill ProductPoint employs a robust versioning and mapping engine that tracks design histories and changing file dependencies. The software automatically increments new file versions, but otherwise lets companies implement their own file-naming schemes. Its CAD-specific search engine makes it easy to find the most current parts and assemblies by letting people search on metadata as well as conventional part names and numbers.

For example, a design engineer could ask to see either all parts supplied by a specific vendor, all parts attached to the rear axle, or all parts manufactured between April and June. Here,



Windchill ProductPoint is a SharePoint-based solution that supports sharing, versioning, and viewing of multi-CAD data.

Windchill ProductPoint's search functionality improves the overall quality of an evolving design. The design engineer can save time, while also reducing the risk of making fundamental design errors, by searching for and using the design of an existing part or assembly as the starting point for a new part or assembly. By leveraging the expertise and engineering value already invested in the original design, engineers can improve on the overall quality of the new design, while getting projects completed faster.

The software mediates multi-user conflicts by automatically locking out follow-on users when one person is working on a file. Plus, the software supports video, animation and other types of rich content that may be used in CAD collaboration.

Introducing Social Product Development

In addition to solving the collaboration issues detailed above, Windchill ProductPoint includes other collaboration functions such as blogs, wikis, calendars, and forums—all of which help to enable social product development. No doubt, Windchill ProductPoint is proving to be an optimal collaboration solution for SMBs because it's compatible with Microsoft Office® and it's simple to configure because it is based on SharePoint, which claims more than 100 million users and growing fast. As well, Windchill ProductPoint features multi-level security and locking for files, and supports local-language display in nine non-English languages.

Windchill ProductPoint can help SMBs gain an equal footing with larger product development companies in regard to file-sharing and collaboration, while reducing the risk of errors or product delays that can come from faulty or corrupt CAD data. Windchill ProductPoint can also help the SMB migrate to a richer set of Product Lifecycle Management (PLM) functionality in the future because it's fully compatible with PTC's Windchill PDMLink® (product data management) and Windchill ProjectLink™ (project and collaboration management) solutions.

See a demonstration of Windchill ProductPoint at:

www.ptc.com/products/windchill/productpoint/