

SOLIDWORKS

GAIN COMPETITIVE ADVANTAGE WITH PRODUCT DATA MANAGEMENT

IMPROVE EFFICIENCY, INCREASE INNOVATION, AND SHORTEN TIME TO MARKET WITH SOLIDWORKS PDM SOLUTIONS

EFFECTIVE MANAGEMENT OF PRODUCT DESIGN AND RELATED DATA IMPROVES COMPETITIVENESS

A CASE IN POINT: ABCO AUTOMATION

EFFECTIVE DATA MANAGEMENT BENEFITS PRODUCT DEVELOPMENT AND WHOLE LOT MORE

ADVANTAGES OF EFFECTIVE DATA MANAGEMENT WHEN COMPARED TO INEFFECTIVE DATA MANAGEMENT

A CASE IN POINT: PRENT

A CASE IN POINT: HOUSE OF DESIGN LLC

EXTEND YOUR COMPETITIVE EDGE WITH SOLIDWORKS PDM SOLUTIONS

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Faced with increasing levels of global competition, today's manufacturers are continuously looking for ways to gain and maintain a competitive edge. Increased efficiency and productivity in product development and manufacturing—resulting in greater innovation, shorter times to market, and reduced development and production costs—are the primary areas of focus for improving a manufacturing organization's competitive position. Underlying these objectives, however, are the speed and manner applied by a manufacturer when utilizing, leveraging, and managing its product design data, including automation of product development and manufacturing workflows, tightening of revision and quality controls, and reuse of product design data for other related business functions. By effectively managing and extending the value of product design data throughout the enterprise, SOLIDWORKS® product data management (PDM) software provides easy-to-use, affordable solutions that enable manufacturing enterprises to realize the productivity gains required to gain a competitive edge.



EFFECTIVE MANAGEMENT OF PRODUCT DESIGN AND RELATED DATA IMPROVES COMPETITIVENESS

Once viewed as valuable only to design, engineering, and product development groups, product design and related data have become essential to efforts by many manufacturers to achieve greater automation, realize increased productivity, and obtain a competitive advantage. Effective management of product design data with a PDM solution like SOLIDWORKS PDM software can help manufacturers improve their competitiveness by sparking innovation, improving quality, and accelerating time to market, enabling them to consistently beat competitors to market with successful, innovative products.

Manufacturers can improve their competitive position through improved data management for several reasons. Implementing a PDM system enables greater automation and organizational efficiencies within product development, resulting in better collaboration and increased innovation while speeding time to market. A PDM system also works to improve quality because of the accuracy and reliability of product design data. The tight revision and quality controls of a PDM system safeguard product intellectual property (IP), while also ensuring that the right revision is released to manufacturing, saving time and money while minimizing scrap and rework. In addition to increasing productivity through formalized, automated product development workflows, a PDM system can also improve the agility, flexibility, and efficiency of the extended enterprise through increased utilization of product design data across the manufacturing organization.

By integrating PDM data with manufacturing resource planning systems, manufacturers can better manage their supply chains—using product design data for sourcing, procurement, and inventory management—as well as improve manufacturing planning by using PDM data and automated workflows to support budgeting, scheduling, and quality assurance functions. Bringing PDM data into enterprise resource planning (ERP) systems can also help manufacturers automate financial transactions, manage stock keeping unit (SKU) inventory, push design data to areas of the enterprise that will benefit, and even glean important human resource information regarding job performance.

This ebook examines the benefits of effective PDM not only for product development and manufacturing groups, but also for additional functions across the manufacturing enterprise. From automation of product development and associated workflows to integration with MRP and ERP systems, a PDM system such as SOLIDWORKS PDM can provide manufacturing organizations with the data agility, flexibility, and control that they need to establish and extend a competitive edge.

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IMPROVING COMPETITIVENESS VIA AUTOMATION, INCREASED USE OF PRODUCT DESIGN DATA

ABCO Automation, Inc. designs and builds custom turnkey factory automation systems for manufacturers across the globe, and has experienced dramatic growth since its establishment in 1977. ABCO's extensive engineering and project management experience—combined with support services and in-house machining and fabrication capabilities—enable the company to design, build, and install automation systems that consistently exceed customer expectations. The reason why ABCO's repeat client base exceeds 90 percent is the company's proven reputation for delivering dependable, effective automation solutions that reduce costs, increase productivity, and provide customers with a competitive edge.

To support business growth, ABCO tripled the size of its North Carolina development facility. It also implemented the SOLIDWORKS PDM Professional product data management (PDM) system in 2010 to automate its use of SOLIDWORKS 3D design software and related development processes. The factory automation company chose the SOLIDWORKS PDM Professional system because the solution is fully integrated with ABCO's SOLIDWORKS CAD software, includes better administration tools, and is more capable than other packages, providing the automation systems developer with greater flexibility for automating workflows, supporting downstream functions, and leveraging and mining product design data.

When ABCO first implemented the SOLIDWORKS PDM Professional system in 2010, the company quickly realized productivity gains, reducing design cycles by 30 percent, accelerating time to market by 20 percent, reducing development costs by 20 percent, and cutting costs related to scrap and rework by 50 percent. Since then, ABCO has realized an additional five percent in efficiency improvements across the board by leveraging and mining PDM data to support other functions while simultaneously providing product developers and management with a window into the status of every design in development, according to CAD Administrator Michael Sveda.

"Since we first implemented SOLIDWORKS PDM Professional software, we've developed several methods for pulling design data out of the PDM system and using it for other purposes," Sveda explains. "For example, we bring data from our PDM system



into our Infor CloudSuite™ Industrial [SyteLine] enterprise resource planning [ERP] system to support associated business functions and utilize Microsoft® SQL Server Reporting Services (SSRS) to dig into PDM's SQL database and collate that data to generate reports. By leveraging our PDM and ERP systems in this manner, we are able to provide a window into the precise status of any part, assembly, or project, at any time in the process."

READ THE WHOLE STORY

To read the full ABCO Automation story, click [here](#).



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Managing the increasing amounts of product design data—ranging from CAD models, engineering drawings, and analysis plots to G code, photorealistic renderings, and bills of materials (BOMs)—has become a necessity for today’s product development organizations. There’s simply no way to save the time and money spent on manually managing this growing mountain of product design data without a modern, efficient PDM system like SOLIDWORKS PDM. In addition to helping product developers save time and money while simultaneously creating higher quality, more innovative products, an integrated PDM system can help manufacturers to better manage growth by supporting downstream functions and making the entire enterprise more efficient and responsive to market demands.

Saves Time

With an integrated PDM system such as SOLIDWORKS PDM, manufacturers will realize greater efficiencies by eliminating time spent searching for existing product design data and related information, and by automating product development workflows. Instead of spending time searching for design data or manually creating BOM information, product developers can utilize the PDM system to quickly and easily locate product data—encouraging design reuse—and realize additional efficiencies related to using a single, integrated design and data management system. Time savings are not limited to product development, however, as a PDM system will also make downstream MRP and ERP functions more efficient.



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BENEFITS OF EFFECTIVE DATA MANAGEMENT

- Automates Workflows
- Tightens Revision Control
- Saves Time
- Reduces Costs
- Accelerates Time to Market
- Facilitates Collaboration
- Fosters Innovation
- Leverages Design Data to Support Downstream Business Functions
- Supports Manufacturing Resource Planning and Enterprise Resource Planning Systems
- Makes the Enterprise More Agile, Flexible, and Efficient



PROBLEMS RELATED TO INEFFECTIVE DATA MANAGEMENT

- Utilizes Unstructured Workflows
- Lacks Revision Controls, Resulting in Use of Out-of-Date Revisions
- Wastes Time
- Incurs Unnecessary Costs
- Extends Time to Market
- Discourages Collaboration
- Limits Innovation
- Squanders the Value of Design Data for Supporting Downstream Functions
- Prevents Use of Design Data to Support Manufacturing Resource Planning and Enterprise Resource Planning Systems
- Keeps the Enterprise Flat-Footed, Inflexible, and Inefficient

...A CASE IN POINT

AUTOMATING WORKFLOWS, TIGHTENING REVISION CONTROLS BOOSTS THERMOFORM PACKAGING SYSTEM DEVELOPMENT THROUGHPUT

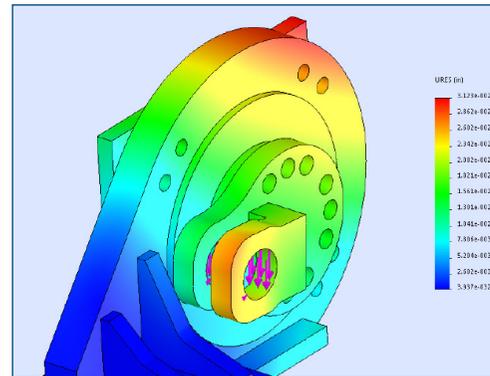
Prent Corporation is the world's leading manufacturer of custom plastic thermoform packaging and related systems for the medical device, electronics, and consumer products industries. With many Fortune 100 companies as customers, Prent is committed to leveraging the latest technologies to better serve its customers.

Prent chose to standardize on the SOLIDWORKS design and manufacturing environment in 2006, implementing SOLIDWORKS mechanical design, electrical design, simulation, and product data management (PDM) solutions.

The SOLIDWORKS PDM Professional implementation enabled Prent to automate its workflows—both in product development and manufacturing and assembly—and tighten revision controls, thereby shortening development times, reducing scrap and rework, and eliminating errors related to using the wrong revision. “On the production side, the implementation of the SOLIDWORKS PDM system has resulted in a largely paperless system, leading to greater automation and fewer questions because we can easily access the latest, most accurate design data,” says Manufacturing Engineer Curt Nyhus. “If we do have questions, we can quickly and easily search the vault for the information we need.”

Prent's product development group also uses SOLIDWORKS PDM to formalize its design processes, maximize design reuse, and improve global collaboration. “The biggest benefit of the SOLIDWORKS PDM implementation is that we now have one version of the truth,” notes Senior Designer Jesse Winker. “SOLIDWORKS PDM allows us to automatically replicate our vault to other design offices and manufacturing facilities around the world, which ensures that we are using the same data, rules, and workflows across the company.”

Since implementing SOLIDWORKS PDM in manufacturing in 2014 and product development in 2015, Prent has streamlined its entire design and manufacturing operation, shortening lead times to as little as two weeks while simultaneously doubling throughput to support a similar jump in sales.



“Now that we've settled in with the SOLIDWORKS PDM system, we're maximizing resource utilization on a global scale,” says Chief Information Officer Steve Zimmerman. “The SOLIDWORKS 3D design environment—and particularly, the SOLIDWORKS PDM system—is helping us to do more work with the same number of people,” Zimmerman adds. “We now design systems more efficiently, collaborate more effectively, and deliver consistently high levels of quality across the organization.”

READ THE WHOLE STORY

To read the full Prent story, click [here](#).



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Saves Money

In addition to saving time and accelerating time to market, an integrated PDM system helps manufacturers reduce development and production costs without sacrificing quality or innovation. By tightening revision controls, a PDM system can cut scrap and rework costs associated with releasing the wrong revision of a design to manufacturing. By minimizing duplicative, unnecessary tasks and increasing design reuse, a PDM system helps manufacturers to eliminate cost overruns and reduce part number proliferation. Furthermore, downstream business functions will become more efficient through access to product design data, saving additional costs outside of product development.

Facilitates Growth

The ultimate goal of improving a manufacturer's competitive position by making the organization more agile and flexible is to consistently succeed in the marketplace and grow as a company. While an integrated PDM system can introduce the productivity gains that companies need to compete more effectively, it can also support the growth that follows shorter, less costly development cycles and faster times to market. Manufacturers who can leverage PDM to accelerate times to market and more consistently be first to market with a new product or model are able to support the increased throughput that accompanies growth without simply adding resources. With the productivity increases associated with the formalized, automated workflows of an integrated PDM system, product developers work smarter, not harder, and are able to utilize time and cost savings to boost throughput without adding resources. Because PDM automates the entire process, manufacturing organizations are able to bring new contributors online more quickly and maximize resource utilization to facilitate growth.

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ACCELERATING INNOVATIVE ROBOTICS SYSTEMS INTEGRATION, SUPPORTING GROWTH WITH PDM

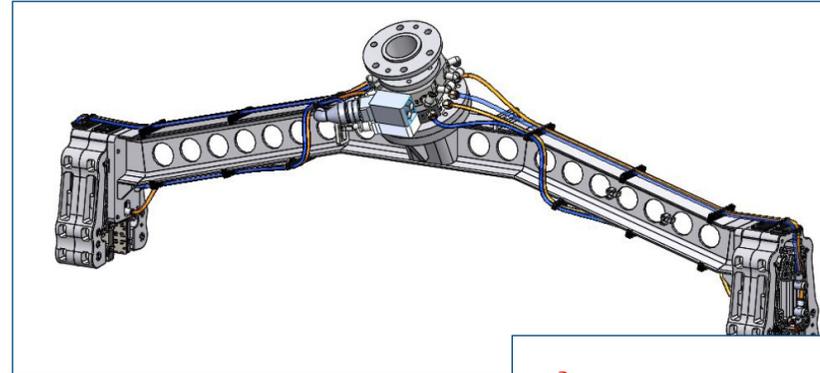
House of Design, LLC is a leading ABB Robotics systems integrator that specializes in efficiently and cost-effectively designing, manufacturing, and implementing robotic systems for innovative, unique applications, such as a robotic system that automatically assembles wooden trusses.

Through its partnership with ABB Robotics, House of Design relies on its partner's robotics hardware and programming and simulation software—ABB RobotStudio®—as key pillars of its robotics system integration work. However, because integrating these robotic systems always requires the design and implementation of additional mechanical equipment, electrical systems, controls, fixtures, and tooling, the company needed a 3D CAD system to design additional system components and assemblies, according to COO Ryan Okelberry.

House of Design chose to standardize on SOLIDWORKS solutions, implementing SOLIDWORKS mechanical design, electrical schematics, analysis, and PDM software solutions. "We chose SOLIDWORKS because dollar for dollar, it's the best 3D CAD out there. When you consider the additional integrated solutions like Electrical and PDM, we get the most bang for our buck with the SOLIDWORKS development environment," Okelberry says.

As House of Design grew and added staff, the volume of projects and related design data prompted the company to add the SOLIDWORKS PDM Professional product data management system to its initial SOLIDWORKS implementation in 2017. With SOLIDWORKS PDM Professional, the company has formalized and automated its development workflows as well as those of additional downstream functions.

"[W]e needed a more capable [PDM] solution as management started to scale the organization," explains Software Application Engineer Ron Grover. "This was critically important to improve the quality and reliability of our design data by incorporating revision controls while still maintaining a collaborative development environment. We're using the automated workflows in SOLIDWORKS PDM Professional extensively, including a half dozen different workflows to automate back-end business processes, such as project management and accounting."



With SOLIDWORKS solutions, House of Design has been able to maintain and support rapid growth in its business and product development effort. The company has grown from its initial two employees to a staff of 80 professionals and has doubled its annual gross sales year over year the past three years. The company has been able to succeed and grow rapidly because of the automation of development workflows and downstream processes with PDM, and the improvement in the quality and reliability of design data.

READ THE WHOLE STORY

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SOLIDWORKS PDM solutions are fully integrated with SOLIDWORKS 3D design software, enabling manufacturers to safeguard, store, and organize product design data for maximum efficiency. These solutions also allow product development teams to collaborate more effectively. Two different solutions—SOLIDWORKS PDM Standard and SOLIDWORKS PDM Professional—are available, depending on the size and PDM needs of the manufacturing enterprise.

SOLIDWORKS PDM Standard

Included as part of SOLIDWORKS Professional design and SOLIDWORKS Premium design and analysis software, SOLIDWORKS PDM Standard is an ideal solution for smaller workgroup environments that are housed in one geographic location. The application helps designers and engineers to easily and efficiently organize and manage product design and engineering data, and has an easy upgrade path if and when an organization's needs change.

SOLIDWORKS PDM Professional

SOLIDWORKS PDM Professional is a full-featured data management solution for organizations large and small. SOLIDWORKS PDM Professional helps product development teams to more easily find and repurpose files, parts, and drawings; share design information; automate workflows; and ensure manufacturing always has the right version. The solution allows users to perform these tasks:

- **Securely store and index design data for fast retrieval**
- **Eliminate concerns about version control and data loss**
- **Share and collaborate on designs with people inside and outside the organization in multiple locations**
- **Create an electronic workflow to formalize, manage, and optimize development, document approval, and engineering change processes**



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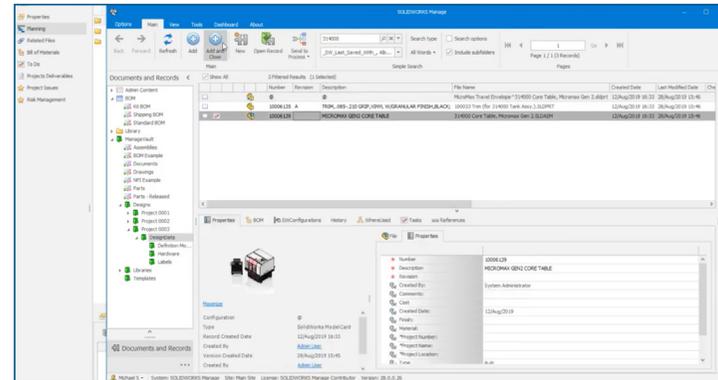
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GET THE MOST OUT OF YOUR PRODUCT DESIGN DATA WITH SOLIDWORKS DATA MANAGEMENT SOLUTIONS

In today's digital product development and manufacturing environment, the ability to locate, utilize, and manage product design data is quickly becoming a critical factor for manufacturing success. In this computer-aided, digital environment, product design and related engineering/manufacturing data have become the lifeblood of the manufacturing enterprise. And just as healthy blood flow is an indication of overall fitness and physical performance in human beings, how well a manufacturing organization leverages, utilizes, and manages this vital data flow will have direct impacts on its ability to grow, compete, and prosper in today's global economy.

Manufacturers can improve their competitiveness by improving data management in product development and beyond. Improved data management with an integrated system such as SOLIDWORKS PDM will save time, reduce costs, and boost productivity through greater automation, formalized workflows, and organizational efficiencies. Moreover, the benefits of improved data management extend beyond its capacity to increase productivity and include its ability to improve product quality, facilitate effective collaboration, boost enterprise agility and flexibility, inspire greater innovation, and support downstream business functions.

From automation of product development and associated workflows to integration with MRP and ERP systems, a PDM system such as SOLIDWORKS PDM can provide manufacturing organizations with the data agility, flexibility, and control that they need to gain a competitive advantage in an increasingly competitive global market.



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Learn more about how integrated SOLIDWORKS data management solutions can help you gain and maintain a competitive edge by visiting www.cati.com, or call (888) 308-2284 .



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