



Finding PLM to Fit Midsized Manufacturers

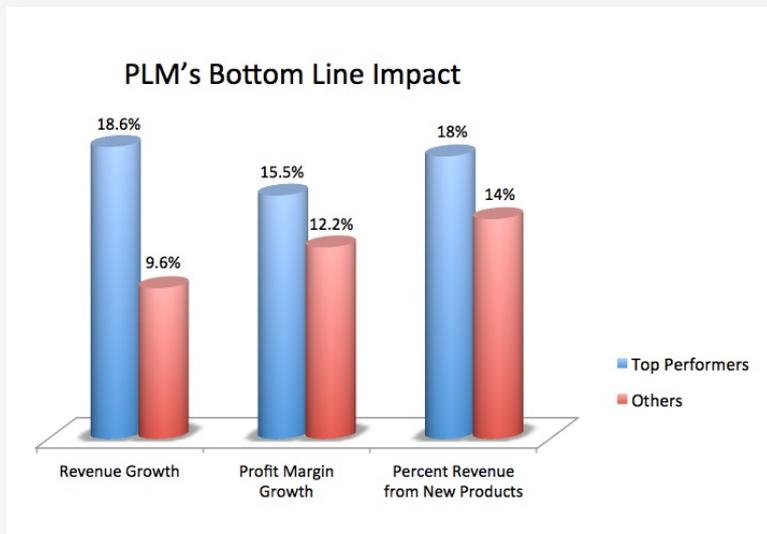
By : Jim Brown | President | Tech-Clarity



“Effective design data management fundamentals enable better product development performance.”

PDM Improves Product Development

Best Practices for Managing Design Data – Tech-Clarity



PLM Drives Even Greater Bottom Line Results

Getting the Most from PLM – Tech-Clarity, Kalypso

Midsize Manufacturers Stuck In-Between

Midsize manufacturers are poised to grow in today's vibrant markets. They're taking advantage of manufacturing revitalization armed with a combination of product innovation and agility. But developing successful products today is complex business. It requires technical knowhow, teamwork, collaboration, and coordination. Midsize companies have to overcome this complexity to compete with larger competitors. They have to connect closely with customers and introduce new products quickly and efficiently to meet their needs.

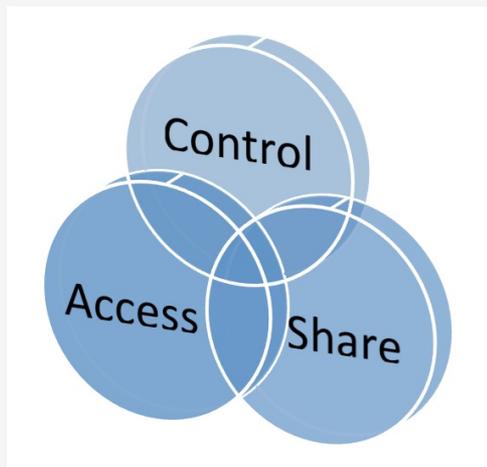
Product Lifecycle Management (PLM) software can help. It drives better product development performance by managing product-related data, processes, and projects. **While smaller companies may be able to control, access, and share product data with relatively simple Product Data Management (PDM) tools, larger manufacturers rely on full-featured PLM systems** that help automate processes and share data across global supply chains.

Midsize companies may find themselves in-between because:

- Product and organizational complexity drive them beyond basic PDM capabilities
 - A full-featured PLM implementation may feel out of reach
- Midsize manufacturers need to choose a system that quickly delivers the core capabilities they need to streamline product development but also gives them room to grow value over time. So what's the right size PLM to fit a mid-sized manufacturer? Let's take a look.

The Allure of Simple Solutions

Ideally, manufacturers could use something as simple as Dropbox or Google Drive to manage product development. Simple apps like these have good user interfaces and file-sharing paradigms that offer companies the fundamentals of data management - controlling, accessing, and sharing product data online. But **they aren't intended to support industrial scale processes** like product innovation, development, and engineering and don't support the capabilities and relationships required to manage complex product data.



“Unfortunately, many engineers look to solutions designed for consumers and turn to web-based file-sharing services like Dropbox, Google Drive, or others. These offerings have good concepts but have many shortcomings that make them inappropriate for professional use, particularly for CAD file management.”

The Basics of Managing CAD – Tech-Clarity

Some companies try to extend simple file sharing solutions to meet basic PDM capabilities. This might be a simple, low cost option but it leads to a solution that relies on manual processes, conventions, and communication to keep chaos in check. This may be enough for a very small company with a handful of engineers. They can manage the rest outside of the system and engineers can yell over the cubicle when they make a change that will impact others. But that approach **doesn't hold up to the complexity found in midsize and larger manufacturers!**

“Simple” Simply Falls Short for Midsize Manufacturers

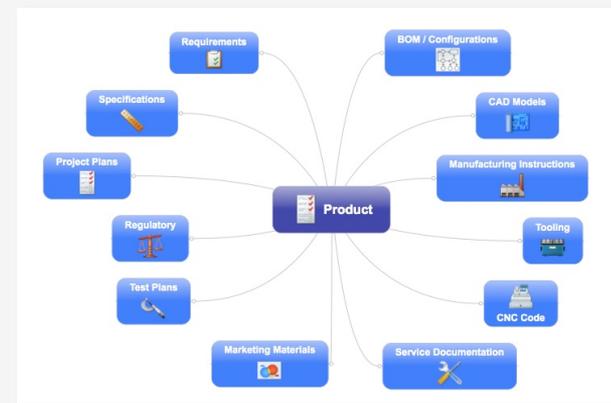
More simple solutions, even those designed to “understand” CAD, are built to manage files as opposed to managing products. They don’t have the context of working in product structures and don’t handle complexities such as how changes by one engineer impact the rest of the product, and certainly can’t determine who on the product development team needs to know about it. They have little or no context of the processes, organization, and project crucial to developing products.



“Engineers spend a third of their time on non-value added work. Even worse, 20% of their time is spent working with outdated information, which often leads to wasted effort and rework.”

Reducing Non-Value Added Work in Engineering – Tech-Clarity

Midsize manufacturers can’t get away with that level of simplicity without bringing about tremendous inefficiency and risk. They have organizational complexity that demands more structure, process, and control. “Simple” leaves too much opportunity for errors and rework. They can’t afford to rely on people-dependent processes, folder structures, or naming conventions. Managing files is not enough. PLM offers the opportunity to step up to more mature processes and technology. But midsize manufacturers need to find the right size PLM system so they can improve efficiency and product development performance quickly without hampering innovation.



Midsized manufacturers compete by having close, responsive relationships with their customers. They seek out and incorporate the “voice of the customer” (VOC) in product design and development starting at the conceptual level. They collaborate early and often to get the right requirements and ensure designs are on target.

Unfortunately, many companies attempt to collaborate by sending CAD or image files to customers. Emailing files often leads to confusion because reviewers may not be looking at the most recent version or understand which design aspect needs to be reviewed. The files are also full of product knowledge and engineering know-how that must be protected. **Manufacturers need a lightweight and secure way for customers to view designs online and provide feedback.**



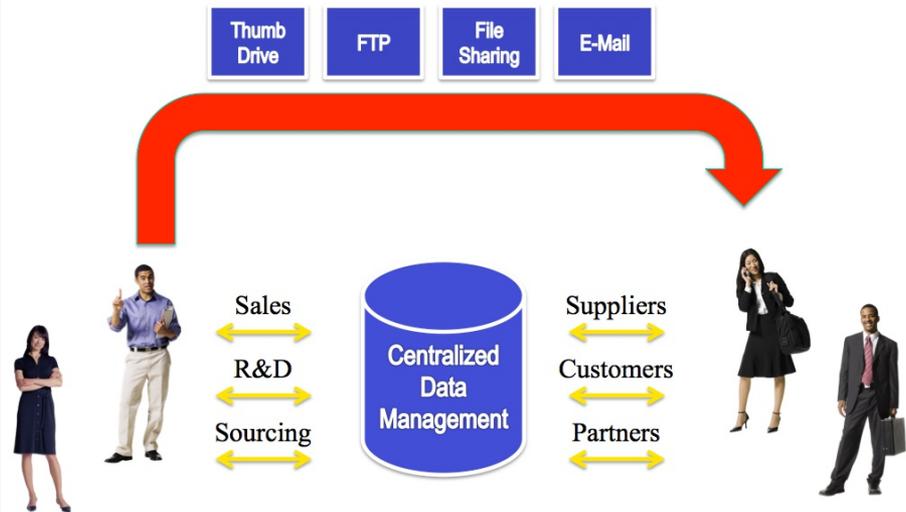
“Social computing technologies show significant promise to raise the bar on product innovation, product development, and engineering performance.”

Going Social with Product Development – Tech-Clarity

Collaborate to Stay Close to Customers

Modern PLM solutions take advantage of social concepts to help create a collaborative dialogue with customers. Social collaboration through PLM offers the benefits of close collaboration without unnecessary risk because an online approach allows files stay securely on the server.

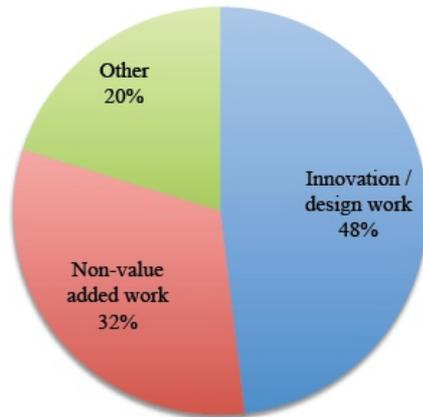
As Social Business Collaboration and the Product Lifecycle finds, *“To realize the potential business value of social product development, the next generation of solutions will need to combine both social computing techniques and proven PLM best practices in a seamless way.”*



Risky and Ineffective Information Sharing Techniques

Work Better Together to Drive Higher Product Development Productivity

Midsized companies have to be agile and efficient. But Tech-Clarity research shows that *“On average, engineers spend less than one-half of their time on innovation and design work.”* Midsized manufacturers simply can’t afford that low level of productivity! The number one culprit is searching for information. PLM helps avoid wasted time by letting engineers easily access and share information in real time with each other, across departments, and with the supply chain. Centralized information helps manufacturers catch mistakes early and gives executives the ability to see what’s going on.



How Engineering Time is Spent

Reducing Non-Value Added Work in Engineering – Tech-Clarity

A significant key to efficiency is working real-time in a product context. PLM manages product structures instead of managing BOMs as documents. A data-driven approach allows engineers to see designs in relation to the rest of the product. It lets them work in parallel without having to rework things when updates by one designer ripple through the product. Everyone can see the latest product in real time to prevent rework. It even helps reduce interruptions because non-engineers can see product designs on their own so engineers don’t have to waste time pulling information together and sitting in design reviews meetings.

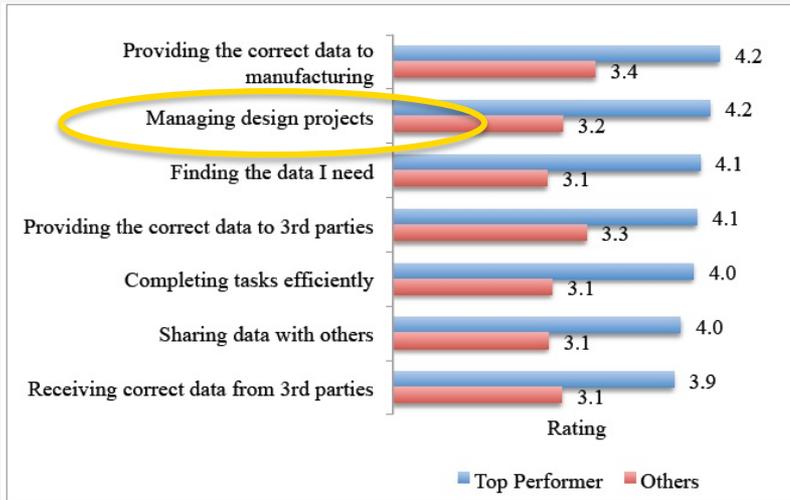


“Poorer performing companies spend, on average, 34% more time on nonproductive data management tasks than world-class companies.”

Better systems help drive better productivity.

Best Practices for Managing Design Data – Tech-Clarity

Manage Products and Programs Holistically



Effectiveness of Engineering Activities

Reducing Non-Value Added Work in Engineering – Tech-Clarity



“PLM can serve as a strong (project management) backbone, connecting programs with their underlying engineering deliverables.”

Reducing Program Risk with EVM – Tech-Clarity

Tech-Clarity research also shows the importance of managing design projects. **Companies with the best product development performance rank their ability to manage design projects much higher than others.** It was only second to “providing correct data” in the list of capabilities that set Top Performers apart from their poorer performing peers.

Keeping everyone on the same page with tasks and status is critical. Most midsize manufacturers probably don’t have a formal program management office (PMO) with full-time project managers and accountants. But they certainly need to manage projects effectively to keep time to market and cycle times fast so they can respond to customers.

At the same time it’s important to keep everyone working in a project context, **engineers can’t afford to waste time being nonproductive because product information and programs are in separate systems.** Instead, a holistic view of projects and products in one system reduces duplicate entry and lost time updating multiple systems.

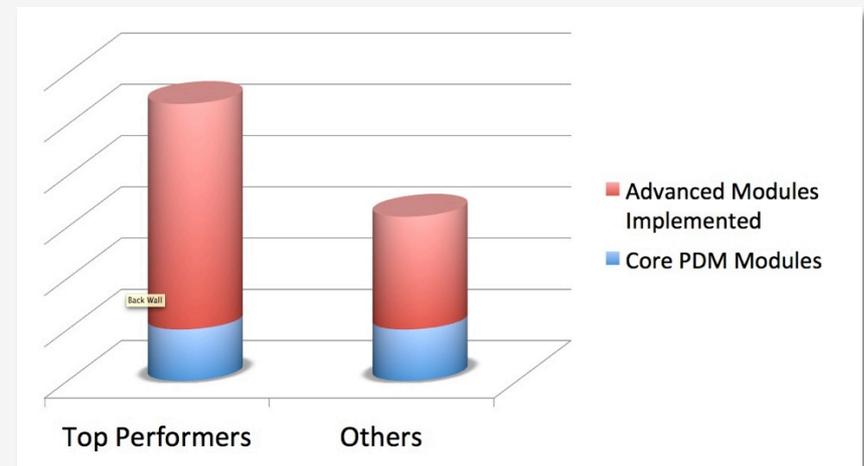
Start Fast, Plan for the Future



Midsized manufacturers typically don't have time to invest in multi-year implementation projects. They need to start with the basics to solve current problems quickly and add value. **PLM basics can quickly help manage complexity, improve collaboration, and enhance productivity.**

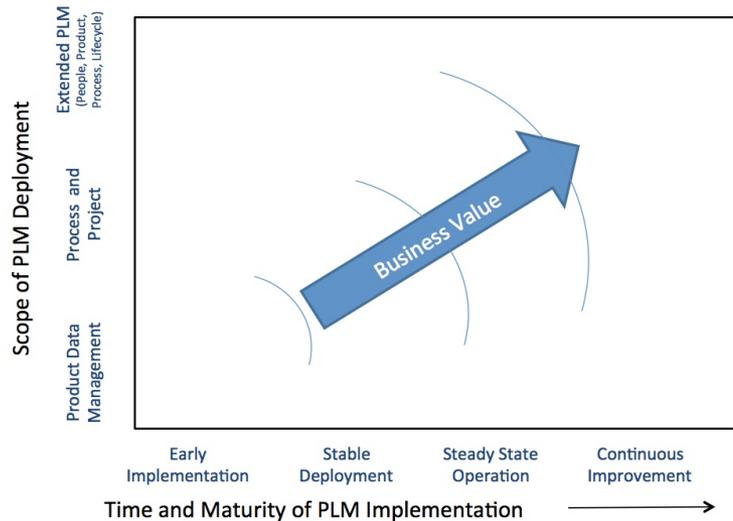
But midsized companies shouldn't plan to stop there. PLM has a lot to offer beyond managing data. Leading PLM systems cover more aspects of product lifecycles, product development, and the experience customers have with their products.

Top Performers use a lot more of PLM's advanced capabilities. While many midsized manufacturers might not be ready for this level of functionality, it's important to be aware that it exists and leave room for expansion as needed. **Manufacturers of all sizes should make PLM a foundation on which to build greater value over time.**



Top Performers Use More of What PLM Has to Offer
[Getting the Most from PLM](#) – Tech-Clarity, Kalypso

Get Started with the Right PLM Solution



Core PLM can quickly add value to midsize manufacturers by helping them combat complexity, improve productivity, and stay closer to customers. Recognize the potential value of a fully featured PLM with all of the bells and whistles, but be honest with yourself about whether your company can afford the time and effort to get there (at least right away).

Don't take on too much. Start with the basics and get value quickly, but recognize the shortcomings of simple file sharing solutions that fall short for the complex products and product development environments common to midsize manufacturers. Look for a solution that allows you to design in the context of your products in real time, but also in the context of processes and product development projects. In addition, look for PLM that incorporates automation including automatic CAD and project updates to keep engineers focused on innovation instead of managing files.

Finally, **make sure to leave your company room to grow as your business dictates, using the initial implementation as a foundation for greater improvements.**

“Top Performers are 85% more likely to use PLM and twice as likely to have the CAD models update automatically.”

Reducing Non-Value Added Work in Engineering – Tech-Clarity



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About the Author

Jim Brown is the President of Tech-Clarity, an independent research and consulting firm that specializes in analyzing the business value of software technology and services. Jim has over 20 years of experience in software for the manufacturing industries. He has a broad background including roles in industry, management consulting, the software industry, and research.

Jim's experience spans enterprise applications including PLM, ERP, quality management, service lifecycle management, manufacturing, supply chain management, and more. Jim is passionate about improving product innovation, product development, and engineering performance through the use of software technology.

Jim is an experienced researcher, author, and public speaker and enjoys the opportunity to speak at conferences or anywhere he can engage with people with a passion to improve business performance through software technology.