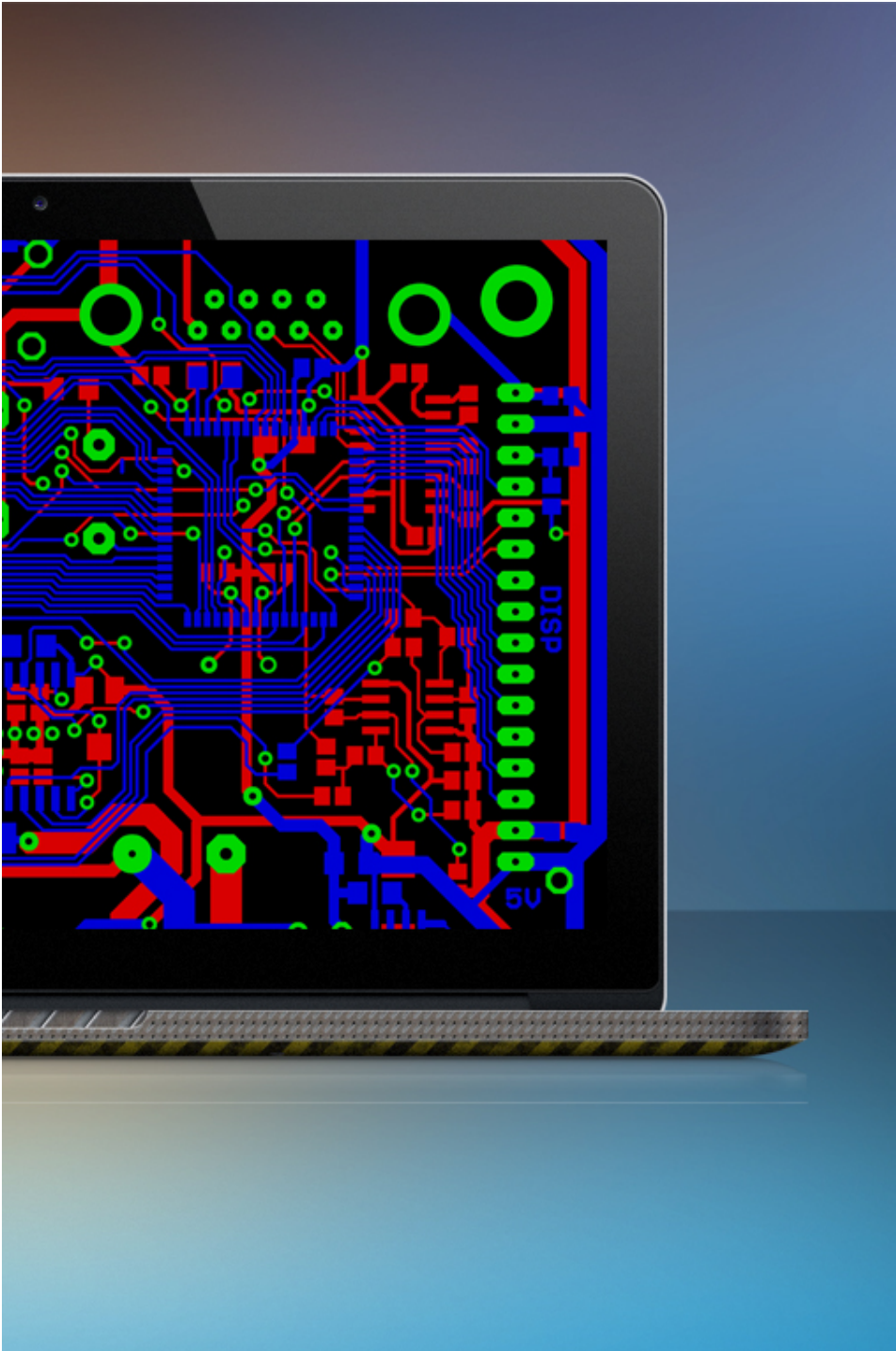


Finding PLM to Fit Midsized High-Tech Companies

By : Jim Brown | President | Tech-Clarity



Midsized Companies are Stuck In-Between

Leading high-tech companies are driving breakthrough innovation and growing rapidly. But developing today's high-tech products is increasingly complex. It requires systems-level thinking, collaboration across disciplines – and lightning speed. Midsized companies have to overcome this complexity and work closely with their supply chains to meet rapidly changing market demands and compete with their larger competitors.

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 try to control, access, and share product data with relatively simple Product Data Management (PDM) tools, larger companies rely on full-featured PLM systems** that help automate processes and share data across global supply chains.

Midsized companies may find themselves in-between because:

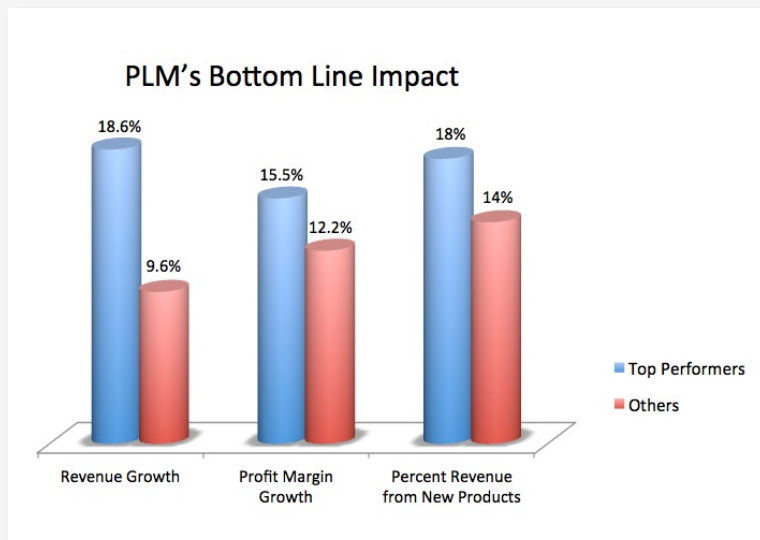
- Product and organizational complexity drive them beyond basic PDM capabilities
- A full-featured PLM implementation may feel out of reach

Midsized 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 midsized high-tech company? Let's take a look.



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

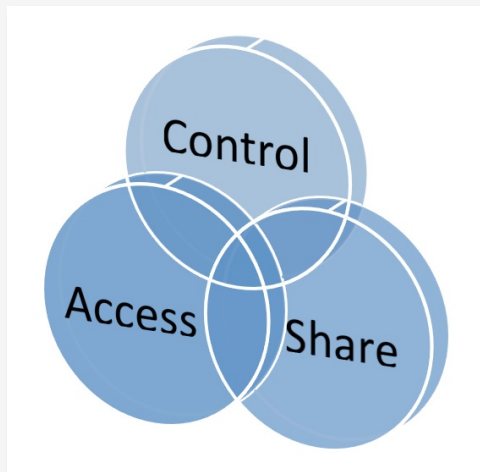
PDM Improves Product Development
[Best Practices for Managing Design Data](#) – Tech-Clarity



PLM Drives Even Greater Bottom Line Results
[Getting the Most from PLM](#) – Tech-Clarity, Kalypso

The Allure of Simple Solutions

Ideally, companies 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.



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“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 high-tech companies and their increasingly global supply chains!**

“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 with ECAD or software. They were designed for primarily mechanical products and don’t handle complexities such as multiple configurations or how changes by engineers in one discipline impact the rest of the product. They have little or no context of the processes, organization, and project crucial to developing products.

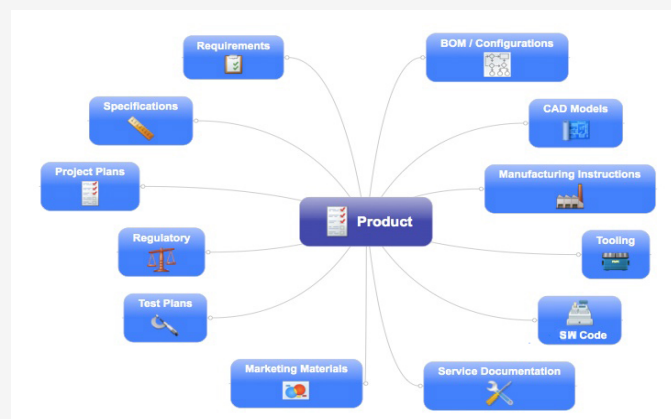


“Engineers spend a third of their time on non-value added work. Even worse, 20% of their time is spent working with outdated information, which often leads to wasted effort and rework.”

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

Midsize high-tech companies can’t get away with that level of simplicity without bringing about tremendous inefficiency and risk. They face complexity that demands more structure, process, and control. “Simple” leaves too much opportunity for errors, rework, and delays. 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 high-tech companies need to find the right size PLM system so they can improve efficiency and time to market without hampering innovation.



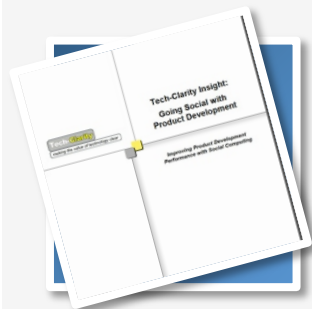
Midsized high-tech companies compete through agility, responding rapidly to market needs. They innovate to capitalize on new technologies and market trends starting at the conceptual level. They collaborate with contract manufacturers and simulate early and often to ensure designs are integrated and on target.

Unfortunately, many companies attempt to collaborate by sending CAD or image files to customers. Emailing files often leads to confusion and delays 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. **High-tech companies need a lightweight and secure way for customers and the supply chain to view designs online and provide feedback.**

Stay Close to Customers and the Supply Chain

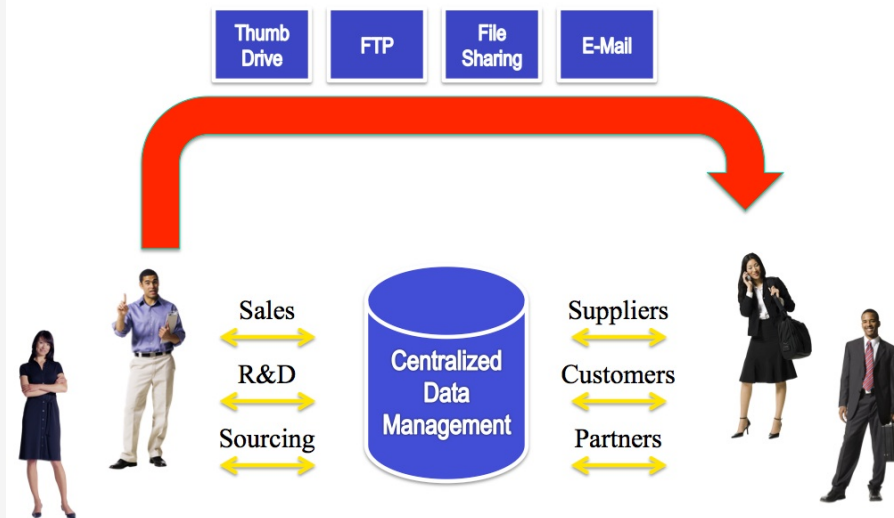
Modern PLM solutions take advantage of social concepts to help create a collaborative dialogue with customers. Social collaboration through PLM offers the benefits of close collaboration without unnecessary risk because an online approach allows files stay securely on the server.

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.”*



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

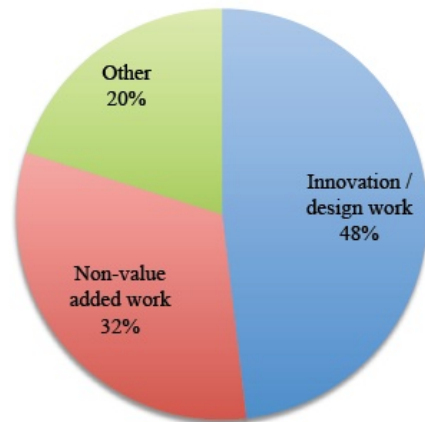
Going Social with Product Development – Tech-Clarity



Risky and Ineffective Information Sharing Techniques

Work Better Together to Drive Higher Product Development Speed

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 companies simply can't afford that low level of productivity! PLM helps avoid wasted time and the resulting delays in product introduction by letting engineers easily access and share information in real time with each other, across departments, and with the supply chain. Centralized information helps them catch design errors and integration issues 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

Tech-Clarity

A significant key to efficiency is working real-time in a product context. PLM manages products and configurations instead of managing documents. A data-driven approach allows engineers and the supply chain to review and simulate designs in relation to the rest of the product, letting them work in parallel. Everyone can see the latest design in real time to prevent rework and delays when updates by one designer ripple through the product. 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.

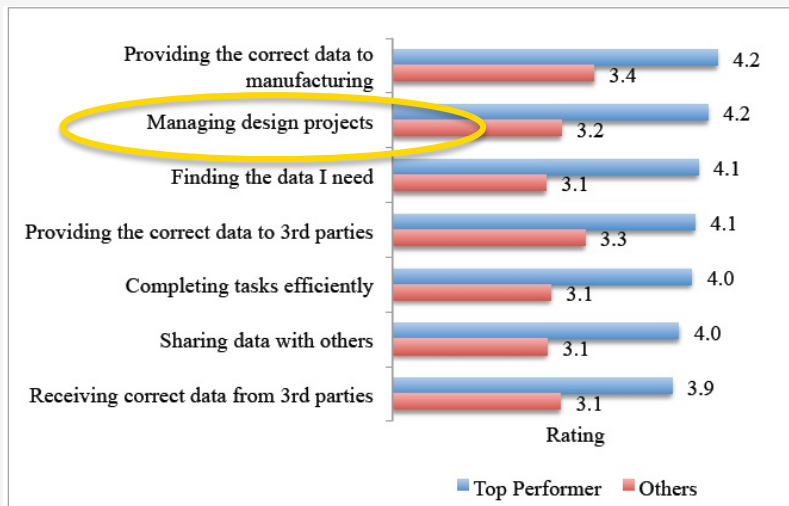


“Poorer performing companies spend, on average, 34% more time on nonproductive data management tasks than world-class companies.”

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 to time to market. Most midsize companies 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 customer and market needs.

At the same time it’s important to keep everyone working in a project context to integrate mechanical, electrical, and software disciplines and coordinate downstream efforts including validation and manufacturing planning. **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.

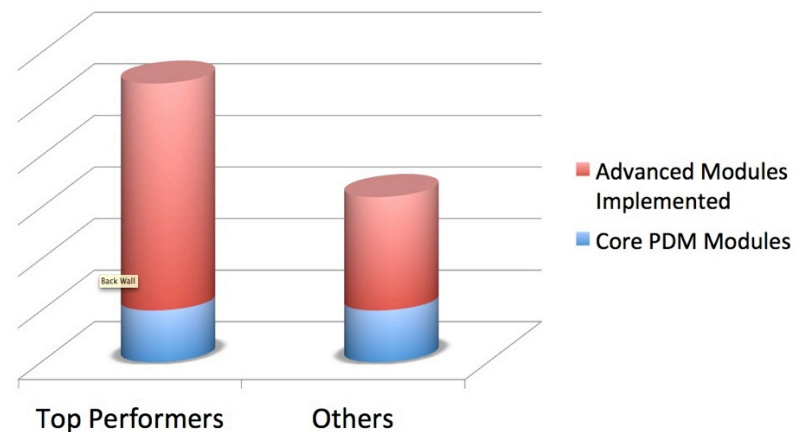
Start Fast, Plan for the Future



Midsized high-tech companies 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 innovation, enhance productivity, reduce errors, and improve time to market.**

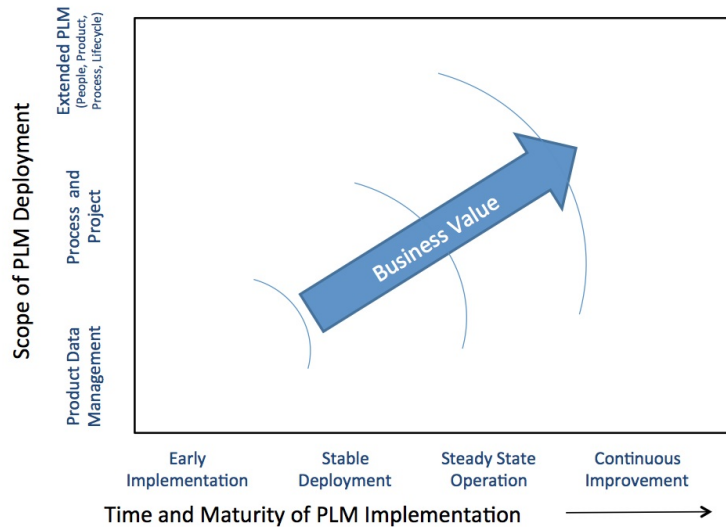
But midsized companies shouldn't plan to stop there. PLM has a lot to offer beyond managing data. Leading PLM systems cover more aspects of product lifecycles, product development, and the experience customers have with their products.

Top Performers use a lot more of PLM's advanced capabilities. While many midsized companies might not be ready for this level of functionality right away, it's important to be aware that it exists and leave room for expansion as needed. **High-tech companies of all sizes should make PLM a foundation on which to drive innovation and growth, building 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 mid-sized high-tech companies by helping them combat complexity, improve productivity, and innovate faster to meet market needs. Recognize the potential value of a fully featured PLM with all of the bells and whistles, but be honest with yourself about how much time and effort your company can afford 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, multi-discipline products and product development environments common to midsize high-tech companies. 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 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 and business needs grow, 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.