SaaS PLM for Supply Chain-Centric Innovators

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Tech-Clarity

The Changing Landscape of SaaS PLM

Choosing a Right PLM Solution for Supply Chain-Centric Innovators

Manufacturers have largely evolved from vertically-oriented businesses that engineer and produce everything inhouse to supply chain-centric entities that innovate, engineer, and manufacture as part of a dynamic supply network. These companies often procure and integrate complete modules, subsystems, and autonomous units to deliver a comprehensive solution. This transition has changed engineers' roles and the tools they need to collaborate and manage product development.

What should supply chain-centric innovators consider when they're exploring a PLM solution that meets their unique needs? How has the PLM landscape changed over the last several years, and how does SaaS fit into that picture?

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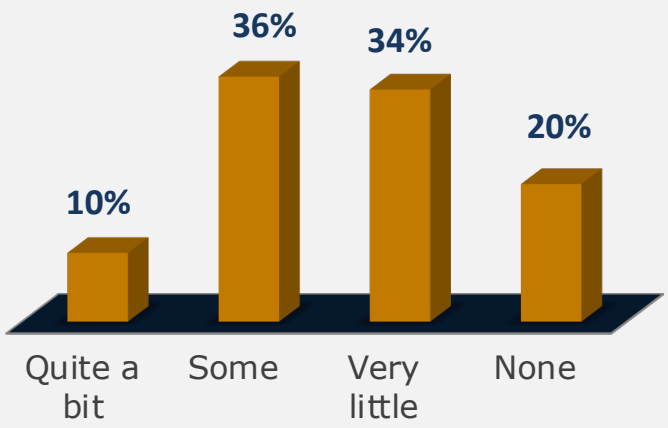
The State of Cloud PLM

Significant Benefits of the Cloud

Our research shares the way cloud solutions are implemented and operated offers valuable benefits. The software-as-a-service (SaaS) model reduces barriers to adoption and lets companies take advantage of solutions faster, at lower cost, and with less risk.

Beyond these general advantages, SaaS excels for product lifecycle management (PLM) because it opens up new business and strategic advantages to foster collaboration and support digital transformation. These benefits are even more attractive as companies struggle to cope with the ongoing impacts of the COVID-19 pandemic.

WILLINGNESS TO TRADE FUNCTIONALITY FOR CLOUD BENEFITS[1]



"Cloud PLM" is not a Cookie Cutter Decision

The cloud is not enough. Manufacturers rarely take a "cloud first" solution approach. Our surveys show that few companies are willing to give up significant PLM functionality to achieve SaaS benefits. They first look for a solution with the capabilities to add value to their business and then select a deployment option. This "capability first" approach has caused some companies to wait for traditional PLM package to be migrated to the cloud. They have not been willing to accept the functional tradeoffs required to leverage newer solutions built for the cloud.

The Equation is Changing

Those tradeoffs vary by company, however, and are diminishing as SaaS PLM solutions mature. PLM requirements vary by industry, company characteristics, and business objectives. For some companies, in particular supply chain-centric innovators, business drivers may make cloud solutions more favorable because they support an inherently more collaborative, multi-disciplinary, cross-company model. For these companies, the advantages of a SaaS solution may meet both "cloud first" and "capability first" criteria. This eBook shares how supply chain-centric companies can find the right solution and transition to the cloud.

Business drivers may make cloud solutions more favorable for supply chain-centric innovators because they support more collaborative, multi-disciplinary, cross-company models.

Why Cloud SaaS is so Compelling

SaaS Solutions Offer Compelling Advantages

The general value of SaaS is relatively well understood. SaaS allows companies to implement solutions faster and scale benefits with less demand for financial, hardware, and IT resources. Cloud architectures let companies operate with greater performance, security, and disaster recovery at lower operating costs. SaaS models offer rapid scalability, reduced risk, and the ability to convert capital costs to operational expenses. They also change the way solutions are kept up to date, offering access to new capabilities sooner and keeping solutions up to date without the traditional need for major upgrades.

SaaS PLM Takes Unique Advantage of the Cloud

It's essential to recognize that SaaS offers unique value for PLM that goes beyond these basics, including the ability to access "infinite" computing capacity, distributed data storage, accommodation for usage spikes, and better support for distributed, mobile, collaborative environments.

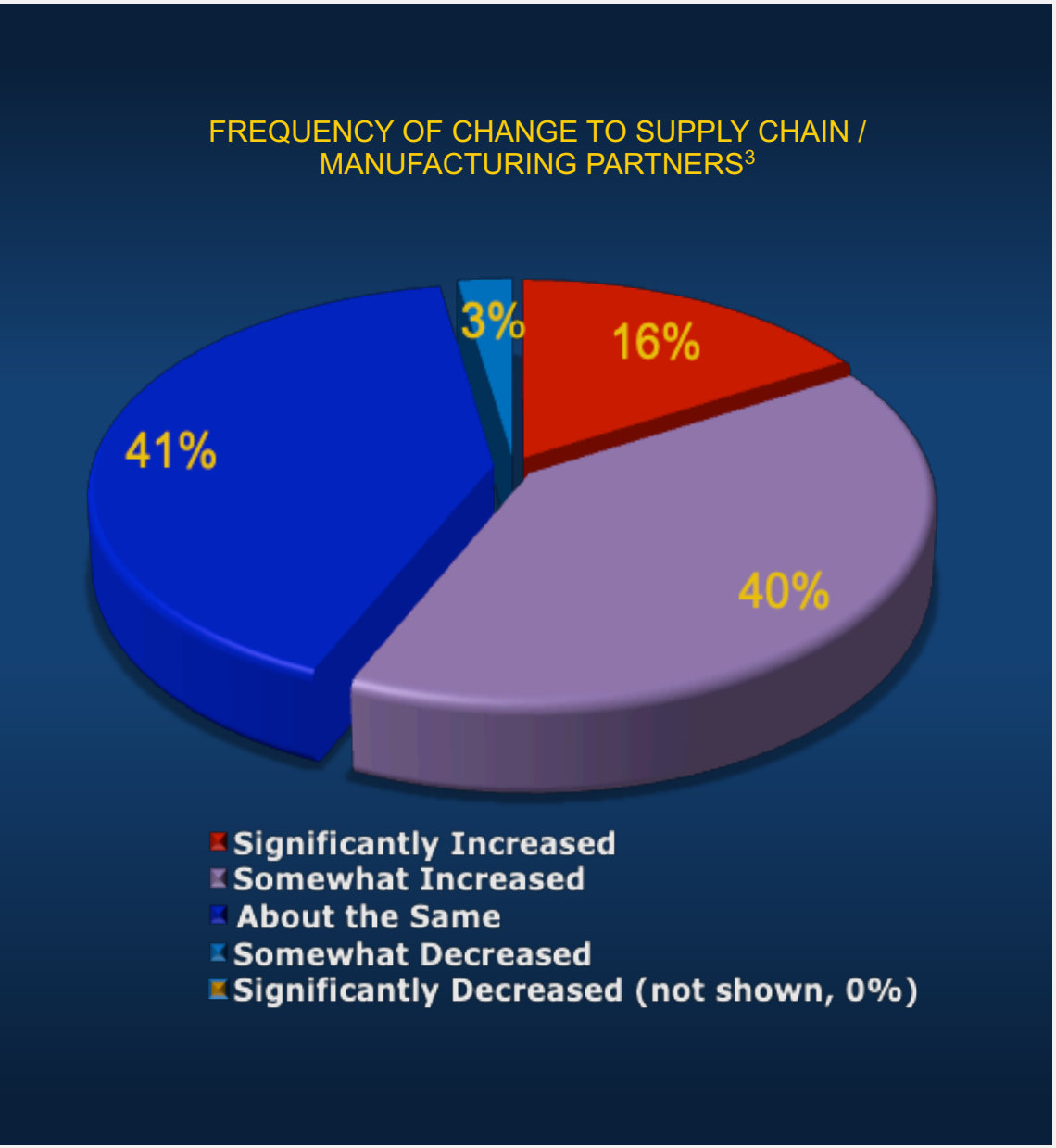
Digital Transformation Demands the Cloud

Beyond these benefits, companies are leveraging PLM (in combination with other enterprise applications) as the digital backbone to help them achieve their digitalization goals. Our *The State of Digitalization in Manufacturing* found three-quarters of manufacturers say PLM contributes to their digital enterprise initiative, with 31% saying it plays a "critical" role. The cloud is essential to supporting digital business models.

Implementing engineering software in the cloud offers value across multiple dimensions:

Three-quarters of manufacturers say PLM contributes to their digital enterprise initiative. 31% say it plays a "critical" role.[2]

Current Times Increase Cloud Appeal



Market Shift to Agile Supply Chains

PLM needs are changing as the manufacturing industry continues to evolve. Manufacturers have more diverse supply chains that include a variety of engineering partners, contract manufacturers, and suppliers. Today's complex products require manufacturers and their supply chains to innovate as a team to capitalize on market opportunities. This means that engineers must play a broader role in innovation and new product development processes and take responsibility for jobs like selecting supplier parts and coordinating supply chain teams.

Beyond diversity, supply chains are more dynamic than ever. The majority of manufacturers say that supply chain volatility has increased over the last five years (see chart), and we expect that trend to continue. Supply chains are more fluid – assembling and disassembling based on opportunities. Supply chain risk from the COVID-19 pandemic will likely further expand supply chain volatility. This dynamic puts new demands on PLM implementations.

COVID-19 is Accelerating Digital Transformation

The pandemic has opened companies' eyes to the inefficiencies inherent to traditional processes developed in the paper era. Working at a distance cast a spotlight on the need for more digital processes that work without relying on proximity. It's not a new problem, but it's more apparent than ever in today's remote working environments and the time to address it has arrived. SaaS can help.

Choosing the Right PLM

PLM Requirements Differ

As we said earlier, PLM requirements vary by industry, company characteristics, and business objectives. PLM is a broad topic and can be used to improve a range of processes. How can companies identify their needs? One of the key considerations when looking for a solution is whether a company is a manufacturing-centric or a supply chain-centric organization.

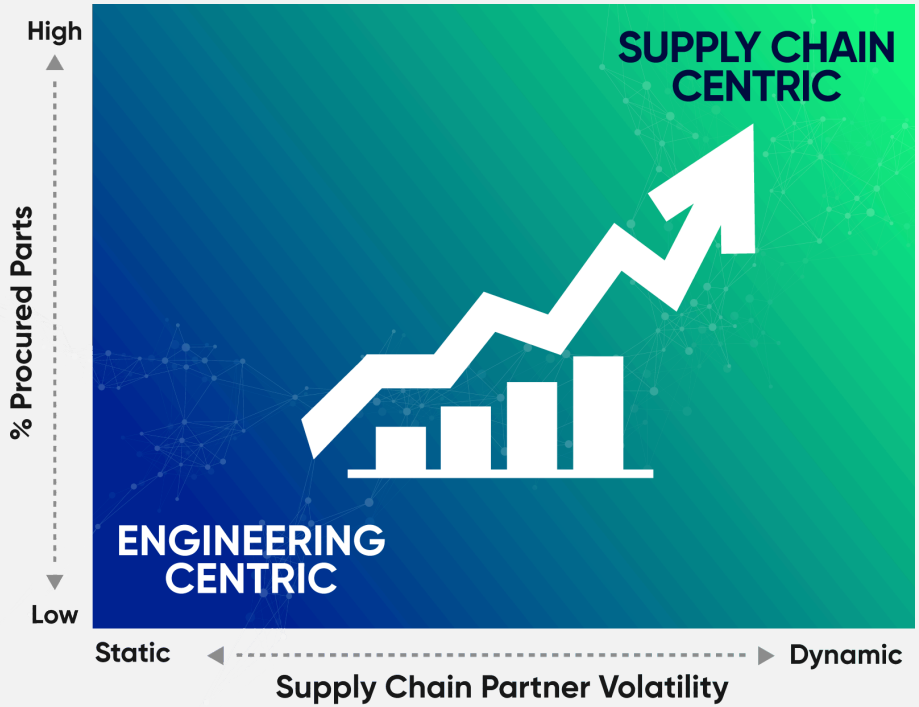
Engineering-Centric Companies

Engineering-centric companies typically have large, internal engineering teams. They are common in complex industries like automotive, aerospace, and industrial equipment. They frequently do most of their own engineering and have very close relationships with dedicated supply chain partners. These companies often rely on a more serial approach to product development.

Engineering-centric companies need tight integration between CAD and PLM, including tight links between requirements all the way through validation and verification. These companies often have complex configurations and rely on tight relationships between CAD and bills of material (BOMs).

Supply Chain-Centric Companies

Supply chain-centric companies are more likely to engage their supplier networks for innovation and product development and include fast-moving industries like electronics, consumer goods, and medical device manufacturers. They frequently rely on a more agile, iterative product development process and have more procured parts in their BOMs. Some traditionally engineering-centric industries, including automotive, are also exhibiting these traits as they incorporate more electronics for autonomous, smart products.



Supply chain-centric companies need real-time supply chain connectivity. These companies require PLM integration with CAD as well, but it can be less intimately connected with a primary internal design tool. On the other hand, it must be more able to quickly incorporate and mockup heterogeneous design formats (including ECAD and software design). Their designs typically require a wide array of product documentation that must be managed and collaborated on in addition to CAD, including specifications, quotes, and more. In essence, supply chain-centric innovators require a more supply chain-centric PLM solution.

The Shifting Cloud versus Capabilities Tradeoff

Traditional PLM Tradeoffs

Traditionally, manufacturers have had to choose between functionality to supporting engineering-centricity or the cloud. But, as we mentioned before, that is a tradeoff many were not willing to make. Companies with intense engineering-centric needs have often found lighter weight, more collaborative solutions don't have the full engineering rigor that they need. They have been more likely to feel that the tradeoff for cloud implementation and operational benefits aren't in their favor and wait for traditional solutions to be available on the cloud.

These companies may be more likely to move to the cloud with traditional solutions through hosting, infrastructure as a service (IIAS), managed services, or related approaches. These approaches allow them to access traditional capabilities, but without the full benefits of a native cloud solution.

Supply Chain-Centric Tradeoffs

Companies with more supply-chain-centric needs have been more able to adopt newer, cloud-native solutions. The inherent volatility of the supply chain makes cloud benefits even more beneficial. Supply chain-centric innovators benefit from the ability to quickly onboard suppliers and collaborate more seamlessly.

Supply chain-centricity may change the "capability first" equation because collaboration and agility enabled by the cloud may be the most valuable PLM capabilities they need. These companies are more likely to find capability tradeoffs acceptable (if they are necessary at all). They may also place higher value the agility that Sass offers to rapidly adopt new functionality.

Not a Clear Formula

The choices are not as clear-cut as those two scenarios, and PLM solutions don't fall squarely into one classification or the other. More mature solutions are becoming cloud-enabled. Early cloud-native solutions are starting to bridge the engineering gap and building stronger connections to CAD. It's important to look into the details.

Supply chain-centricity may change the **"capability first"** equation because the collaboration and agility enabled by the cloud may be the most valuable capabilities.

Recommendations and Next Steps

Investigate SaaS Solutions

Cloud solutions are compelling because they lower implementation and adoption barriers with reduced risk and expense. Cloud PLM provides even greater strategic value due to the unique capabilities of the cloud and support for digital transformation.

Newer cloud companies provide more than just a web-based infrastructure. A native SaaS company can take a fundamentally different approach to training, data migration, licensing, integration, upgrades, and more.

Choose the Right SaaS PLM Solution

The cloud PLM opportunity is not the same for all. Engineering-centric companies may value deeper capabilities like CAD integration from traditional solutions hosted on the cloud. Supply chain-centric companies likely favor agility and collaboration from newer cloud-native solutions. Today's supply chain volatility and supplier-centric collaboration processes turn the "capability first" model on its head because the need for agility and supply chain collaboration are more important success drivers than traditional engineering-centric capabilities.

Choose the Right SaaS PLM Solution

Companies need to evaluate their PLM and deployment options based on their business needs so they can optimally leverage cloud and PLM benefits. Fortunately, newer cloud PLM solutions not only better suit the supply chain, they now reduce the need to trade off needed functionality because they offer more engineering-centered capabilities like tight CAD and software development integration.

The bottom line is that PLM can drive significant business improvements. It's time to find the right PLM solution for your business and get started.

Acknowledgments

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About the Author

Jim Brown founded Tech-Clarity in 2002 and has over 30 years of experience in the manufacturing and software industries. Jim is an experienced researcher, author, and speaker and enjoys engaging with people with a passion to improve business performance through digital enterprise strategies and supporting software technology.

Jim is actively researching the impact of digital transformation and technology convergence in the manufacturing industries.

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Tech-Clarity is an independent research firm dedicated to making the business value of technology clear. We analyze how companies improve innovation, product development, design, engineering, manufacturing, and service performance through the use of digital transformation, best practices, software technology, industrial automation, and IT services.

References

1) *Industry Adopting Cloud Innovation Platforms,* Tech-Clarity, 2018.

2) *The State of Digitalization in Manufacturing*, Tech-Clarity, November 2018.

3) Additional analysis of data from *Extending PDM Beyond Design Data Management,* Tech-Clarity, September 2019.

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