

THE PERILS OF VENDOR LOCK-IN



5 QUESTIONS EVERY ENGINEERING LEADER SHOULD ASK ABOUT THEIR CAD & PLM SYSTEMS



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0001C0AE: E6 BB inc Draw
MetersFlag
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0001C0B2: 85 2F sta RefObjectName
0001C0B4: A2 02 idx #502
0001C0B6: 20 63 C1 jmp SetObjectName
0001C0B8: 45 05 jmp #01
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0001C0BB: 95 B5 sta $B5.x
0001C0BD: CA dex
0001C0BE: 10 FB bpl -
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An open, integrated approach keeps data connected across the lifecycle while preserving interoperability, scalability, and freedom of choice, so you stay in control of your IP and your ability to innovate, today and in the future.

Your product designs and intellectual property are more than files—they are the foundation of your competitive advantage. They embody years of engineering knowledge that must remain accessible, adaptable, and firmly under your control. Locking that data into a closed system can break continuity across the product lifecycle, restrict how designs evolve, and limit your ability to integrate new tools or collaborate at scale.

An open CAD or PLM system is designed to easily share data and integrate with other tools and partners, while a closed system tightly controls data and integrations within a single vendor's ecosystem. As AI becomes an essential part of engineering—from design assistance to automation and optimization—those systems will require broad, trusted access to your product data. Closed platforms can interfere with that access, slowing innovation and narrowing your options.



WE UTILIZE A LOT OF AI TECHNOLOGY, BUT IN THE END, AI NEEDS DATA, AND THAT'S WHERE PTC COMES IN AS OUR PARTNER HELPING US.

Dr. Fabian Distel, Murrelektronik GmbH

CLOSED SYSTEMS DON'T JUST TRAP YOUR DATA. THEY CRIPPLE YOUR STRATEGY.

A vendor sits across the table and offers a seductive promise: a single, fully integrated CAD and PLM platform that will handle everything. One system. One roadmap. One future. No more sourcing tools. No more integration work. All you have to do is move—often deeper—onto their platform.

It sounds like progress. But while your strategy is focused on faster innovation, higher quality, and lower costs, the vendor's strategy is simpler: lock more of your company, your data, and your processes onto their systems. The tighter the integration, the higher your switching costs—and the less leverage you retain over pricing, choice, and direction.

The real cost shows up quietly. The moment you convert, your digital thread is no longer yours—it's been re-routed. If your business depends on specialized third-party tools, that thread gets cut. Data can fragment, duplicate, or disappear into proprietary silos, forcing teams to hunt for information, question its accuracy, or run parallel systems just to stay operational. What was sold as simplification becomes permanent complexity.

Now add the next wave of risk: AI. Tomorrow's AI-driven design, automation, and optimization tools will depend on broad, trusted access to your product data and intellectual property. In a closed system, that access is mediated, constrained, or delayed—available only on the vendor's terms, through their APIs, and aligned to their roadmap. The result is AI innovation that slows down, or never materializes at all. Your data may still be yours in name, but your ability to use it freely—and intelligently—is no longer guaranteed.

Will your closed system support your software development and service requirements? Many modern products include software, electrical, and mechanical requirements that may be difficult to manage with your data locked in a closed system. Similarly, you may want your data files to feed your service requirements, which could be problematic if access to your data files is hampered by a closed system.

Even if you standardize entirely on one vendor, the risk associated with a closed system doesn't disappear—it compounds. Pricing power shifts. Innovation narrows to what fits inside a single ecosystem. Your digital thread, your IP, and your future AI strategy are now tightly coupled to someone else's priorities.

Locking into a closed CAD and PLM system isn't a technical upgrade—it's a strategic bet that one vendor will always move at the speed, direction, and openness your business requires. Before you make that bet, there are five critical questions every manufacturer should ask to understand the long-term risks, trade offs, and consequences of locking in.

1

DOES THE VENDOR FOLLOW AN OPEN STRATEGY THAT SUPPORTS A CONTINUOUS DIGITAL THREAD?

Open systems preserve choice and integration; closed systems can force you to accept whatever the vendor provides.

An open strategy enables a continuous digital thread and seamless third-party integrations, keeping your product data accessible and connected across the organization. Closed systems restrict integration, fragment data, and force teams into workarounds that increase cost, risk, and delay. The issue isn't just CAD-to-PLM connectivity, but whether the full engineering ecosystem can participate. For example, a quality CAD system loses value if it can't integrate with best-in-class simulation tools, making limited tool choice a competitive disadvantage. In closed environments, third party software is often poorly integrated, loosely connected, or blocked entirely, forcing teams to rely on limited native tools or manual data transfers.

2

HOW WILL THE CLOSED SYSTEM SUPPORT SOFTWARE DEVELOPMENT AND SERVICE NEEDS?

Open systems can facilitate sharing of software and service requirements; closed systems make this handoff more challenging.

Many modern products are no longer purely mechanical—they rely on software, continuous updates, and ongoing service throughout their lifecycle. Supporting those requirements demands tight integration with software development tools, requirements management, testing, and service systems. In a closed CAD and PLM environment, those connections may not be part of the vendor's core roadmap. That makes it harder to manage software changes alongside hardware, trace issues from the field back to design, or adapt service processes as products evolve. Over time, your software and service teams will find themselves working around the system instead of with it—breaking the digital thread and slowing innovation, quality improvements, and customer responsiveness.



PTC OFFERS SOLUTIONS FOR THE WHOLE LIFECYCLE, FROM CONCEPTION TO SERVICEABILITY.

Ronald Cramer, VP Projects PLM
INFINEON TECHNOLOGIES AG

3

HOW WILL A CLOSED SYSTEM SUPPORT MY AI STRATEGY?

Open systems put you in control of how AI can access your data; closed systems can put up unwanted access barriers.

AI only creates value when it has broad, trusted access to high-quality product data across the lifecycle. In a closed system, access is constrained by proprietary data models, limited APIs, and vendor-controlled roadmaps. As AI becomes central to the full product lifecycle, closed platforms introduce real risk. Your data may exist, but it may not be accessible, contextualized, or usable by the AI tools that matter most—now or in the future. That restricts experimentation, slows innovation, and ties your AI strategy to a single provider's priorities rather than your own.

4

AM I REQUIRED TO MOVE TO THE CLOUD?

Is cloud right for you, right now?

Cloud-based SaaS CAD offers real advantages—but not every manufacturer is ready to move on someone else's timeline. The cloud should be a strategic choice, not a forced migration. With some CAD systems, SaaS adoption is driven by the vendor's roadmap, pressuring customers to move just to stay current, unlock new capabilities, or avoid support constraints—even when regulatory, security, or operational realities say otherwise. A forced cloud strategy reduces flexibility, limits deployment options, and deepens long-term dependence on a single vendor's infrastructure and pricing. The real issue isn't whether the cloud is in your future—it's whether you control when and how you get there.

5

HOW WILL DATA LOCK-IN AFFECT US?

What happens if your situation changes and you need to get your data back?

Once critical design data has been broken apart, distributed, and locked inside a vendor's proprietary system, retrieving it is rarely simple. Reassembling, validating, and trusting that data in the future can require enormous time, effort, and cost—especially when business continuity, compliance, or innovation depends on it.



WE WERE LESS STRESSED USING CREO, NOT JUST BECAUSE OF TIME SAVED, BUT BECAUSE WE'RE MORE IN CONTROL.

Giacomo Gurrini, H.P.E. HIGH PERFORMANCE ENGINEERING SRL



VENDOR LOCK-INS ARE COSTLY, BUT AVOIDABLE.

PTC is committed to empowering customers with open platforms. Here's how we do it:



By design, Creo and Windchill are open systems. PTC's Creo includes robust API's for third-party solutions, and both Creo and Windchill work well with competing CAD and PLM systems. Creo also has deeply integrated tools from world-class partners like Ansys and ModuleWorks.



PTC offers a comprehensive Intelligent Product Lifecycle, with award-winning Creo, Windchill, Codebeamer and ServiceMax software to address your CAD, PLM, ALM, and SLM requirements.



PTC's AI strategy helps manufacturers apply AI to address customer value, based on a three-pillar approach—Advise, Assist and Automate—enabling you to access your data and IP in a secure, powerful manner.



PTC offers on-prem and cloud-based SaaS options for both Creo and Windchill, so you can make the transition to the cloud when you decide the timing is right for you.

PTC's Creo is a parametric 3D CAD system that helps you deliver your best designs in less time. Creo delivers innovative CAD tools for designing with composites, conducting real-time simulation, and streamlining manufacturing, with expanded Model-Based Definition and electrification capabilities. Creo provides an on-premises solution, while Creo+ delivers a SaaS solution.



SUCCESSFUL IMPLEMENTATION OF PTC WINDCHILL PDMLINK AND PTC CREO HAS SIGNIFICANTLY IMPROVED QUALITY OF WORK AND EFFICIENCY IN MY DEPARTMENT. WE POSITIVELY RECOMMEND THIS SOLUTION TO OTHER COMPANIES.

Stephane Borrel, GE Healthcare LLC

Ready to take the next step?

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