In Today's Digital Era, Do We Still Need PLM?

by Daniela Ilieva and Sachin Misra

Digital has disrupted innovation, fundamentally changing how companies [discover, create, make and sell](#) the products they bring to market. But even with all the new technologies and game-changing use cases, companies that fail to recognize the continued importance of foundational enterprise technology like product lifecycle management (PLM) will miss out on the full potential of digital transformation.

Emerging technologies like adaptive intelligence, blockchain, [internet of things (IoT)](#), 3D modeling, 4D simulation, 3D printing, virtual and augmented reality and [advanced predictive analytics](#) are widely available and can create competitive differentiation in new ways.

Companies are justifiably excited about potential new capabilities. Who wouldn't want to gather real-time feedback – whether it's from the field, multiple manufacturing facilities or during transit – to improve a product, to proactively identify issues *before* they become problems, to optimize a product for manufacturability, or to model and analyze a product digital twin virtually before making a single physical part or committing to expensive tooling? The potential is enormous.

> But with all the hype, many organizations overlook the role of PLM. It's seen as the norm of the past, mainly used internally by design and engineering teams. Few see PLM for what it truly is – the core enabler of innovation in the digital age.

PLM still plays an important role in the innovation process. Companies improve their odds of creating differentiated products that improve business results when they deploy new digital technologies, intersect them with PLM, and continue to evolve their PLM solutions beyond the basic capabilities.

Digital + PLM = Better Together

For years, companies have adopted PLM to establish a central repository for the enterprise product data record and to streamline design processes, resulting in productivity gains and efficiency benefits. But while PLM enables *some* cross-functional collaboration and improves product data accuracy and access, it traditionally has limited impact on delivering *more effective* innovation or improving integrations and reuse between design and manufacturing, quality, or go-to-market.

Companies still miss innovation revenue targets as a result of launching me-too products or products that fail to meet core requirements because there is no direct voice of the customer input or product performance feedback. Products are still designed with little input from manufacturing and operations, causing production issues that affect time to market, and more importantly time to volume and projected yields.

When PLM and digital are integrated, the benefits multiply. Digital and PLM together provide exponential value by increasing the connectivity among functions in the product value chain, by enriching the product record with real-time data that comes from smart products, factories and customers, and by applying advanced and insightful predictive analytics.

For example, IoT generates a lot of real-time product and operations data, but this doesn't provide competitive advantage on its own. Many companies are sitting on growing stores of product-related and operations data gathered through sensors – and while they are data rich, they are information poor.

When companies combine core PLM data with real-time data from IoT, in-market product performance data, and advanced analytics capabilities, they can get to true insights. By applying analytics to product design and product field data, companies can optimize the performance of products, create new ones, manage quality issues before product is released to market, and improve production ramp-ups. The availability of intelligent data and the ability to provide it to the right functions at the right time is what creates new opportunities to reduce risk, improve quality and accelerate innovation.

The Role of PLM in the Digital Innovation Era

Because PLM manages critical product data throughout the product lifecycle and across the supply chain, it provides a critical infrastructure for the digital transformation of the end-to-end product lifecycle.

With PLM as the design control hub and the system of record for product definition and change, companies can:

- Establish the thread that increases connectivity and availability of real-time data among functions in the product value chain (this is about establishing the *digital thread* for real-time digital innovation and business models with embedded decision support)

- Tie the virtual definition of the product with the real-world operation and experience of the product (this is virtual representation of the product – the *digital twin* – that helps manufacturers test and simulate product lifecycles in realistic situations without having to use any manufactured components or intersect with the physical world at all)
- Provide meaningful insights from existing data on how to further reduce cycle times, facilitate data-driven design, predict quality issues and prescribe solutions, and to correlate design decisions to manufacturing performance, product quality and more

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Imagine a scenario where manufacturing yield and quality of product during manufacturing is lower than expected or predicted. More often than not, manufacturing slows or is halted as root cause analysis identifies the cause of the defects and corrective actions are put in place. This impacts the ability to ship product against market demand and leads to missed market opportunity and revenue. Design decisions made months or years ago are hard to identify or correlate to manufacturing defects and lowered yields.

The solution? Integrating existing captive manufacturing sensor (or real-time IoT sensor) data to product data and design decisions in PLM by leveraging IoT, adaptive intelligence, RFID and blockchain solutions. With this link, we can predict potential quality issues and take proactive measures with actionable intelligence, correlating manufacturing outcomes with design decsions already made or being contemplated. Overall, the integration can shorten root cause analysis, drive continuous design optimization, and improve product quality and customer satisfaction.

So, the question is not *whether* PLM has a role or not in digital innovation and in your digital transformation journey. The question is *how you evolve* your PLM solution and intersect it with new technologies to enable it to become the digital thread of your product value chain and provide the intelligent insights that will drive your business forward.

Stay tuned!

We plan to write more about how to evolve PLM, and we'll cover real examples and practical next steps.

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