



DIGITAL INDUSTRIES SOFTWARE

Simplify IT complexity to
harmonize product development
and downstream processes

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In the fast-paced world of modern manufacturing, IT leaders are under constant pressure to simplify their organization's technology landscape while supporting seamless integration across product development with downstream processes. This integration is critical not only for maintaining a competitive edge, but also for optimizing IT costs and reducing operational complexity.

However, many organizations face significant challenges due to fragmented IT landscapes, characterized by disconnected systems, redundant solutions from multiple vendors and limited cross-system connectivity. These inefficiencies lead to data silos and escalate IT maintenance costs.

By consolidating vendors and adopting a unified platform, IT teams can reduce the total cost of ownership while ensuring robust connectivity between design, engineering and production systems.

In this brief, we will explore how organizations can connect product development with downstream operations to enhance data accuracy, streamline workflows and simplify IT landscapes across the entire product lifecycle.

The challenges of fragmented IT landscapes

One of the primary obstacles facing manufacturers today is the fragmentation of product data across disparate systems, increasing the burden on IT teams to manage disconnected tools and databases while addressing operational inefficiencies.

This fragmentation leads to inconsistencies, manual updates and costly errors when synchronizing design or engineering bills of materials (DBOMs; EBOMs) with downstream processes such as production, procurement and technical publications.

This lack of integration not only creates inefficiencies but escalates IT complexity and inhibits effective change management, as misaligned or delayed BOM updates disrupt critical business functions.

Additionally, the limited connectivity between product lifecycle management (PLM), enterprise resource planning (ERP) and manufacturing execution systems (MES) often hinders cross-departmental collaboration, placing further strain on IT teams while adversely impacting product quality and time-to-market.

Harmonizing product development under a unified PLM system

For IT professionals, fragmented BOM management across disconnected systems increases complexity, introduces data silos and amplifies the challenges of maintaining accurate, synchronized information across the product lifecycle. A unified PLM system provides a scalable, enterprise-wide framework to address these issues by harmonizing enterprise BOM management and integrating critical business systems to streamline data flow and reduce complexity.

By centralizing BOM data within a unified PLM system, IT teams can:

- **Reduce system complexity and maintenance overhead:** Eliminate redundant integrations and manual data synchronization tasks with a single source of truth for engineering, manufacturing and service BOMs.
- **Enhance data integrity and connectivity:** Streamline data flow across systems, ensuring that accurate, up-to-date information is readily available for downstream processes, such as procurement, production and technical publications.

- **Improve system reliability and scalability:**
Standardize connections between core systems, reducing the need for custom integrations and ensuring a more resilient IT infrastructure that can grow with the organization.
- **Support operational efficiency with automation:** Automate data synchronization and updates across systems, minimizing manual interventions and enabling IT teams to focus on strategic priorities.
- **Enable effective change management:**
Seamlessly manage engineering changes across the product lifecycle, mitigating disruptions and ensuring alignment between design, manufacturing and service teams.

By adopting a unified PLM system, IT leaders can simplify their technology landscape, reduce the total cost of ownership and deliver robust, scalable solutions that support their organization's digital transformation and operational goals. The key solution that facilitates this transformation is the digital thread backbone — a unified framework that connects product development with downstream operations, ensuring seamless data flow and enhanced collaboration across systems.

The power of the digital thread backbone

The digital thread backbone solution from the Siemens Xcelerator open digital business platform provides IT teams with a unified, scalable framework for managing BOM data across systems. This approach minimizes system fragmentation, reduces integration complexity and maintenance efforts, and enhances data accuracy to enable seamless collaboration across the entire product lifecycle.

By connecting product development with downstream operations, the digital thread backbone

ensures that accurate, up-to-date information is readily available to all stakeholders, from engineering and technical publications to production and procurement.

This level of integration and visibility is crucial for IT leaders aiming to streamline their IT landscape, harmonize product development with downstream processes and ensure system reliability. Companies can reduce the complexity of fragmented systems, enable more efficient change management and support both 'shift left' and 'shift right' strategies to optimize their workflows and enhance overall operational efficiency.

Conclusion

In today's fast-paced manufacturing environment, the ability to harmonize product development with downstream processes is essential for maintaining a competitive edge.

By embracing the power of the Siemens digital thread backbone solution, organizations can unlock the full potential of enterprise BOM management, reducing IT complexity and enabling a connected, efficient product lifecycle.

This empowers IT teams to streamline operations and optimize workflows while minimizing system fragmentation. In this unified framework, companies can focus on delivering scalable, innovative solutions that drive business success.

[See how your organization can benefit](#) from the Siemens Xcelerator open digital business platform and the digital thread backbone.

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Simplify IT landscapes across the entire product lifecycle with the **digital thread backbone.**

See how

