Windchill 11: The Smart, Connected PLM Platform

CIMdata Commentary

Key takeaways:

- *Over the years, Windchill has grown in breadth, depth, and flexibility to support the growing complexity of PTC's customers' products*

- *ThingWorx technology is transforming Windchill into a smart, connected PLM platform by enabling integration and mash-ups of data created and maintained within PLM and other environments*

- *Windchill 11's role-based applications and HTML5 user interface are designed to democratize PLM and make it more usable to an expanded community of users*

- *PTC is committed to cloud-based delivery of its products and also announced new subscription licensing*

PTC announced the release of Windchill 11—a solution that they state delivers "Smart, Connected PLM" to better support developing, delivering, and supporting products and solutions in today's world of the Internet of Things (IoT) and systems of systems. Jim Heppelmann, PTC President and CEO, stated that "IoT is PLM" and that PTC is developing its products and services to better enable its customers to develop and support smart, connected products that will drive the future.

Brian Shepherd, PTC EVP Enterprise Segments, stated that IoT is changing competition, changing companies, and changing products. Product development processes are changing and PLM must change to support and enable it. New products and solutions must be connected and collaborative, and are becoming increasing complex. Furthermore, these issues are transforming industrial companies into being software and analytics driven. Mr. Shepherd stated that to help their customers meet these challenges PTC designed Windchill 11 on four themes as illustrated in Figure 1 and described below.
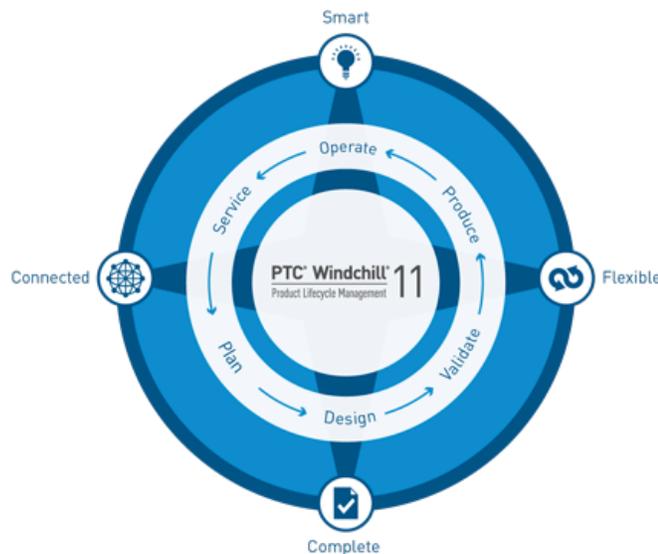

Figure1—The Key Themes of Windchill 11

Thus, PTC has a new evolution of their solution wheel, keeping the lifecycle and adding key characteristics of Windchill 11:

- Smart—role-based apps, improved search functionality, and IP protection
- Connected—connected quality, Performance Advisor, and requirements traceability
- Complete—BOM management and transformation, and support for Creo 3.0 breakthroughs
- Flexible—cloud deployment, subscription pricing, and SaaS PLM

Kevin Wrenn, GM of PTC's PLM Segment, highlighted 5 new capabilities and 5 major improvements in Windchill 11 and stated that one of PTC's objectives is "Making Windchill purpose-built for companies that make smart, connected products."

Role-Based Applications (new) are purpose-built applications ("apps") designed to be highly intuitive and context-driven to provide users with smarter PLM access (e.g., providing just the data that impacts their role) to better enable them to make more timely and accurate decisions. Customers can more easily add new applications as they are developed and can also include IoT data as well as data from other systems for use within the apps based on the mash-up technology from the ThingWorx acquisition. These new apps will be released over time under the PTC Navigate name with the first being Navigate View. For current PTC users, these new role-based apps will run on Windchill 10 version 10.1 M40 and later, so a migration will not be required to leverage these new capabilities. PTC's shift to a platform and app architecture will allow customers to put new solutions into production without upgrading the underlying platform, enabling a quicker time to value. CIMdata thinks that these role-based apps will better enable casual PLM users to access and work with information managed by Windchill 11. This continues PTC's efforts to democratize PLM and make it accessible to more non-engineering and technical personnel.

Connected Quality (new) is designed to improve business performance by providing information processes with smart, connected product data and help increase the speed and accuracy of quality analyses. The objective is to expose quality data throughout an organization and improve new product designs by creating visibility into fielded product performance and learning from a product's operational behavior. One of the new capabilities is the ability to mash-up quality data and machine operational data. CIMdata believes that this is a very good use of ThingWorx technology to enhance and expand new capabilities within Windchill.

Requirements Traceability (new) is improved by coordinating product changes across requirements, hardware designs, and software designs by integrating PTC's Integrity ALM solution using a combination of ThingWorx technology and the Open Services for Lifecycle Collaboration (OSLC) standard. Users will be better able to understand the impact of requirements changes on a product's Bill of Materials (BOM), and track and manage requirements throughout the product lifecycle. While requirements management remains within the domain of PTC Integrity, the tighter integration of Integrity and Windchill will help PTC's customers manage the growing complexity of their products.

Performance Advisor (new) is available to provide deeper insight into how Windchill 11 is being used and its performance under various loads. That information can be used to improve both the end user and administrator experiences. Windchill is now itself a connected smart product, enabling rapid and proactive support. Customers can analyze performance across users and benchmark themselves against other companies that are using Windchill

using performance data provided by PTC in a protected, secure environment that preserves customers' anonymity. CIMdata will be interested to hear how customers respond to this capability. PTC stated that 60% of Creo customers have adopted similar functionality introduced previously. CIMdata believes that it has the potential to help companies identify opportunities to improve the performance of their PLM solution and better plan their PLM expansion strategy.

PLM Cloud and New Subscription Pricing (new) adds flexibility to Windchill deployments. Both enable companies to add resources quickly and cost effectively to better meet the needs of the changing needs of their projects and programs. IT overhead can be reduced by using the cloud options including fully hosted SaaS. PTC primarily uses Amazon Web Services to deliver their hosted services but other options are available including country specific hosting. Current customers can migrate existing customized solutions including integrations onto the cloud and leverage PTC's experience to streamline administration of their PLM environment.

Windchill Search (enhanced) is now a multifaceted search capability improved to power better information reuse and to reduce the time users spend searching for data. PTC worked with customers to build out this capability. It combines their Windchill PartsLink classification search with traditional attribute search. Users can leverage keywords and filters in an Amazon- or eBay-like search paradigm rather than the simpler Google paradigm.

Bill of Material Management (enhanced) is designed to manage a complete, multidimensional BOM including engineering, manufacturing, and service elements. It incorporates improved visualization capabilities, part or item centric support, variant logic sharing with ERP, and a more flexible change management functionality.

Bill of Materials Transform and Compare (enhanced) includes a completely rewritten and streamlined HTML5-based Windchill MPMLink visual user interface designed to ease BOM transformation from Windchill to ERP. It supports plant-specific attributes on the MBOM, associativity at the part and occurrence level, and the ability to perform conformity analyses between EBOMs and MBOMs. It supports parallel design and manufacturing planning to enable faster time to manufacturing and reduce errors in planning and production.

Manage Creo 3.0 Breakthroughs (enhanced) including Design Exploration Extension (DEX) and the ability to create alternative designs in parallel. Using DEX, it is easy to extract selected elements from product structures to conduct trade studies or examine other design approaches. Once evaluation is complete the appropriate designs can be fully released for downstream processing.

Advanced IP Protection (enhanced) provides support for security labels checking and the display of security labels in structure components. These and other security improvements are designed to enable companies to increase collaboration internally and across their extended supply chain while maintaining the IP protection they and their partners require.

Other areas of enhancement delivered by Windchill 11 include Creo Elements Direct Management updates, automatic project updates, NPI process improvement, a redesigned query builder, a new version of System Monitor, and expanded Customer Experience Management Quality module capabilities.

Matt Cohen, EVP Global Services and Partners, discussed how PTC wants to help their customers extract value from PLM. He described PTC's Value Ready Deployment (VRD) methodology for quicker production startup that takes into account a company's specific requirements. VRD is generic today, but will become industry focused over time. The initial industry will be medical devices followed by high-tech and automotive.

PTC stated that their backlog of cloud business is large. They have a target of 30% of new deployments to be on the cloud, but think it will take 24 to 30 months to get that many customers to migrate. They hope to double the number of seats from a stated current count of 1.5 million to 3 million over the next 3 years. They expect much of this growth will be in the mid market with companies with $250 million to $1.25 billion in revenue, primarily in the medical device and high-tech industries. These are aggressive targets from segments that have been traditionally reluctant to invest in cloud-based PLM.

CIMdata thinks that Windchill 11 furthers PTC's expanding support for IoT and the development of smart, connected products that become components in systems of systems. It includes purpose-built applications to better democratize PLM and expand the number of users of Windchill. The inclusion of purpose-built tool sets for IoT producers reinforces their commitment to IoT.

PTC stated that Windchill 11 has been in development for five years and they have started to fold in technology and functionality obtained through recent acquisitions. PTC is continuing to incorporate acquired technology within Windchill and other products, e.g., the mash-up functionality from ThingWorx is beginning to be used extensively within Windchill. The use of these capabilities provides PTC with opportunities to enhance both the user experience and the overall capabilities that Windchill 11 delivers. Additional Windchill 11 capabilities related to augmented reality for in-service parts, etc., will be built on the Vuforia acquisition. (PTC showed a short demo at the event and the augmented reality capabilities were interesting.) CIMdata believes that Windchill 11 is an excellent step forward for PTC and we are pleased to see them making effective use of the technologies they have recently acquired.

About CIMdata

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