PTC Windchill Is A Leader Among Product Lifecycle Management For Discrete Manufacturing Providers

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PTC Windchill Combines IoT, Design, And Alm For Asset-Intensive Manufacturers

PTC's Windchill has more than 12,000 discrete manufacturing clients and nine-figure annual revenues, and its clients include Phillips, J&J, the US Navy, and Raytheon. PTC's vision of enterprise PLM as the foundation of its customers' digital thread is superior because of its strategic investment in the ThingWorx IoT platform, and it had an impressive performance in The Forrester Wave™ Industrial Internet-Of-Things Software Platforms, Q3 2021. Together with its acquisition of the Onshape web-based professional design platform and of Intland and its application lifecycle management (ALM) solution, Codebeamer, its compelling innovation roadmap underpins its strategy to deliver a platform supporting the most demanding digital thread for asset-intensive manufacturers of capital goods with long product lifecycles.

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*A gray bubble or open dot indicates a nonparticipating vendor.

PTC's Windchill offering demonstrates strengths in managing data sources, stage gates, product development control, design and sourcing for quality, integration with certification processes and libraries, support for reuse of designs and parts, digital thread, extended bills of material, embedded software, variants, engineering change management, digital twin of manufacturing processes, product line engineering, compliance sustainability and green PLM, and service use cases. PTC Windchill appeals most to asset-intensive high-tech industrial and transportation manufacturers exploiting IoT data and prioritizing sustainability in their transition to smart manufacturing. We weren't able to speak with enough of PTC's Windchill reference customers for this evaluation.

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PTC Windchill Evaluation Overview

CURRENT OFFERING

Ideation/requirements capture

Ideation	PTC Windchill is on par relative to others in this evaluation. The vendor provides advanced capabilities, such as populating requirements management including capture, assessment, review, and baselining through to validation planning and validation test management, and includes voice of the customer (VoC) data.
Data sources	PTC Windchill is superior relative to others in this evaluation. The vendor supports ingestion of IoT, enterprise, and other systems' data and offers support for digital twin and quality management or specific failure mode element analysis (FMEA) functionality.
Stage gates	PTC Windchill is superior relative to others in this evaluation. The vendor offers support for stage-gate definition and progress and provides advanced capabilities, such as management of lifecycle objects and templates.

Design, test, risk management, and certification

Product development control	PTC Windchill is superior relative to others in this evaluation. The vendor offers contract tracking through workflow but also offers features such as collaborative monitoring dashboards and workflows.
Design (and sourcing) for quality	PTC Windchill superior relative to others in this evaluation. The vendor offers, for example, catalog access including 1 billion electronic and electromechanical components via search interface or quality collaboration workspace and offers additional advanced capabilities, such as direct engagement with sourcing, managing, and monitoring of both risks and costs, and issuing RFIs or offering "status" change based on cost, region, quality, and risk; or APQP and PPAP support, or delivers collaborative closed-loop planning, or integration with Silicon Expert or IHS Markit to mitigate supply chain exposure by identifying critical counterparties.
Risk management	PTC Windchill is on par relative to others in this evaluation. The vendor offers corrective and preventative action (CAPA) and FMEA support.
Certification library integration	PTC Windchill is superior relative to others in this evaluation. The vendor integrates multijurisdictional standards and certification checking and offers advanced capabilities, such as out-of-the-box (OOTB) connectivity to regulatory libraries or dynamic device design history files for medical devices.
Materials or sourcing library integration	PTC Windchill is on par relative to others in this evaluation. The vendor offers capabilities such as part content as a factor in design.

Long product lifecycle design

Reuse	PTC Windchill is superior relative to others in this evaluation. The vendor offers "where used" functionality and a catalog of previously used parts and integration with variant management or additional intelligent attributes and classification and offers advanced capabilities, such as part metadata and AI-driven search and sourcing.

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Digital thread	PTC Windchill is superior relative to others in this evaluation. The vendor offers support for design and manufacturing bills of materials (BOMs) and offers additional functionalities, such as specific traceability functionality and/or exploiting the Open Services for Lifecycle Collaboration (OSLC) standard.

Short product lifecycle design

Sourcing	PTC Windchill is on par relative others in this evaluation. The vendor offers, for example, a significant level of support for transformational sourcing.
Contract manufacturing	PTC Windchill is on par relative to others in this evaluation. The vendor offers capabilities such as specific contract manufacturing management functionality and/or secure collaboration management of tasks and processes.

Product data management

Extended bills of materials (BOM)	PTC Windchill is superior relative to others in this evaluation. The vendor offers CAD-agnostic and out-of-the-box ingestion of part or product data plus the ability to include software in the EBOM and offers advanced capabilities, such as support for engineering BOM (EBOM), manufacturing BOM (MBOM), model-based systems engineering, and release and configuration engineering support.
Software bill	PTC Windchill is on par relative to others in this evaluation. The vendor offers capabilities like integration with GitHub or design synch and some ALM integration.
Embedded software	PTC Windchill is superior relative to others in this evaluation. The vendor offers revision control and testing traceability before deployment to manufacturing or to the field and offers advanced features, such as the ability to manage software source code and build artifacts in a multidisciplinary product structure for traceability and governance.
Bill of process	PTC Windchill is on par relative others in this evaluation. The vendor offers support for bills of process (BOPs) and shop-floor-ready work instructions synchronized with the MBOM shared across multiple manufacturing facilities or specific to an individual facility, plus support for BOP simulation/visualization using third-party tools, or support BOP, considering differing geography, plants, local sourcing options, and APIs to downstream solutions such as MES to promote process/build optimization.

Manufacturing use cases

Variants	PTC Windchill is superior relative to others in this evaluation. The vendor offers simple tools for variants, including copy design functionality and offers sophisticated management of variants, including variant requirements in functional, logical, and physical categories.
Engineering change management	PTC Windchill is superior relative to others in this evaluation. The vendor offers cross-disciplinary tracking and management of issue reports, change requests, and change orders through their lifecycles with fully configurable workflows and offers additional capabilities, such as support for cross-disciplinary tracking and management plus nonconformance alerts.

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Digital twin of manufacturing process	PTC Windchill is superior relative to others in this evaluation. The vendor provides a unified data structure for process parts and work instructions and offers advanced capabilities, such as integration with advanced planning and scheduling or integration with IoT and edge computing.
Product line engineering	PTC Windchill is superior relative to others in this evaluation. The vendor offers specific support for product families and variants and offers advanced capabilities, such as the ability to create and manage modular platforms, associating EBOM to MBOM.
Supply chain use cases	PTC Windchill is on par relative to others in this evaluation. The vendor offers integration with external sources and supplier collaboration or sourcing support.
Compliance, sustainability, “green” PLM support	PTC Windchill is superior relative to others in this evaluation. The vendor provides features such as management of sustainability attributes and workspace or design process for supply chain sustainability and offers advanced features, such as connections to laboratory information management systems and external databases for incorporation in product design.
Service use cases	PTC Windchill is superior relative to others in this evaluation. The vendor offers support in capturing and managing individual product configurations to support maintenance and field service use cases and uses a dynamic data model or embedded extended reality (XR) for field service support and offers sophisticated support for “service assets” like field maintenance instructions and an “as maintained” BOM.
Platform characteristics	PTC Windchill is superior relative to others in this evaluation. The vendor offers, for example, a low-code platform, standard integrations, web client, and no-code configuration and offers capabilities such as embedded XR and enablement of interoperability, exploiting standards like OSLC.

STRATEGY

Product vision	PTC Windchill is superior relative to others in this evaluation. The vendor’s vision includes the concept of transition from a product economy to experience economy, the concept of “GitHub for hardware,” exploitation of low-code, connected experiences, focus on asset light manufacturing, or product value management and embraces advanced concepts, such as smart platforms for IP reuse and product scale, regulatory compliance, servitization, and alleviating supply chain disruption.
Execution roadmap	PTC Windchill is superior relative to others in this evaluation. The vendor demonstrated significant execution roadmap impact on market share and focus on growth and strategic partnerships and integrations but also offers significant tangible proof of execution in terms of acquisitions and innovation delivered.
Market approach	PTC Windchill is superior relative to others in this evaluation. TThe vendor’s go-to-market approach includes strategies for direct and indirect sales, including value-added resellers, systems integrator, and vertical platform market and channels and exploits substantial global direct sales and sales support channel partnerships plus technology partnerships and benefitting from low customer churn.

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Performance	PTC Windchill is on par relative to others in this evaluation. The vendor has enjoyed at least 15% recent annual revenue growth.
Planned enhancements	PTC Windchill is on par relative to others in this evaluation. The vendor's planned enhancements focus on user group input and/or sustainability.
Innovation roadmap	PTC Windchill is superior relative to others in this evaluation. The vendor exploits a platform foundation to deliver upgrades more frequently than every two years or successfully embeds modern technologies like XR and AI.
Supporting products and services	PTC Windchill is superior relative to others in this evaluation. The vendor offers on-par product and service complements plus additional capabilities, such as availability of partner network services, best practices, and app exchange or offerings from content and strategic alliances or accelerators.
Partner ecosystem	PTC Windchill is superior relative to others in this evaluation. The vendor has at least 1,000 partners.
Delivery model	PTC Windchill is superior relative to others in this evaluation. The vendor's delivery model includes a free downloadable version and provides multiple cloud options and sovereign instances.
Commercial model	PTC Windchill is superior relative to others in this evaluation. The vendor offers named user licensing, accommodation for peaks and troughs in user populations, plus transparent pricing and self-service plus licenses for different communities such as students.

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