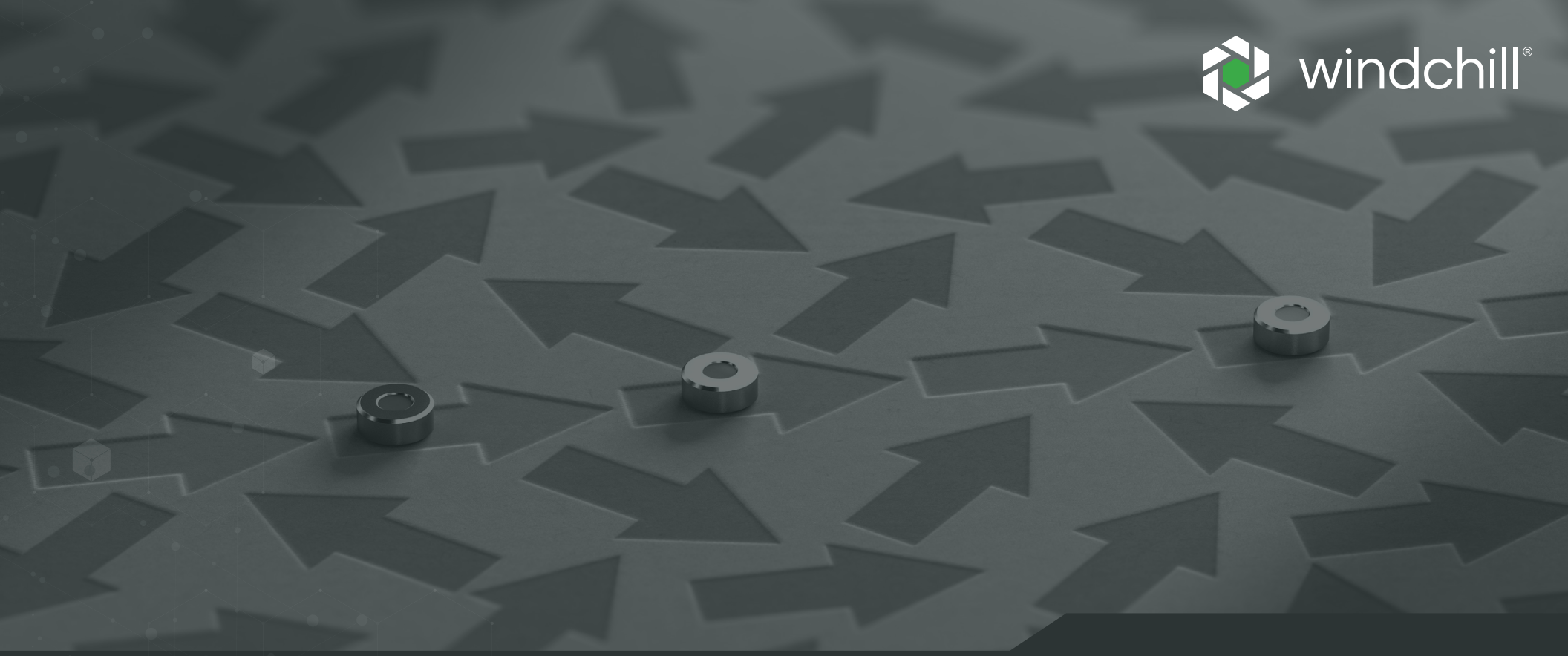

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Understanding
CHANGE MANAGEMENT
in Windchill

ptc

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Why Change Management Matters

Change management is a systematic process of requesting, planning, implementing, and evaluating changes to product data and information. Formalizing these processes help manufacturers resolve issues and seize opportunities pertaining to any artifact of their product definitions. From conceptualization through end-of-life, change management in Windchill allows users to manage control over revisions to designs, items, and records. Windchill's highly configurable and flexible processes ensure that change workflows meet enterprise needs while providing visibility and automated task assignments to stakeholders.

CHALLENGES

Manufacturers that lack a robust change management practice often struggle to account for the full impact of changes and fail to effectively communicate change with stakeholders across the enterprise. As a result, they face significant risk any time changes are made to a product definition. Poor documentation and manual handovers lead to miscommunication resulting in quality, production, and supply chain issues downstream. Lack of automated data collection, traceability, and visibility contribute to long wait times for approvals, or worse – ill-advised approvals. These dangers are amplified when teams are siloed and when numerous or complex changes are required.

CONSEQUENCES

Higher Cost of Poor Quality – Poorly configured and ungoverned change management processes impede quality improvement activities and will invariably introduce new quality issues.

Diminished Productivity – Change management processes that lack traceability and provide poor visibility put a heavy administrative burden on stakeholders that conflicts with their primary functions.

Increased Scrap and Rework – Changes that are slow, miscommunicated, or improperly implemented will often result in non-conforming products and other quality issues on the factory floor.

Delayed Time-to-Market – During new product development, when the product definition is in constant flux, enormous time and effort is wasted when change management processes fail to keep cross-functional teams well aligned.

Benefits of Change Management

Change Management in Windchill is highly configurable to support simple to elaborate change processes. Windchill provides data governance and associativity so that all changes and configurations are fully defined and controlled. Repeatable, automated workflows ensure that change and approval tasks are delivered to the responsible stakeholders. Standardizing on Windchill's best practices for change management informs better decision making, drives down the cost from poor quality, accelerates change implementation, and reduces time-to-market.

IMPROVE PRODUCT QUALITY

Deliver a real-time view of requested changes to all enterprise stakeholders, while expanding cross-discipline involvement to promote collaboration and improve quality and cost impacts of changes.

ENSURE PRODUCT COMPLIANCE

By linking and tracking product data across the lifecycle from one single source of truth you can ensure compliance standards and other requirements are met as changes are proposed and implemented.

PROMOTE ENTERPRISE ALIGNMENT

Create product associativity so stakeholders are assured access to the most up-to-date product information, changes are easily identified, and changes are responded to appropriately and timely.

STREAMLINE CHANGE EXECUTION

By configuring change processes that scale to meet business needs, that automate work-in process interactions, and that deliver easier to understand reviews for different roles, you can greatly accelerate change activities.

Key Change Management Capabilities in Windchill

The following list of key change management capabilities in Windchill is not exhaustive. Both the list and definitions are intended to provide a brief overview of the tools that are among the most valuable to the typical change management user.

Change Process/Workflows

Change process management enables you to easily configure change workflows to accelerate product development while providing visibility to all users connected through a digital thread. Users can accelerate product development, quality activities, and cost-reduction projects using simple to rigorous change processes and enabling work-in-process interactions to plan and execute changes with redlines, mass updates, effectivity, supersedes and more. Windchill allows you to create repeatable, easy to use processes that deliver tasks automatically to users.

Change Request

A change request can be created in response to one or more problem reports or without any reference to a problem report. A change request details the changes necessary to correct a problem or provide the enhancement so that the appropriate people can make the business decision to proceed with or cancel the proposed change. With change requests, your teams can evaluate technical and business justifications and plan minor or major changes (urgent, fast-track, regular, form fit function, & process) with a change review board.

Key Change Management Capabilities in Windchill

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Change Notice/Change Tasks

A change notice represents the implementation plan and execution of work to be done to successfully implement the change. One to many change tasks can be assigned for each change workflow and can include intended modifications to CAD, eBOM & eBOM, documentation, process planning, sBOMs and more. Windchill can apply business rules that ensure critical business process needs are followed before releasing the results of changes to the enterprise. This process can release changes to Windchill as well as to ERP, MES and other enterprise systems.

Digital Product Traceability

Windchill leverages Open Services for Lifecycle Collaboration (OSLC) for linking across systems. This is used to create traces to product data (E.g., parts in a BOM, document, and options & choices driving variability) in Windchill from requirements in tools like PTC Codebeamer, DOORS Next Gen and functional modes from system engineering tools like Windchill Modeler. This enables cross-discipline collaboration, ensures regulatory needs are met, and improves changes with holistic impact analysis.

Change Impact Analysis

Change impact analysis is the capability to detect and to document all the objects that are involved in and could be impacted by a change. This can include many objects, from simple drawings to more complex system architectures or even tooling that is required to produce a product. Windchill lets you easily navigate and gather related data to identify change impact including data from external relationships such as requirements or system models. Impacted items on a change are flagged for visibility to promote cross-domain collaboration and eliminate unforeseen consequences of changes.

Key Change Management Capabilities in Windchill

Change Issue Management

Issue management is the engineering process of addressing any problems that occur over the course of an engineering project or within a manufacturing organization. In Windchill problem reports are captured in issue tables which can be used to identify trends and set priorities. A problem report is created to document a problem or to request a product enhancement. With problem reports engineering teams can capture issues or opportunities for products and processes to determine next steps that must be taken to address quality, durability, and compliance related issues. Problem reports are attached to both change and quality workflow processes.

Release Management

Release management involves scheduling, planning, managing, and controlling a product through the various stages of its lifecycle. It defines the lifecycle phases of a product or data object, the actions that can be executed during various phases, who has access to what data during any particular phase, and the requirements to promote from one phase to the next. The default lifecycle states for an object being changed is “In Work”, “Under Review”, and “Released.” However, in Windchill, you can create a variety of lifecycle templates that can be applied as necessary to different products and data objects to govern them more or less formally through development and changes. This approach provides a model for the commercialization process and ensures product data is being acted upon in accordance with its lifecycle phase.

Key Change Management Capabilities in Windchill

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Change Orchestration

Change orchestration ensures that as changes get released in PLM, a change notice is generated in other systems directly. In this way, downstream stakeholder can go through the required enrichment and change process within their system. With interfaces from PLM to ERP, MES, and other key enterprise systems, attributes that are created or changed in PLM are automatically published and that updated information is readily consumable by stakeholders across the company.

Change Redlining

With change redlining (or BOM redlining), you can easily highlight suggested changes to a BOM to describe change intent, to support out of order change execution, and to simplify communication of a change. Redlines can be created one at a time or via mass change to create/update many redlines in a streamlined process. This capability better illustrates the relationship between the affected objects and the resulting objects on a change notice so stakeholders can easily see, plan for, and execute changes.

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Expert Insights

NICK SAMARDZIJA
Product Manager, PLM Solutions
PTC

"Now we're starting to talk about enterprise change management and PLM is essentially the backbone of a lot of elements of not only just the digital thread, but all of these different disciplines"

Change management is the most impactful capability gained when moving from simple product data management (PDM) to product lifecycle management. Rigorous change processes that foster collaboration become even more important as portfolios grow more complex, teams become larger and more diverse, and operations spread globally. Windchill gives manufacturers the tools to manage change according to best-practices, and to mature their change processes as business needs evolve.

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Customer Perspective

SCOTT MORRIS
PLM Manager
iRobot

"Every customer has a different need, a different requirement, a different way that information flows through their organization. And Windchill provides you the tools to configure that in any way that best fits the organization."

iRobot is the leading global manufacturer of household robots. While headquartered in Massachusetts, the company also has design offices in California as well as distribution and manufacturing sites around the world. iRobot relies on Windchill to maintain tight alignment between design centers, factories, suppliers, and contract manufacturers, as its product designs and component requirements change.

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Realized Benefits Case Study

VAILLANT GROUP

The Vaillant Group is a global market and technology leader in the field of heating, ventilation, and air-conditioning (HVAC) technologies.

CHALLENGE

Manual handling of process and data management tasks led to inadequate access-control, lack of concurrent engineering functionality, and lack of traceability and version control. This flawed error-prone manual data entry process was delaying time to market and driving up costs due to unacceptably high levels of rework.

SOLUTION:

Vaillant Group selected PTC's Windchill as the foundation for a multi-phase enterprise digital transformation initiative.

Phase 1 – Core elements of PLM such as workflow-controlled creation of parts and Bill of Materials
Phase 2 – Advanced PLM functionalities, including the world-wide use of release and engineering change management
Phase 3 – Applying digital transformation technologies. For example, using connected product information acquired from IoT

28% Faster time to change implementation

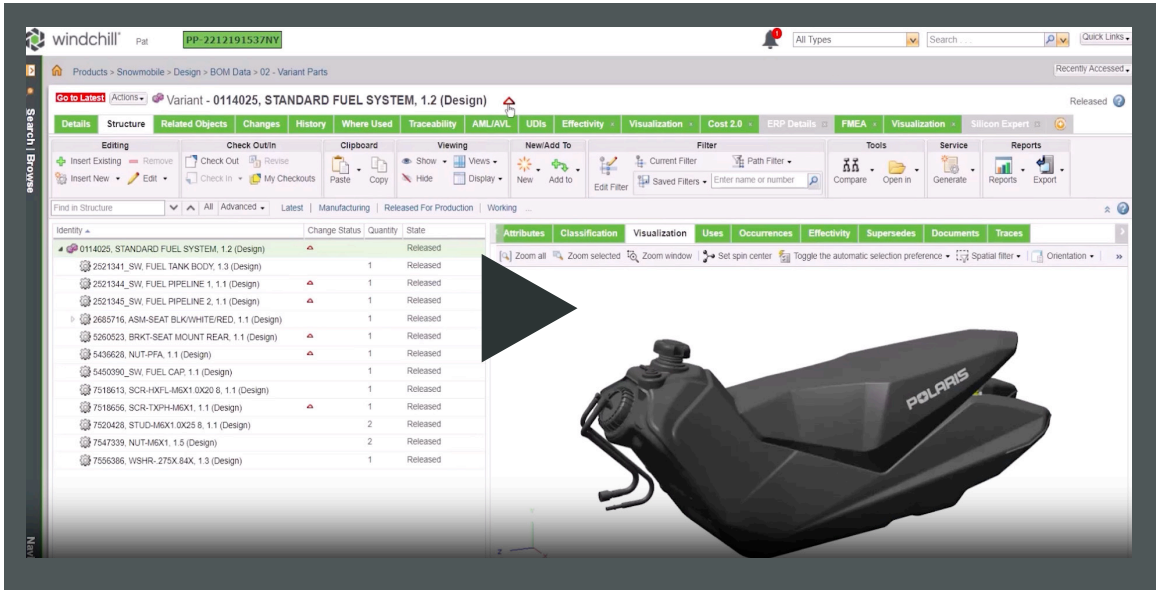
53% Improvement in first pass sample approvals

16% Reduction in rework

8% Reduction in time-to-market

See Change Management at Work

This demonstration covers the entire change process, including problem report, change request, and change notice from the perspective of a hypothetical product manager for Polaris Snowmobile Products. It emphasizes the visibility, traceability, and standardization of the change management process in Windchill, ensuring that tasks, reviews, and sign-offs are routed to the appropriate individuals and places.



- PROBLEM REPORT
- CHANGE REQUEST
- CHANGE NOTICE
- CHANGE TASK
- CHANGE REVIEW
- CHANGE IMPACT ANALYSIS
- RELEASE MANAGEMENT

Change Management Solutions: What to Consider

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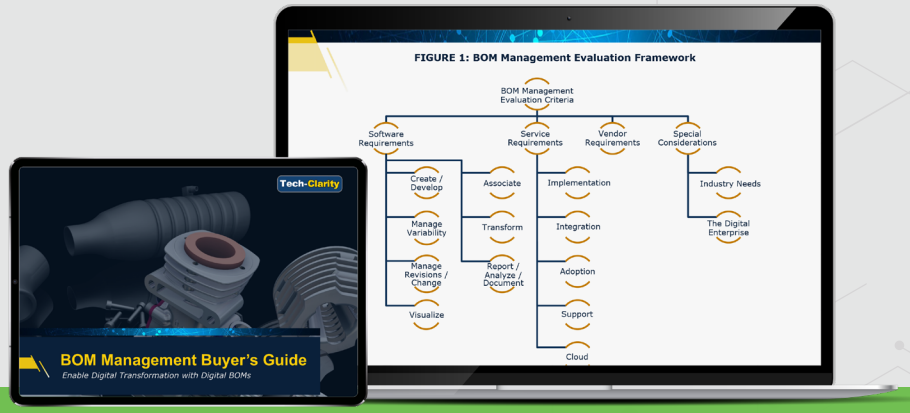
Change Management Requires a Strong PLM Foundation

A strong change management is inextricable from a strong PLM foundation. However, too many companies operate with immature BOM management processes, often based on drawings, that lead to delayed time to market, quality problems, poor productivity, excess cost, and damaged customer relationships.

Improving the maturity of change management by implementing a digital BOM not only helps with things like complexity, product personalization, efficiency, and collaboration but also plays a crucial role in supporting organization wide digital transformation efforts.



Use this Tech-Clarity Buyer's Guide as a reference tool as you investigate systems to improve the maturity of your own PDM or PLM practices.

Learn More >

This Buyer's Guide covers:

- The benefits of digitizing BOM management and making it the foundation of the digital thread and digital twin.
- The functionalities, service options, and vendor requirements you should be considering when looking at BOM management solutions.
- Why you should look beyond your current needs so you can support the digital future.

Learn More

Click here to explore more of these topics

BOM Management

Collaborative Product Development

Engineering Change Management

Manufacturing Process Management

Model-Based Systems Engineering

Parts Classification

Product Configuration Management

Product Data Management

Product Variability Management

Quality Management

Requirements and Test Management

Service Process Management

Supply Chain Collaboration

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