Windchill® Platform Structures: More Efficiently Manage Product Variants

Think of Your Product and Design as a Platform

Manufacturers are continually working to deliver tailored products to suit their markets, geographies, and industries. By offering greater choices, manufacturers can better satisfy customer requirements to realize a competitive edge and pursue new market opportunities.

To enable this vision, global manufacturers need a scalable, cost-effective way to develop diverse products. They can achieve this by adopting a platform approach to product development.
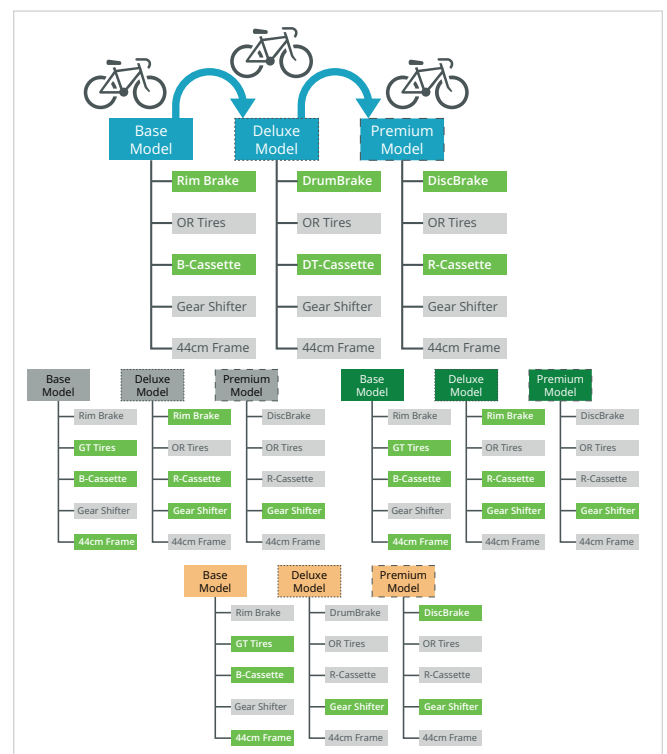
Challenges

Traditional approaches to product diversity come at a high cost to manufacturers. Developing complex products creates demands on the systems and people needed to manage data, maintain designs, and propagate changes. For example, engineers have to manually track and understand the impact of configuration changes. Additionally, there is no way to commonly manage and distribute the logic used to configure or control these systems.

The manufacturing complexity doesn't end there. It also puts extreme pressure on manufacturing planning, making it difficult to effectively organize and balance lines, ensure cost efficiency, and handle short order fulfillments.

Moreover, the extra time, effort, and expense required to design and deliver more diverse product offerings often negatively impact processes beyond manufacturing. The impact can extend across the supply chain, from the cost of extra parts inventory to the added burden on service and support organizations.

We typically think of companies competing over products—the proverbial "build a better mousetrap." But in today's networked age, competition is increasingly over platforms. Build a better platform, and you will have a decided advantage over the competition.

Harvard Business Review

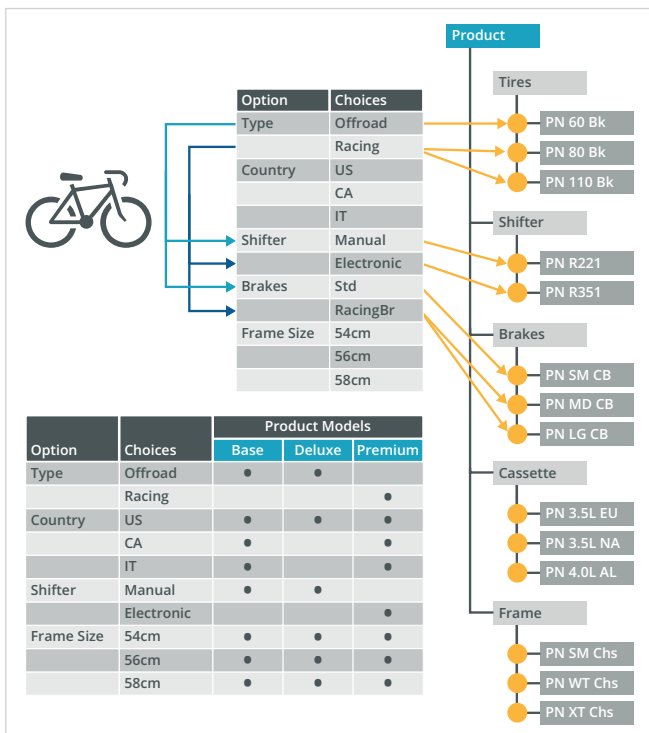Example of challenges using a static methodology

Implications

- Makes it difficult to ensure high levels of reuse

- Increases R&D costs, and ultimately, the cost of goods sold

- As complexity increasingly limits flexibility, organizations may struggle to meet customer requirements for more profitable customizations and configurations

- Creates a drag on productivity, which impacts revenue and profitability, both directly and through lost opportunities

Windchill Platform Structures: Achieve Product Diversity with Scale

The challenge is to meet the diversity of product requirements—and the requirements of product diversity—while achieving economies of scale across the enterprise. A global platform approach manages all aspects of a product: the geometry, the various "bills of information" and all the configurable logic. Windchill Platform Structures provides companies with the critical capabilities needed for platform success.

The solution allows manufacturers to reuse systems and subsystems across product families and strategically design, create, manage, and validate product variants to ensure that customers get the products they need. Simply put, by thinking about their products and designs as a platform, manufacturers can more efficiently make and deliver regional or market-specific products without increasing operational complexity.

With a platform approach, companies gain an enterprise solution to reuse systems and subsystems across product families. Efficiency improves as system and interface reuse becomes the basis for manufacturing plans and service deliverables. This solution allows manufacturers to achieve product diversity by:

- Architecting and managing modular product families

- Developing platform-based offerings with the rules that drive them

- Validating product platforms and specific configurations to meet company business objectives

- Reusing platform logic and product configurations across the enterprise

Benefits

- Increase the efficiency of design teams

- Enable faster NPI through greater product reuse

- Improve NPI win rate through tailored products

- Realize as much as a 25% decrease in product development time*

- Achieve 30-40% savings through higher product commonalities*

- Reduce production cost and improve service profitability
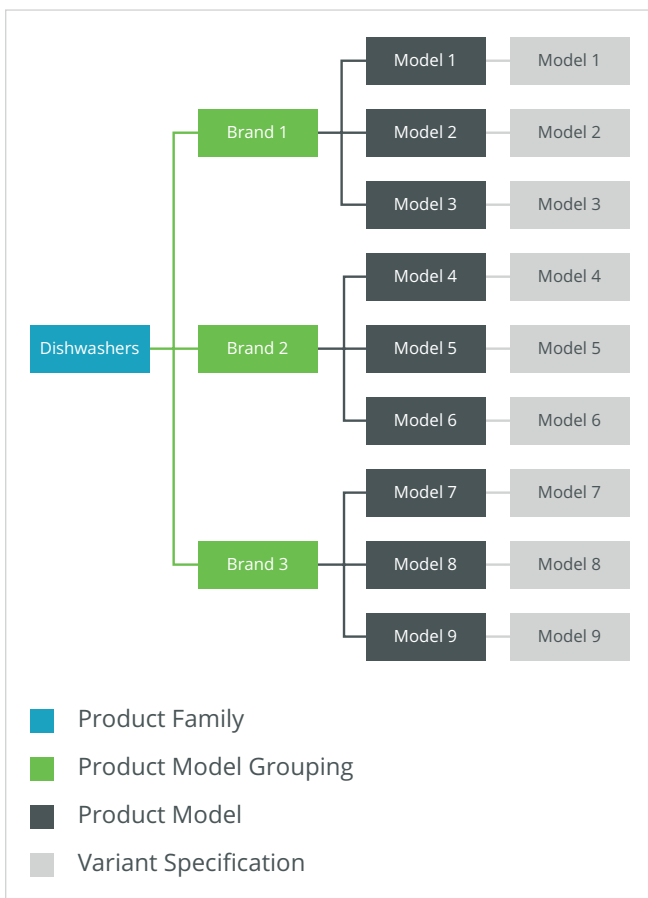
*Based on PTC customer experiences

An example showing the application of a platform strategy

Option	Choices	Product Models		
		Base	Deluxe	Premium
Type	Offroad	●	●	
	Racing			●
Country	US	●	●	●
	CA	●		●
	IT	●		●
Shifter	Manual	●	●	
	Electronic			●
Frame Size	54cm	●	●	●
	56cm	●	●	●
	58cm	●	●	●

Features

Product Family Management **NEW!**

- Create a Product Family hierarchy for the configurable Platform

- Define Product Models which represent what might be sold to the market

- Use Product Groups to organize Product Models for better clarity

- View & Edit the Product Family in a matrix enabling better visibility to the planned offerings

Manage Complex Platform Configurations

- Manage and evolve the platform across the lifecycle

- Maintain complete configurations of product families

Schematic representation of a product family

Define and Validate the Platform and Modules

- Allow for the architecting and development of modular platforms

- Plan and define a modular product architecture that includes reusable modules

- Support the analysis and validation, such as interference or compliance of specific configurations

Share the Platform

- Share product configurations and logic throughout the extended enterprise

- Make full use of platform definition and configuration logic in manufacturing planning

- Synchronize PLM/enterprise system changes from EBOM to MBOM to SBOM

- Load variant specifications from external sources

Managing Controls

- Expose controls across the company enabling collaboration and broad reuse of logic

- Author and manage options, choices, rules and expressions including textual and numeric values

- Publish Option, Choices and Rules to external tools such as Configurators and ERP

Ready to get started? Visit PTC.com/en/products/ plm/capabilities/platform-structures today.