SAVING WITH VARIANTS

Optimal Product Variety at Best Possible Reuse

Processes

Methods

Tools

BCT

1. The Challenges of Variety

Successful companies have less variants than less successful ones - McKinsey figured that out 20 years ago. Still, variety exploded in most companies since.

Individualization of products and globalization of markets are the most important drivers for variants - but also lacking awareness of the costs they produce. Without standardization and reuse the costs of variants rapidly exceed their benefit.

Often companies have ten thousands of parts in stock, their data creation and maintenance costs many times more than their value. Reducing the parts inventory by only a few percent means savings of millions of dollars.

The reduction of variety saves not only money, but ensures shorter lead times in product development, since proved parts cause less faults and changes.

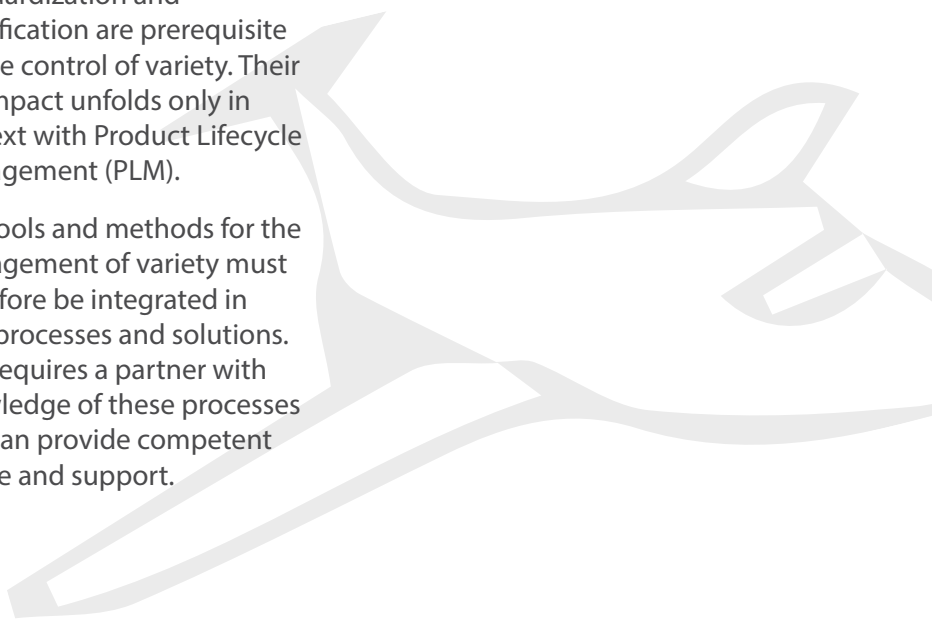
2. The Strategic Dimension of Variance

The reduction of variety is a management task that has to be anchored in the organization. Companies need a clear strategy on how to reduce, control and avoid variants. Therefor they need to:

- consolidate and better structure their part inventory,
- revise their product structure so that a maximum of variety can be achieved with a minimum of parts,
- establish processes and methods to maintain this order,
- control the development of part inventory and variety.

Standardization and classification are prerequisite for the control of variety. Their full impact unfolds only in context with Product Lifecycle Management (PLM).

The tools and methods for the management of variety must therefore be integrated in PLM processes and solutions. This requires a partner with knowledge of these processes and can provide competent advise and support.



3. The Consolidation of Parts Inventory

Establishing order implies systematics. It can be mapped in a classification structure and used for the standardization of the parts inventory. PLM lays the foundation for combining this classification with other systems of ordering.

The consolidation and structuring of the parts inventory is the first step towards the reduction of variety.

There are several approaches:

- Identify duplicates with geometrical similarity search and database research,
- Analyze usage frequency, filter unnecessary parts and lock them for further usage,
- Define and provide preferred parts according to usage frequency,
- Group related parts with sets of rules,
- Link structured and unstructured data with semantic connections and extract characteristics.

All this approaches also facilitate the search for existing parts and thus their reuse.

4. The Modularization of Product Architecture

Many products are not designed for variance due to their hierarchical structure. If necessary they must be restructured within the framework of standardization.

Modular product architectures allow the configuration of customer specific characteristics from standard modules and the avoidance of variants. The generation of the desired variants is controlled via configuration.

Starting point for the building of intelligent modular structures can be the capture of requirements in the sense of Systems Engineering. They can be translated using the QFD method (Quality Function Deployment) to technical characteristics that serve as a basis for the definition of configuration rules.

Product configuration is the high art of standardization. It provides more security due to the usage of proven configurations reduces the effort for post processing and makes the existing product know-how more accessible.

5. The Maintenance of Order

Order requires not only systematics, but also tools and methods to ensure their compliance. They include, for instance:

- Uniform processes with clear responsibilities for the creation of new parts,
- Forms, that support the user in recording the necessary data,
- Mechanisms, that automatically check the correctness and completeness of the data.

When reusing complete assemblies it is automatically checked whether all parts can be used or if single parts have to be replaced. The check of the usage states also provides the possibility the phase out parts in an organized way.

6. The Control of Variety

Many companies do not know how many new parts they create very month and how often which parts are used, although the basic information is available in the PLM solutions.

The evaluation and visualization of this information in reports helps the management to control the variety on a long term. This is the only way to avoid that the progress in standardization is depleted by a creeping variant generation in daily business.

The continuous monitoring of several key indicators is also an important criteria for a successful use of PLM..

BCT Technology AG belongs to the reputed experts in the field of standardization and classification. As a partner of Siemens PLM Software we help our customers to better control their part variety.

Our solution modules, completely integrated into Teamcenter, put companies into position to

- analyze and clean their parts inventory,
- build and fill a classification,
- track the quality and up-to-datedness of the parts throughout their complete lifecycle,
- control the development of variety in the company.

BCT supports its customers at the selection, implementation and customizing of PLM solutions and additional tools for classification and variant management. We analyze the parts inventory to identify the saving potential, educate the users in handling the tools and provide support.

We also consult and support customers to structure their product portfolio and build a product configuration, with the goal to control and if possible to avoid new variants.

Thanks to the close cooperation with Siemens PLM Software the BCT solutions are employed worldwide in several industries: machinery and plant construction, aerospace, automotive, high-tech and electronics, medical industry.

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