

A NEW DIMENSION IN
PRODUCT DEVELOPMENT **»»⁴PEP**

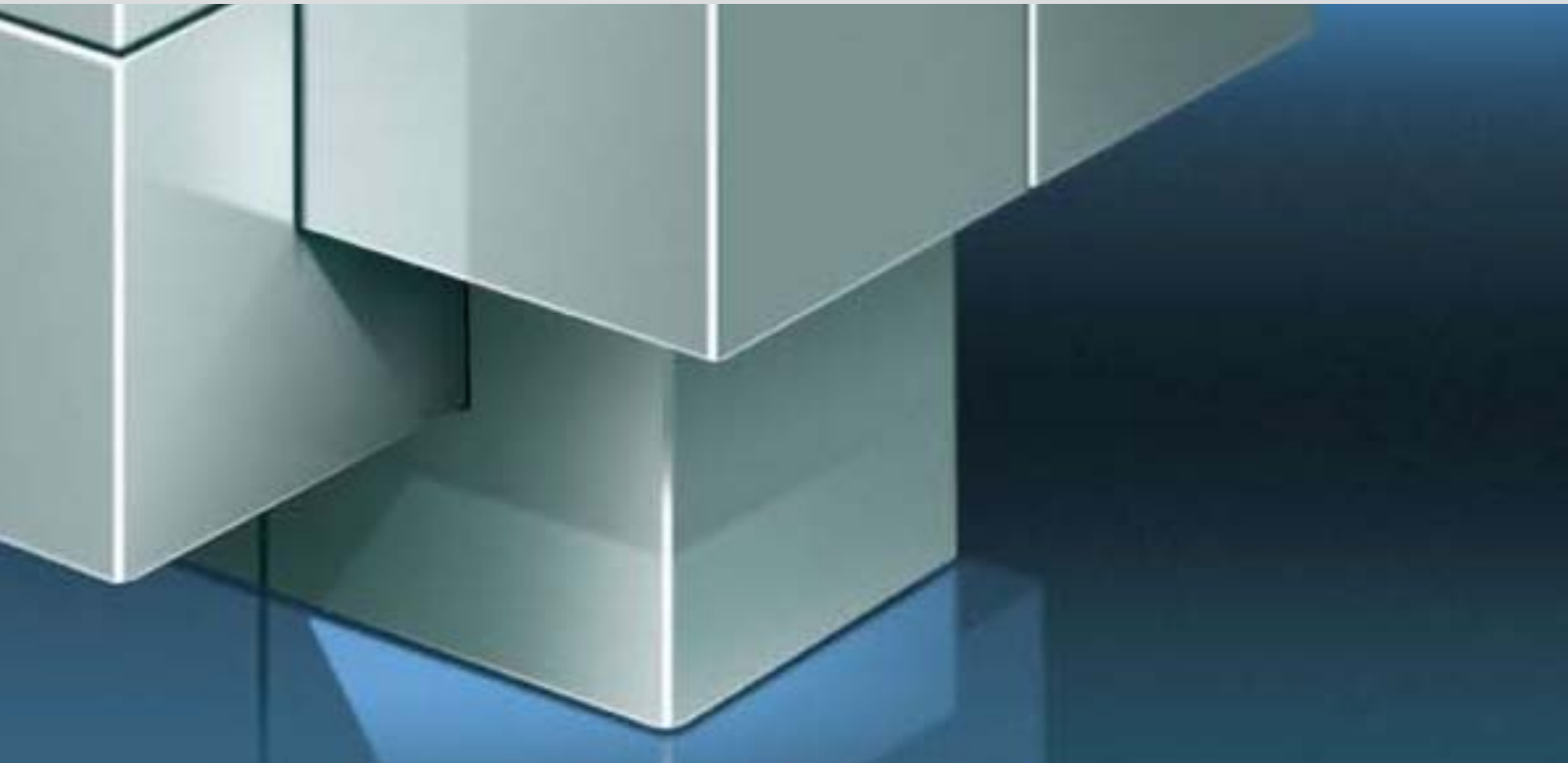


THE WHOLE IS GREATER
THAN THE SUM OF
ITS PARTS. (ARISTOTLE)



EFFICIENT PRODUCT
DEVELOPMENT IS KEY TO
BUSINESS SUCCESS.





Developing new, innovative products is a core competency that is clearly crucial to the survival of every industrial company. But innovation isn't everything: the ability to launch new, high-quality products quickly and cost-effectively is just as important.

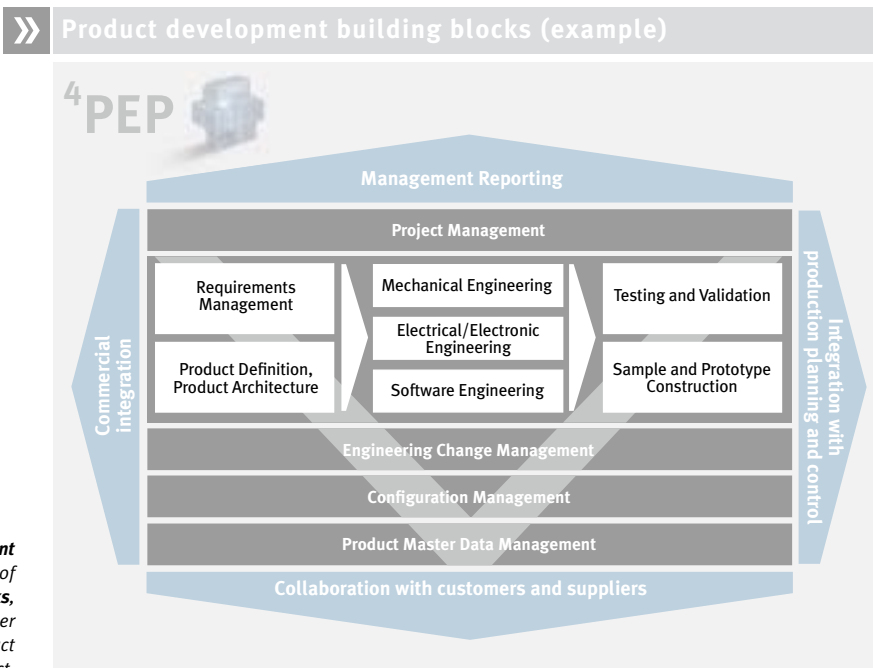
Managing product development is now more demanding than ever, thanks to ever-increasing product variety and complexity (due in part to the growing importance of electronics and software), cost and deadline pressures, and statutory regulations.

IT has so far been unable to fully support the product development process in a manner that is efficient and transparent. Import/export issues, redundant and inconsistent data, high manual effort for data provision, and a lack of process transparency are common features of product development activity in virtually every business today. The situation is comparable with a large puzzle, where the pieces don't always seem to fit. The consequences are poor quality, cost overruns, and missed deadlines – and often a long-term impact on business success.



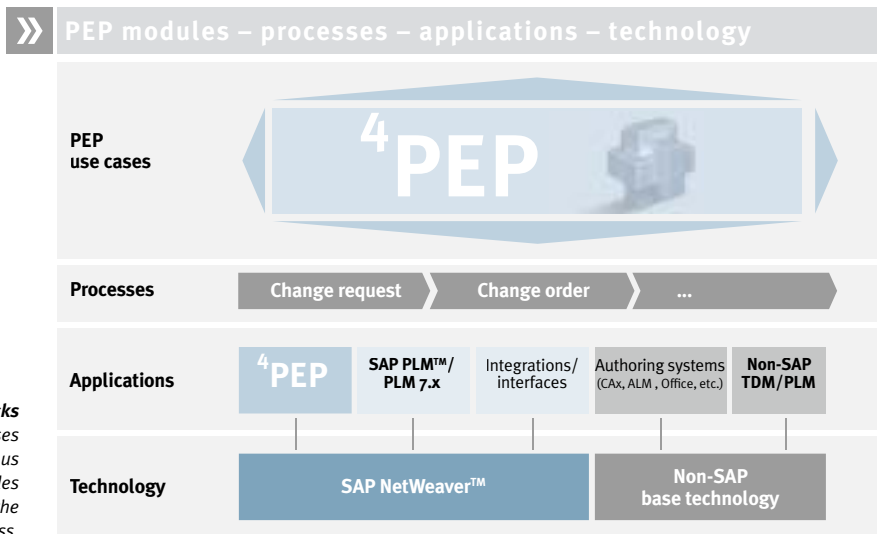
4 PEP » THE INTEGRATION PLATFORM FOR YOUR PRODUCT DEVELOPMENT PROCESS

4PEP is a flexible, intuitive platform that puts all the pieces of the puzzle together to create a clear, manageable whole. The focus is on integrating and linking all data and combining it with flexible process management. The versatile functionality offered by the comprehensive SAP® toolbox is provided to users in the context of a PEP building block.



The product development process is made up of numerous building blocks, with the type and number varying from product to product.

The **SAP NetWeaver™**-based solution also integrates the standard **SAP PLM™/PLM 7.x** functionalities, enabling a support of the entire product development process. The application can be run via the classic **SAP GUI™** or the new **PLM 7.x** Web frontend. Thanks to the open architecture, **non-SAP authoring** and **TDM/PLM systems** can also be integrated, allowing a complete development process representation, even in a heterogeneous system environment.

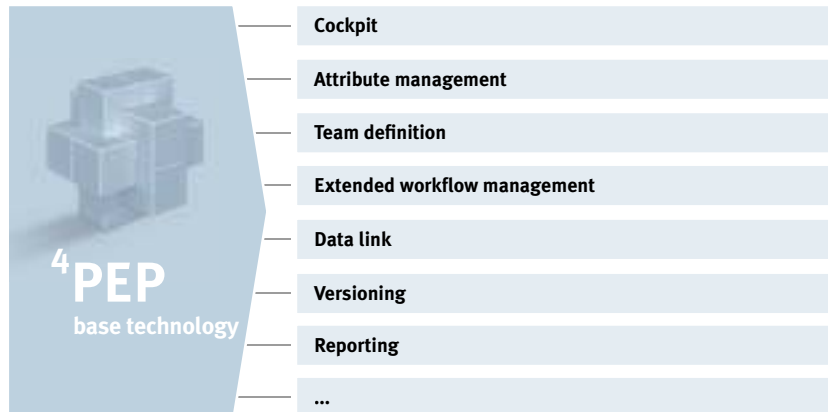


The PEP building blocks contain business processes that are supported by various applications. 4PEP enables holistic management of the product development process.

The **4PEP** platform offers extensive base components for supporting a wide range of product development building blocks (use cases). The state-of-the-art software has been generically developed and is highly configurable, providing outstanding options for customization to suit individual workflows and data models. Configuration instead of add-on development is the key to short project times and low costs.

The use of **cockpit technology** provides a user interface that combines simple Excel usability with the integration capability of a business system. Each cockpit line represents a freely definable data container that can hold any data object (material master, bill of materials, etc.) and its attributes (data fields). Users can initiate any transaction of their choice from the cockpit, producing a closed loop workflow and consolidated view of all required data (including from third-party systems). The ability **to version** data containers enables comprehensive, convenient configuration management, while **attribute management** allows data masks to be freely defined. Custom and predefined **SAP®** fields can be combined in any permutation. A rule editor enables simple definition of dependencies between data fields and field values.

» The ⁴PEP base technology



⁴PEP base technology provides the platform for mapping preconfigured or custom use cases.

The **team definition** functionality allows simple definition of project teams, thus enabling transparent processes for distributing information via **extended workflow management**. This ad hoc approach means that users tough using standardized workflows, can intervene in live processes to make prompt, flexible decisions.

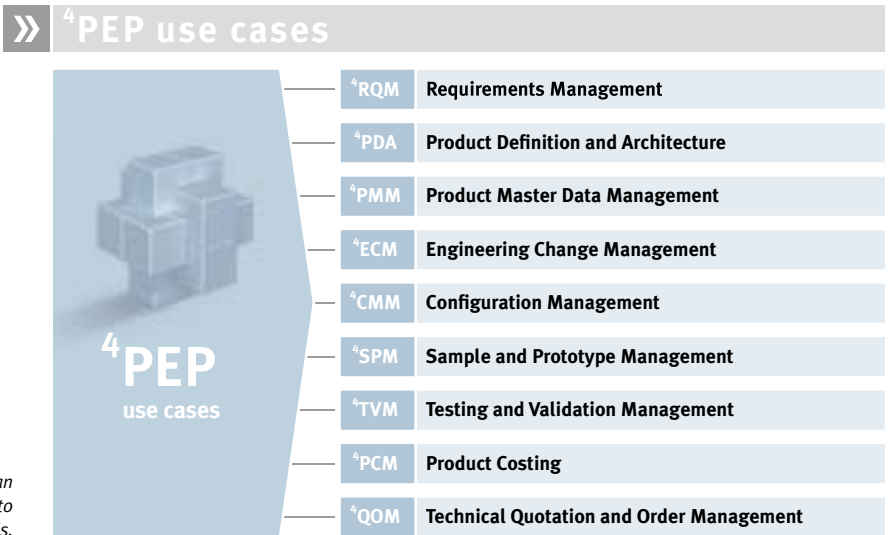
In product development, the many different data objects (requirements, functions, materials, bills of materials, drawings, software, recipes, documents, etc.) need to be pulled together. The **data link** function achieves this by connecting all data objects with each other—requirement to requirement, requirement to function, function to component, and so on. For example, change processes can thus be initiated at the product requirement stage, rather than when a material changes. The system can automatically determine which other requirements, functions, or components are affected by the change—representing a huge step forward in terms of development project efficiency. Development matrices created using the quality function deployment (QFD) method can be simply and conveniently supported, to name just one of the options.

Managing all data, documents, and processes on the ⁴PEP platform also enables comprehensive **reporting**. Thanks to flexible searches and output, all information relating to the product development process can be delivered in real time at the push of a button. This takes product development transparency to a completely new dimension.

The ⁴PEP base technology supports the full range of use cases via flexible customizing. **ILC PROSTEP** has already predefined and implemented many key product development scenarios.



»» ⁴PEP USE CASES FOR INTEGRATED PRODUCT DEVELOPMENT



⁴PEP use cases can be easily tailored to company-specific needs.

The **Requirements Management** (⁴RQM) use case shows the structured definition of product requirements in the early stages of development. Thanks to recording the development and history of individual requirements, distribution of requirements management tasks to team members, and complete requirements tracking right through to the testing and validation process, your products benefit from a completely new dimension in development quality.

The **Product Definition and Architecture** (⁴PDA) use case covers the structuring of products at the start of the development process. Where more complex mechatronic products are involved, the focus is on the functional structure aspect, while for products with multiple variants the emphasis is on timely variant definition and assignment of components to variants. It is also possible here to replicate the established practice of loading an existing bill of materials onto a “blank sheet of paper” for change purposes, without having to modify the master data in the system. Thus, product structures can be defined with the minimum of effort for quotation/product costing purposes.



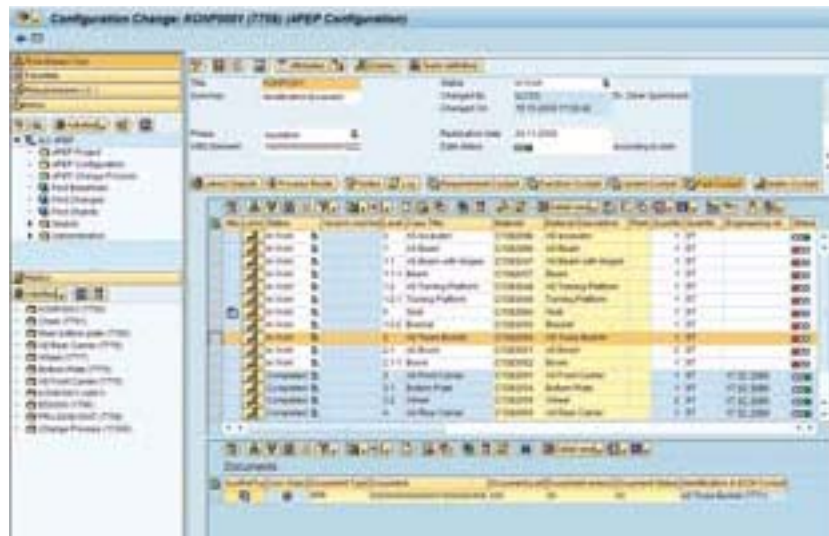
» FLEXIBLE CONFIGURATION: DESIGN YOUR OWN BUSINESS SCENARIOS

Almost as soon as the decision is made to develop a product, master data is needed. For many organizations, the distributed process of maintaining master data across the enterprise remains a major headache. With **Product Master Data Management** (⁴PMM), you can establish reliable, transparent maintenance processes and ensure high product data quality. The system also enables project managers to check the maturity and progress status of each component at the push of a button, so they know the precise point in the development process reached by a product at any given time.

Product changes can be conveniently assessed and implemented via the **Engineering Change Management** (⁴ECM) use case, which integrates the entire change process, from the initial change note to change request, order, and execution. Any master data within your organization can be included in the change process.

The **Configuration Management** (⁴CMM) use case enables multiple changes to be combined in a single baseline. In some industries, this is essential for safe product development that complies with legal requirements and an important basis for documentation, costing, and sample/prototype construction. The latter function acts as a “company within a company” and needs to provide input to virtually all the processes involving in manufacturing the finished product. The samples/prototypes must be commissioned, planned, produced, supplied, and billed. The sample level can be derived from product development data and changed as necessary. And, of course, everything needs to be documented in a fully trackable manner. Because manual processing requires significant effort for many enterprises, IT tools are widely used and just need to be adapted to the requirements of sample and prototype construction. With the **Sample and Prototype Management** (⁴SPM) use case, we take the existing applications and integrate them with ⁴PEP accordingly to create a highly efficient application.

» Parts cockpit



The parts cockpit enables transparent maturity management and progress control.

The same applies to **Testing and Validation Management** (⁴TVM) of your products, where you can plan and implement test scenarios in close coordination with your sample and prototype management activity. By testing against requirements from the earlier development phase, you can ensure the integrity and robustness of the product development process.

The **Product Costing** (⁴PCM) use case enables multiple costing of a product during the development process. Costs can be tracked throughout the lifecycle, from initial quotation/product costing based on a rough material structure to costing multiple baselines and calculating the costs of the signed-off product. Existing costing tools can be easily integrated into the ⁴PCM environment and are thus available for continued use.

Technical Quotation and Order Management (⁴QOM) integrates commercial quotation and order processing into the product development process. The scenario includes assessing the technical feasibility of customer requests and quotation costing based on the product to be developed. The history of the quotation and order process can be tracked at any time in terms of technical content—a facility that can be crucial, particularly during customer acceptance testing.

Easy to configure, the predefined use cases can be adapted to individual requirements with minimum effort. It is also possible to quickly realize other business scenarios. ⁴PEP can therefore be deployed as a universal integration platform, across industry boundaries, as well as outside the product development process.



⁴PEP GIVES YOU COMPLETE CONTROL OF YOUR PRODUCT DEVELOPMENT PROCESS FOR THE FIRST TIME. INTEGRATION OF THE ENTIRE ERP ENVIRONMENT TAKES YOUR PROCESS EFFICIENCY TO A COMPLETELY NEW LEVEL.



4 PEP » A NEW DIMENSION IN PRODUCT DEVELOPMENT

You can face future challenges with confidence across the board, from initial requirement to production start-up:

- » Integrative view of all data and workflows
- » Uniform, consistent data
- » Transparency for all participants, from program manager to project manager and project team members
- » Complete cost management possible
- » Continuous, real-time deadline and status information
- » Frontloading, i.e., through timely, comprehensive requirements management
- » Uniform, transparent data and processes enable and facilitate collaboration
- » Improved, easier documentation and verifiability

Why not find out for yourself how easy it is to fast track your product development?



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