



SAP Enterprise Product Development

SBN Webinar

SAP
2020

PUBLIC

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Agenda

Introduction

Enterprise Product Development – Overview

Enterprise Product Development – Capabilities

- Collaboration
- Engineering
- Visualization
- Connected Products

Q&A



Introduction



Product Lifecycle Management Trends



Customer Sentiment & Experience

Customer sentiment can make or break the success of your product in the market place

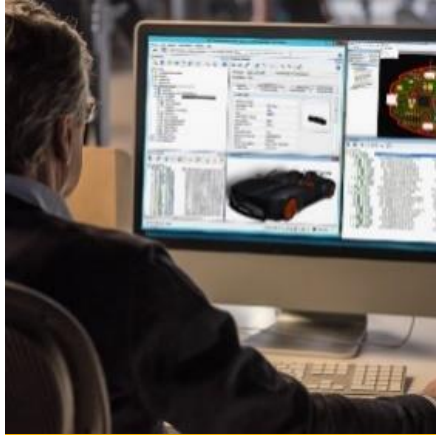
Product Complexity & Individualization

Smart products & customization are no longer an option, the market demands them

Closed-looped Enterprise Processes

Innovation is driven by insights into a product's behavior and how a product impacts the extended enterprise

Today's **Challenges** in Product Development



24%

Frequent Design Changes

How can I decrease the amount of effort and costs put into frequent design changes?



34%

Changing Design Requirements

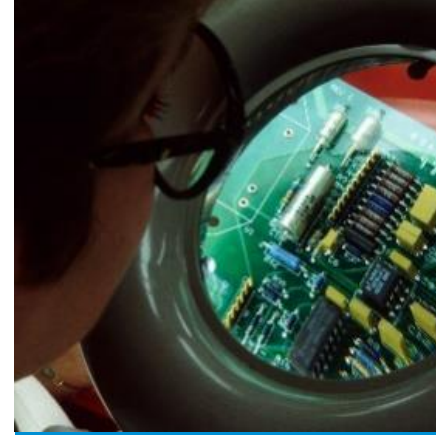
How do I effectively track & manage continuous change in product requirements?



29%

Projects are understaffed

How can I improve my product development collaboration process to do more with less?



25%

Increased Product Complexity

How can I manage product complexity, ensure quality & meet compliance requirements?



19%

Problems/errors are found too late

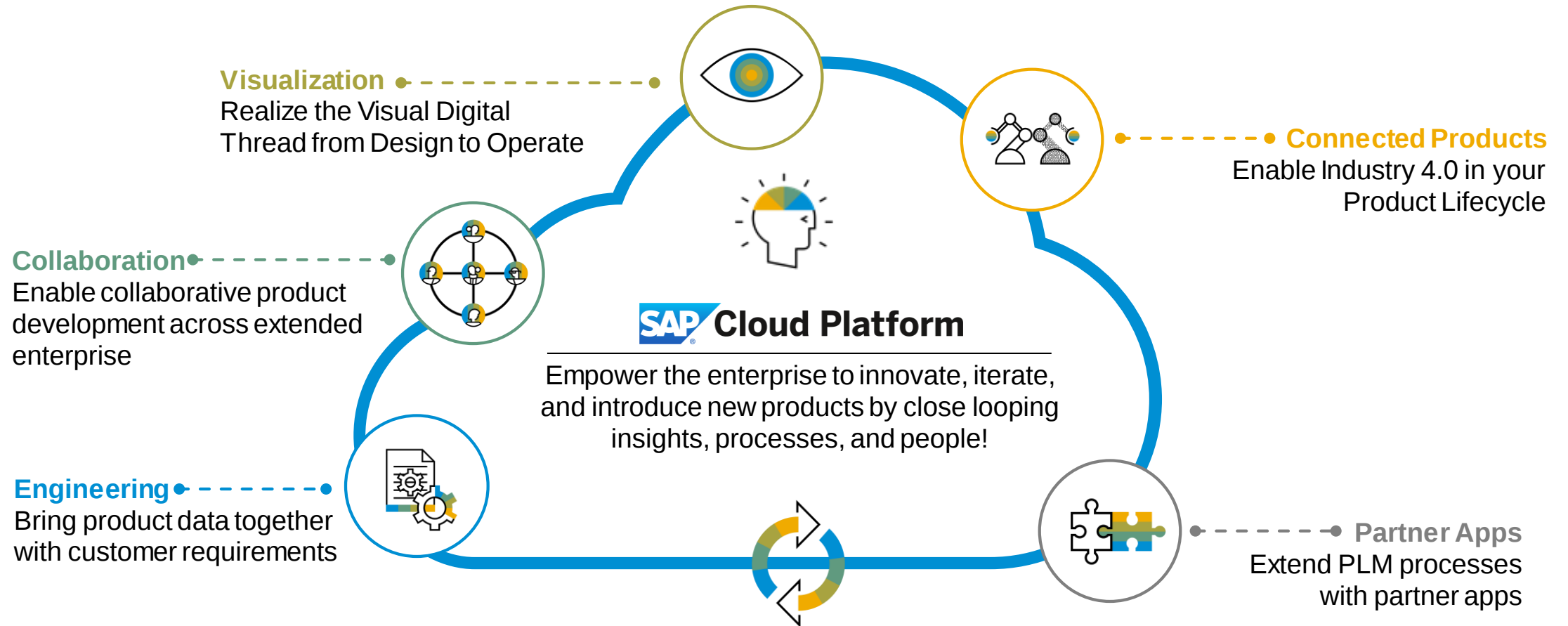
How can I catch errors early in the game in order to control costs & maximize profits?

Solution Overview



SAP Enterprise Product Development

Reimagine Innovation



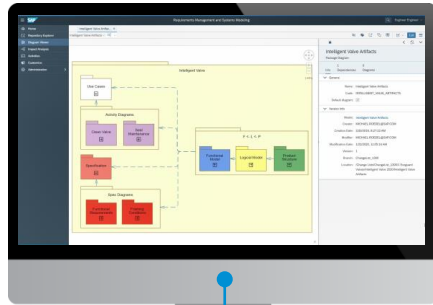
SAP S/4HANA | SAP ERP / ECC

SAP Enterprise Product Development

Capabilities and Key Features



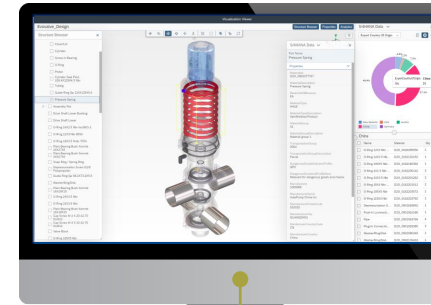
Engineering



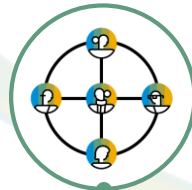
- Requirements Acquisition
- Requirements Management
- Functional Structure Management
- Impact & Lineage Analysis
- Test Planning & Execution
- Manage Test Artefacts & Results



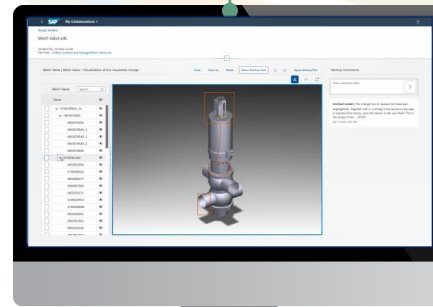
Visualization



- Simplified User Experience
- Import, Browse & Share
- Visual Data Integration
- Author, Edit & Enhance Visualizations
- Role-based Visual Application Templates
- 3D Visual Work Instructions

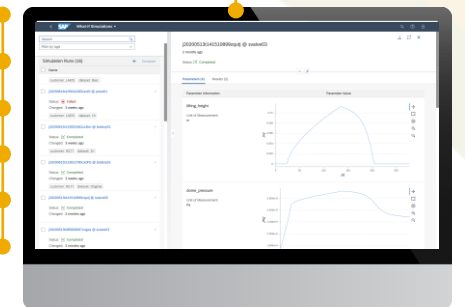


- Requirements Driven Engineering Collaboration
- Share Documents
- 3D Visual Design & Redlining
- Simple Task/Workflow Management
- Collaborate on Structured Product Data incl BoM
- Supplier Collaboration
- Collaborate on Changes
- Comments



Collaboration

- Simulation Based Digital Twin
- Virtual Sensors
- Health Prediction
- What-If Simulation
- Dynamic 3D Visualization
- Collaboration with OEMs



Connected Products

Key Capability Features & Benefits



SAP Enterprise Product Development - Engineering



Engineers and product developers can realize a **engineering digital thread to empower people** with insights to improve key business decisions from Design to Operate.

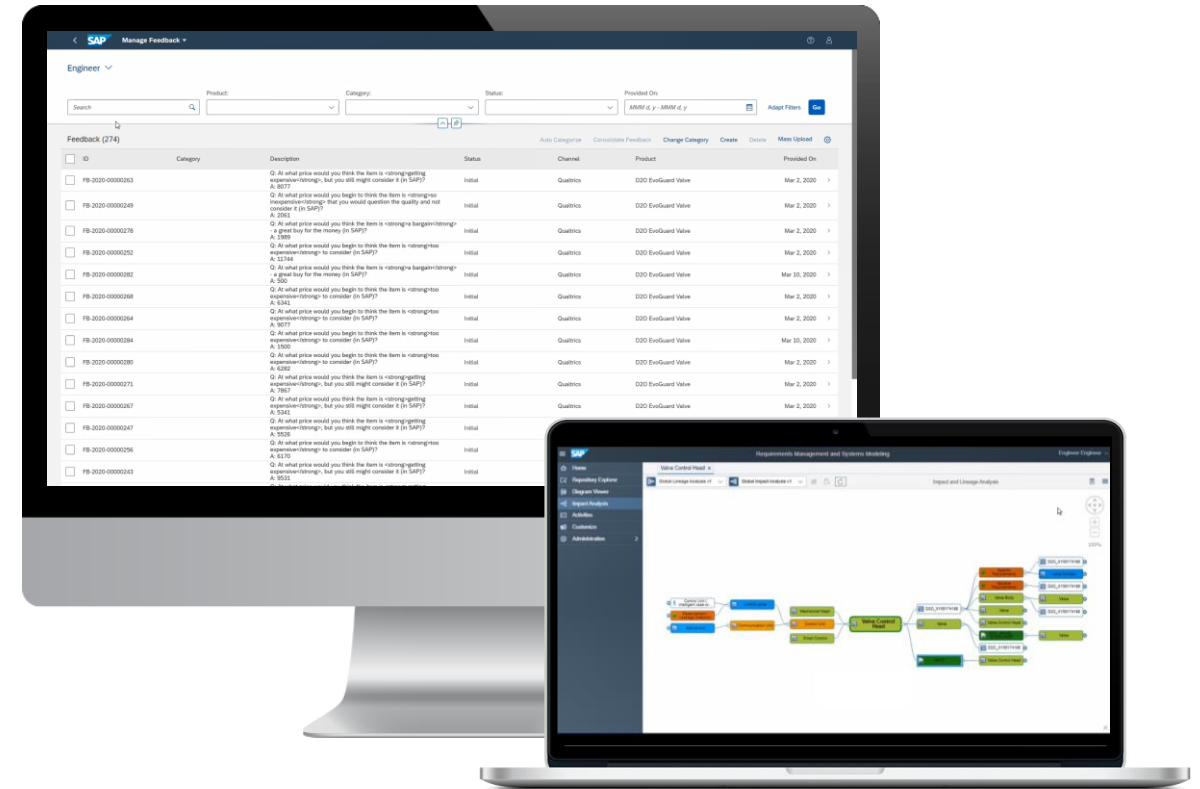
Capability features and value proposition

The Engineering capability enables companies to:

- ✓ Effectively incorporate the **experience data** related to **products** & its **users** and consolidate the true **voice of customer** into product engineering
- ✓ Translate product requirements into **multi-disciplinary digital models** for further synthesis, simulation and optimization
- ✓ Efficiently manage product **complexity** across **Mechanical, Electrical, Electronics** and **Software** disciplines
- ✓ **Reduced latency** between **engineering** and **business** enabling them to accomplish MBSE and aspire for realizing model-based enterprise vision
- ✓ **Realize true digital thread** for the entire product lifecycle by combining product engineering with the business data

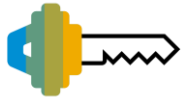
Value Proposition:

- Digitally transform and **accelerate time to market** proactively to address changing market needs
- **Conquer Complexity** of increasing product variations & multi- disciplinary smart product development
- **Drive efficiency** in design and development by combining engineering and business data across enterprise
- **Efficient handling** of enterprise wide product processes



SAP Enterprise Product Development – Engineering

Product description

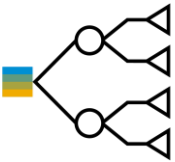


Key Features



Voice of Customer

- Requirement acquisition
- Create and manage feedback based on product feedback collected from various sources
- Create and manage consolidate feedback
- Machine learning for auto classification of feedback



Requirement Management & Systems Modeling

- Manage requirements through requirement models
- Standards based requirement exchange
- Systems Modeling Language (SysML) models incl functional, logical, usecase, activity diagrams to facilitate cross discipline



Test management

- Create and manage test artifacts.
- Plan and execute tests against product requirements.
- Analyze test results and stay connected with product development.



Integration

- SAP S/4HANA – digital core
- Qualtrics
- Asset Intelligence Network



Cockpit and IoT analytics

- Transparency on collaboration and requirements
- 3D product representation
- Insights on relevant topics
- Accessing data and taking action

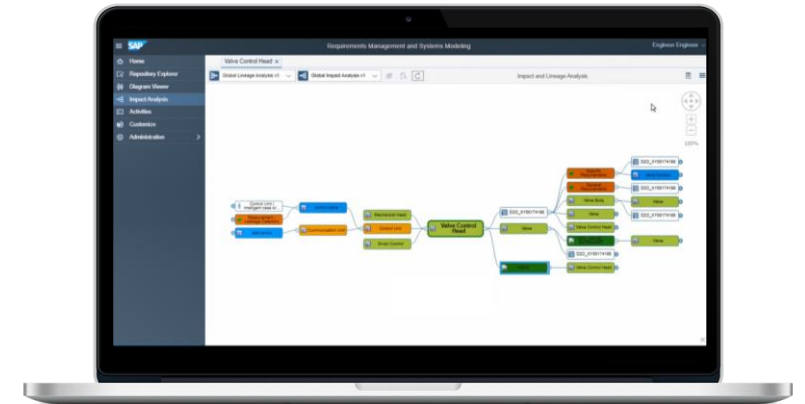
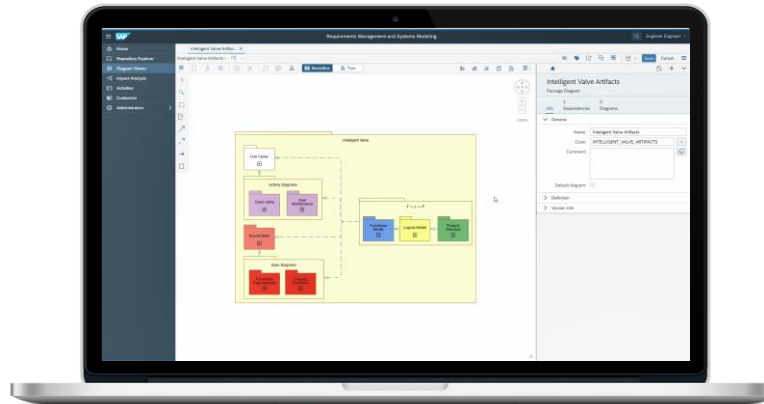
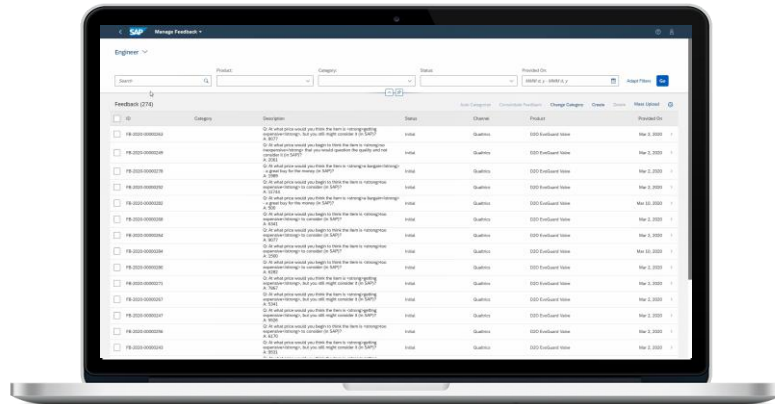


Product complexity management

- Model-based systems engineering
- Early detection of issues omission and reduction of system defects
- View of system from multiple perspectives
- Visual analysis

SAP Enterprise Product Development – Engineering

Realize the Engineering Digital Thread from Design to Operate



Voice of Customer

Develop right products for right market needs and accelerate time to market



Conquer Complexity

Establish Model Based Systems Engineering approach to enable multi disciplinary smart product development



Actionable Insights

Empowering product developers & users with insights to act in the moment

SAP Enterprise Product Development - Collaboration

Capability Overview



Product developers across discrete and process industries can realize a **collaborative digital thread to empower people** with insights to improve key business decisions from Design to Operate.

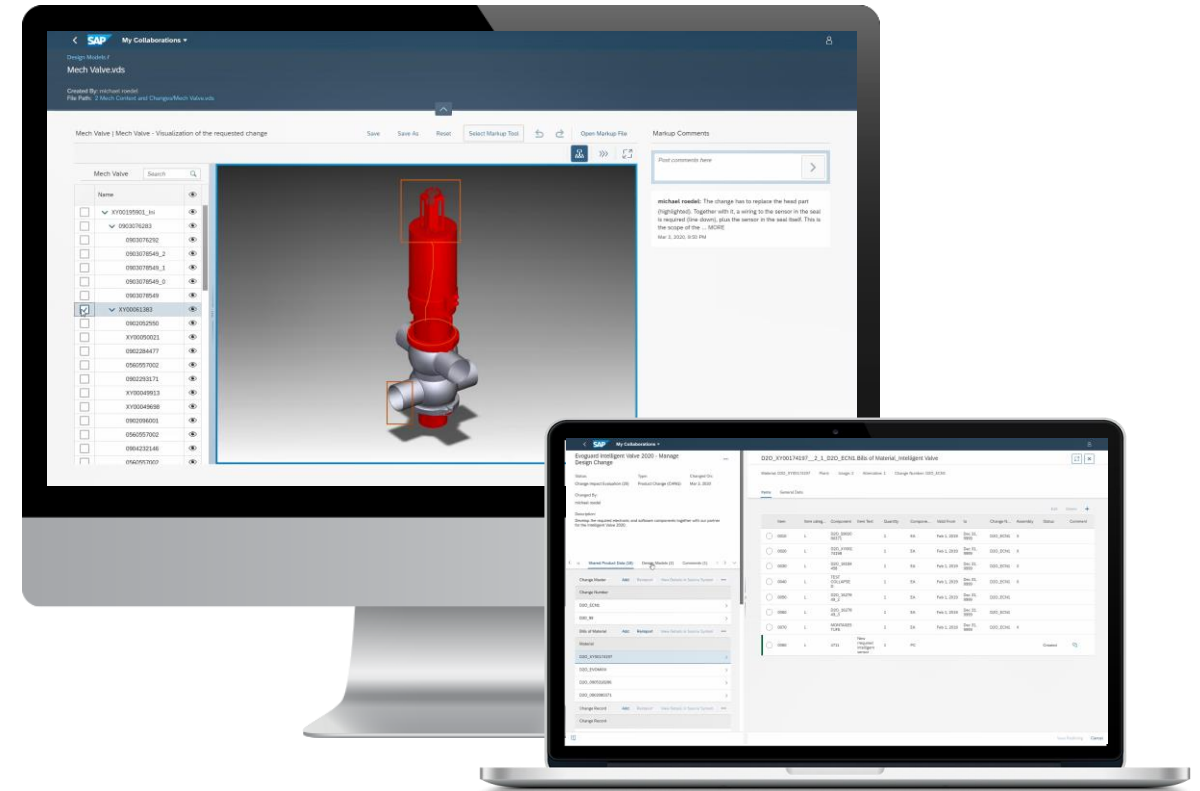
Capability features and value proposition

The collaboration capability enables companies to:

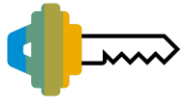
- Digitally transform and **Increase efficiency with single source of truth for collaboration across the enterprise**
- **Reduced lead time** for product parts and constituents
- **Reduced iterations** on collaborated products
- **Efficient handling** of enterprise wide product processes

Resulting in:

- ✓ **Secure & seamless** collaboration on **structured product data** like BoMs, materials, documents and unstructured data like files and images
- ✓ Drive **efficiency** in collaboration with utilities like **robust workflows, task management, inbuilt 3D viewer support & redlining**
- ✓ **Design Anywhere-Build-Anywhere (DABA)** capabilities are facilitated by allowing design and manufacturing teams to share and communicate product information, making decisions using a single set of globally secure product data.
- ✓ **Increased transparency & risk mitigation** by engaging with the right suppliers



SAP Enterprise Product Development - Collaboration

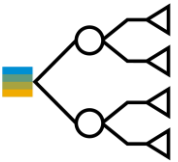


Key Features



Instant collaboration

- Across extended enterprise
- Collaboration workspace
- Invitation of participants
- Secure storage and sharing



Transparency

- Workflow-based collaboration to facilitate easier communication
- Integrated in-box to review work



Collaboration on actual product data

- Uploading documents from the document management system (2011)
- Updating of documents seamlessly
- Integration to CMIS



Integration

- SAP S/4HANA – digital core
- Ariba Supplier Lifecycle & Performance (2011)
- Ariba Network (2011)
- SAP Engineering Control Center (Q2 2021)



Cockpit and IoT analytics

- Transparency on collaboration and its statuses
- 3D product representation
- Insights on relevant topics

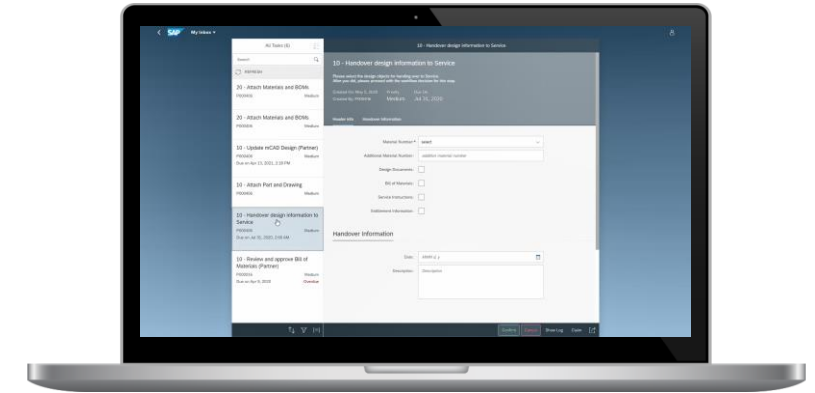
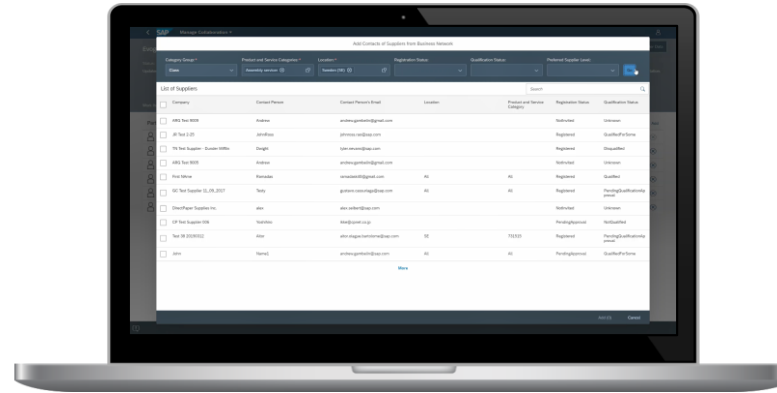
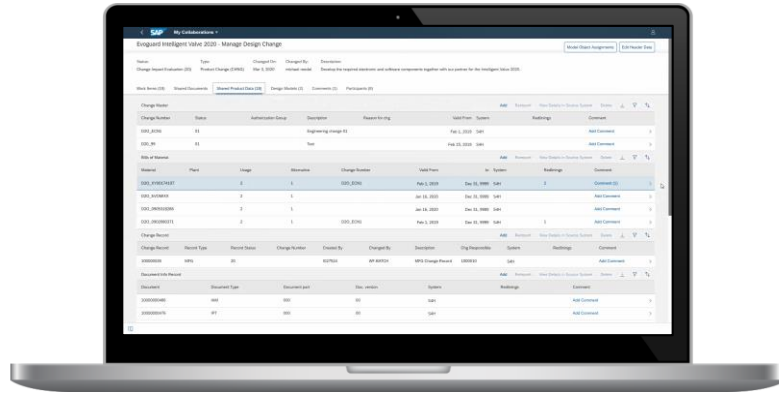


Secure collaboration

- Secure & seamless collaboration on product data
- Role based authorizations & version controls
- Robust workflows & task management to support collaboration

SAP Enterprise Product Development – Collaboration

Realize the Collaboration Digital Thread from Design to Operate



Consistent Collaboration

Establish single source of truth for collaboration on unstructured and structured product data



Extended Enterprise processes

Collaborate seamlessly to support processes in product development, sourcing & beyond across the extended enterprise



Actionable Insights

Empowering product developers & users with insights to act in the moment

SAP Enterprise Product Development – Visualization Capability Overview



Enables a **visual digital thread that empowers people** throughout the enterprise with insights to improve key business decisions from Design to Operate

Capability features and value proposition

The visualization capability enables companies to:

- Digitally transform and simplify the User Experience (UX) by accessing information visually.
- Leverage visualizations as the oldest and most natural form of communication to provide “In Context” visual learning and retention of product and asset information.
- Connect 3D Computer Aided Design (CAD) data with ERP and master data from design, procurement, supply chain, manufacturing, quality, asset operations and service to deliver a Model Based Enterprise.

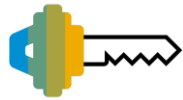
Resulting in:

- Empowered people, that are engaged and motivated be more productive with next generation visual cloud applications.
- Reduction in time to make key business decisions by providing access and visibility to business data, insights and actions via a 3D visual index.
- Value measured in hours leveraging secure role-based visual application templates.
- Improved training, manufacturing execution, service and first-time fix rates of critical assets.



SAP Enterprise Product Development - Visualization

Realize the Visual Digital Thread from Design to Operate



Key Features



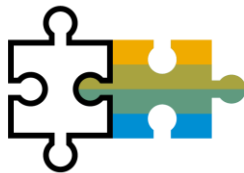
Simplified User Experience

- Access information visually
- In context product or asset information
- Digital transformation of the graphical user interface (Ux)



Import, Manage, Browse & Share

- Upload 3D Computer Aided Design (CAD) files
- Create & manage visualization folders
- Securely share visualizations



Visual Data Integration

- Tag visualizations with business metadata and associate with enterprise structures
- 3D design data into visual business processes
- Support change management processes



Author, Edit & Enhance Visualizations

- Apply scene materials
- Create views and animation sequences
- Annotate models with ISO safety symbols, detail views and text



Role-based Visual Application Templates

- Realize value in hours
- Extend templates with zero coding
- Create “Visual Indexes” by combining 3D, analytics and enterprise data.

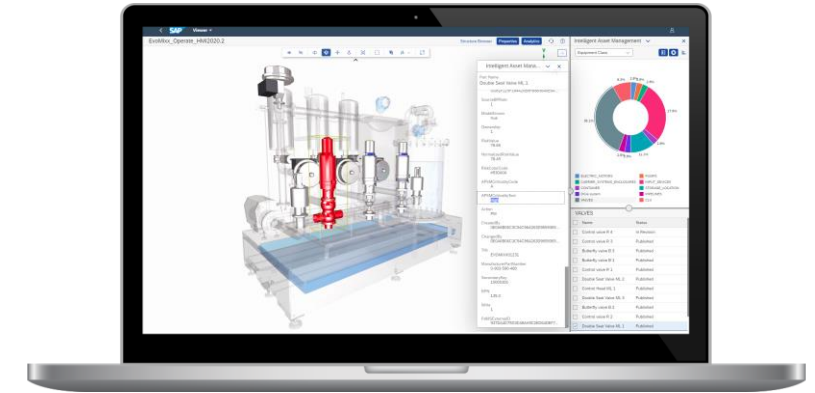
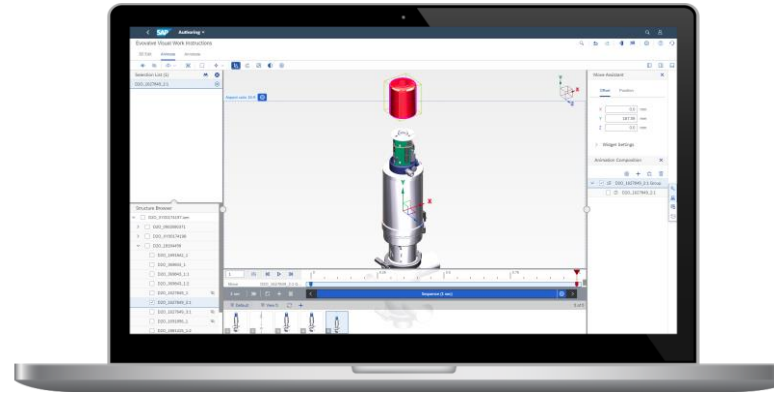
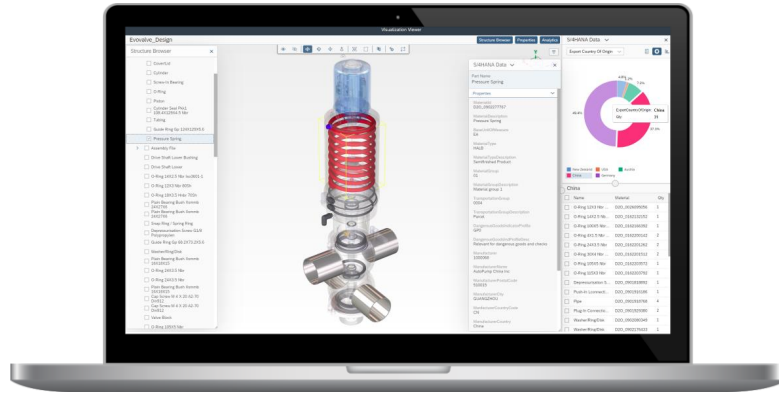


3D Visual Work Instructions

- Transcend language barriers
- Visual learning and retention of information
- Improve training, manufacturing execution, service and first-time fix rates of critical assets

SAP Enterprise Product Development - Visualization

Realize the Visual Digital Thread from Design to Operate



Visually Empower People

Enterprise insights to improve key business decisions, processes and timely action



Simplified User Experience

Access information visually, in context of product or asset information



Digital Transformation

Improve training, manufacturing execution, service and first-time fix rates of critical assets

SAP Enterprise Product Development – Connected Products

Enable IoT-based digital product and service innovations

Help product centric companies to **digitize physical products** through IoT-enabled engineering models.

Capability features and value proposition

The capability enables product centric companies to:

- Create Connected Products based on IoT-enabled engineering models
- Enable the usage of engineering models in service and operations
- Analyse product usage and understand how operating conditions deviate from assumed conditions
- Perform what-if simulations to optimize service processes

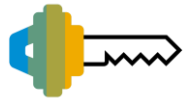
Resulting in:

- New revenue stream(s) through value-added services
- Increased profitability in service and maintenance operations
- Improved insights for predictive maintenance through virtual sensors
- Better R&D efficiency through product usage insights (Closed loop Engineering)



SAP Enterprise Product Development – Connected Products

Enable IoT-based digital product and service innovations



Key Features



Simulation-based Digital Twin

Embed digital twins from ANSYS and IoT-enable engineering simulations for advanced engineering insights



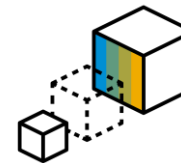
What-If Simulations

Maximize product effectiveness through simulation-based scenario analysis and what-if models



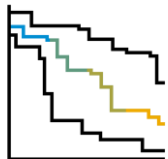
Virtual Sensors

Create virtual sensors based on IoT-enabled engineering models to measure what physical sensors can not



Dynamic 3D visualization for CFD and FEA

Visualize and present actual and simulated system behavior including post-processing capabilities of CFD and FEA models



Product Health Prediction

Use virtual sensors to establish an early warning system for product related health issues (prescriptive monitoring and maintenance)

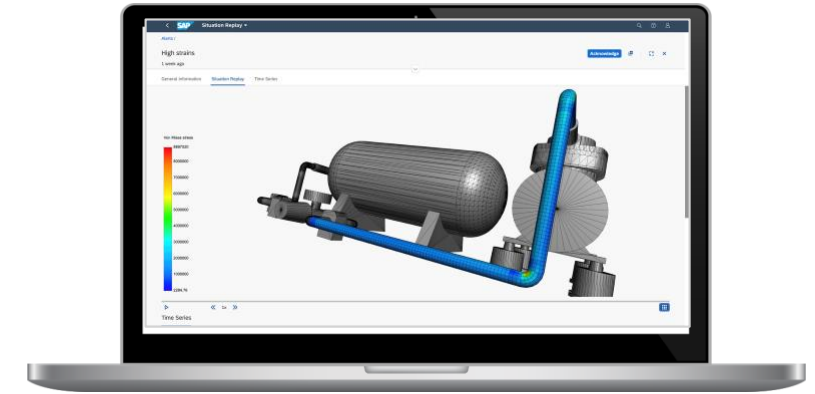
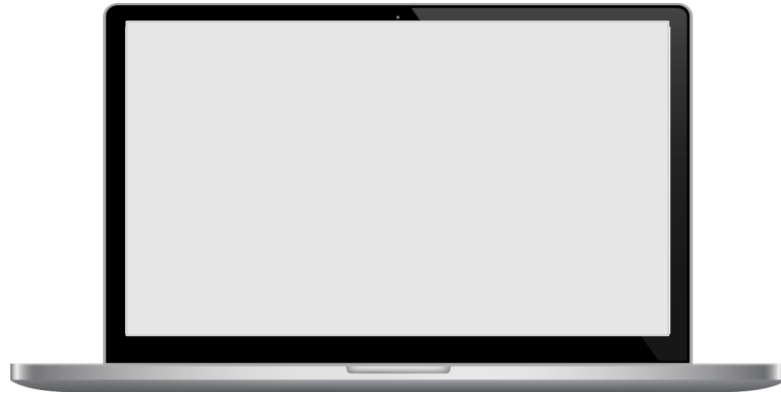


Integration with Asset Central and SAP Asset Intelligence Network

Single repository for all information about assets and equipment's to enable effective collaboration between OEM's and Operators

SAP Enterprise Product Development – **Connected Products**

Enable IoT-based digital product and service innovations



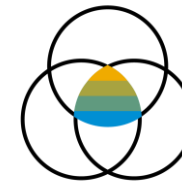
Increase Revenue

Accelerate revenue growth through Connected Products by creating value added services (e.g. sell virtual sensors as a service)



Reduce costs

Help to reduce service and warranty costs through virtual sensors and what-if simulations. Improve R&D decisions through usage insights and health predictions.



Differentiate

Improve competitiveness with innovative digital services and get recognized as a thought leader

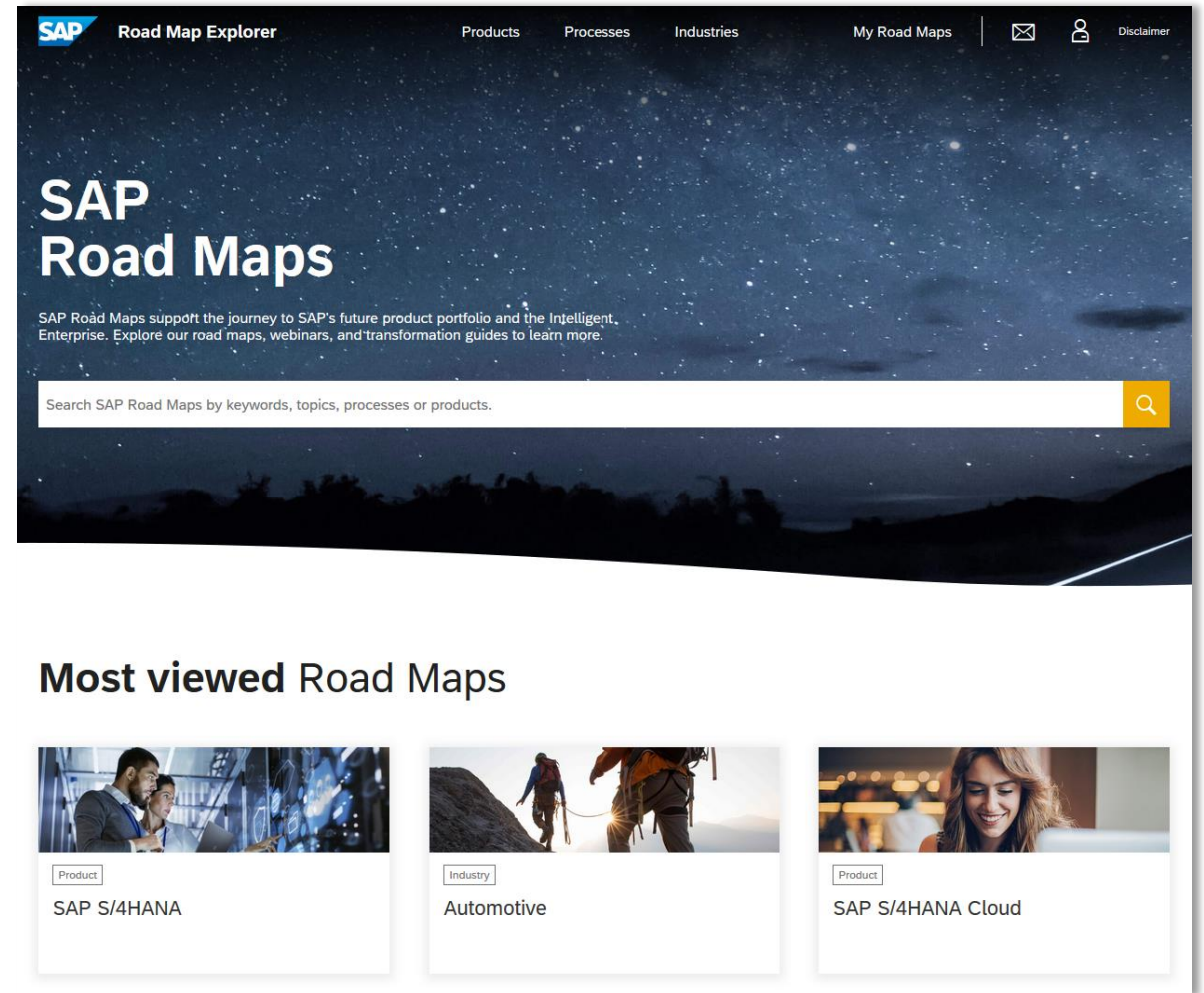
Roadmap



SAP Road Map Explorer

Stay up to date with our latest innovations in
the SAP Road Map Explorer

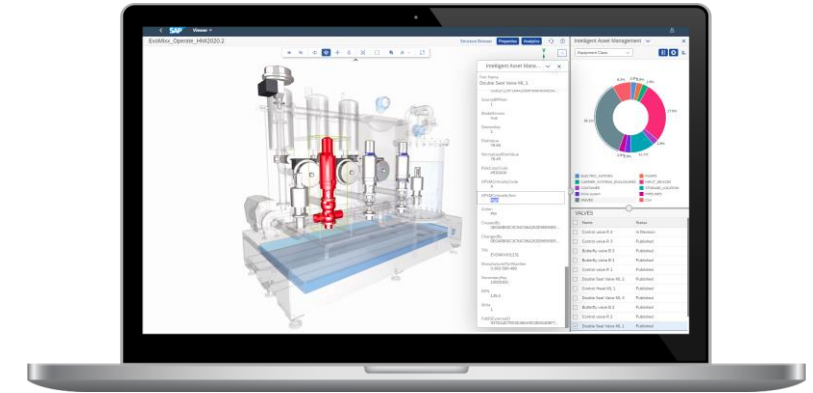
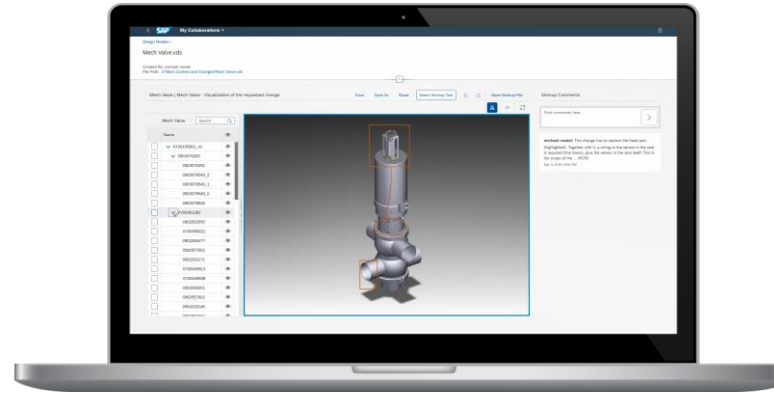
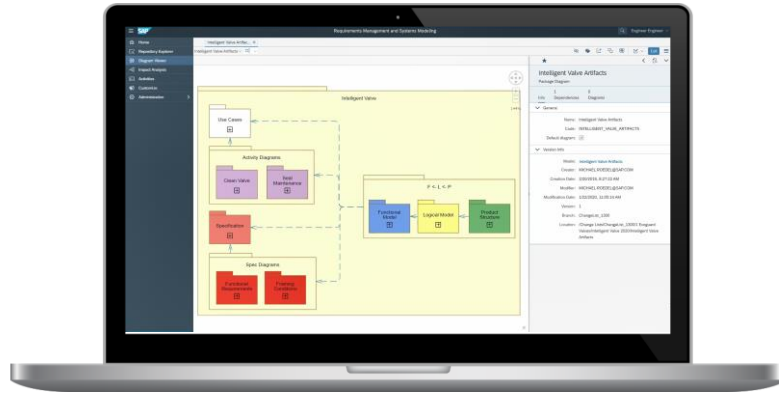
Discover Now



Summary



SAP Enterprise Product Development Summary



Innovate New Products

Develop quality, connected, compliant and sustainable products



Provide Actionable Information

Enterprise collaboration with all relevant information, insights and stakeholders



Empower the Enterprise

Close looped enterprise processes to synchronize the digital thread from Design-to-Operate & Design-to-Consume

Thank you.

Contact information:

Carsten Dietze-Selent

carsten.dietze-selent@sap.com