Sustainable Innovation using SAP PLM

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Agenda

1. Introduction

2. SAP Solution Overview

3. Summary
Global Trends and Their Impact on:
LoB Product Development

💡 Consumer-Driven Sustainable Innovation

❌ Global Price Pressure

👩‍💼 Increasing Product Compliance and Corporate Regulations

**Shorter Innovation Cycles**
- More visibility to customer’s needs, market opportunities, and technologies
- Product portfolio strategy linked with business execution
- Need to manage innovation processes
- Continuous performance tracking

**Development cost pressure**
- Reduce time to market and increase efficiencies in Design, Manufacturing, and Service
- Pressure for continuous product cost management and reduced component costs
- Need for flexible and dynamic development collaboration networks

**Product Liability**
- Need for compliance controls, documentation, and visibility
- How to introduce a sustainability “culture” and design sustainable and compliant products
- How to avoid compliance violations from development, manufacturing, sales, service or recycling

**Fact:** Roughly 80% of all new products are failing to achieve their expected results

**Fact:** About 70% of product costs are locked down during the design phase

**Fact:** Companies are increasingly being held accountable for the environmental and safety performance of their products

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What are the Reasons for Failure?
The challenge of disconnected processes and tools

**Misaligned or lack of innovation**
Disconnected Business Processes and Information
- Missing market insight and portfolio strategy can lead to wasted effort and failing products
- Limited innovative ideas leads to losing market share and missed revenue opportunities
- Lack of transparency in innovation execution increases budget spending and failing market introductions

**Long development times and manual effort for handover to manufacturing and service**
Missing “single source of truth”
- Fragmented and ineffective collaboration with partners and suppliers elevates the number of change interactions and time consuming optimization processes
- Excess component and task costs as a result of last minute design changes
- Lack of visibility in production capabilities. Lack of timely and complete communication of last minute changes

**Lack of compliance information and controls**
Insufficient Sustainability Approach
- Lack of visibility into completeness of product and process compliance is increasing the risk of penalty and re-calls
- Lack of accurate compliance reports and audit trails
- Insufficient partner network and manufacturing controls
Continuous Product and Service Innovation:
The entire organization needs to ensure a continuous stream of profitable innovation

- Business insights for informed decision making
- Aligned portfolio strategy with overall goals
- Leveraging the right talent, partners and capabilities
- Coordinate and manage innovation execution

Integrated Product Development:
Connecting Development / R&D with the Business

- Enables innovative product development, envisioned from market insights
- Faster time-to-market and accelerated product revenue growth through focused engineering and active alignment of design with manufacturing and service
- Ensure quality and scale by embedded quality management

Embedded Product Compliance:
Being green starts with simply being compliant with existing regulations

- Products designed for compliance
- Complete and accurate compliance reporting
- Automated compliance analytics and controls
Strategies for Product and Service Leadership & Capability requirements to support these Strategies

**Portfolio Optimization**
- Business insights by analytics
- Open Ideation
- Strategy and roadmap management
- Portfolio, resource, time and budget management
- Project planning and execution
- Project collaboration and compliance
- Portfolio and Projects linked with Business Execution

**Development Efficiency**
- Collaborative engineering in and beyond the enterprise
- Requirements and customer needs management
- Efficient, visual communication
- Synchronized product structure management across product lifecycle phases
- Development integration to Manufacturing and Service

**Quality Excellence**
- Support of sustainable and compliant product design
- Manage and track company and global standards like REACH, RoHS, and WEEE
- Comprehensive and embedded change management across organizational disciplines
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SAP’s End to End Process Centric Strategy

Flexibility and integration to achieve Product and Service Leadership

- Continuous Product and Service Innovation (NPDI)
- Integrated Product Development
- Embedded Product Compliance
- Continuous Product Change
**Solution Highlights**

- New and harmonized user interface (UI) for portfolio and project management
- Deepen the integration of project and portfolio management (PPM) with the SAP Product Lifecycle Management application to align portfolio with product definition
- Extend integration of PPM and project system functionality in SAP ERP to align portfolio planning with execution
- Comprehensive process support for capital project portfolio management
- New Idea Management solution
- Financial planning and resource management enhancements
- Enhanced reporting capability with business context viewer
Powerful Project Planning and Execution

Version Comparison in Gantt Chart
Integrated Product Development
Solutions for Discrete Industries

Solution Highlights

- Embedded Product Visualization for faster and better communication
- Decision Support via Business Context Viewer
- Role-based easy to use user interface
- Direct collaboration
- Offer guided process for reconciliation between Engineering-BOM and Manufacturing-BOM
- Synchronize and compare items’ structures and attributes
- High-level product definition, like a concept BOM
- Functional structures and views with integrated variant configuration and simulation
- Support for change management with both date and parameter affectivity
- Dependency matrix
- CAx integration with variant assembly management
Integrated Product Development
Solutions for Discrete Industries

Object Navigator: Material MCU68HC11

Material Data
- Status: Released
- Unit of Measure: Pieces
- Material Group: Controller Unit
- Procurement Type: Vendor
- Revision: A
- Price: 115.74 EUR
- Volume: 0.20 m²
- Net Weight: 0.7 KG
- Gross Weight: 0.9 KG

Long Text: This controller unit is based on the MCU68HC11 8-bit microcontroller. It is typically used in control units for brake systems or display systems. It is equipped with a serial communication interface.

Bill of Material (BOM) Data
- BOM Usage: Engineering
- BOM Status: Released
- BOM Text: Bill of Material for Controller Unit MCU68HC11

Classification
- Architecture: 8-bit
- Memory: EPROM
- Version: 2.7

Stock Overview

Where Used
- Material
  - 5201145: Break Unit System
  - 5201145: LCD Display
  - 520189: Entertainment Module
  - 5000022: BUS Controller Unit

Project List
- Project Name
  - Break Unit System 2.0: Prototype Development
  - Upgrade Firmware: Upgrade
  - Redesign LCD Display: Development
  - Replacement XUV5: Development

Quality Issues
Integrated Product Development
Solutions for Discrete Industries

Engineering Desktop

CAD Integration

Authoring Environment

Guided Structure Synchronization (GSS)

Direct Collaboration

Engineering Change Management

Product Structure & Assembly Management

Manufacturing Environment

Manage Complexity with Simplicity
Solution highlights

- Use new UI for recipe management
- Generate labels directly from recipe management
- Create ingredient, allergen, and nutrition statements automatically
- Calculate recommended dietary requirements automatically
- Assemble and transform formula information into a final view of your label
- Use the business context viewer for process industries embedded in SAP PLM
- Use compliance checks to comply with regulations quickly and before product launch
**Nutritional Value Data**

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>100 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>7.37 g (12.25 %)</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>1.42 g</td>
</tr>
<tr>
<td>Unsaturated Fat</td>
<td>5.95 g</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>332.30 mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>1,913.19 mg (78.22 %)</td>
</tr>
<tr>
<td>Total Carbohydrates</td>
<td>99.5 g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>1.9 g</td>
</tr>
<tr>
<td>Sugar</td>
<td>1.20 g</td>
</tr>
<tr>
<td>Protein</td>
<td>6.50 g (10.27 %)</td>
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<tr>
<td>Calcium</td>
<td>117.38 mg (9.04 %)</td>
</tr>
<tr>
<td>Iron</td>
<td>2,952.61 mg</td>
</tr>
<tr>
<td>Magnesium</td>
<td>4.71 mg (1.83 %)</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>11,208.80 IU</td>
</tr>
<tr>
<td>Vitamin B1</td>
<td>102.03 mg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>36.62 mg</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>0.43 mg</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>3.47 mcg</td>
</tr>
<tr>
<td>Niacin</td>
<td>16.26 g</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>0.66 mg</td>
</tr>
<tr>
<td>Thiamine</td>
<td>0.05 mg</td>
</tr>
<tr>
<td>Other Carbohydrates</td>
<td>50.25 g</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>50.25 g (30.13 %)</td>
</tr>
</tbody>
</table>

*Percent Daily Values are based on a 2,000 calorie diet.

**Ingredients:**

Baking Soda, Water, Soybean Oil, Salt, Topping/Crust, Enzyme No. 1, Natural Cheese, Sweetening/MSG, Flour mixture.
Embedded Product Compliance
Ensure compliance and reduce risks

**Solution highlights**

- Improved support of REACH registration process for discrete and process industries
- Management of discrete and process compliance checks simultaneously
- Support of additional regulations, such as GHS
- Integrated compliance checks in procurement and production processes
- Product intelligence provides comprehensive product analytics, compliance, and sustainability reporting
Embedded Product Compliance
Ensure compliance and reduce risks
Continuous Product Change
Ensure consistency, transparency and reduce process time

Solution highlights

- Minimizes the impact of product related changes by providing change management centric workflows and transparency across the product life cycle
- Ad hoc workflow
- Flexible and dynamic Workflow folder management
- Change process analytics to track and maintain workflow processes
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Companies Today are Driving Value

**Continuous product and service innovation (NPDI)**
- COLGATE-PALMOLIVE
- HERSHEY'S
- HUMMEL
- MAHLE
- OSRAM
- KAESER KOMPRESSOREN
- SCA
- ørlikon leydold vacuum
- Johnson & Johnson
- British American Tobacco

**Integrated product development**
- BMW
- SIEMENS
- Dade Behring
- Continental
- MAHLE
- brose
- HP
- HEIDELBERG
- ECLIPSE AVIATION
- TENNECO Automotive
- Welch Allyn
- Cooper Cameron
- ABB
- AESCULAP
- Waters
- Rolls-Royce

**Embedded product compliance**
- ZEISS
- molex
- BASF
- Honeywell
- Ashland
- Panasonic
- Chemptra
- CORNING
SAP’s Leadership in PLM Space

**PLM Direct Revenue Leaders 2009**

Source: CIMdata PLM Market Analysis - 2009 Report (Revenue excludes CAD related revenue)
SAP has a Strong Position in a Fragmented Environment

Gartner

- “SAP has the broadest PLM reach across all manufacturing industries among all of these PLM providers by leveraging its enterprise resource planning (ERP) customer base.”

- “…there are significant improvements in PLM usability in SAP’s PLM 7.0. IT managers see SAP PLM as an opportunity to reduce costs and improve data transparency across product development, manufacturing operations, the back office and customer-facing activities.”

- “Many Gartner manufacturing clients choose to employ SAP PLM in tandem with product design, manufacturing engineering and product data management capabilities from specialty PLM software providers, because SAP’s focus complements, rather than competes with, most of its PLM competitors. However, the advances in PLM 7.0 will encourage Gartner clients, particularly discrete manufacturers, to take a closer look at replacing existing best-of-breed offerings with SAP.”

- “We recommend that SAP ERP customers explore SAP’s PLM 7.0 capabilities, because the ERP software includes a significant percentage of SAP's PLM capabilities already.”

“Industry Depth Is Crucial When Selecting a PLM Vendor” by Marc Halpern of Gartner
Gartner: April 2009
“SAP has placed itself in pole position and, in doing so, revitalized and repositioned an already leading organization”

The SAP Sustainability Map “is one of the first tools in the market that offers a comprehensive overview of the multidimensional challenges of corporate sustainability, with relevant software solutions to address them.”

“SAP Maps the Corporate Sustainable Future: Enterprise-Wide Sustainability Software Comes of Age”
January, 2010, Stephen Stokes & Bill Polk

“Case Study: SAP’s Sustainability Transformation How To Save The World And Tap Into A Multibillion-Dollar Market”
December, 2009, Holger Kisker
Product Development processes are changing – The times of unstructured processes, time for failure and communication via Spreadsheets are gone …

Reduced “Time-To-Profit” can be achieved by a balanced orchestration of Product Development strategies (Portfolio Optimization, Development Efficiency, Quality Excellence)

SAP provides a comprehensive approach and solutions to support Engineers and R&D departments AS WELL AS the entire Enterprise to achieve this goal
Thank you!