

**SAP's PLM Should Be on Your Short List**

*by David Boulanger and Kevin O'Marah*

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Your Short List**

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## SAP's PLM Should Be on Your Short List

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### SUMMARY

#### The Bottom Line: SAP's PLM product warrants your attention

Without much fanfare, SAP has poured substantial resources into its *Product Lifecycle Management (PLM)* product, an application that surpasses simple product data management capabilities to provide full product lifecycle management of large, complex products. SAP customers should consider the following:

- *PLM* competition and functionality differ across manufacturing environments.
- *PLM* capabilities in product data management, collaborative design, portfolio management and strategic sourcing are solid but not quite equal to best-of-breed.
- For large enterprise SAP manufacturers, in either process or discrete environments dealing with large, complex products with significant after-sales services, maintenance, project and program management issues, SAP's *PLM* is now ready for your short list.

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For more details,  
see page 5.

#### Findings and Analysis

To better understand SAP's *PLM* product, AMR talked with many early adopter *PLM* clients and examined the competition landscape. SAP customers considering using their investments in SAP ask, "How does SAP's *PLM* stack up against best-of-breed?" Although the answer varies for each customer, the following findings will provide guidance:

- SAP's *Recipe Management* functionality for process customers, although new technology, will integrate corporate product definition and execution capabilities.
- SAP's *PLM* integrates manufacturing data and post-sales lifecycle maintenance and services requirements for collaborative asset management.
- *PLM* combines disparate product data across multiple SAP back-end manufacturing systems on various releases.
- SAP's *PLM* is still a materials-centric application and is not yet a process-focused tool.
- Unlike early SAP implementations, *PLM* projects are short-term, with defined benefits and quick Return on Investment (ROI).

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For more details,  
see page 7.

## Recommendations

- Consider SAP's *PLM* if you are a large enterprise SAP manufacturing customer in the process, discrete or Engineer-to-Order (ETO) environment with significant after-sales services and maintenance businesses.
- SAP's *PLM* should also be considered for discrete and ETO environments where complex equipment will be transferred to third-party operators for service and support, which also use SAP, or where Original Equipment Manufacturers (OEMs) have significant after-sales services components.

## SAP's PLM product warrants your attention

### PLM competition and functionality differ across manufacturing environments

Table 1 identifies the best-in-class PLM vendors that compete with SAP's *PLM*. A numerical ranking identifies both the relative depth and breadth of product functionality as well as market traction, measured by numbers of live and implementing customers. This overall score will help SAP and non-SAP customers assess whether they should examine SAP's *PLM* in the near future.

While companies that do not have SAP can still benefit from PLM, the greatest value is obtained from integrating *PLM* to SAP's manufacturing, supply chain, plant maintenance and other modules. Therefore, the value of SAP's *PLM* to non-SAP customers decreases significantly.

Manufacturing Environments	Process	Discrete/Complex Discrete	Engineer-to-Order
<b>Vendor Competition</b>	Complex, Formation Systems, Mountain Systems, Sequencia's ProcessPoint	Agile Software, EIGNER + PARTNER, ENOVIA, MatrixOne, Oracle PDX, PTC, SDRC, UGS	EIGNER + PARTNER, ENOVIA, PTC, SDRC, UGS
<b>Overall Grade—SAP customers for functionality and traction (1=lowest, 5=highest)</b>	3	3	4
<b>Overall Grade— Non SAP customers for functionality and traction (1=lowest, 5=highest)</b>	2	2	3
<b>Live PLM Customers</b>	Several \$5B+ CPG, chemical and pharmaceuticals companies	Several very large global manufacturers in high-tech	Several global, very complex engineer-to-order manufacturers with significant service businesses

Table 1: Competition and traction in manufacturing environments for SAP's *PLM*

Source: AMR Research, 2001

**PLM capabilities in product data management, collaborative design, portfolio management and strategic sourcing are solid but not quite equal to best-of-breed**

Each customer needs to assess its pain points.

Table 2 indicates that even though SAP's *PLM* is a solid product, in each area there are best-of-breed point solutions with deeper functionality. Each customer needs to assess its pain points. If you value integration to *R/3* and solid product functionality—not quite best-in-class—across the areas of product data management, collaborative design, portfolio management and direct materials sourcing, SAP's *PLM* will make your short list.

PLM Functional Components	Best-in-Class Vendors	Score	Comments
Product Data Management	ENOVIA, MatrixOne, PTC, SDRC, UGS	B	Strong product data management capabilities from its manufacturing roots
Collaborative Design	Alventive, CoCreate Software, Framework Technologies Corporation, PTC, SDRC, UGS EAI	C	SAP PLM has transaction-based collaboration but not 'design rooms' and interactive collaboration functionality
Portfolio Management	IDe, MS2, XIS	B-	SAP can assemble and analyze data across a portfolio but can not perform portfolio optimization
Direct Materials Sourcing (excluding procurement vendors)	MatrixOne, NexPrise, PTC	B	SAP has the pieces in back-end R/3, New Dimensions and Commerce One/SAPMarkets technology but has not packaged them

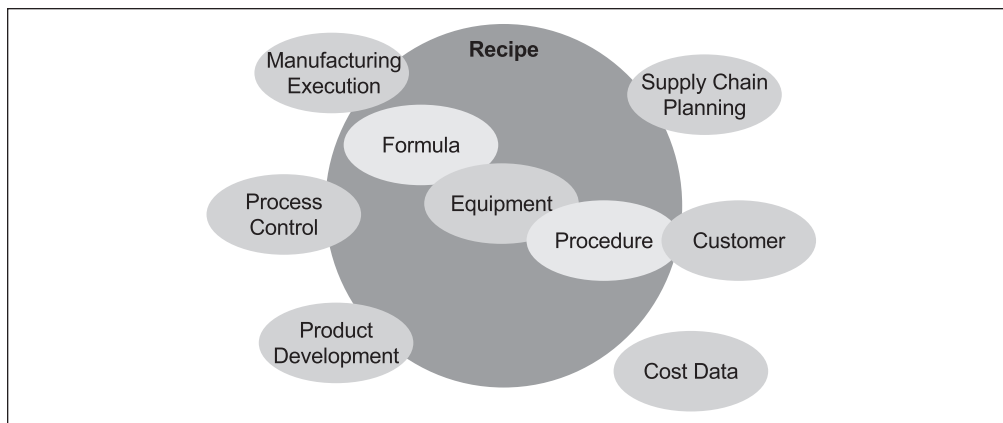
**Table 2: SAP's *PLM* functional areas versus best-in-class**

Source: AMR Research, 2001

**SAP's *Recipe Management* functionality for process customers, although new technology, will integrate corporate product definition and execution capabilities**

In conjunction with several long-time global SAP customers in the Consumer Goods and Household Products markets, SAP is developing a *Recipe Management* module that addresses product development and costing today, and in the future will address high-level recipe execution aspects for manufacturing. Several large customers are piloting and other global customers are in the implementation phases.

*Recipe Management*, which targets mainly Consumer Goods, Chemicals and Pharmaceuticals SAP customers, uses a central product definition, which can then be translated to a site-specific master recipe concept. Bill of Material (BOM) generation is part of Phase I deliverables, while Phase II will focus on business process and equipment selection enhancements.



**Figure 1: *Recipe Management* integrates recipe and production execution capabilities**  
Source: SAP, 2001

Figure 2 on page 8 illustrates the functional areas that *Recipe Management* currently addresses.

## SAP's PLM integrates manufacturing data and post-sales lifecycle maintenance and services requirements for collaborative asset management

Several early adopters of SAP's PLM indicated they invested in PLM as much for its integration capabilities for post-sales maintenance and service as for specific functionality. PLM is integrated with the *Asset Accounting* module within FI, the *Investment Management* module for capital equipment budgeting and forecasting, the *B2B* and *Professional Edition* desktop procurement applications, and the *APO* supply chain planning engine.

The February 2001 AMR Research *Manufacturing Strategies* Report entitled, "The Answer to your Strategic MRO Procurement is Collaborative Asset Management," states that visionary companies are just starting to bundle products and services to become strategic partners. Yet collaborative asset management initiatives are in the early stages, and there are few applications to support the process. Figure 2 shows the level of functionality needed for collaborative asset management.

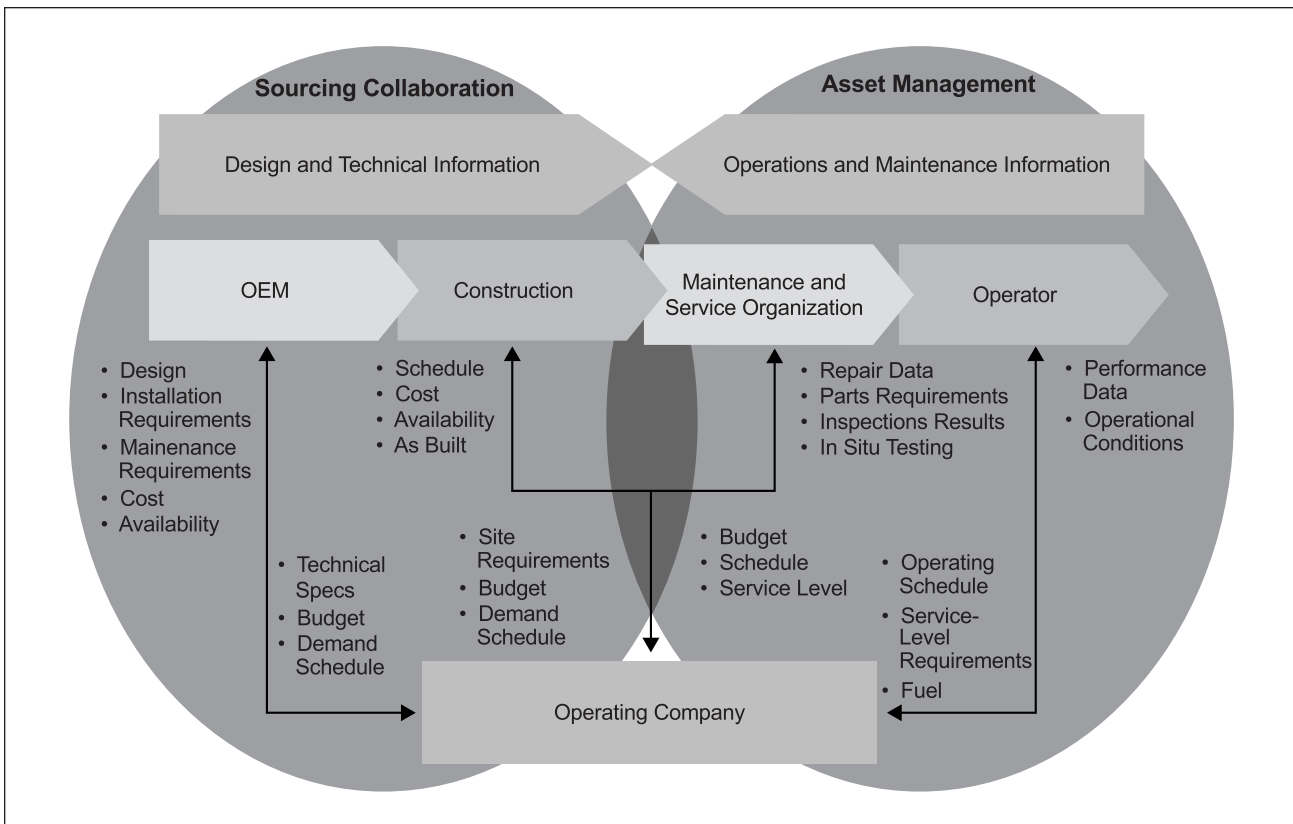


Figure 2: The collaborative asset management landscape

Source: AMR Research, 2001

## PLM combines disparate product data across multiple SAP back-end manufacturing systems on various releases

SAP's strength is in providing its *PLM* product to clients with heavy investment in wall-to-wall *R/3* technology:

- SAP *PLM* at 4.6c provides product replication, which allows product data to be distributed from *PLM* to *mySAP*, pre-*mySAP*, or non-SAP systems. Data is collected in data packages and then transferred to target systems using Application Link Enabling (ALE) protocols or Extensible Markup Language (XML)/Hypertext Transfer Protocol (HTTP).
- In a future release, *PLM* will provide a common data server and provide change and configuration management as well as baseline, engineering change notice, classification and configuration, and business partner information to all participants in a collaborative environment.
- Several live SAP customers reported that *PLM* can be implemented as an integration layer, binding together multiple SAP pre-*mySAP* *R/3* back-end systems. Using the common data server, *PLM* is able to integrate multiple manufacturing and Enterprise Resource Planning (ERP) systems. One large global high-tech manufacturer is piloting this effort.

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SAP's strength is in providing its *PLM* product to clients with heavy investment in wall-to-wall *R/3* technology.

Figure 3 illustrates the details of the *PLM* integration platform.

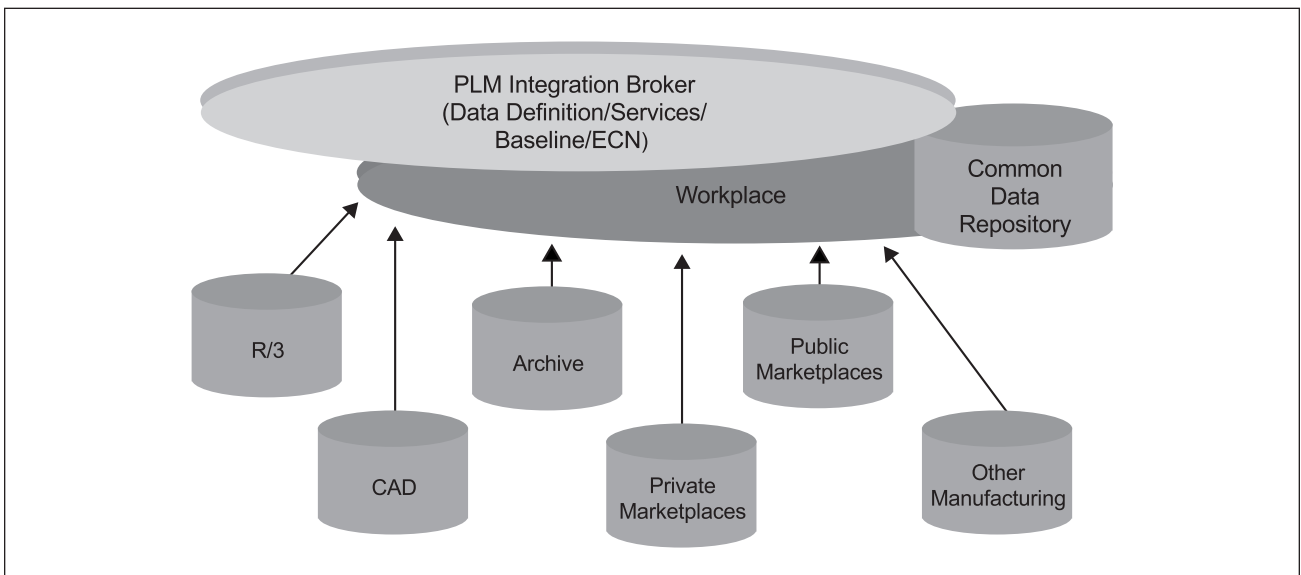


Figure 3: SAP's *PLM* provides an integration layer across multiple SAP systems

Source: SAP, 2001

## SAP's *PLM* is still a materials-centric application and is not yet a process-focused tool

With program and project management integration to *Project Systems*, or other project management tools, and its collaborative folder, data sheet and modeling capabilities, SAP's *PLM* is a transaction-oriented and materials-oriented tool. AMR Research expects that, as more SAP customers take SAP's *PLM* deeper into New Product Development and Introduction (NPDI) initiatives and collaborative marketplace interaction, the product will become a more fully functional tool that deals with the planning, collaboration and business rules of collaborative design, portfolio management and direct materials sourcing.

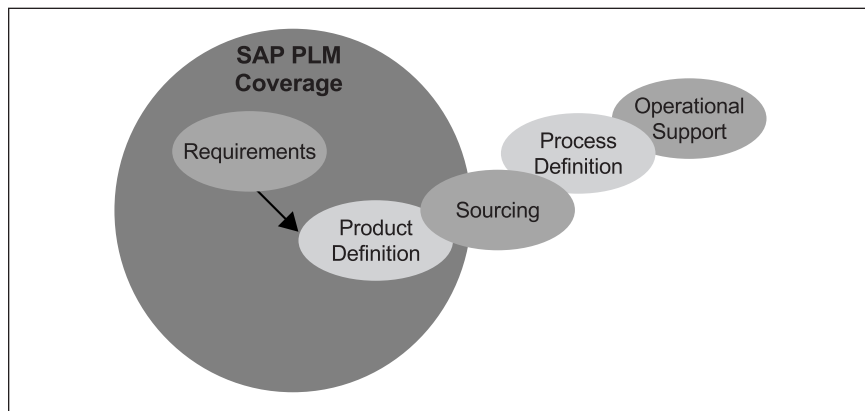


Figure 4: SAP's *PLM* is still a materials-centric application and is not yet a process-focused tool

Source: AMR Research, 2001

## Unlike early SAP implementations, PLM projects are short-term with defined benefits and quick ROI

SAP's *PLM* is now live at several SAP customers in complex discrete or ETO environments. They report the following:

- All report using *PLM* 4.6c against one or several older versions of *R/3*, and all understand that the older *R/3 PP* and *PP PI* modules provide more limited integration and change management capabilities than *mySAP*. These customers were looking to upgrade to the *mySAP PP* and *PP PI* modules over the next 12 to 18 months to take advantage of greater flexibility in the newer version.

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SAP's *PLM* is now live at several SAP customers in complex discrete or ETO environments.

- Many describe *PLM* as easing current pain points for common data during product design, engineering, manufacturing and post sales service. Although they expect SAP to develop *PLM* further in the areas of collaborative design and portfolio management, they invested in the product primarily because of its current product data management strengths and integration to *R/3* manufacturing modules.
- These *PLM* customers report that their business cases and project implementations are far shorter and more focused than their initial multi-year initial SAP implementations.

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Many describe *PLM* as easing current pain points for common data during product design, engineering, manufacturing and post sales service.

Table 3 indicates business case factors, ROI and payback statistics, and project-sizing and duration estimates across these live *PLM* customers.

Types	Items
Business Case Factors	<ul style="list-style-type: none"> <li>• Process cost savings due to usage of consistent data</li> <li>• Quicker time-to-manufacture and time-to-service due to consistent data</li> <li>• Global visibility of all data to all interested parties throughout the process</li> </ul>
ROI and Payback	<ul style="list-style-type: none"> <li>• 18-30% annual savings, payback in three-to-five years</li> </ul>
Project Duration and Size	<ul style="list-style-type: none"> <li>• Six-to-nine months and one-to-three business units</li> <li>• 10-to-12 Full-Time Equivalents (FTEs)—combination of internal FTEs and outside consultants in a 2:1 ratio</li> <li>• Outside consultants used primarily for product expertise</li> </ul>

**Table 3: Business case, ROI and payback statistics for *PLM* customers**

Source: AMR Research, 2001

## Companies Referenced In This Report

Company	Website	Page #
Agile Software	<a href="http://www.agilesoft.com">www.agilesoft.com</a>	5
Alventive	<a href="http://www.alventive.com">www.alventive.com</a>	6
CoCreate Software	<a href="http://www.cocreate.com">www.cocreate.com</a>	6
Compex N.V.	<a href="http://www.compex.be">www.compex.be</a>	5
EIGNER + PARTNER AG	<a href="http://www.eigner.com">www.eigner.com</a>	5
ENOVIA	<a href="http://www.enovia.com">www.enovia.com</a>	5
Integrated Development Enterprise (IDe)	<a href="http://www.ide.com">www.ide.com</a>	6
Formation Systems	<a href="http://www.formationsystems.com">www.formationsystems.com</a>	5
Framework Technologies	<a href="http://www.frametech.com">www.frametech.com</a>	6
MatrixOne	<a href="http://www.matrixone.com">www.matrixone.com</a>	5
Mountain Systems	<a href="http://www.mountainsystems.com">www.mountainsystems.com</a>	5
MS2	<a href="http://www.ms2.com">www.ms2.com</a>	6
NexPrise	<a href="http://www.nexprise.com">www.nexprise.com</a>	6
Oracle	<a href="http://www.oracle.com">www.oracle.com</a>	5
PTC	<a href="http://www.ptc.com">www.ptc.com</a>	5
SAP AG	<a href="http://www.sap.com">www.sap.com</a>	3
Sequencia	<a href="http://www.sequencia.com">www.sequencia.com</a>	5
Structural Dynamics Research Corporation (SDRC)	<a href="http://www.sdrc.com">www.sdrc.com</a>	5
Unigraphics Solutions (UGS)	<a href="http://www.ugs.com">www.ugs.com</a>	5
XIS	<a href="http://www.xisinc.com">www.xisinc.com</a>	6

## NOTES

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# Reader's Acronym List

## ACRONYM

ALE  
 B2B  
 BOM  
 CAD  
 CPG  
 ECN  
 ERP  
 ETO  
 FTE  
 HTTP  
 NDPI  
 OEM  
 PLM  
 ROI  
 XML

## DEFINITION

Application Link Enabling  
 Business to Business  
 Bill of Material  
 Computer-Aided Design  
 Consumer Packaged Goods  
 Engineering Change Notice  
 Enterprise Resource Planning  
 Engineer to Order  
 Full-Time Equivalent  
 Hypertext Transfer Protocol  
 New Product Development and Introduction  
 Original Equipment Manufacturer  
 Product Lifecycle Management  
 Return on Investment  
 Extensible Markup Language