



Product Lifecycle Management integration with enterprise applications from IBM

Bring innovative products to market faster

Improve profitability and gain market share by satisfying consumer demand for increased product variety, higher quality and lower prices. Product Lifecycle Management integration with enterprise applications from IBM can help you reduce the costs of managing business processes, training employees and performing redundant tasks. By tying systems together, you can streamline operations and make faster, better design and manufacturing decisions.

How to reduce costs and shorten time to market

IBM Product Lifecycle Management Services and certified business partners provide diagnostic tools, design integration transformation consulting and knowledge-based engineering best practices to help ensure your Product Lifecycle Management integration with enterprise applications solution is best tailored to meet your needs.

Integrating Product Lifecycle Management with other enterprise applications enables engineers to access component cost information and inventory levels, which is information usually stored in the ERP system. This knowledge can be used to design products that use the lowest cost, approved parts and components as well as parts already in inventory if they meet the design requirements so that they do not have to be declared surplus or returned to the supplier. Also, the ability to alert personnel and organizations "downstream" of possible problems or pending changes and then to quickly propagate those changes is critical to reducing or eliminating errors, rework and scrap.

Integration can also provide early availability of design and change information to downstream users, i.e. manufacturing engineering, marketing or service and maintenance personnel who review designs and provide feedback. Also to "work ahead" to prepare the production facilities and processes that will be needed to manufacture, sell or service the products. This can significantly help reduce the time needed to launch a new product into the marketplace once its design is completed and approved.

Increase product innovation and knowledge sharing

Provide transparent business process and data integration between PLM and other applications across the enterprise to reap long-lasting benefits, including:

- Enhancing the collaborative design environment by providing a means for virtual real-time access to data and information.
- Providing consistency in the use of both product- and plant-related information by personnel in organizations throughout your business.
- Helping reduce the time to bring new and better products to market at a lower cost while improving quality.
- Creating and using common product-related terminology and processes throughout your organization.



Integration enables PLM innovation

Improve customer satisfaction and speed time to market by enabling collaborative development. Optimize product design by facilitating business process integration. And improve product innovation with enhanced knowledge sharing. Product Lifecycle Management integration with enterprise applications from IBM can help you meet your operational objectives, while reducing the costs of product development and manufacturing.

Integration is our business

Our Product Lifecycle Management solutions provide customers with a proven infrastructure and a wide array of integration capabilities, including integration with legacy applications. The IBM Service-Oriented Architecture (SOA) Foundation helps to extend the value of the applications and business processes that currently run your business, not replace them.

- We offer a broad portfolio of software for SOA, the underlying approach used to simplify enterprise integration, relied upon by over 87,000 customers.
- From market planning to service-after-sales, IBM has a large number of certified professionals to help you with your PLM challenges.

- Over 1,200 certified PLM consultants
- More than 900 Engineering and Technology Solutions professionals
- More than 500 Application Management Services and Business Integration skilled professionals
- We have nearly 200 PLM business partner organizations based in 50 countries around the world, employing more than 2,000 qualified PLM professionals.

Improve business agility and market responsiveness

Support implementation of a full PLM system by connecting with customer and supplier systems. We can help you:

- Improve data integrity and control between systems by automating synchronization of part, document and bill of material data based on product lifecycle events.
- Reduce time to market and produce higher quality products with earlier availability of design and change information to downstream users.
- Gain a more cost-effective product design process due to engineers having access to key enterprise resource planning information such as price, part availability and inventory levels.
- Speed up manufacturing planning steps that are affected by engineering data and processes.
- Reduce the cost of late cycle changes resulting from data entry errors.
- Increase parts reuse and decrease the cost of managing a larger parts inventory.
- Respond faster to customer requests for quotes.
- Increase productivity and help lower education costs by reducing the number of applications employees must learn to use.
- Reduce costs of writing and maintaining customized code running on top of applications.

The solution in action

One of the world's leading electrical equipment manufacturers implemented the PLM integration with enterprise applications solution from IBM to gain the following results.

- A single, unified design database of both mechanical and electronic files.

- Integration to ERP system enabling enterprise-wide access.
- Due to replacement of serialization with concurrent engineering, collaboration is now possible.

Our client has reaped the following benefits.

- Product development time has shortened by 30% (48 to 35 days).
- Bill of materials error rate has decreased from 28% to 17%.
- Mechanical design quality has improved by 70%.
- Electronic design errors have been reduced.

Research findings illustrate the benefits

CIMdata research, conducted in September 2005, of PLM and ERP integration benefits reported the following findings.

- 75% reduction in the time, cost and errors associated with re-keying data entry from one system to another.
- 75% reduction in bill of materials error cost as they are created once and then managed consistently in both PLM and ERP.
- 15% reduction in inventory costs as the result of designers and engineers knowing what parts are already on hand and incorporating them into new versions of products—improved parts reuse.
- 8% reduction in scrap of materials that cannot be used in production and which were either already in inventory or ordered before procurement was aware of pending changes.

Increase your flexibility to change

Integrate Product Lifecycle Management data and processes with other enterprise applications. Our solution offers a flexible connectivity infrastructure for integrating applications and services by reducing the number, size and complexity of interfaces and integration points you need to build and maintain. It enables modeling of processes across multiple applications and facilitates conversion and migration efforts with reliability, scalability and robustness.

Award winning service oriented architecture for PLM

IBM offers a broad portfolio of software for service-oriented architectures (SOA) to enable application integration across the enterprise and is relied upon by over 87,000 customers.

- We have an extensive ecosystem of more than 4,000 partners and 3,150 active independent software vendors.
- We invest over US\$1 billion a year around SOA and Web services.
- We offer 6,700 IBM developers and more than 10,750 IBM Global Business Services and IBM Global Technology Services practitioners trained on IBM WebSphere®.

We offer award winning SOA products.

- "IBM tops elite vendor list" —Intelligent Enterprise Editors' Choice Awards (April 2005)
- "IBM overall winner in application integration middleware" —CRN Channel Champions Award (March 2005)
- IBM WebSphere: "impressive management options, support for Web services and general ease of use..." — Network Computing (February 2005)

Improve business agility and market responsiveness

IBM Product Lifecycle Management Services, part of IBM Global Business Services, offers solution integration and implementation services encompassing portfolio planning, concept development, design, production and testing, and maintenance and support.

Depending on your unique needs, your Product Lifecycle Management integration with enterprise applications solution from IBM may include:

- IBM WebSphere® Process Server, delivering:
 - One programming model to connect and utilize IT resources as service components.
 - Rapid assembly of business solutions by wiring reusable service components.
 - Constructs for dynamic processes, including business rules, business-state machines and selectors, events, and role-based tasks and capabilities.
- IBM WebSphere Enterprise Service Bus provides Web services connectivity, JMS™ messaging and service-oriented integration to power your SOA.
- ENOVIA VPLM offers a complete set of integrated solutions for virtual product modeling, lifecycle management and decision support for companies making complex, high-value products.
- SMARTEAM enables highly flexible product data management and mission-critical business process management, optimally leveraging product knowledge and driving

collaboration across the enterprise and value chain.

World-leading manufacturer implements our solution

One of the world's leading electrical equipment manufacturers faced the following challenges.

- Separate MCAD and ECAD databases caused development delays.
- Disconnected product data impacted quality control negatively.
- There was not a direct link to ERP, which caused errors and delays due to manual copying of data between systems.
- The ECO cycle was slow and error-prone.

The Product Lifecycle Management integration with enterprise applications from IBM solution includes SMARTEAM software and enables:

- Multi-CAD data management from a single repository—AutoCAD, SolidWorks and Pro/E.
- Fast retrieval of accurate data with powerful search capabilities.
- A tight link to their SAP ERP system.
- Bilingual operations in Chinese and English.
- Quick implementation and training time.

Significantly lowering your costs

The Business Integration Value Assessment, a series of studies conducted with customers, shows that IBM Business Integration can significantly lower the total cost of typical, non-enterprise application integration systems.

- 35% lower integration costs
- 80% lower upgrade costs annually
- 50% lower maintenance costs per year

In December of 2004 Forrester Consulting produced a report titled "The Total Economic Impact™ Of Migrating To IBM WebSphere Business Integration Server Express," which outlined the following.

- Payback period: five months (best case); six months (risk adjusted)
- ROI (without hardware): 306% (best case); 266% (risk adjusted)
- ROI: 105% (best case); 86% (risk adjusted)
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