

## Bridging the divide: Integrating PLM and ERP



## Uniting business-critical systems

It's a familiar and common scenario: To accomplish numerous day-to-day business functions, a manufacturing company creates several separate departments, such as purchasing, manufacturing and sales, and then in turn, each department implements its own individual business applications.

Typically, the primary area of investment for business applications has been Enterprise Resource Planning (ERP) to manage the tangible resources used in product manufacture and distribution – such as purchase orders, shop floor procedures, inventory and finances. In parallel, as product development has become more complex, manufacturers have also tended to invest in Product Lifecycle Management (PLM) to optimise the management of product concept and design, and engineering data and processes.

The problem? At best, two highly effective systems that operate independently. At worst, process and information silos that have a crippling effect on business productivity.

To make successful business decisions, manufacturers need to 'bridge' the divide that separates these two business-critical systems. This will facilitate enterprise-wide collaboration and enable processes that access, combine and exploit the knowledge of each. The result? A company achieving its maximum potential.

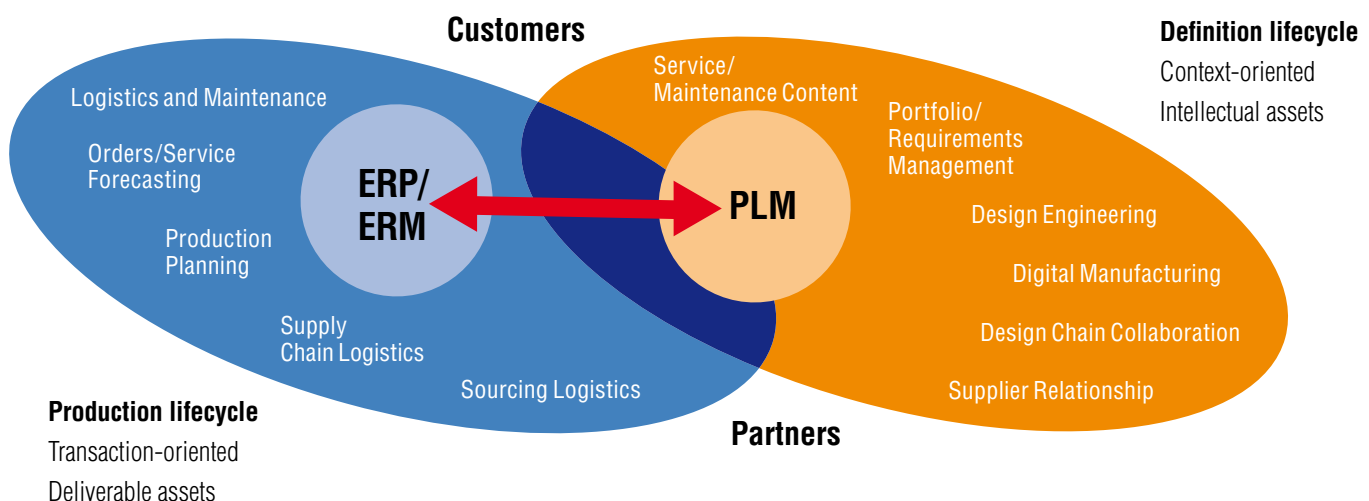
## Addressing strategic business challenges

When the applications, people, processes and information a company relies upon to run its business efficiently are disconnected, problems can grow quickly:

- Data maintained in multiple places must be synchronised using a mix of manual and batch processes
- Users are frustrated at having to input redundant data using multiple user interfaces, resulting in lost time and input errors
- Information is not timely due to cumbersome information retrieval from multiple applications
- Decision-making is slow and faulty, based on incorrect, or out-of-date, information.

At its simplest level, bridging between an ERP and PLM system aligns business processes and facilitates the sharing of data. By helping to eliminate the typical data errors, redundancies and process bottlenecks caused by disconnected systems, significant operational efficiencies can be realised, improving a company's responsiveness to marketplace demands.

By synchronising digital product lifecycle data stored in a PLM system with production data stored in an ERP system, enterprise-wide processes based on automatic, bi-directional transfer of information (such as parts lists, bill of materials (BOMs) and product structures) can be executed more accurately and efficiently. In addition, when each department has access to its own data in the full enterprise context, it can more easily find, revise and visualise different types of product data – independent of formats and systems.



## Building the bridge between PLM and ERP

To build a solid bridge you need to have strong towers near each shore and a strong, flexible way to span between them. IBM offers SMARTEAM as the foundation for the PLM 'tower' and IBM WebSphere as the 'span' that connects SMARTEAM to multiple ERP towers.

Successful business integration technology should be:

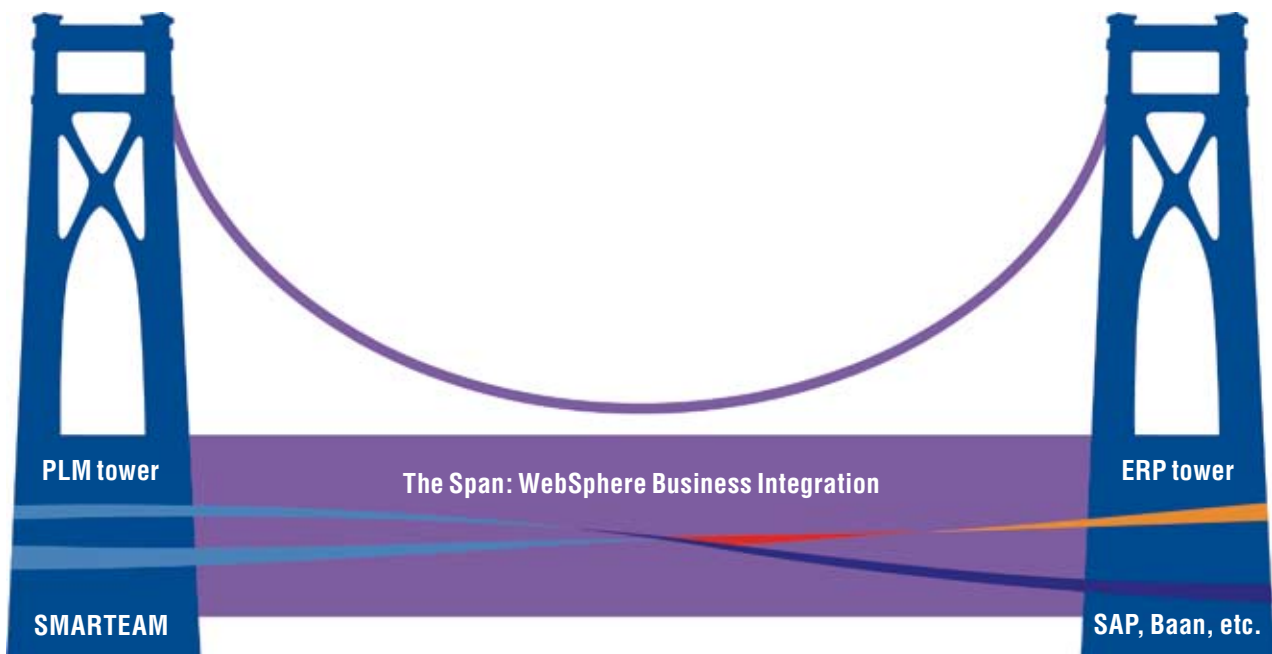
- Robust enough to support mission-critical enterprise applications
- Able to provide relevant realtime, and near realtime, data synchronisation
- Able to automate processes and information exchange across disparate systems
- Scalable and flexible enough to meet expanding needs
- Adaptable to support application upgrades and revisions without requiring complete 'rewiring' of the connections.

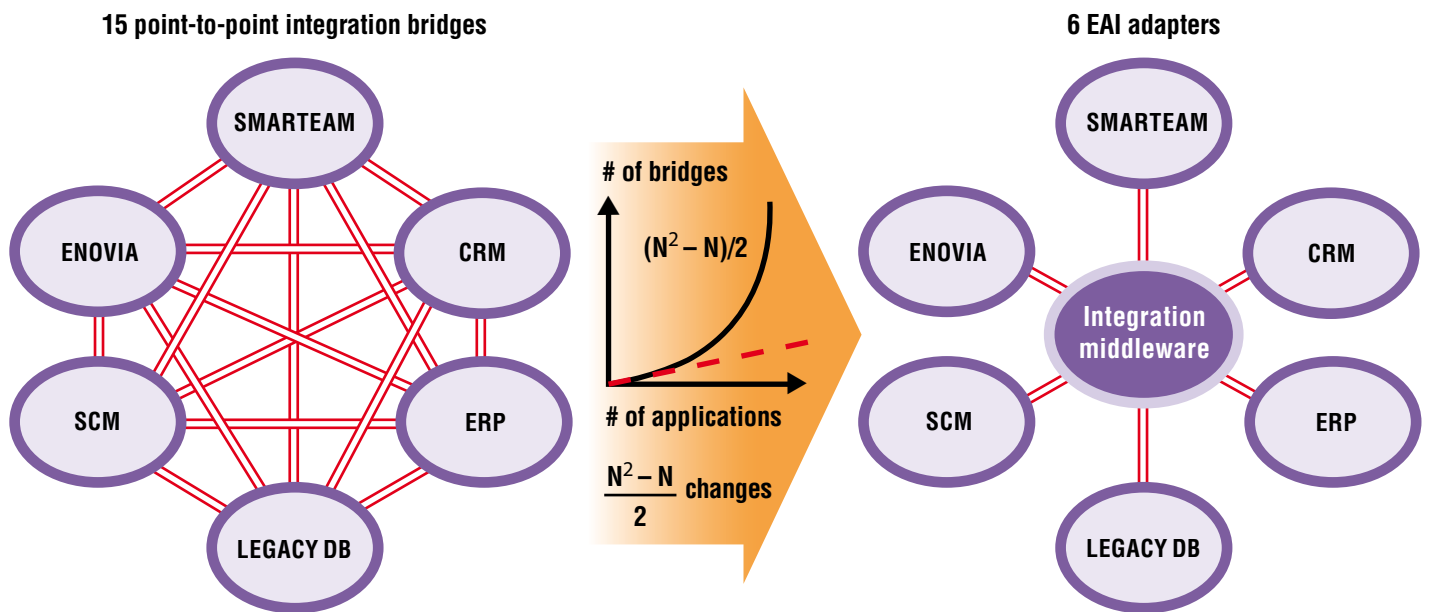
## The foundation of the PLM tower: SMARTEAM

SMARTEAM, an IBM PLM solution developed by Dassault Systèmes, leverages the latest information technology to provide organisations with robust PLM. Its comprehensive enterprise PLM functionality is delivered via a flexible, dynamic product suite noted for its rapid implementation and easy customisation.

Securing product data in all formats for both full product history and access to latest revisions, SMARTEAM optimises processes across the product lifecycle. This includes requirements management, concurrent design and engineering, BOM management, and engineering change. Through automated, standardised PLM workflows, secure access to relevant product data, and its open Enterprise Application Integration (EAI) structure, SMARTEAM also connects departments, enterprise sites, suppliers and customers. This enables collaboration across organisational and geographical boundaries and supports business integration at multiple levels.

Via SMARTEAM's Gateway tool, data from the PLM tower can flow to other vital enterprise application towers. Gateway provides access to SMARTEAM's product information repository through XML compliant channels and EAI platforms, facilitating the sharing and exchange of updated parts, items, BOMs, Engineering Change Orders (ECOs) and other related product data.





## The span: IBM WebSphere

There are several options when creating the bridge span: from simply passing a flat file from the PLM system to the ERP system, through developing an in-house point-to-point integration, to adding the flexibility of a middleware solution such as IBM WebSphere.

Organisations needing simple, small scale integration, without regard for any future requirements, often choose to write a simple connection using basic networking facilities. However, once requirements change – even during the design phase of an application development project – these additional complexities can rapidly skew the costs.

However, business integration using IBM WebSphere allows a company to integrate and automate inefficient business processes, and create and manage business rules with easy to use tooling that requires little or no programming. If requirements, or market needs, change, rules can be simply and rapidly modified.

IBM WebSphere leverages pre-packaged adapters to a variety of enterprise applications, facilitates integrity, provides flexible routing and manipulates application data in transit, while requiring little or no extra application coding. It is also easy to maintain, reducing the total cost of ownership.

## Building the bridge brings returns

The benefits of IBM WebSphere are available to companies of all sizes. IBM WebSphere Business Integration Server Express provides a comprehensive integration package that helps small and medium businesses quickly and easily integrate applications. In addition, the solution can be rapidly deployed, can scale as a business grows, and is easy to install and use.

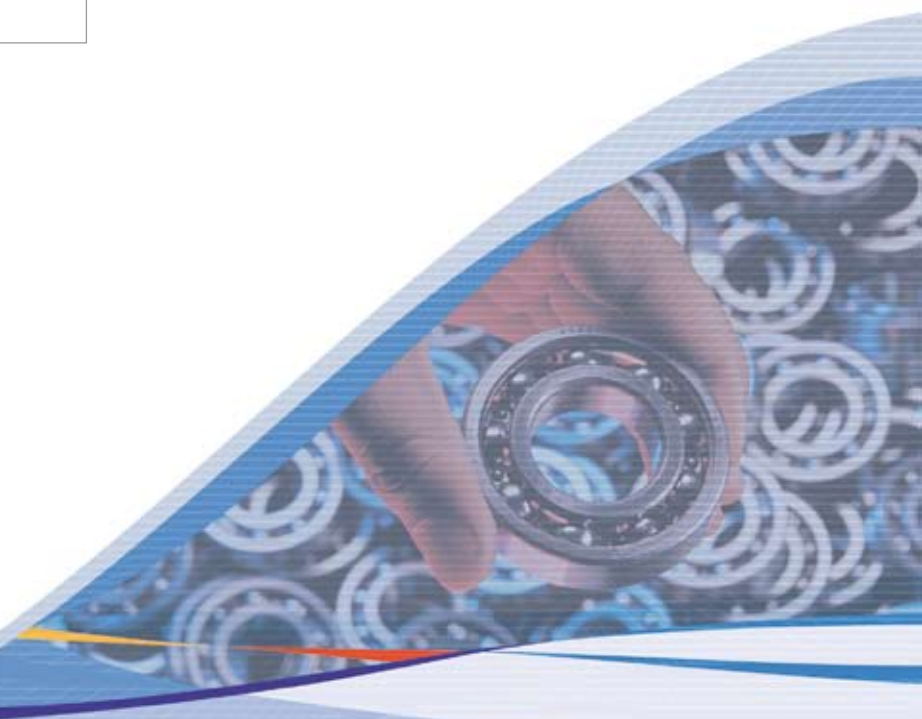
Building a bridge between PLM and ERP can deliver the following benefits:

- 75 percent reduction in the time, cost and errors associated with re-keying data.
- 75 percent reduction in BOM error cost as BOMs are created once and then managed consistently in both PLM and ERP.
- 15 percent reduction in inventory costs as the result of designers and engineers knowing what parts are already on hand and incorporating them into new versions or products – improved part reuse.
- 8 percent 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.

*Source: PLM and ERP Integration: Business Efficiency and Value (CIMdata)*

The combination of SMARTEAM and IBM WebSphere enables full integration between PLM and ERP systems. This sharing of data and bridging of key business processes can help speed workflow, eliminate redundant efforts and improve communication throughout an organisation.

So, picture a new scenario: A manufacturer achieving its maximum potential. Engineers with better access to materials data improving product design, and business analysts and production planners with better access to product design data improving sourcing, costing and related tasks. Which organisation would you rather be?





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