



**Nurture growth with
IBM PLM Solutions**



PLM (Product Lifecycle Management) is a continuous process that enables an enterprise to effectively and efficiently innovate and manage its products and related services throughout the entire business lifecycle, from initial concept through recycling or disposal.

“PLM’s closed loop approach gives our clients key insights into product performance which can, in essence, turn a once-mediocre product into a genuine category leader.”

*Nick Donofrio,
IBM Senior Vice President of
Technology and Manufacturing.*

An On Demand Business is an enterprise whose processes – integrated end to end across the company and with key partners, suppliers and customers – can respond with flexibility and speed to any customer demand, market opportunity or external threat.

Innovation drives growth. Flexibility makes it happen.

Drive innovation to grow your business and nourish competitive advantage. Ensure profitable growth by maximizing returns on assets and minimizing costs. Shorten time to market and get superior products to your customers ahead of the competition. Respond quickly to changing market and business conditions.

Does this ring a bell? These are some of the toughest challenges companies must overcome to thrive and prosper in today’s harsh business climate. Companies like yours. All of which requires you find ways to transform your product development processes while becoming more agile, flexible, and focused on your core strengths.

That’s just what PLM can help you do, enabling you to meet these challenges by providing the optimum tools, processes and access to product information. With PLM, you optimize your development processes and develop exciting new products to meet the needs of a demanding market. Enhance productivity and collaboration throughout the product cycle. Protect and reuse valuable assets and company knowledge. Streamline your core processes through greater efficiency and leveraging your best resources. IBM is the one company that provides you with a complete PLM solution.

As the world’s PLM leader, IBM is the unique partner to help your company achieve its goals by solving its key business issues and become an on demand business.

IBM PLM Solutions are based on a broad portfolio of capabilities and offerings to transform your organization and integrate it into a collaborative and productive software, electronic systems and mechanical engineering environment. IBM PLM solutions are characterized by:

- Industry expertise and experience to solve the specific problems of your company. IBM and its business partners provide services that cover all aspects of a PLM project, including business consulting, support for implementation, application integration and technology hosting, as well as outsourced engineering and technology services.
- Best-of-breed software applications and services partners that make your team more productive. IBM’s unique portfolio is supported by our strategic partnership with Dassault Systèmes and alliances with many other application and service providers.
- Global support capabilities that facilitate your growing network of partners, suppliers and customers. IBM is present wherever you are or need to be. As you outsource tasks, expand markets and acquire partners, IBM can provide the support you require to manage and maintain control of your business.
- Fast and leading-edge computing and storage technology that you can always rely on. IBM’s top-performance computing environment supports the latest technologies such as grid-computing and 64-bit processing.
- Open middleware that enables you to interoperate across your enterprise, and transfer knowledge throughout your product lifecycle. Enhancing communication and integrating disparate technologies between departments, design partners, suppliers, and customers is IBM middleware’s sweet spot.

Portfolio Planning > Concept Development > Design > Production & Testing

Invest in IBM PLM solutions to make your business flourish.

> Innovate through optimized product development and production processes

Optimize your product development process – from concept to rollout. Cut time-to-market by months, even years. Reach the market at the right time with the products customers demand.

Become a company that offers product designers the tools to view the entire product development picture in real time. Speed both new product development and those already in the pipeline with effective virtual prototyping and testing. Encourage more innovative thinking by analyzing an expanded number of design choices. Design products right – the first time.

IBM understands how to make innovation push profitability and growth – it's the driving force behind our ability to continually grow market share – because we too manufacture products. And we use PLM processes ourselves to enhance innovation in all of our product lines.

“By shortening the cycle time by ten months, we are now much more flexible and better adapted to the changing market demand. This benefit is priceless for our company.”

Paolo Cera, Marketing Director, Maschio Group.

Agricultural machinery producer Maschio Group used IBM PLM to reduce time to market by 55%, achieved productivity gains enabling them to explore 50% more design options, and increased design quality by 70% by moving to a complete 3-D environment.



“IBM was able to provide big company technology at a price affordable for a smaller company. In addition, the partnership between IBM and its technology partner, Dassault Systèmes, is the longest in the industry. They know and deliver what manufacturers need to stay competitive.”

*Xun Guo, Managing Director,
ISA Group (a Swiss watch maker).*



> Maintenance & Support > Retirement & Disposal

> Improve productivity

Design products faster. Share them with your customers sooner. Wipe out idle time in your existing process. Use design time more efficiently. Enable your engineers and designers to complete tasks in minutes, instead of hours or days.

We're ready to pass along our PLM experience – from our own internal practice as well as thousands of customer implementations – to help you work faster and more efficiently. By applying PLM to our own business, we've learned what to do to help you become more efficient. We work to provide a short learning curve for training and education and overall ease and speed of implementation.

“Grid technology from IBM and Platform Computing reduced the time required for our clash testing from 72 hours to 4 hours and contributed significantly to enhancing our design quality.”

Dr. Heinz Mayer, Magna Steyr
(strategic partner to vehicle manufacturers).

“The PLM Solution has benefited Clarion in cutting cost and improving our time-to-market. Now our design team can complete a model and deliver it to a customer in 9 instead of 14 months.”

Toshiyuki Nakazaki, Director of Research and Development, Clarion (a leader in the audio electronics industry).



> Collaborate across the value chain

Enable your suppliers to know what materials you need at the same time or even before you do. Develop products in a lean, responsive digital design and modeling environment in response to customer requirements. Quickly shift product development to partners when market conditions change.

With IBM PLM solutions, your company can focus on its core competencies. Production, sales and delivery costs fall as a result of real-time collaboration and outsourcing capabilities. Partner with others for non-core processes. Conserve time and resources. Focus on what you do best. We deliver the same end-to-end PLM capability and deep industry knowledge, globally, through face-to-face local service.

“We must enable customers, partners, suppliers and employees worldwide to collaborate while not wasting time in data transfer or management.”

Sherrill Novosad, Project Manager Digital Enterprise Program, Pratt & Whitney Canada.

Aircraft manufacturer Pratt & Whitney Canada needed to reduce the development cycle of a new engine to less than three years, while implementing seamless collaboration among an expanding number of partners worldwide. Using IBM PLM solutions, Pratt & Whitney saved millions of dollars annually by reducing the assembly design phase by 20%.





> Capture, share and re-use company knowledge

Get the most out of the data you have. With immediate access to engineering assets, product knowledge and design data, make better, faster decisions. Decisions that help you maximize your return on assets and minimize your costs.

Reliable, scalable, industry standard PLM technology from IBM can help you manage data. So your staff, suppliers and partners get the latest product information – in the right format, right now. Re-use or extract data from existing designs. Improve your product portfolio management. Focus resources on the products with the most potential.

From product portfolio planning and concept development to product launch and eventual retirement, IBM has the expertise to implement the full breadth and depth of PLM. Through our own capabilities, as well as those of Dassault Systèmes and many other application developers, we are able to meet the task-specific needs of your particular industry. An advantage of our open environment is that product information can be integrated and shared outside of engineering with marketing, sales, and aftermarket support.

PLM COMPUTING TECHNOLOGY

IBM Systems and Technology Group's offerings are developed with IBM's core innovations incorporated into powerful, flexible servers, storage and engineering workstations to meet every workload and budget. Together, they provide an optimal PLM computing platform configured for performance. IBM technology is enabled to support 64-bit applications – which allow the efficiency and speed of design and simulation-tasks to be significantly improved. IBM can also optimize your operations by capturing idle processing power. Through grid or cluster computing, IBM has helped manufacturing companies to better utilize their computing assets and to improve performance and turnaround of critical resource-intensive applications such as clash and crash analysis.

IBM's Automotive/Aerospace Engineering Innovation Framework addresses design cycle time reduction and IT infrastructure optimization by providing a simplified framework to optimize complex analysis and design environments that are right for your business.

PLM INTEGRATED ENVIRONMENT

IBM middleware provides the technology to integrate across your product development environment. IBM middleware platforms – including Lotus®, WebSphere®, Rational®, DB2®, and Tivoli® – provide a holistic infrastructure that will ensure an open, scalable, reliable, flexible and secure PLM environment.

IBM middleware can help integrate your existing disparate or legacy systems into an efficient enterprise-wide system that extends to your design partners, suppliers, dealers and service providers so that you can deploy optimized, manageable and measurable end-to-end processes.

INTEGRATING MECHANICAL, SOFTWARE AND ELECTRONICS

IBM's Embedded Systems Lifecycle Management solutions offer best practices, solutions and services for software and electronic design and management. The IBM Rational® Software Development Platform is a key component of this capability, providing a complete modeling, testing and management environment for embedded software development. By combining these technologies and practices with your mechanical design environment IBM can you help take your products into the digital era.

“Building a system capable of managing the amount of data involved in the layout of an entire truck, requires a considerable amount of time and energy. We expect our vehicle configuration management system, based on IBM PLM solutions, to save development costs.”

Osamu Mitsuhashi, Manager,
Information systems planning, Nissan Diesel.

Truck development involves more components and more complex assembly combinations than development of passenger cars. Truck manufacturer Nissan Diesel considered it crucial to establish a system to efficiently manage its vehicle configurations. The IBM PLM solution helped shorten the cycle time required to create a vehicle layout by 90%.

> Streamline processes to accelerate innovation

Transform an “endless cycle” into a faster process. Reduce physical prototyping. Make fewer engineering revisions. Perform less manufacturing rework. When your product design and support processes integrate seamlessly across the entire virtual enterprise, you can collaborate on designs with customers and suppliers – and identify problem areas sooner.

Respond to marketplace events quickly. Win more profitable contracts. Evaluate a wide range of real world performance parameters and manufacturing feasibility during the product development stage. Even simulate a product’s performance throughout its lifecycle before it goes to the factory floor.

IBM PLM solutions help you to optimize participation of all disciplines across the entire product development process – helping you drive innovation within your company.



“For Loewen, PLM is a strategic initiative that will result in incremental top-line revenue growth while streamlining and improving ongoing operational practices.”

Stephen Segal,
Chief Information Officer, Loewen.

IBM PLM solutions have enabled luxury window and door manufacturer Loewen to grow top-line revenues by providing real time customization, simplified collaboration with suppliers and customers on customer-built products while increasing design re-use and reducing overall development time.



“IBM is helping us expand the type of technology we can bring to our devices beyond what our own internal research and development can do.”

Mike Coyle, President Cardiac Rhythm Management, St. Jude Medical.

ENGINEERING & TECHNOLOGY SERVICES

E&TS (IBM Engineering & Technology Services) is the portal into IBM’s deep engineering skills and innovative research. Access to IBM’s 50 thousand plus engineers and scientists working across 20 research facilities in 6 countries can help accelerate product development and competitive advantage. With E&TS you can quickly and cost-effectively leverage IBM resources to design, implement and manufacture leading-edge components, systems and network-centric technologies.

IBM’S STRATEGIC PLM PARTNERS

Core to IBM’s PLM strategy and value add are its partnerships with application and service providers. IBM continues to invest in partners and alliances, including our strategic relationship of over 20 years with **Dassault Systèmes**. Other IBM alliances include software providers such as **MSC.Software**, which provides virtual product development products, including simulation solutions. **Engineous** offers a specialized engineering process integration and design optimization tool set. **IDe** provides specialized product innovation and portfolio management applications, and **Centric Software** offers integrated project management and collaboration tools. Many other alliances and relationships round out IBM’s portfolio of capabilities and ensure a best-of-breed approach to each customer’s unique environment.

“... all things positive begin with predictable business. We needed new processes and a Product Lifecycle Management (PLM) solution to help us minimize costs from the early bidding process to the servicing phase 25 years down the road.”

*Arnie Moore, Vice President of Engineering,
Northrop Grumman Ship Systems.*

IBM PLM Services help you transform your business by planning, implementing and maintaining a world-class PLM environment. Our teams of skilled professionals deliver industry-specific customer solutions ranging from strategic consultancy and innovation management through to implementation hosting and outsourcing services.



“IBM PLM solutions, including CATIA, enabled us to fit the maximum number of parts, and usually the most powerful engine possible, into the most compact space. In this way we were able to design a product with the optimum ergonomic properties for handling by the user.”

*Alan Hayes, Technical Administration Manager,
Black & Decker.*

IBM PLM Application Software (CATIA, SMARTEAM, ENOVIA) products are flexible and open-architected PLM software tools that can be readily configured and tailored to the unique needs of any manufacturing organization. CATIA offers unique, industry-leading relational design and virtual modeling capabilities. SMARTEAM and ENOVIA manage product information from concept through retirement. The products include digital mockup and virtual modeling capabilities which ensures flexibility and engineering efficiency.



Grow and thrive with IBM – your long-term PLM partner.

And with IBM, it doesn't end there. We ensure that all the elements of our solutions work together with the multiple aspects of your product development and lifecycle management process. By leveraging the open architecture of our hardware and middleware, our own experience as a global manufacturer, and our unmatched investment capabilities in Research & Development, IBM is able to meet all your current and future PLM needs.

Our commitment to open industry standards helps you integrate the PLM solution with other elements of your enterprise – both internally in terms of your design and product lifecycle needs and externally in relation to your suppliers, customers and partners.

IBM is a global manufacturer with first hand knowledge of the related processes and challenges. Our shared experience with manufacturing industries and managing our global network of partners gives us direct insight into your similar business challenges.

As a global PLM thought leader, we are committed to investment in R&D – the key to innovation – and hold more patents than any other company. IBM's programs with academic institutions offer faculty members and researchers software, hardware and educational materials to help them implement the latest technology in the curriculum and research.

IBM represents stability and the power to innovate in a world of change. Both now and in the long term, we lead the development of PLM in close cooperation with our key partners in order to provide unmatched industry expertise and a full line of industry-specific solutions.

And now - as the natural next step - come and visit us at the IBM PLM web site: <http://www.ibm.com/solutions/plm>. There you can learn how other innovative companies have worked with us to grow and become an On Demand Business.



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