Software for the automotive industry
Executive brief

IBM

Innovate automotive design and improve productivity, sales and services to grow and reach new markets.

ON DEMAND BUSINESS™

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Executive summary

At the same time that automotive companies like yours are facing the pressure to meet customer demands with rapid, regular improvements, a number of challenges stand in the way. Quality and innovation costs continue to increase. Supplier integration and collaboration complexity increase. Marketing costs rise. The demands of global regulations continue to change.

IBM can help you address these challenges. By leveraging information across your business, you can optimize business processes, and identify and implement new revenue-generating initiatives. Tools that help you manage design and production processes also enable you to get to market rapidly. And when you integrate your supplier community — from requirements definition through design and development to aftermarket — you can drive innovation, satisfying both needs for high quality and regulatory compliance.

Utilizing IBM's extensive automotive experience with leading automotive companies, IBM software for the automotive industry helps you manage today's industry challenges — based on a service orientation — to enable you to become an On Demand Business. This executive brief introduces these IBM automotive industry offerings and highlights how IBM can help your automotive company:

- *Optimize design, development and manufacturing within your enterprise and with your suppliers with product life-cycle management (PLM).*
- *Minimize both costs and the complexity of manufacturing business management with manufacturing productivity.*
- *Drive customer satisfaction and loyalty through dealers and parts distributors with marketing, sales and service.*

Manage across an increasingly complex supply chain to meet customer demands

Every year, automotive manufacturers need to create new models and car architectures become more complex to meet customer demands. That means that in addition to Original Equipment Manufacturers (OEMs), mechanical and electronic system and component suppliers must design and produce at an accelerating pace. And do so without sacrificing quality or cost — to gain the loyalty of today's customer.

Consequently, automotive companies are changing the ways they work together to create designs, build products and efficiently integrate mechanical and electronic design. Computer simulations are used rather than physical models to test safety, efficiency and performance. By using digital design and simulation software, automotive design cycles can be reduced significantly from 72 months to as short as 18 months with a lower cost structure.

"The solution we built with IBM provides us with a flexible and efficient means to break down silos across DaimlerChrysler, and in so doing has established the foundation for us to become a nimbler, more responsive company. It gives us the infrastructure we needed to standardize and optimize our processes across the company."

—Dr. Seshu Bhagavathula, Director for Technology Strategy, DaimlerChrysler

Faced with highly demanding consumers and compressed development cycles, establishing reliability throughout the global supply chain is crucial. Every automotive company must get the required assembly, part or material necessary in time to meet demands. Manufacturers who establish high-quality design, development and production processes help avoid costly repairs and recalls that can plague competitors.

When quality issues occur, effective analysis and problem management become crucial to satisfy affected customers. The increasingly costly requirements of global regulations require companies to track where parts go, comply with standard reporting, and collect and correlate customer and warranty data.

Across design, development, production and aftermarket processes, the effective use of information technology (IT) based on a service orientation is crucial as these solutions help automotive companies maximize revenue by bringing new products to market quickly and minimize costs by optimizing design, production, supply chain, retail and aftermarket sales and service processes.

Integrate resources and manage design and production

IBM can help automotive customers meet today's industry challenges. To help you rapidly tap new markets and manage complexity across the supply chain, IBM provides offerings to create an on demand operating environment that integrates people, processes and information while simplifying IT infrastructure management. Among its key characteristics, a service orientation implementation:

- *Uses technology as an open framework to help build the flexibility, responsiveness and efficiency that your on demand business requires.*
- *Tightly integrates business processes end to end.*
- *Reuses modular components to drive efficiency.*
- *Connects components using industry-specific open standards.*

IBM is a leader in open standards including:

- IT standards such as Java™ Enterprise Edition (J2EE™), Web Services and Linux®.
- Industry standards such as the Automotive Industry Action Group (AIAG) and AUTOSAR.

IBM software for the automotive industry can help you connect disparate resources into a seamless, flexible and responsive organization, enabling you to:

- *Leverage information across your business.*
- *Manage the design and production processes.*
- *Integrate the supply chain.*

As a result, the software helps you respond quickly to shifts in market demand.

Leverage information across your business to facilitate revenue-generating initiatives

Responding to customer demands and driving customer satisfaction are easy to talk about but difficult to achieve when information is scattered in many disparate systems throughout your infrastructure. Integrating data access across your disparate systems — structured and unstructured, static and real time, manufacturers and suppliers — is a crucial step in better understanding your customers and your business processes.

Leveraging information across your business enables you to:

- *Overcome current difficulties in obtaining customer feedback that hamper customer loyalty and weaken your competitive advantage.*
- *Implement flexible development and production processes to build your innovative designs precisely, rapidly and cost-effectively.*
- *Deliver personalized information and processes that drive employee productivity and improve customer satisfaction.*
- *Proactively monitor the performance of customer relationship management (CRM), design, manufacturing, supply chain and warranty processes.*
- *Dynamically change processes to respond to changing customer demands and minimized cycle times.*

Manage design, development and manufacturing processes to enable you to get to market quickly

To overcome the gap between the emerging need for shorter development cycles and cumbersome processes, leading automotive companies seek to streamline their critical business processes. Providing people in design and development with the role-appropriate information they need is very important. But a robust solution also

includes tools that facilitate reuse of both designs and knowledge. Furthermore, automotive companies benefit from monitoring and management solutions that measure the transformed design and development processes and help identify future opportunities to optimize these processes.

When you efficiently manage the design and production processes, you can:

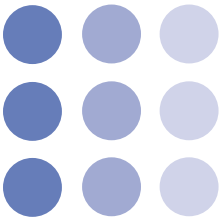
- *Share design information between engineering teams – across original OEMs and suppliers – to facilitate collaboration and decision making and drive rapid time to market.*
- *Reuse existing designs and knowledge to help accelerate time to value.*
- *Manage the development process across in-vehicle domains, car platforms and vehicle suppliers to help maximize production capacity, reuse and flexibility.*
- *Use a common business production portal to monitor production status, manage process exceptions and enable timely issue resolution.*

"IBM … software helps Audi foster management efficiencies and powerful customer relationships."

— Thorsten Kuehl, Senior Technical Consultant, divine GmbH

Integrate supply chain through aftermarket to drive quality and help comply with regulations

The business relationships that make up your supply chain have never been more important to your success — or more complex to manage. Transactions between you and your partners, suppliers and OEMs need to become highly integrated to support your goal of getting to market quickly. At the same time, to help avoid recalls and help comply with regulations, you need to verify the quality of incoming components and products, and track where your outgoing components and products go.



To achieve these goals, you need an infrastructure-comprehensive solution for integrating your supplier community and improving manufacturing productivity. One that can help you manage many facets of your relationships — from monitoring the data you share to building collaborative virtual work environments to automating applications that span multiple companies.

Integrating the supply chain helps you:

- *Implement effective outsourcing and design models for production to optimize inventory and manage relationships with partners, suppliers and OEMs.*
- *Integrate applications and data between PLM, enterprise resource planning (ERP) and Manufacturing Execution Systems (MES) applications.*
- *Create highly secure, standards-based development, engineering and manufacturing environments that span internal, outsourced, dealer and customer communities.*
- *Optimize build-to-order capabilities to increase customer satisfaction, minimize in-house and vendor-managed inventory, and maximize resource utilization and flexibility in the supply chain.*
- *Help avoid mistakes due to manual procedures – both internal processes and those that involve dealers and other aftermarket partners.*

Leverage IBM's automotive industry expertise to transform your value chain

IBM solutions for the automotive industry bring together the extensive IBM portfolio of hardware, software and high-value services — and its wide network of Business Partners — to address the most prevalent challenges for clients in the industry. IBM solutions and automotive industry experience help each client accelerate its progress in becoming an On Demand Business — so it can respond with flexibility and speed to virtually any customer demand, market opportunity or external threat.

Creating business processes with a *service orientation* has emerged as the best way to achieve that flexibility and speed, as well as agility and resilience. Service orientation takes everyday business applications and breaks them into individual business tasks, called services. These services can then be shared with other departments within your company, integrated with your trading partners and exposed directly to customers to create new or modified business processes. As a result, you have the flexibility to easily respond to changing market requirements. And because these services can tie together existing ERP, human resources (HR), CRM and supply chain systems from leading vendors such as SAP, Oracle, Siebel and JD Edwards, there is no "rip and replace" required. Furthermore, these services can be used across multiple processes — rapidly, easily and consistently — to help drive improved time to value and reduced costs.

IBM software, a key building block of the IBM solutions for the automotive industry, is vital to employing a service orientation strategy. It helps our clients achieve business flexibility by enabling them to model, assemble, deploy and manage business processes for today's on demand business environment.

IBM software for automotive product life-cycle management

This integrated software — platform, partner application suite and best-practice methodologies — facilitates collaboration across and beyond company boundaries and enables the rapid development of complex products, services and embedded software. This software enables you to:

- *Optimize the development and support of products and services throughout the entire life cycle, from digital product design through product build to post-sale service.*
- *Manage and enable timely access to PLM intellectual property data across business functions and processes – for employees and suppliers to leverage reusable components to create the best automotive products for demanding customers.*
- *Implement open standards–based systems engineering and software development tools and methodologies to facilitate quality development and enable innovation.*
- *Extend participation in the product development process across procurement, manufacturing, maintenance and marketing teams.*
- *Incorporate telematics hardware and software that can drive customer satisfaction and product differentiation.*

"We've created an entirely new sales channel for our company by using IBM technology. As a result, our customer base has grown substantially."

— Robert Ernst, IT Manager, Mike Castrucci Chevrolet

IBM software for automotive manufacturing productivity

This comprehensive integration and collaboration software uses a manufacturing model designed to manage costs, process efficiencies and provide quality control. By implementing this integrated set of processes, tools and services, you can:

*According to SEC filings, North American automotive manufacturers reported over $11 billion warranty claims in 2003.**

- *Build a factory's manufacturing processes to connect across the plant floor and with enterprise applications, enabling flexible reconfiguration based on increased manufacturing visibility.*
- *Leverage existing production resources and up-to-date information to drive optimal utilization of manufacturing capacity and integrate with enterprise systems.*
- *Integrate ERP solutions across the supply chain to provide visibility into production data, thereby enabling production facilities and business partners to dynamically and flexibly respond to customer demands.*
- *Use supply chain management to optimize planning and inventory processes across organizational boundaries.*

IBM software for automotive marketing, sales and service

This software helps you maximize the satisfaction of both dealers and customers. Link manufacturer systems directly to dealers and channel partners to streamline sales, and

thereby drive both dealer profitability and the customer experience. After the sale, leverage product performance monitoring, data analysis and reporting capabilities to accurately detect and promptly address product issues. The software helps you:

- *Improve the customer experience of buying and owning an automobile by providing the dealer with integrated information, delivery and execution processes.*
- *Minimize warranty cost and maximize product quality and safety by accessing underused data and facilitating rapid, collaborative decision making about product issues.*
- *Manage product and customer information throughout the sales and ownership cycles to drive highly effective marketing programs and cost-efficient customer service.*
- *Leverage telematics to obtain real-time insight on how vehicles are performing and provide customers with assistance before problems arise.*

Business Partners help further leverage IBM software capabilities

IBM software for the automotive industry is complemented by applications and services provided by our IBM Business Partners — including the hundreds of Business Partners specializing in service orientation — helping to make this solution a world-class foundation for optimizing your value chain. Working in partnership with our clients, IBM and IBM Business Partners can help meet the needs of today's automotive industry organizations.

For more information

IBM is unique in its combination of unmatched automotive industry experience, deep service orientation skills, unparalleled Business Partner network, and software and technology product excellence — and as a result is a clear leader in service orientation. We can help you get started with service orientation, whether for the enterprise, a departmental initiative or a single project. IBM is the ideal partner for automotive companies seeking to meet the challenges of maximizing flexibility of design and manufacturing processes; introducing new products to market quickly and efficiently; minimizing the cost of both core and noncore operations, often by shifting responsibilities along the value chain; and streamlining sales, service and marketing processes.

To learn more about IBM software for the automotive industry and other automotive industry–specific offerings, contact your IBM representative or IBM Business Partner, or visit **ibm.com**/software/industries/auto

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