DaimlerChrysler builds a “proactive infrastructure” to become more flexible and responsive.

Overview

- ***Challenge***
  DaimlerChrysler knew that competitive strength in today’s dynamic global auto industry came not only from efficiency, but also from the ability to adapt the business quickly to changes in its environment.
- ***Why Become an On Demand Business?***
  DaimlerChrysler needed to be able to sense everything from shifting customer preferences to changes to shipment dates, and have the built-in means to respond dynamically. But this required flexible systems and processes integrated from end to end.
- ***Solution***
  DaimlerChrysler engaged IBM to design and build an integrated infrastructure solution that provides a standardized, “ready-made” environment for developing, deploying and running applications.

Key Benefits

- *Significant reduction in overall application lifecycle costs*
- *Fundamental reduction in average application development cycle*

>> **On Demand Business defined**
“An enterprise whose business processes—integrated end-to-end across the company and with key partners, suppliers and customers—can respond with speed to any customer demand, market opportunity or external threat.”

Based in Auburn Hills, Michigan, and Stuttgart, Germany, DaimlerChrysler generated $192 billion in revenues on sales of 4.7 million vehicles, making it the world’s number three auto manufacturer. The company, whose brands include Mercedes-Benz, Chrysler, Jeep®, Dodge and Freightliner, employs 384,723.

With manufacturing facilities in 17 countries and products sold in 200, few companies are more global in scope than DaimlerChrysler. The company (www.daimlerchrysler.com) has made this strong global presence a key part of its business strategy as a way to gain the most leverage from its operations and its global brand. Underlying and driving this strategy is the auto industry’s intense competition, which has made efficiency and cost control absolutely essential. While the merger that created DaimlerChrysler established the potential for scale-driven efficiency, realizing that

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– *Dr. Seshu Bhagavathula, Director for Technology Strategy, DaimlerChrysler*

On Demand Business Benefits

- Reduction in overall application lifecycle costs
- Reduction in average application development cycle time
- Nearly 50% reduction in installation costs for applications deployed via the new application development platform
- Nearly 30% reduction in ongoing operations costs (based on Gartner Group study)
- Reduced technical risks in deployment and operations phase for applications developed using the new solution
- Improved ability to standardize and optimize business processes across the company resulting in increased responsiveness as a company

potential required the company to consolidate and integrate its operations. Only then could the company unleash the valuable synergies on which the merger was predicated.

As IT investment exploded in the late 90s, the competitive demands on auto manufacturers increased still further. While cost control remained important, flexibility and speed—in the form of shorter cycle times and rapid time to market—had also become key operational requirements. But for DaimlerChrysler, the pervasive growth of technology had also presented a challenge. Still in the early stages of integrating its operations, DaimlerChrysler—like many large firms—grew into a complex patchwork of products and technologies running on a variety of IT infrastructures across the company. The operational implications were significant. For one, the fact that business units—and sometimes departments—ran different systems and applications posed a major obstacle to cross-functional integration and contributed to the formation of business process silos across the company.

Driving toward adaptability

DaimlerChrysler knew that competitive strength in today's dynamic global auto industry came not only from efficiency, but also from the ability to adapt the business quickly to changes in its environment. This meant being able to sense everything from shifting customer preferences to changes to shipment dates, and having the built-in means to respond dynamically. But the company also knew that to achieve such a sense-and-respond capability required flexible systems and processes integrated from end to end. DaimlerChrysler recognized the need to break down its silos and saw its IT strategy as an effective medium for achieving this.

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– *Wilfried Reimann, Senior Manager for Technology Integration, DaimlerChrysler*

Within DaimlerChrysler, the prevailing view was that its IT capabilities should facilitate—not thwart—its business strategy. The most fundamental of these capabilities was the application development. Under the previous framework, IT complexity and a lack of standards made the application development and deployment process slow and inefficient and made applications prone to unpredictable performance. For each application, developers had to address not only business logic but also technical issues like integration, security and performance testing. Once applications were developed, the lack of standards also precipitated operational problems. With no standardized infrastructure, data center staff were often ill-prepared to configure, integrate and manage the new applications. This added to the overall time, cost and

burden required to bring new applications online. In sum, cumbersome application development made DaimlerChrysler less responsive.

A new infrastructure solution

With the assistance of IBM, DaimlerChrysler addressed this problem by reinventing the way it developed and supported applications across the enterprise. At the core of this new application framework is a standardized, integrated platform employing a Service Oriented Architecture (SOA) approach. Known as the Pro-Active Infrastructure (PAI), the platform was designed as an efficient, "ready-made" environment for deploying and running enterprise-wide Java applications. Its core benefit is simplification, which it achieves by encapsulating most of the technical aspects of application development—such as security, directory services and integration—into modules that can be readily accessed and reused by developers, thus enabling them to focus their efforts on business logic. Moreover, because the new system was designed to be inherently robust and scalable, performance testing requirements are drastically reduced, enabling developers to focus on high value added tasks.

The final and arguably most innovative attribute of the PAI is its built-in flexibility. Built on a firm foundation of standards such as J2EE, XML and Web Services, the new platform can modularly add new products and technologies with no or minimal impact to the applications running on top of it. By simplifying the application infrastructure, DaimlerChrysler has increased its flexibility to capitalize on new technologies while at the same time reducing the cost of maintaining its applications within its data centers. In this way, the PAI acts as a bridge between application development and data center operations. An even truer measure of the PAI's flexibility is the model DaimlerChrysler and IBM used to deploy it. While traditional engagements generally have a clear beginning and an end, DaimlerChrysler treats the PAI as an ongoing series of product releases subject to constant evolution. Under this model, the company's distributed base of internal customers—its application development and data center teams—gain access to the leading edge technology built into the platform, while development efforts as a whole are bounded by a common set of standards.

Designed with the support of IBM Business Consulting Services and IBM Global Services – Integrated Technology Services, the PAI is comprised of a series of specialized, well integrated modules like the portal, J2EE, process integration, business information broker, security and directory platform, supplemented by selected 3rd party products. Each of these platforms has one or more standard products as its foundation, but also includes add-on functionality to standardize development and operation and to integrate with the DaimlerChrysler computing and network infrastructure. For instance, developers relied on the PAI portal platform to develop its highly successful employee and supplier portals and to build workflow-oriented business applications as well as applications that share business process data across or within business units within an SOA framework.

Key Components

Software

- IBM WebSphere® Application Server
- IBM WebSphere Portal
- IBM WebSphere Business Integration
- IBM WebSphere MQ Workflow
- IBM DB2® Universal Database™
- IBM Rational® Development Tools

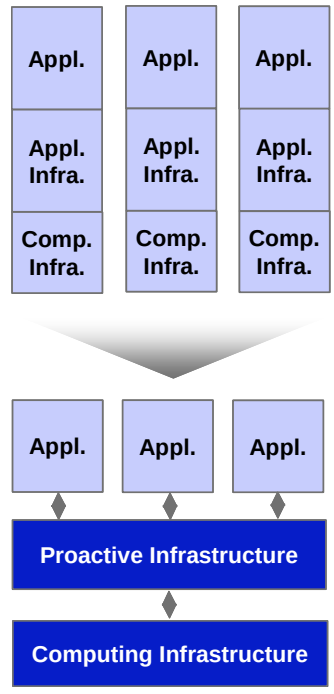
Servers

- IBM eServer™ pSeries®

Services

- IBM Business Consulting Services
- IBM Global Services - Integrated Technology Services
- IBM SWG Services

Former approach vs. PAI
Deployment Time: 18 months



A module based on IBM WebSphere Application Server is used to develop J2EE-based Java applications. IBM DB2 Universal Database serves as the PAI's standard database engine.

By standardizing its application infrastructure, DaimlerChrysler has been able to transform, simplify and streamline its application development and management processes. For the roughly 120 applications developed using the PAI so far, DaimlerChrysler expects the new processes to reduce their overall costs significantly over the course of their lifecycles. On the development side, the speed and efficiency enabled by reusable components are a big factor, with the average development cycle reduced by nearly half. Results have been equally impressive in the area of operations, where streamlined and automated processes for installing, configuring, monitoring, and troubleshooting applications have enabled DaimlerChrysler to reduce its costs by nearly 30 percent (according to a best practices study by the Gartner Group), allowing it to redeploy resources into continued optimization efforts.

But to bring the story full circle, the real acid test in assessing the solution's value is whether it helps make DaimlerChrysler a stronger, faster and more adaptive competitor in the global auto market. For Dr. Seshu Bhagavathula, Director for Technology Strategy, the answer is an unqualified yes. "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," explains Dr. Bhagavathula. "It gives us the infrastructure we needed to standardize and optimize our processes across the company." Good examples of this include a common bill of materials application now under development that will serve all of the company's commercial vehicles divisions, as well as new collaborative processes that will enable business units around the world to share engineering data.

For Wilfried Reimann, Senior Manager for Technology Integration and the project's key driver, the depth and breadth of IBM's resources around the world were key factors in its selection as a provider. "It was important for us to know that IBM will be there wherever we decide to deploy," says Reimann. "IBM knows about building open infrastructures and about the way global organizations like DaimlerChrysler work. There are not many companies that can make that claim."

For more information

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