

KLM Royal Dutch Airlines

Service-oriented architecture
contributes to high performance



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accenture

High performance. Delivered.

Based in Amsterdam, The Netherlands, KLM Royal Dutch Airlines (KLM) is a pioneering airline that was founded in 1919.

With more than 30,000 employees, the airline realized operating revenues of €7.2 billion and operating income of approximately €540 million in its most recent fiscal year. KLM carried nearly 22 million passengers and 619,888 tons of cargo, and provided more than 100 airlines with engineering and maintenance services. Throughout its history, KLM has maintained an enviable reputation as a result of its determined efforts to be a leader in quality and customer satisfaction. To do so, the airline has had to innovate consistently: In 1998, KLM was honored

with the "Airline of the Year Award" by influential US trade magazine Air Transport World; in 1999, it was the first airline in the world to receive ISO 14001 certification for its environmental care system; and, over the past six years, it has been one of the most successful airlines at leveraging technology-based strategies to streamline operations amidst financial and competitive turmoil in the global airline industry. Today, with its fleet of 190 modern aircraft, KLM ranks fifth among airlines in the FORTUNE® Global Most Admired Companies survey.

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Business challenge

The entire global airline industry had little time to set in motion organizational and operational changes that would enable them to survive the combination of the 2002 dramatic decrease in passenger air traffic and the intense downward pressure on airfares caused by discount airlines. To ensure it could maintain its industry reputation and leadership, KLM moved swiftly and aggressively to analyze its cost base, examining all areas of operations for new streamlining opportunities. In 2003, KLM retained Accenture to develop and enhance the airline's Web-based applications through the early adoption of a service-oriented architecture (SOA) approach. In particular, KLM management wanted to ensure cost-effectiveness by providing the ability to develop and reuse Web services that would best support the dual goals of streamlining operations and improving customer satisfaction.

Because KLM wanted to achieve greater coordination between its business processes and information systems, KLM and Accenture decided

to use SOA as the optimal approach to support this goal. Service-oriented architecture was ideally suited to KLM's business alignment aims and Accenture was well positioned to team with KLM to address strategic business challenges, develop an IT infrastructure for enabling accelerated application development and organizational flexibility and provide education and training on SOA, all to support high performance. The collaboration between Accenture and KLM has yielded the e-commerce applications that have delivered better than expected flexibility and customer satisfaction. Meanwhile the backend SOA-based service layers—as well as several reusable services—are making it easier for the airline to facilitate working with third-party commodity service providers.

How Accenture helped

Accenture's extensive cross-industry research reveals that high-performance businesses develop distinctive capabilities to support operational efficiency and business innovation—which is why Accenture and KLM made SOA the cornerstone of the expansion of the airline's

electronic services, which are central to KLM's distinctive approach to business. The joint Accenture/KLM team comprised approximately 25 professionals in services layer and service-oriented architecture development, in addition to development for reservations, ticketing, payment and check-in. These professionals worked together to build and launch new SOA-based reusable services and applications.

Using Sun Microsystems' J2EE open source software and IBM WebSphere technology platform, the team produced a service-oriented architecture that would become the foundation for future business growth. Furthermore, they identified reusable services that would make it convenient to quickly develop new applications for the airline. As an example, KLM recently launched an electronic booking tool application for its customers. The application is based on reusable services that are also used for the electronic ticket booking applications for its own employees as well as by other parties outside KLM.

In addition, the SOA layers that Accenture helped create are making it possible to facilitate the smooth migration of application services from KLM mainframe systems to a new platform. The SOA underpins the Reservation & Pricing Services Layer (RPSL) that supports the migration of more than 30 e-commerce and operational applications from KLM legacy systems to the Amadeus booking system, an industry-wide standard commodity service provider for airlines. Principles of SOA support applications like the Electronic Booking Tool (EBT) and Internet Check-In (ICI)—as well as backend abstracting service layers—to facilitate the move to third-party commodity services, which KLM developed with Accenture's help. The new SOA foundation, which was built because of KLM's longstanding vision, is enabling decreased application development times through reuse—driving efficiency, improving operations as well as customer relationships.

Accenture also worked with KLM to solidify its "reuse, buy, build" philosophy. The idea is that if a service cannot be reused to build an application, KLM must choose whether to buy or build the necessary capabilities based on key business criteria, including return on investment and total cost of ownership. These aspects of KLM's approach to SOA will start to make a difference as KLM determines how it can use its existing storehouse of reusable services, such as the electronic ticket booking services, in new areas such as checking in via mobile phone or via the Internet.

High performance delivered

Service-oriented architecture has helped KLM fulfill its business objectives and has provided KLM with the means to both expand electronic services with innovation as a central feature of its approach. The new SOA-based electronic-booking and Internet check-in applications—30-plus reusable services that Accenture helped KLM develop—are delivering significant performance improvements. "KLM has gone from

zero tickets sold online to millions of euros in daily sales," says Michael Widjaja, Accenture System Integration & Technology partner responsible for the KLM relationship. Its new SOA technology environment has evolved to the point where it provides a solid foundation for the reuse of services, creating opportunities to use existing services to build applications that save time, save money and contribute to new revenue generation.

Today, as a result of three focused years of Accenture/KLM teamwork, KLM is seen as one of the world's leading airlines for implementing ambitious, forward-looking electronic business activities. The collaboration with Accenture has allowed KLM the advantage of taking a long view, knowing business results were being achieved throughout the entire process of building SOA capabilities. KLM has also become more committed to its goals of code reuse and operational streamlining.

Furthermore, KLM's approach to SOA has lowered its overall cost of integration through the application of industry-wide Internet standards that reduce time to delivery, as well as enable centralized enterprise-wide service monitoring and management—and has provided a common technique for data integration from multiple sources. In addition, the airline's standards-based, scalable and extendable service layer helps it deploy interfaces that were previously too complex or costly.

Teaming with Accenture, KLM is pursuing other SOA-related electronic services initiatives to define business processes and services around the customer and an electronic IT architecture study for KLM's next-generation electronic architecture. The airline plans to continue to realize benefits in all its complex activities: From online ticketing, seat availability and live transfer kiosks that speed passenger transfers, to airport-based electronic ticketing and check-in and Web-based ticketing. "In the hyper-competitive airline industry, it is increasingly challenging to maintain leadership and deliver consistent results," says Accenture's Widjaja. "By using our formidable

resources and expertise around SOA as well as our deep partnership with KLM, we are helping KLM to make a better airline through continual innovation that contributes to high performance."

Accenture builds high-performance businesses with SOA

Service-oriented architecture, or SOA, is an area of technology expertise that Accenture believes will revolutionize the speed with which organizations can respond to changes in business and market conditions. Service-oriented architecture allows companies to fluidly combine existing and recent IT assets to deliver new applications, business processes and business models inside and outside the enterprise.

In our extensive research into high-performance IT organizations and into how businesses and governments are planning to achieve new growth through enterprise systems, SOA has been identified by many of the world's leading organizations as an area that will help them best differentiate themselves in the marketplace and deliver competitive advantage.

By making it possible to reuse services and access them wherever they are located, SOA contributes to organizational flexibility and adaptability; by enabling the creation of composite solutions, SOA makes it easier for employees to access and use enterprise applications, driving productivity gains. Accenture recommends that organizations begin to study practical SOA approaches, quick-win opportunities and ways SOA could contribute to the ongoing quest for high performance.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. With more than 187,000 people serving clients in over 120 countries, the company generated net revenues of US\$23.39 billion for the fiscal year ended Aug. 31, 2008. Its home page is www.accenture.com.



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Contact Information

To find out more about Accenture
and service-oriented architecture,
contact: Michael Widjaja
michael.widjaja@accenture.com
+31 (0) 20 493 8579