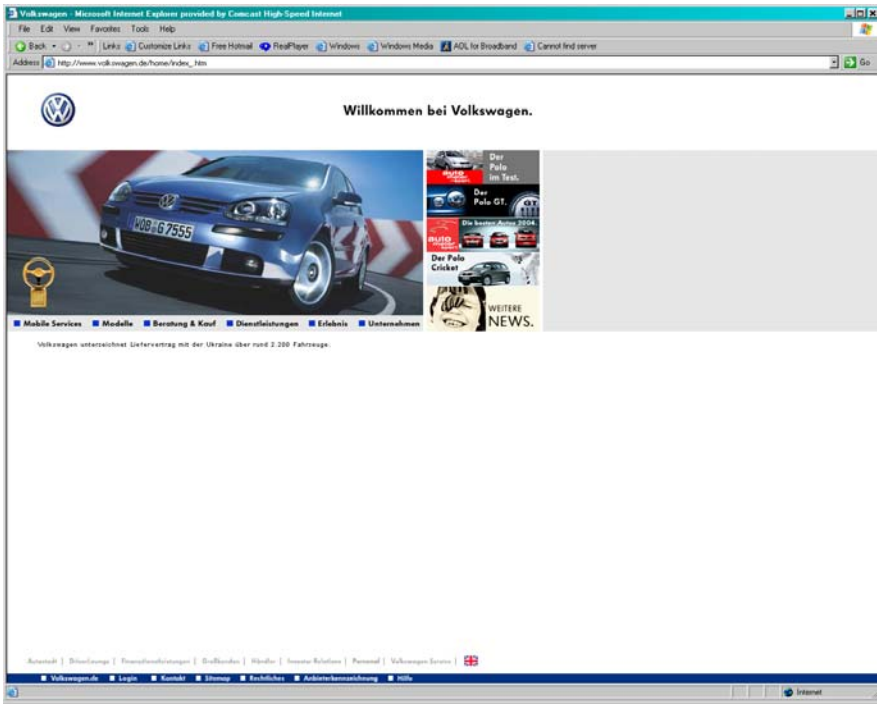
Volkswagen's world-class procurement strategy produces breakthrough productivity gains.

Overview

- ***Challenge***
  Faced with rising complexity within its supplier-facing processes, Volkswagen needed to make its employees more productive to stay ahead of the competition
- ***Why Become an On Demand Business?***
  Volkswagen needed to integrate its information and processes to speed decision-making and become more responsive to a rapidly changing supplier environment
- ***Solution***
  An On Demand Workplace that includes an enterprisewide portal for employees and suppliers whose sensing, analytic and workflow capabilities have radically streamlined the way employees access and act on information
- ***Key Benefits***
  - *20% increase in procurement staff productivity*
  - *Expected 100% payback within one year*
  - *Significant decreases in materials purchasing and inventory costs*



Volkswagen is the company behind such storied brands as Audi, Bentley, Bugatti and Lamborghini.

Based in Wolfsburg, Germany, Volkswagen AG (www.volkswagen.de) is Europe's largest auto manufacturer with worldwide revenues approaching $110 billion and manufacturing facilities on every continent. While perhaps best known for its VW and Audi brands, Volkswagen is also the company behind such storied brands as Bentley, Bugatti and Lamborghini. Amid the ever-increasing competition in the worldwide auto industry, Volkswagen has long set itself apart through the design and

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–Dr. Martin Hofmann, Group Executive Director for Purchasing Process and Information Management, Volkswagen AG

On Demand Business Benefits

- Expected payback within one year
- 20% increase in productivity for Volkswagen's procurement staff
- Shorter order-to-delivery cycles by virtue of more efficient processes
- Improved ability for Volkswagen procurement staff to focus on high value-added activities
- More rapid response to impending shortages and surpluses, thereby reducing bottlenecks and inventory costs
- Improved ability to leverage purchasing economies through a more unified view of Volkswagen's supply chain

engineering of its cars—yielding the mix of speed and simplicity that epitomizes "Euro" styling.

Speed and simplicity have also grown in importance for the company's underlying business processes. Driven by relentless industry competition, the need for maximum employee productivity, shorter cycles and lower costs has never been greater. At the same time, achieving these efficiencies has become an increasing challenge. One big reason is a shift in consumers' buying practices, with more and more buyers customizing their cars at the dealership—from upholstery and color to engines.

As a result of this trend, car manufacturers' business processes—already complex—have become even more so. Once an order is placed at a dealership, it flows through a variety of systems, to the production ordering system, to the production assembly system and finally to the logistics system, which closes the loop when it delivers the car to the customer. While more options means more choices for Volkswagen's customers, it also means an exponential increase in the variations of parts moving through the assembly process, each of which needs to be ordered, shipped and tracked. In many ways, this order-to-delivery cycle represents the frontline of the competitive battle being waged in the auto industry. As part of this battle, Volkswagen and its competitors need to maximize the efficiency of every stage of this cycle in order to reduce their costs and to speed delivery of new vehicles to customers. However, with Volkswagen's processes becoming more and more complex, optimizing the efficiency has in turn become even more of a challenge. The industry's incessant pressure to control cost compelled the company to face this challenge.

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Complexity: the looming challenge

To get on a higher plane of efficiency going forward, the company needed to fundamentally change its core processes. Within Volkswagen, the efficiency of processes is defined by how well these processes operate under "normal," predictable conditions and, perhaps more importantly, their ability to dynamically adapt to key changes in its environment and still deliver the best possible outcome. Given the sheer scale of Volkswagen's procurement activities—global purchasing volume approaches $80 billion annually—the company is constantly buffeted by external events. Forecasts change. Commodity prices rise and fall.

Suppliers go out of business. And for every one of these events, Volkswagen's ability to respond rapidly and correctly is a key measure of its process efficiency and, ultimately, its long-term competitiveness. In addressing the challenge, Volkswagen focused on a basic, yet critical, truth—that the root of business processes is the use of information to trigger action. The key to more effective procurement practices, says Dr. Martin Hofmann, VW's Group Executive Director for Purchasing Process and Information Management, was to redefine the way employees and suppliers access knowledge, thereby unleashing their potential to add value. "Knowledge management has become one of the most critical success factors in the auto industry," says Hofmann. "We need knowledgeable employees who can focus their energies on high-value activities and driving new efficiencies, spending as little time as possible seeking and wading through information."

The On Demand Workplace Defined

- A set of services and software that simplifies employee access to content, applications, people and processes.
- A secure, enterprisewide portal that enables employees to dynamically interact with integrated business processes, other employees, partners, suppliers and customers.
- A personalized workplace that becomes a single destination for employees to do work.

A number of factors stood in the way of this vision. First and foremost was a lack of common processes and information architectures. While a truly global company, Volkswagen's processes and systems are highly localized and departmentalized; each location runs a different set of processes, applications and user interfaces, operating in different languages and time zones. Having to navigate through these disparate systems bogged down decision-making in the company's procurement operations, and made it more cumbersome for suppliers, who were required to log onto as many as 20 systems to get the information they needed. Underscoring the need to act, Dr. Hofmann cited an internal study finding that purchasing agents spent 70 percent of their time in the act of searching for, retrieving, analyzing, validating and moving information, with only 30 percent spent on value-added activities like finding new potential cost savings and negotiating better prices with suppliers. "It was clear that this ratio had to be reversed," notes Dr. Hofmann. The only way to do that was to radically change the way people worked with information across organizational boundaries to make them more responsive to events that affect them."

Speed through sense and respond capability

Working with IBM, Volkswagen began putting in place a new system designed to simplify and automate the process by which employees and suppliers capture, access, analyze and use information. According to Dr. Hofmann, the aim of the new system is to reverse the current application paradigm, under which the burden of seeking information falls entirely on end users. "Our vision was to leverage technology to create a sense and respond capability that would support more effective decision-making," says Hofmann. "This means the right intelligence and workflow automatically goes to the right user in response to an outside event—the very definition of an end-to-end adaptive process." Volkswagen's new On Demand Workplace solution is comprised of four main components:

Volkswagen's new Jetta™ Wagon

Key Components

Software

- IBM WebSphere® Application Server
- IBM WebSphere Portal
- IBM WebSphere Business Integration
- IBM WebSphere MQ
- IBM WebSphere Edge Server
- IBM DB2® Universal Database™
- IBM Tivoli® Access Manager

Servers

- IBM eServer™ xSeries®

Services

- IBM Business Consulting Services
- IBM Software Group
- IBM Böeblingen Development Laboratory

- *Sensing capability*, to automatically identify and capture external events such as price changes, competitive issues or supplier-related developments
- *Personalized information delivery*, using a portal to send the right information to the right business user
- *Integrated analytics*, using business intelligence to analyze and contextualize the event-driven information
- *Business process automation*, which employs advanced workflow technology to trigger automatic actions across a range of relevant business process areas

The dramatic impact on procurement productivity is most evident when compared with the way the process had formerly been conducted. In a typical day, procurement staff are bombarded with unstructured information. Telephone calls come in about supply shortages, or a procurement officer might read about a supplier going under in the trade press. For these and other events, procurement staff need to assess what the event means for Volkswagen's production needs, what business processes will be affected and what actions will be required to work through the situation. The new system alerts Volkswagen of an event that could cause a parts shortage, and triggers an automatic checking of parts inventories, alternative sources and the impact on vehicle production, as well as the overall financial impact on the balance sheet. Tasks that used to take days or hours now take minutes. Freed of information overload, procurement staff can now focus their time and effort on producing the optimal outcome—minimizing the downside and making the most of cost-saving opportunities.

Volkswagen and IBM team up for smarter procurement

To build the solution, Volkswagen selected IBM WebSphere technology to not only connect employees and suppliers to information and applications throughout the company but also enable the kind of automated, data-enriched workflow environment it envisioned. Since the new solution would have to integrate with a wide range of systems—both off-the-shelf and home-grown—strong support for open standards was a must, as was the ability to personalize information and push it out to the right user at the right time. To meet this need, Volkswagen selected IBM WebSphere Portal to provide employees and suppliers with a single point of access to critical supply chain data and applications. To transparently integrate the procurement system with various backend systems—a

critical element of the solution—Volkswagen employed IBM WebSphere MQ. To perform the business process integration underlying the solution's automated workflows, the company chose IBM WebSphere Business Integration. Running on a cluster of IBM eServer xSeries servers, the portal solution also employs IBM DB2 Universal Database to house key information and IBM Tivoli Access Manager for authentication. Load balancing within the cluster is performed by IBM WebSphere Edge Server.

With Volkswagen's solution uniting a huge, heterogeneous infrastructure, ease of integration and standards support were immeasurably important. But with the requirement that the solution ramp from a handful of pilot users to more than 35,000 in a matter of months, Dr. Hofmann notes that scalability and resiliency were also top-tier concerns. "We felt that the overall flexibility and scalability of the WebSphere architecture would allow us to grow smoothly," says Hofmann.

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–Dr. Martin Hofmann

IBM's role in the project was to provide the technology and the expertise needed to make Volkswagen's sense-and-respond vision a reality. IBM Business Consulting Services worked with the company's internal consulting organization on business process design and integration, while staff from the IBM Software Group defined functional requirements, designed the solution and played a key role in legacy integration. The IBM Böeblingen Development Laboratory assisted in defining the solution's future needs as well as troubleshooting. While the solution went into production a year after the start of the project, Volkswagen's strategy called for an incremental rollout, with new features and elements added continuously.

The Impact: smarter employees, shorter and faster cycles

By integrating sensing capabilities with a deep knowledge base and a highly automated workflow, Volkswagen's procurement staff is becoming highly efficient. A year into deployment, the company has targeted a 20 percent rise in staff productivity—and that's just the beginning. Employees and suppliers now spend less time finding information and more time acting on it. Freed from inefficient processes, these employees can now focus on further process improvements—the kind that will reward Volkswagen in the punishing competitive climate of today's global auto industry. More efficient employees and integrated processes have also made the company more responsive to supply-related developments, and in so doing have shortened the order-to-delivery cycle, enabling customers to get their cars faster. In addition to cutting time, a tighter, more informed supply chain has also enabled Volkswagen to cut costs in a variety of ways. By keeping ahead of the curve on impending shortages and surpluses, the solution helps keep inventory carrying costs down and keeps bottlenecks to a minimum. Dr. Hofmann also sees the higher visibility across the supply chain, made possible by the solution, as a

major driver of future costs savings. "We're now better able to identify synergies that will drive costs down," says Dr. Hofmann. "The more we can coordinate our purchasing internally, the better we'll be able to capitalize on volume-based effects and reduced complexity." For the portion of the project completed thus far, he expects to achieve 100 percent payback "well within a year."

Driving toward an on demand future

After targeting the initial phase of the deployment in the procurement area, Volkswagen plans to expand its sense-and-respond On Demand Workplace framework to the company as a whole. By relying on the WebSphere platform to link all of Volkswagen's business processes—inside and beyond the enterprise—Dr. Hofmann expects similar levels of productivity improvements for the company's 300,000 worldwide employees. "Eventually, Volkswagen will be fully connected both inside and outside of the company, based on well-defined business events and business scenarios," says Dr. Hofmann. "We will be able to respond rapidly—in some cases simultaneously—to critical events in our business environment. Having a faster, more productive set of processes will also help us keep our costs down and stay competitive."

Dr. Hofmann also sees IBM playing a key role in Volkswagen's increasingly on demand future by continuing to help the company redefine and connect business processes. "We hope to leverage IBM's vast knowledge of industry best practices, as well as their knowledge of on demand technology to identify and implement our key processes faster," explains Dr. Hofmann. "This will make us much faster in terms of order-to-delivery cycles, product development and our ability to connect to the outside world."

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