

# Audi Hungaria Motor standardizes and integrates to overtake supply chain complexity.

---

Overview

---

■ **Challenge**

*With its role within the VW Group’s supply chain growing, Audi Hungaria’s business processes were becoming more complex, impeding future growth and optimization.*

■ **Why become an On Demand Business**

*With more business units depending on it, the company needed to ensure that it could respond rapidly to changes in the supply chain. This meant simplifying its processes and better integrating them with those of other business units in the VW Group.*

■ **Solution**

*Audi Hungaria worked with IBM Business Consulting Services to redesign and integrate its supply chain processes, all of it implemented under the umbrella of a new SAP solution. An automated systems management platform was deployed to make the system more flexible, robust and manageable.*

■ **Key Benefits**

- *Tenfold increase in the speed of its materials requirement planning cycle*
- *Simplified systems management, reduces integration costs and improves IT productivity*



*In addition to being the world’s fourth largest engine manufacturing plant, Audi Hungaria Motor’s Gyor facility assembles the popular Audi TT Coupe.*

A unit of European automotive giant Volkswagen, Audi Hungaria Motor Kft. was established in 1993 as one of several engine suppliers for the VW Group, whose business units include Volkswagen and Audi. In the short span since its founding, Audi Hungaria’s daily engine production has grown from 100 to more than 6,500, making it the Group’s largest engine supplier—and displaying a rate of acceleration that any carmaker would be proud of. In addition to growing its engine volume, Audi Hungaria has also expanded the scope of its production to include the assembly of Audi’s TT Coupé and Roadster sports cars. Both of these developments moved Audi Hungaria to the very center of

*“We have achieved massive improvement in process acceleration and transparency as a result of the implementation of electronic invoicing and purchasing. This is an absolute advantage for the successful management of the company.”*

*–Heinrich Franke, Chief Financial Officer, Audi Hungaria Motor*

### **On Demand Business Benefits**

- Audi Hungaria's material requirements planning cycle is 10 times faster than under the previous solution.
- The flexibility of the new systems management framework facilitates Audi Hungaria's growing role in the VW supply chain by enabling rapid process integration and automation.
- The framework's single point of control simplifies systems management, reducing integration costs and improving IT productivity.
- Integrating supply chain processes end-to-end provides more visibility into key information flows—supporting decision-making.

VW's global supply chain. As Audi Hungaria's prominence in the VW supply chain has grown, so too have the scale of its operations and the degree to which its processes have become interdependent with those of other business units. One sign of increased scale is the rapid increase in the number of mechanical production and assembly lines it operates, which have made it the fourth largest engine plant in the world. Another is the large and growing network of warehouses used to store in-bound parts from suppliers as well as completed engines to be delivered to the Group's manufacturing plants around Europe. As it has become more connected, Audi Hungaria has experienced a quantum increase in the complexity of its business processes, the volumes of information flowing across its value chain and the demands placed upon its core systems.

### **Moving to the middle of the supply chain**

By moving to the center of VW's supply chain, Audi Hungaria came under increased pressure to coordinate its engine production with the production needs of the business units. Given the tight timeframes built into Audi Hungaria's delivery practices, failure to provide a unit with needed parts would result in a costly and disruptive production shutdown in as little as two days. Compounding this pressure was a broader initiative within the Audi unit to cut the time required to turn around customer orders. With these steeper demands and tighter timeframes, one of Audi Hungaria's major challenges was to make its processes fluid enough to adapt quickly to upstream changes in each unit's vehicle demand, which in turn percolated down to engine demand and—ultimately—engine component demand from Audi Hungaria's suppliers.

The company's systems would prove critical to meeting these challenges. Though the performance and availability of Audi Hungaria's systems had always been important, the company's increasingly prominent role in the VW Group's supply chain made them even more so. Indeed, with more transactions coming from more sources, Audi Hungaria's systems were subjected to sharply increased volume—and the stakes for their successful performance were rising. With its future role expected to grow still further, Audi Hungaria also needed to ensure that its systems would facilitate—and not impede—its expansion. Thus, as it added new products, production lines, warehouses and suppliers, Audi Hungaria needed the ability to rapidly and seamlessly integrate them with existing processes like production planning and logistics. Finally, with these process connections becoming increasingly complex, the company also needed a way to simplify their management to keep

systems running smoothly. Audi Hungaria's existing solution, built around the low-end ERP system it had started out with, had performed well but could not meet the company's new requirements. The company needed a way to sense changes up and down its growing supply chain—such as higher car demand from anywhere in the VW Group or lower parts capacity among any of its suppliers—and respond rapidly. This solution would also need to be inherently flexible and adaptive to meet the constant need to integrate new processes—even as the complexity of process integration grew. Finally, to keep this complexity from adversely impacting manageability and resiliency, ensuring a high degree of automation in areas like systems management, configuration and optimization was key.

#### Increased responsiveness through process integration

To achieve this goal, Audi Hungaria engaged IBM Business Consulting Services to fully redesign, standardize and integrate key processes like materials handling, warehouse management and logistics, and to implement them under a new end-to-end ERP platform. To improve sensing, RF barcode scanning devices were used by Audi Hungaria employees to automate the tracking parts shipments in an out of warehouses. To make the supply chain more responsive, IBM integrated forecasting, engine production planning and MRP (material replenishment planning) in realtime, improving the tightness and precision of its capacity planning. To further streamline planning, Volkswagen's companywide supplier portal, [www.vwgroupsupply.com](http://www.vwgroupsupply.com), is used as a platform upon which Audi Hungaria and its suppliers collaborate on key planning parameters like volumes and dates. Also, by enabling the tracking of key supply chain data, the portal makes its more transparent to Audi Hungaria and its suppliers—and thus a more valuable decision-making tool. These improvements were complemented by the use of advanced imaging and document management technology to automate the routing, review and approval of purchase requisitions and invoices.

While process redesign led to major efficiency improvements, long-term optimization required a flexible infrastructure for managing the *integration* of these processes—and overcoming the complexity that process integration was producing. To achieve this, IBM deployed a new systems management infrastructure that enables Audi Hungaria to add, manage, automate and connect all of its applications and processes through a single interface. Equally important is the solution's ability to pinpoint problems within a complex process flow, which facilitates rapid problem resolution and prevents potential bottlenecks from forming. Determined to have a single point of contact for the project, Audi Hungaria selected IBM Business Consulting Services on the basis of its business process and industry expertise, its experience in deploying complex ERP solutions and its expertise in such diverse technology areas as RF and document management. For the ERP core of the system, Audi Hungaria selected SAP R/3, SAP for Automotive and SAP Business Information Warehouse. For the systems management and automation, the company chose Tivoli Workload Manager,

---

## Key Components

---

### Software

- IBM Tivoli® Workload Manager
- IBM Tivoli Application Performance Management
- IBM WebSphere® MQ
- SAP R/3
- SAP for Automotive
- SAP Business Information Warehouse

### Servers

- IBM eServer™ pSeries® p650

### Services

- IBM Business Consulting Services
- 

*“The project optimized Audi Hungaria’s processes in diverse ways. With the introduction of SAP R/3, we took an important step on the way to further future growth.”*

*—Heinrich Franke*

while Tivoli Application Performance Management was selected to monitor the performance of various solution components. Integration—a critical part of the solution—was performed using a combination SAP Exchange Infrastructure (to link core ERP components and processes) and IBM WebSphere MQ (to link the solution to various host systems running within VW Group business units). The entire solution runs on an IBM eServer pSeries p650 server, deployed within Audi Hungaria's Győr, Hungary headquarters.

With its new solution in place, Audi Hungaria is now better positioned to meet the rigorous demands of the VW supply chain. The fundamental benefit is a vastly improved ability to manage complexity among processes and systems, which has in turn enabled the company to optimize the efficiency of its supply chain. Perhaps the best example is the material requirements planning cycle. Now, when vehicle forecasts change at the top of the chain, the system produces component requirements for suppliers at the bottom of the chain 10 times faster than under the old system. It's a great example of how end-to-end process integration helps make the overall supply chain more responsive.

As Audi Hungaria becomes more deeply woven into the fabric of the VW supply chain—adding new production lines, warehouses and processes—its newfound flexibility has tamed the IT challenges of growing, managing and optimizing the system. As a result, IT productivity goes up, integration and management costs go down and IT staff are freed to focus on further optimizing business processes. Towards this end, Audi Hungaria created an internal Competency Center with just this aim. Audi Hungaria Chief Financial Officer Heinrich Franke notes that in the end the key benefit lies in the ease of future process optimization—which is the key to competitiveness. “With the newly implemented system landscape, we have a high performance basis for further optimization and continued growth that is secure in the future and fits perfectly into the standardization strategy of the [VW] Group.”

#### **For more information**

Please contact your IBM sales representative.



©Copyright IBM Corporation 2004

IBM Corporation  
Corporate Marketing  
New Orchard Road  
Armonk, NY 10504  
U.S.A.

Produced in the United States of America

10-04

All Rights Reserved

eServer, IBM, the IBM logo, the on demand business logo, Tivoli and WebSphere are trademarks of International Business Machines Corporation in the United States, other countries or both.

Other company, product or service names may be trademarks or service marks of others.

This case study illustrates how one IBM customer uses IBM products. There is no guarantee of comparable results.

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.