

Greater Transparency in the Automotive Supply Chain Enables Cost Reductions

CASE STUDY / AUTOMOTIVE

Managing an Increasingly Complex Supply Chain

“BMW Group is a very customer-oriented company”, says Stefan Betz from the Material Control Overseas Plants department of BMW Group. “All over the world, we will accept, and act upon change requests from our customers until a few days before their vehicle goes into production.”

The ability to accommodate last minute changes to customer orders puts a great deal of pressure on BMW’s supply chain. And although the organisation currently has a 99.9x percent delivery reliability record, BMW wants to do better.

To meet the growing demand for BMW vehicles overseas, the company is now producing more of its vehicles in local markets. Managing the BMW global supply chain network to fulfil overseas demand for their vehicles is complex. Adding to that complexity are the numerous logistics service providers that the Material Control Overseas Plant department of BMW Group partners with to ensure that supply of parts to these plants is just-in-time and cost-effective.

Transparency across the Supply Chain

Tracing the journey of a single part through BMW’s overseas supply chain might find it moving from the plant where it has been manufactured, on to BMW Germany, then on to another supplier who might use it to manufacture a part of the car. This is then entrusted to a logistics provider, taken to a packing plant and transported by sea, air or train to the overseas plant.

With thousands of parts moving through the system at any point in time, it wasn’t easy for the team to alert the overseas plants of BMW when there were delivery bottlenecks. In order to ensure that overseas plants received all the necessary parts to fulfil customer



orders, BMW had to express ship the parts – a costly affair. This also made it difficult for BMW to accurately identify costs and cost drivers.

BMW had been using tools like Microsoft Excel®, Microsoft Access® and SAP® Business Information Warehouse to analyse the data along the supply chain. But as Betz notes, “Our traditional instruments increasingly reached their limits”.

Convinced that they needed a system that could deal with the increasing amounts of big data generated by the supply chain and a deeper and timely analysis of this data, BMW began a new project. The aim of this project was to achieve transparency across all parts of the supply chain to BMW overseas plants – from inventory and processing times, to measuring the performance of service providers and cost.

“The need for maximum transparency across all the important supply chain processes was ultimately the main reason we decided to introduce the Agile Information Platform (AIP) and selected Teradata as our technology and implementation partner”, says Betz.

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analysis of the supply chain, some standard reports have been created but users can also create their own reports to analyse the end-to-end process along the whole supply chain or focus on a particular process step.

“Thanks to the AIP, we now have a convenient possibility to bring together countless interfaces and large amounts of data. We can, for example, analyse where stocks are too high or transports are underutilised”, Betz observes. “In addition, the Teradata solution offers the possibility to integrate data from our suppliers as well as predictive analytics applications, something that is already being promoted in other parts of the company. From a technological point of view, the Teradata solution sets high standards.”

Implementing an Agile Information Platform (AIP)

The Material Control Overseas Plants department assumed the overall project management. But to ensure things ran smoothly, they engaged with IT, Purchasing and the experts at the BMW IT Research Centre at the Clemson University Greenville in South Carolina, forming an overarching steering committee to steer the project.

“The Teradata Professional Services specialists played an important part in this success of the AIP. Their work with different departments was very constructive, cooperative and solution-oriented”, Betz observes. “This was an important success factor that led to excellent results in early phases of the project, which gave the overall project a boost.”

The Benefits of Transparency

With the introduction of the AIP, BMW has noticed greater efficiencies in material control because all service providers are now tracked centrally. This has enabled the material control team to reduce the supply cost while being able to execute new requirements faster.

“We can now identify deviations such as delayed shipments at a very early stage, so that both the service provider and we at BMW Group can take appropriate action sooner”, said Betz. “This reduces the staff cost and financial expenditure considerably, and it creates room for further process improvements”.

Agile and Integrated

During implementation, the team at BMW also leveraged Teradata’s logical data model for the transport and logistics sector. This meant that the team could jump-start the creation of their data warehouse, and implement industry best practices to create a blueprint for the AIP’s data architecture. The AIP allows the team to flexibly run reports not just on data generated from the supply chain, but also to analyse this supply chain data with other data sources from around the organisation.

Some of the data sources currently in AIP:

- Inventory/stock
- Reason codes for air freight
- Master data (material, prices, packing material, packing instructions, suppliers)
- Tracking and tracing
- Air freight, vessel and train costs
- Goods receiving & advanced shipment notification
- Call offs for material (plant, supplier)
- Programme planning
- Primary and gross secondary demand

Currently, 80 different data sources are fed into the AIP, some loaded a couple of times daily and up to as frequently as 15 minute intervals.

The AIP provides a platform for different departments to analyse all the data sources from around the organisation on an ad-hoc basis to gain full insight into the complex supply chain operations. BMW currently has 20 “power users” for the system. To facilitate

Components of the Teradata Solution for BMW

- Teradata Data Warehouse Appliance 2750 with two nodes
- Teradata Data Warehouse Appliance 2690 with two nodes
- Teradata Backup, Archive and Restore (BAR) Solution
- Teradata DataLab
- Teradata Manufacturing Logical Data Model
- Professional and managed services

For instance, air freight is often the quickest way of getting parts of overseas plants, but this was also one of the more expensive forms of transportation. Analysis of inventory, customer order data and other data sources gave the team better insight into which parts were needed and at which overseas plants. This enabled BMW to reduce the cost of air freight to its overseas plants in China by almost 70 percent over the course of two years.

Also, with various departments now having the ability to run business intelligence reports on a “self-service” basis, the pressure on the IT department was relieved. “The logistics departments see the Agile Information Platform as an innovation that delivers true added value”, concludes Betz.

Riding on the wave of the successful rollout of the AIP, the team plans to add new interfaces and roll out the system to more “power users” and “self-service” users. In time, the company also wants to add more data sources to the AIP, such as those from suppliers. The team believe there are more areas of BMW’s business in which predictive analytics made possible by the AIP could enhance efficiency.

About BMW

With its three brands BMW, MINI and Rolls-Royce, the BMW Group is the world’s leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. As a global company, the BMW Group operates 31 production and assembly facilities in 14 countries and has a global sales network in more than 140 countries. The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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