

Case Study:
SUPPLY CHAIN MANAGEMENT

IMPLEMENTING AN EARLY WARNING SYSTEM REDUCES VEHICLE WARRANTY AND RECALL COSTS

INTERNATIONAL AUTOMOBILE AND TRUCK MANUFACTURER

An international automobile and truck manufacturer needed an early warning system to help it stay ahead of costly warranty claims and vehicle recalls. The original equipment manufacturer (OEM) turned to BearingPoint for help in developing a platform to bring disparate and often disconnected information sources into a cohesive system that would produce valuable data.

MANAGING RISKS, CONTROLLING COSTS

Automobile manufacturers and their tier-one suppliers are continuously seeking ways to improve quality, streamline processes and reduce operating costs. One opportunity for cost savings lies in the billions of dollars manufacturers must



BearingPoint helped an international automobile and truck manufacturer design and implement a system to improve the timeliness and usefulness of vehicle quality data, thereby significantly reducing warranty and recall costs.

spend on warranty claims and vehicle recalls each year—costs that can be avoided or more effectively managed with a robust quality information system.

The OEM that BearingPoint assisted had multiple data sources and quality information systems with limited functionality, restricting the company's ability to aggregate data. This hindered quality engineers in identifying and responding to product quality issues or quickly tracking emerging trends identified through engine, transmission and other system control modules. Also, the vehicle manufacturer had limited access to the detailed diagnostic information captured by dealers to perform root-cause analysis



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on warranty claims. This negatively impacted the OEM's ability to pinpoint issues quickly and lower warranty costs.

The OEM engaged BearingPoint as a trusted business advisor because of our thorough understanding of the manufacturer's elaborate systems, processes and organization. The engagement included the development of a quality "data mart" and portal that translates warranty and quality data into standardized information that can be used at any point in the value chain, from the engineer to the plant to the dealer.

LINKING DISPARATE SYSTEMS TO PRODUCE ACTIONABLE DATA

Improving data collection and analysis is critical to reducing the potentially huge cost of warranty claims and recalls. According to an article by Kevin Mixer in the AMR Research Report published November 24, 2003, "Gathering, analyzing and acting on critical data enables companies to avoid litigation, reduce replacement costs and minimize defects. The result? Brand owners can increase customer satisfaction with better product experiences, directly enhancing brand value as well as providing significant liability and recall cost avoidance."

Along with having to cope with various systems, the OEM that BearingPoint was assisting lacked the infrastructure to capture the detailed information needed to analyze vehicle diagnostic data.

The vehicle manufacturer had limited access to the detailed diagnostic information captured by dealers to perform root-cause analysis on warranty claims. This delayed the OEM's ability to identify issues quickly and lower warranty costs.

Historically, diagnostic data—although captured at the dealer level—was not stored centrally or for an extended length of time. Also, data was not stored consistently or in a usable manner. In fact, many of the manufacturer's quality engineers did not even have access to the data.

These factors made it difficult to link the diagnostic data with warranty claims filed by the dealerships. The manufacturer also needed to tie diagnostic data to its production and sales schedules. By making these linkages, the company could be proactive in the identification of emerging quality issues much earlier in the production life cycle. Without it, the OEM could not isolate issues related to a defective group of vehicles. The result was a much larger—and more expensive—campaign or recall than necessary.

The diagnostic data and the warranty claims—two key types of data—were the focus of BearingPoint's engagement.

HIGH-POWERED BUSINESS FUNCTIONALITY

In the engagement's early phases, BearingPoint developed a prototype early warning system for the vehicle manufacturer's several thousand North American dealers. The prototype included 20 reports that demonstrated the types of information that a system could provide and offered a glimpse into the levels of analysis the OEM needed. Soon thereafter, the production system was developed. The company was able to create more than 700 reports that facilitated detailed problem identification and analysis, helping it to:

- Receive a daily feed of diagnostic, build and sales data.
- Receive an hourly vehicle operations feed to monitor fleet management.
- Parse and translate the quality mart database and populate it with dealer data, vehicle-build information and weekly warranty claims data.
- Match dealer repair orders with diagnostic data.
- Integrate a Web-based business intelligence tool for queries, analytics and reporting.
- Comply with government regulatory reporting for emissions.

The OEM continues to enhance the system's functionality by introducing new modules, including engineering fleet management, as well as a supplier link to trace defective vehicle parts.

SHARPENING DAY-TO-DAY BUSINESS PROCESSES

Along the way, the OEM discovered additional ways to increase the system's value by addressing—and correcting—little-known gaps in its processes and data.

- **Missing data.** As the information traversed the legacy system, the company would lose key elements of the production data due, in part, to the lack of an end-to-end systems design or data integration plan. By the time the information reached the production, warranty claims and quality databases, the value of the data was diluted at best, if it wasn't missing altogether. In the new environment, the manufacturer can more effectively collect and retain the data moving from the source systems at the manufacturing plants to the warranty claims database.
- **Precise data.** In addition to providing a tremendous amount of rich data, the quality information system architecture allows the OEM to validate and, if necessary, cleanse the information before pulling it into the system. The architecture provides robust extract, translate and load capabilities that allow for quicker and more effective data management.
- **Actionable data.** Under its existing model, the vehicle manufacturer relied on slow and sometimes manual processes to store warranty and diagnostic data and share it



between engineers and dealers—a process that often took three to four weeks. With the early warning system, each day the OEM's dealers send diagnostic data on all vehicles that connect to dealer technology. This allows the company to track recurring problems several weeks earlier than it previously could and with more information and detail.

A LONG-TERM, SCALEABLE MODEL

With BearingPoint's support, the vehicle manufacturer has deployed a proactive quality management system that improves data quality and opens the door to millions of dollars in savings through cost avoidance. The OEM also has a solid platform for adding functionality. In the long term, the quality management system can help the company identify and resolve vehicle problems quickly, boost overall quality performance and, ultimately, improve customer satisfaction and loyalty to its brand.

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Brand owners can increase customer satisfaction with better product experiences, directly enhancing brand value as well as providing significant liability and recall cost avoidance.”

*KEVIN MIXER
AMR Research Report published
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