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Ensure material validations, track ongoing quality audits, maintain regulatory compliance.

Elemica

# Case Study



### CLIENT PROFILE

**Industry:** Tier 1 Automotive Supplier

**Employees:** 865

**Revenue:** \$1.55B

**Elemica Solution:**  
Supplier Quality Management



### ELEMICA QUALITY COMPONENTS

Supplier Quality Management

Traceability and Compliance

e-CoA (Electronic Certificate of Analysis)

Manufacturing Quality Management

**AY Manufacturing, an automotive industry supplier, uses the cloud to meet its customers' supply chain quality expectations, as well as its own.**

### EXECUTIVE SUMMARY

To respond to rapid growth for its automotive products and to improve its responsiveness to changing quality regulations, AY Manufacturing required a new supplier quality application. After an extensive industry search, AYM chose Elemica Quality to streamline its supplier nonconformance management and performance reporting process to replicate its major customer's process. AY Manufacturing has since expanded its use of Elemica Quality for production asset calibration management, resulting in additional efficiencies and cost savings. Future applications will include the Production Part Approval Process (PPAP) and the Initial Production Part (IPP) process.

### AY MANUFACTURING

AY Manufacturing, located in Columbus, Ohio, was established in



October of 1997 as an affiliate of Yachiyo, Inc., USA, the U.S. subsidiary of a major Japanese auto parts manufacturer, for the express purpose of manufacturing auto parts in the U.S. for a major Japanese automobile maker.

The company was a joint venture between ASC incorporated and

Yachiyo Industry Co., Ltd. Yachiyo is a \$3.3b manufacturer of motorcycle and automobile parts in Japan. It offers fuel tanks, sunroofs, bumpers, rear beams, bumper beams, door hinges, and inner pillars.



The company also manufactures automobiles. It has operations in Ohio and Georgia, Thailand, Vietnam, India, Japan, Mexico, and China. Yachiyo Industry Co., Ltd. was founded in 1953 and is based in Sayama-shi, Japan.

Because the OEM automaker is known for a strong commitment to quality in all aspects of its production, Yachiyo decided voluntarily to make its supply quality management system a priority in both reliability and transparency, knowing that unjustified material variability would not be tolerated.

### Products

AY Manufacturing in Columbus is geared to the production of sunroofs, turning out 1,090,000 per year for its client. Their products have dynamic features, protection requirements and esthetic characteristics that challenge the engineering team, production assets, and quality management. The processes are supported by both TS16949 and ISO 14001 certification.

### Supply chain

With its own supply chain of at least 80 sub-suppliers, the company needs to oversee materials flowing into their facilities primarily from other areas of the US, but also from Canada, China, Mexico, Japan, and South East Asia.

### Motivation for Implementing Elemica Quality

Faced with the combination of quality demands from both the parent company and the final client, AY Manufacturing had deployed a quality management tool for initial plant operations. However, with the growth in product complexity and

production volume, the solution in use became outdated. Increasingly frequent system crashes, and subsequent loss of data demanded a new approach. In addition, the system it used did not allow for the level of traceability and supply chain transparency modern quality standards require.

Administering it demanded more time than seemed reasonable, because it required the referencing of multiple databases in order to gain an understanding of a single process or material. The difficulty of managing an ageing system threatened quality control, including the capacity of the company to apply Statistical Process Control to enable both quick responses and to identify attempted falsification of data. In 2011, the AY Manufacturing management team began a search for a solution that could be managed as a comprehensive system and would be consistently reliable. The solution they selected in 2013 was Elemica Quality. AY evaluated several quality management solutions but determined that the proven, web-based Elemica Quality approach would enable them to meet their objectives most effectively.

### Implementation

Their level of commitment to quality at first demanded that the company run the two systems in parallel. For a year, this meant doubling the work load for quality professionals who had to enter data twice and check it for consistency. After a year of checking Elemica Quality's performance in this way, the company stopped the use of their old system and switched entirely to Elemica Quality. At this point, the increasing ease of managing the system as a whole and accessing databases conveniently have reduced the effort required to that of the previous, less functional system. In short, the more sophisticated and comprehensive approach of Elemica Quality has not increased the burden on the quality professionals or the cost of its administration.

### On-boarding Suppliers

The process for on-boarding the company's suppliers for the SCR function (Supplier Concern Reporting) was, according to management, "not too difficult, and there have been few issues since start up." Currently, the system manages over 500 materials flowing into the facility from all 80+ suppliers. Management estimates that each supplier has at least two or more people using the system



through their own home page. The initial scope of the Elemica Quality deployment focused on nonconformance management of supplier materials.

### Initial Deployment Focus

Nonconformance management in Elemica Quality mimics the process between the OEM and AY Manufacturing and its plants operating as suppliers. That includes self- management of nonconformances and their OEM-defined metrics that incorporates nuisance factors and unique scorecarding calculations. AY Manufacturing then turned around and asked Elemica to create a custom variation of the Elemica Quality scorecarding functionality so that the unique computations for reporting on AY suppliers was automated, timely and accurate.

Supplier concern reporting (SCR) for direct materials can now be done in the Elemica Quality system from any web-connected workstation, at any physical location in AY or outside when traveling to Supplier locations. All of the NCR details are centralized

in the AY Elemica Quality server hosted in the primary Elemica data center. That centralized data can provide reporting as requested from any workstation anywhere.

### Results at present

- Efficiency – time/labor costs reduction - has greatly increased.
- Risk avoidance - suppliers are being held to a deadline for countermeasures that help to reduce the risk of sub-standard product being shipped.
- Compliance with requirements- the system helps AY to comply with its OEM requirements.
- Audit requirements (efficiency of preparation for and passing of audits) – the system has made it easier to find needed information.
- Certifications – the company is TS certified and the system is used to help pull needed data for certification audits.

### Additional solution focus - Calibration

One of the imperatives of the corporate owner, Yachiyo, is “to value time and originality.” The management team of AY Manufacturing took this to heart, and looked at production asset

calibration as an opportunity for process improvement and monetary savings. With Elemica consulting help, AY defined an innovative Elemica Quality configuration to fit their needs for their “calibration solution.”

The plant uses many inspection implements to produce each sunroof. To stay within specifications, these implements must be periodically calibrated. This process is time-consuming, requiring the gathering and analysis of data from each implement. The Elemica Quality project manager and his team decided to turn each of the inspection implements into a Elemica Quality location for reporting quality and performance data. In a sense those implements became “suppliers” of information, not material. Now, each of these inspection implements sends compliance documentation to the Elemica Quality system which shows test results that place it either in or out of compliance with the company's requirements. In addition, Elemica Quality automatically manages the schedule for re-calibration of each implement and notifies the staff when one is due. The approach has greatly lightened the work-load of QA personnel, while also improving the reliability of the data being managed.

### Future Applications

For many companies in the automotive industry, supplier-related processes can be the most time-consuming, and riskiest, part of their quality program. Two that stand out are the Production Part Approval Process (PPAP) and the Initial Production Part (IPP) process which identifies Supplier change points for Part design or



Process changes, to better control when and where these changes will occur. Both may require a series of emails and phone calls, and documents that must be reviewed for completion and accuracy. There are many opportunities for mistakes to be made or information to be lost.

AY is currently testing the use of the Elemica Quality Certification functionality to administer these processes. Elemica Quality will ensure that AY and their suppliers will be automatically notified when a PPAP or IPP is required and will have the most current and up-to-date documents and instructions at their fingertips. Schedules are tracked and reminders are sent so that no deadlines are missed.

## CONCLUSION

Elemica Quality has enabled AY Manufacturing to improve quality and reduce costs while growing their business as a leading North American sunroof producer.

## About Elemica

**Elemica is the leading Digital Supply Network for the process manufacturing industries. Elemica accelerates digital transformation by connecting, automating, anticipating, and then transforming inter-business supply chain processes for the products they buy, sell, move, and comply. Launched in 2000, customers process over \$500B in commerce annually on the network. For more information, visit [www.elemica.com](http://www.elemica.com).**

## How Elemica Quality Works....

Elemica Quality fills the void left by most enterprise applications. Elemica Quality collects, stores and analyzes material parameters and production settings to improve manufacturing yield. Elemica Quality's knowledgebase of raw material characteristics and process variables allows manufacturers to correlate input cause to output effect. This correlation allows manufacturers to proactively prevent disruptions, resulting in improved yield by reducing waste.

At the same time, Elemica Quality improves the relationship between the licensing company and its supply base. The supply base is managed via easy-to-access web-based portal technology for regulatory and industry certifications. Procurement professionals gain data-driven insights into supplier performance for more effective sourcing. Plant operations management exerts more control over material variability, increasing yields and return on assets.

Research and Development personnel gain visibility to supply chain compliance with material specifications (raw, WIP, finished products) and can adjust interactively as internal or market conditions dictate. Instead of focusing on interruptive issues that reduce supply chain effectiveness and profitability, quality professionals using Elemica Quality have a system resource for proactively driving process improvement that supports operational excellence.



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## A System of Savings

### PLANT-LEVEL SAVINGS

**Reduced Testing** - Reduced costs associated with testing of incoming raw materials based on supplier confidence from online Elemica Quality compliance knowledge with automatic SPC and time trends analysis. Includes reduction in test equipment and consumable savings.

**Reduced Non-Conforming Material** - Online shipment validation of material specification prior to materials being shipped by the supplier reduces wasted time and money dealing with out-of-spec materials.

**Reduced Waste** - Reduced manufacturing waste caused by supplier material quality variability. Automatic SPC, PPK and time trends analysis on incoming materials reduce unexpected results in the manufacturing process reducing defects, unusable lots and wasted materials and associated disposal and reclamation costs.

**Reduced Regulatory Documentation** - On-Line CAR/CAP, Supplier Development, Audit, and Statistical Analysis data reduce the manual generation, tracking, management, storage and archival of quality records required for Regulatory Compliance. Also realize a reduction in CAR/CAP, audit and quality record storage and archival.

**Simplified Cost Recovery** - Online Cost Recovery automation simplifies the ability to track and analyze the costs incurred due to a supplier's non-conformance and quality issues. These charges may be passed back to the supplier.

**Simplified Recordkeeping** - On-Line supplier-entered COA data eliminates a plant's need to manually enter, file and store COA data. Simplified record keeping and accessibility supports supplier shipment tracking and material traceability. Also realize a reduction in COA storage and archival costs.

**Efficient Inventory Management** - On-Line Advance Shipment Notification with On-The-Way, Shipment Received or Released Status with date produced supports first-in first-out material management increasing production efficiency.

**Efficient Production Scheduling** - On-Line Advance Shipment Notification provides material delivery dates supporting more accurate production scheduling; reducing line down time waiting on needed materials, providing increased production efficiency.

**Reduced Specification Costs** - On-Line management of supplier viewable material specifications and test procedures reduces costs associated with supplier communications and specification management.

### CORPORATE QUALITY-LEVEL SAVINGS

**Reduced Supplier Oversight** - Corporate-wide, on-line, real time view of all suppliers, CAR/CAP summaries, supplier performance reports and audit status simplify the management of suppliers worldwide. Also results in a reduction in documentation storage and archival costs.

**Simplified Supplier Ratings** - Simplified supplier rating and ranking through on-line supplier quality performance summaries.

**Reduced Manual Entry** - On-line management of CAR/CAP, Supplier Development, Audit, and Statistical Analysis data reduce the manual generation, tracking, management, reporting, storage and archival of quality records required for ISO/QS/AS and TS-16949 compliance. Also results in a reduction in documentation storage and archival costs.

**Simplified Vendor Communications** - On-line message of the day and automated supplier notification of CAR, Audit and Quality Manual events reduces mailings, faxes and e-mail to suppliers.

**Elemica Quality saves the Goodyear Tire and Rubber Company \$26 Million (USD) annually across 80 plants with an average of \$325K per plant**