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

Elemica
Case Study

CLIENT PROFILE
Industry: Consumer Goods

Employees: 2,000

Revenue: $997 Million

Elemica Solution: Elemica Quality

ELEMICA QUALITY COMPONENTS

Supplier Quality Management

Traceability and Compliance

e-CoA (Electronic Certificate of Analysis)

Manufacturing Quality Management

Morton Salt reduced the cost and time associated with the production of customer-bound Certificates

SALT, A VITAL MINERAL

The seemingly simple white mineral we take for granted in life is anything but simple. If you earn a salary, then you may be interested to know that the translation from Latin means that you are being paid in salt (a solarium, as Roman legionnaires were) and are, hopefully, considered "worth your salt."

In fact, salt is vital, playing a key role in our nutrition, in our industries and manufacturing, and in agriculture. Salt occurs naturally, and is obtained by evaporating seawater, or by mining rock salt deposits.

Morton Salt, Inc. ("Morton Salt") is the trusted authority in salt in North America. Headquartered in Chicago, Morton embarked on a project in 2009 with Elemica to enhance the effectiveness, efficiency and quality of Morton Salt's outbound certificates of

analysis ("COAs") to its customers. Straight forward? Not so fast...on with the story.

Some of the areas in which salt figures so prominently are in food (both for taste and in food processing and preservation), in water (for pools and water softening) and in ice control products. Salt is also used in a number of pharmaceutical applications and is also essential for animal feed mixing as well as for other general industrial applications.

As consumers, we are generally most familiar with the salt we use in food, but even here, the story is not as simple as it sounds. Different methods are employed to incorporate salt into our food or as part of processing it. These methods and the execution of their processes are invisible to consumers, but are driven by a focus on quality, i.e., the performance of their products for which they are intended.

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The methods of using salt can include brining, adding it directly in a dry form, broadcasted, dry mixed, mechanically dispersed, or as a slurry. Each one of these methods requires a different type of salt to fit the exact specifications of its intended use. For example, Morton offers 17 different kinds of food salt products, each with its unique quality specifications.

TYPES OF SALT

Salt is produced through multiple processes and used for multiple purposes, each with its own quality specifications.

Morton Salt produces a wide variety of salts ranging from culinary salts to deicing salts and even pharmaceutical grade salt. All of these products are produced consistently and to the exacting specifications of Morton's customers.

Quality specialists, chemical engineers, food scientists and industry-specific specialists with centuries of cumulative experience are required at every step of the way to make sure that each salt product made by Morton Salt is delivered in a form that is consistently reliable and within agreed upon specifications.

With so many different products and product specifications arising from one mineral, it is understandable that Morton Salt deployed a state-of-the-art tool for its product "proof- of-quality" report management across 24 of its production facilities in the United States and in Canada (the Canadian facilities are managed by Morton Salt's subsidiary, The Canadian Salt Company Limited).

"There were some cases in which Elemica Qualitybrought visibility to trends occurring at our locations. The availability and transparency of data across the organization was very beneficial...."

*– Kim Tenney Project Manager
Morton Salt, Inc*

INITIAL MOTIVATION FOR ACQUIRING ELEMICA QUALITY

When Morton Salt subscribed to Elemica Quality, the primary motivation was to reduce the costs and time associated with the production of customer-bound certificates. The diversity of products offered by Morton Salt made the process of manually creating and distributing certificates complex and time consuming. Processing the two seemingly simple ions of sodium and chloride in salt can require extensive testing. For example, pharmaceutical Certificates of Analysis ("COAs") include 15 different chemical tests and 4 visual tests. The finished pharmaceutical product must meet the standards published in the most recent edition of the United States Pharmacopeia ("USP").

The advantages of implementing Elemica Quality's e-COA Outbound included the following:

• Improvement of material reliability through the use of continued analysis and reporting of production materials in a form that facilitates specification conformance and speedy intervention in cases of breakdowns;

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- Access to a configurable tool for e-COA format flexibility and customer profile definition; and
- Automation of e-COA generation with trending of test analyses for finished product performance by customer, by plant, by time frame, and by lot.

MODULES

The Elemica Quality modules deployed by Morton Salt included **Specification Management** for material test definition, **e-COA Outbound** for powering the automation of certificate generation and sections of **Finished Products** to gather production batch tests for inclusion in the outbound certificates.

Elemica Quality provides electronic certificates from a single location for Morton Salt production locations to generate, validate, transmit and store certificates over the internet. Since this information is digital, the electronic certificates, or e-COA, could be managed in a manner which resulted in improved productivity for Morton Salt.

The material test results from various stages of production created the knowledge base, which reduced the manual generation and distribution of certificates, and provided traceability.

Because Elemica Quality e-COA utilizes a SaaS model, locally dedicated hardware and software are eliminated, and all Elemica Quality modules are standardized and easily accessible. The modules collectively support supply chain quality in every network tier and internal production process in which material performance is key to producing quality products for the end user.

"We were able to refine the specifications to create a generic specification which allowed us to develop a national product specification."

*– Kim Tenney Project Manager
Morton Salt, Inc*

SCOPE

Elemica Quality was deployed across 24 company locations in the United States and Canada, which included 17 manufacturing plants and 7 warehouses.

SIGNIFICANT AREAS OF IMPROVEMENT

Time Savings

The primary objective in acquiring Elemica Quality was met. The metric that was used to support the acquisition of Elemica Quality software (time and costs associated with the creation and sending of certificates) showed a savings of 15 minutes for each certificate.

The total number of certificates sent at the beginning of the deployment was between 32,000 and 35,000 per year, resulting in savings between 8,000 and 8,750 man-hours per year.

Visibility and Manageability

The data mining capability of Elemica Quality made it possible to analyze the material data received from all of Morton Salt's facilities and to begin to show trends that may not otherwise have become visible for a much longer period of time or sufficiently precise for real insights. This allowed Morton Salt to address the trends by various means, including the adjustment of specifications.

By making the data between plants transparent and available to all users 24/7, it became more manageable. Increased manageability showed up in such fundamental areas as improved communication flows and better alignment between the production facilities and sales force.

Standardization

During the days when manually produced certificates were offered, customers perceived that it was better to have certificates produced in their own particular format. In the end, however, it became clear that the e-COA® certificates received were of better quality. This became a factor in increasing customer satisfaction for a number of (if not all) customers, because when they received a certificate from one plant, it looked exactly like the certificate they received from other plants.

The certificate standardization also led to further standardization of Morton's processes. Deploying Elemica Quality to automatically generate certificates also brought with it continuous improvement by further standardizing Morton's testing protocols. This standardization brought a new level of consistency to its processes, which had a positive effect across other parts of the organization.

Sales

The effect of continued standardization resulting from Elemica Quality showed up in several dimensions.

The previous (manual) system allowed each individual plant to eventually trend materials that were moving closer to out- of-specification conditions within their own locations.

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However, with the adoption of Elemica Quality and the insights it provided into product trending, Morton was able to further standardize its products.

Ease of use and customer support

> *"Elemica Quality is very easy to use and very intuitive. We were also very pleased with our experience with Elemica Quality (Elemica) staff."*
>
> *– Kim Tenney Project Manager*
> *Morton Salt, Inc*

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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.

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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Quality

Automate supply chain quality to improve operational efficiency and simplify industry compliance.

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

FOR MORE INFORMATION, PLEASE VISIT ELEMICA.COM

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780 Johnson Ferry Rd., Ste. 400 Atlanta, GA 30342 | +1 (678) 514-3700