ANALYTICS

Analytics powers data-driven factories

Integrating data with Qlik Sense Enterprise SaaS
for flexible data links and rapid analysis

Qlik Q®

"The primary reason we chose Qlik Sense is its unique 'associative technology', which enables flexible data searching even when data is dispersed."

Mr. Misao Yamamoto, Chief Investigator – Production Innovation Center, Toagosei Co., Ltd

Promoting labor efficiency in a declining population

Toagosei Co., Ltd. is a chemicals manufacturer with a broad product portfolio. The company leads the market in Japan for instant adhesives and develops basic industrial materials and general-purpose chemicals such as electrolytic products and acrylic monomers. Its nationwide network of factories and research institutes work together to improve production efficiency across a wide range of products.

Mr. Misao Yamamoto, Chief Investigator of the Production Innovation Center, Nagoya Office and Technology Production Unit, Information Systems Department, Management Strategy Division, explains: "As our working population continues to decline, the manufacturing industry faces the challenge of building efficient production systems with fewer people. However, this can be seen as an opportunity to promote digital transformation and automation."

In 2017, Toagosei started the full-scale promotion of IoT at its factories. Starting with the Nagoya factory, the company has established a data analysis platform based around its Manufacturing Execution System (MES), which also includes a Plant Information Management System, Laboratory Information Management System and ERP system.

"Collecting and utilizing manufacturing big data generated from applications such as MES is an important issue," says Mr. Yamamoto. "How we view and analyze the collected data will greatly affect future automation, labor-saving, quality preservation and the passing down of skills in the factory."

Solution Overview

Customer Name
Toagosei Co., Ltd.; Nagoya Factory

Industry
Manufacturing

Location
Aichi Prefecture, Japan

Function
IT

Business Value Driver
Reimagined Processes

Challenges
- Promote work efficiency and productivity improvements
- Establish a production system based on labor-saving due to declining population

Solution
Toagosei promoted automation with Qlik Sense® Enterprise SaaS by importing data from multiple servers and integrating and centralizing information to facilitate rapid analysis.

Results
- Promoted real-time information sharing and cooperation between business units
- Enabled analysis to be completed freely without defining parameters in advance
- Allowed changes to analysis to be incorporated swiftly

Associative technology enables rapid analysis

Realizing that strong data analysis will become increasingly important to the continuous optimization of factory operations, Toagosei decided to introduce a BI tool. Qlik Sense was the final choice.

"Qlik's unique associative technology was very appealing. Data is bi-directionally linked to and associated with other data," says Mr. Yamamoto. "The fact that everything acts as a search key is a feature not found in other BI tools, and it's something that can deliver great benefits in big data analysis."

Mr. Akihiro Ito, Deputy Manager of the Production Innovation Center, says: "The quick data analysis, intuitive operation and multifaceted power of expression offered by Qlik Sense will help transform the workplace.

"I recall my own difficulties in collecting data and creating materials when I worked in the factory. When I saw Qlik Sense, I was shocked to find that reports that once took dozens of hours could be created instantaneously. Even someone like me, who is not very familiar with IT, can create analysis reports and dashboards through drag-and-drop operations. I wanted to spread the word about how easy it is to use."

Mr. Ito is now using his knowledge of the factory floor to apply Qlik Sense to actual situations, covering factories, head offices and R&D departments in each region. "Based on my experience, I am constantly telling people what Qlik Sense can do and how it will make their work easier. I'm a strong advocate for increasing data literacy across the company."

Data integration for smart factories

The introduction of Qlik Sense facilitated the integration and centralization of sources on various servers, significantly reducing the time and effort required to collect and process data. It will also a play a key role in accelerating the introduction of IoT at Toagosei, a process that began in 2019 when the company launched the Production Innovation Project to promote smart factories.

"We aim to improve the productivity of all our manufacturing facilities to develop smart factories," Mr. Yamamoto says. "From production planning to results, we have taken measures such as data integration centered on MES, AI-OCR, anomaly detection by AI, the introduction of smart devices, the use of high-performance sensors and robotization."

Mr. Ito notes a change in awareness after the introduction of Qlik Sense, with Toagosei staff able to centralize materials using individual tools based on specific requirements that had previously been mutually isolated.

"Anyone can view the same set of materials at any time without having to set up a special meeting place," he adds. "This has brought about a major transformation in work practices."

Qlik Sense's ability to link data and flexibly combine data sources is, according to Mr. Ito, one of the main advantages of Qlik.

"We have implemented SAP ERP; Qlik's associative model makes it easy to combine data from SAP and non-SAP systems within Qlik applications," he explains. "Each person can extract the required data and customize it with Qlik Sense to carry out tasks such as project, budget and progress management without the need for dedicated software."

According to Mr. Yamamoto, the response to smart factories at Toagosei is very positive. "An attitude of actively sharing know-how is spreading," he adds. "The foundations for data analysis that responds to changes are being created."

Timely analysis through Qlik Sense Enterprise SaaS deployment

Toagosei started migrating to Qlik Sense Enterprise SaaS in 2021 to promote smart factories and data-driven factories. This initiative will enable more timely, highly accurate data analysis. Mr. Ito observes:

"Alert notifications are available in Qlik Sense Enterprise SaaS, allowing for faster action. And since alerts can be set without restrictions, it is possible to monitor the data we need."

Qlik Sense Enterprise SaaS has also expanded the number of Qlik users within the company.

"Qlik Sense sheets and individual analysis results can be set by users to be delivered on a regular basis, and report delivery can be scheduled and customized according to delivery destinations. This enables us to reach employees who may not have previously had access to Qlik analysis tools," adds Mr. Ito. "We have also introduced a consumption-based Analyzer Capacity license that makes it possible to share consumption among users, creating an environment conducive to spreading Qlik Sense company-wide."

Currently, about 190 users have created about 90 analytical apps on Qlik Sense Enterprise SaaS and are using them on a daily basis.

"It is important to have an environment that is accessible to everyone and allows users to consider cases from multiple perspectives to promote smart technology," says Mr. Yamamoto. "We need to open an interactive dashboard to compare and analyze data from different angles on the spot and exchange opinions. Qlik Sense's associative technology makes this possible. The creation of such an environment will allow us to minimize work perception gaps."

Using Qlik Sense to improve data literacy

"I am inspired by interacting with people from various industries," says Mr. Ito, a member of Qlik's top user community, Qlik Advocate. "We've been using Qlik Sense primarily for factory operations, so new applications in finance and HR are revelations to us. We can learn about examples from large companies through lectures and other channels, and it is also a great benefit to hear about real-life implementations directly from other industries and companies."

Toagosei is also capitalizing on the opportunity to implement a company-wide approach to Qlik Sense, with one application being the training of new employees.

"We have incorporated Qlik Sense into training so participants can experience its usability. I have high hopes that all employees will make good use of it in their assigned workplaces," Mr. Yamamoto says.

"I would like to encourage training to improve data literacy," adds Mr. Ito. "Qlik Sense provides a machine learning (ML) environment, but that is still beyond the current level of many users. We continue to strive for higher standards."

Expanding analysis to facilitate a data-driven factory
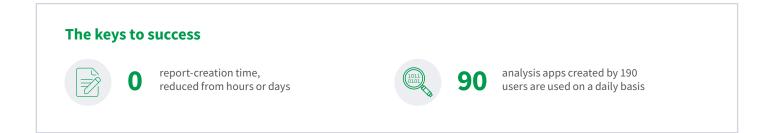
Mr. Yamamoto is now looking to extend the results gained by introducing Qlik Sense Enterprise SaaS from the Nagoya factory to nationwide.

"We currently use Qlik Sense to create Gantt charts for production planning, but only at the Nagoya factory. If we can expand that so all our factories across Japan can carry out budgets and actual management using Qlik Sense, we will be on the path toward achieving data-driven factories."

Mr. Yamamoto is also looking to promote data analysis on a company-wide scale. "For analysis of imported company-wide data, we would like to calculate optimal operating parameters from factory data and connect this to the continuous optimization of operations. I would also like to accelerate SAP data analysis with Qlik's accelerator package to pave the way from analysis to prediction."

Toagosei is making rapid progress toward becoming a data-driven organization and sees Qlik as an important supporter of this drive. Mr. Ito also envisages solutions that make greater use of Qlik Sense Enterprise SaaS.

"We are currently working on visualizing the entire process in Qlik Sense, from purchasing raw materials to focused sales," he says. "Qlik Sense enables easy traceability, which facilitates more accurate optimization. We also have a strong need for factor analysis, which identifies the cause of problems. We're aiming to establish a system that identifies causes using Qlik Sense's ML capabilities." As Toagosei continues to accelerate toward becoming a data-driven organization, Qlik will play an important role in supporting this initiative.

The keys to success

0 report-creation time,
reduced from hours or days

90 analysis apps created by 190
users are used on a daily basis

"The notification capabilities of Qlik Sense Enterprise SaaS allow swifter actions. Alerts can also be set freely, enabling full monitoring of essential processes."

Mr. Akihiro Ito, Deputy Manager, Production Innovation Center, Technology Production Unit, Toagosei Co., Ltd.

Qlik Q

About Qlik

Qlik, with the recent addition of Talend, delivers an industry leading portfolio of solutions for data integration, data quality and analytics. This includes advancements in real-time, AI, ML and automation. The most successful organizations are investing in data to make sense of the increasing amounts and varieties of data from diverse sources. The challenge is to effectively integrate, analyze and act on the data while ensuring its trustworthiness. With more than 40,000 active customers in over 100 countries, Qlik's solutions work with any data source, target, architecture or methodology, to ensure customers have the data they need, whenever they need it.

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