CASE STUDY

Advancing operations management with Octave Tempo Operations Management at AGC Chemicals

Key facts:

Company: AGC Inc.

Website: www.agc.com

Industry: Chemical

Octave products used: Tempo Operations Management *(j5 Operations Management Solutions)*

AGC is a global leader in the chemical industry, offering a diverse range of products including glass, electronics, chemicals and ceramics

Tempo Operations Management system was implemented in the chemical business division, which focuses on the production of chlor-alkali, urethanes, fluorochemicals, and other specialty chemicals. Given the diverse nature of AGC's product range, each product has distinct characteristics in its manufacturing process.

The challenges

Before the system was implemented, data was stored in silos and managed independently by each department with each following its own workflows and practices. This approach was fragmented and made it challenging to collect and analyze data, and decision-making often relied on experience and intuition. In response to these challenges, the company initiated the development of CHOPIN (Chemical plant Operational Platform Inspired by human Network), a system that integrates operational, quality and facility management capabilities required by the manufacturing division.

Tempo Operations Management was introduced as the core of this system, adopted to standardize and streamline operations, centralize data and integrate with other systems.

How Tempo Operations Management solved the challenges

The implementation of Tempo Operations Management standardized and streamlined operations management processes, leading to improved productivity. The company transitioned from making decisions based on experience and intuition to data-driven, decision-making. Also, AGC built knowledge and expertise while strengthening initiatives for employee skills development.

Key benefits:

- Tempo Operations Management solutions facilitate data collection and provide visibility into critical information for plant operations management. The system advanced users' situational understanding, promoted information sharing, and across the plant and enabled timely decision-making based on accurate information.
- The use of Octave Tempo Work Instructions (formerly j5 Work Instructions), Octave Tempo Operations Logbook (formerly j5 Operations Logbook) and Octave Tempo Shift Handover (formerly j5 Shift Handover), along with the implementation of workflows based on user roles, has significantly improved operational efficiency, safety and effectiveness.
- Tempo Operations Management seamlessly integrates with external systems and excels in managing various field operations.

The following assessments were made by stakeholders from various parties regarding the impact of the improvements:

Operator: The progress of tasks is now visible and the information handover process has become smoother. Unnecessary transcription tasks have been eliminated, leading to a reduction in the time required for shift handovers.

Operation supervisors: The progress management capabilities have made it possible to prevent the omission of work orders and reporting tasks. The improved search functionality also made it easier to refer to tasks completed in the past.

Managers: Expertise and knowledge can now be captured and passed to other employees. The operational data is structured in a way that facilitates data analysis and other key purposes.

In terms of quantifiable benefits, each team saved approximately 5.5 hours per day by eliminating the time required for assessing situations, holding meetings, drafting shift handovers and issuing work orders.

Approach for advancement

The use of Tempo Operations Management IndustraForms

Tempo Operations Management IndustraForms is a standard feature and is used to digitize paper-based forms such as reports. Its usability is similar to Microsoft Excel (or other spreadsheet programs) and does not require any sophisticated programming skills. By migrating from traditional paper-based documents to Tempo Operations Management templates, users no longer need to manually enter data into digital files. Instead, they can now attach videos and photos taken in the field to share real-time information about the progress of the work. Data entered for field record keeping is fed into the plant information management system (PIMS), enabling trend monitoring. Through these new implementations and processes, the company has established improvements that work autonomously.

Leverage text data

The operation work orders, logs and process data stored in CHOPIN are analyzed using the system platform called CHART (CHemical plant Advanced Realization Technology). CHART is a system intended to generate business value by exploring the usage and analysis methods of collected data. These results are used to assess workloads, improve the accuracy of prediction models and detect abnormalities.

Workload assessment: CHART and CHOPIN's data analysis capabilities and BI tools are integrated. Based on operation logs extracted from the Tempo Operations Management database, the internally developed analytics workflow automatically identifies the number of tasks, people hours, and cost losses. As a result, the company can make decisions based on the results of this analysis.

Improve predictive model accuracy: by extracting numerical data related to operations, such as catalyst addition volume increases/decreases, and using them as explanatory variables in the same way as PIMS time series data, a highly accurate predictive model can be derived and used to optimize operations.

Anomaly detection: An anomaly detection algorithm has been successfully developed and has proven to be effective by breaking down sentences into the smallest meaningful units. This is carried out using morphological analysis to determine the meanings and components of speech. Ongoing development aims to enhance the algorithm's capability to provide suggestions that were not recognized with the conventional method.

By using Tempo Operations Management IndustraForms AGC successfully addressed several challenges by digitizing paper-based task checklists, inspection patrol reports and other documents. Additionally, the application of text data, including basic data aggregation and natural language processing methods, has played a significant role in fostering data-driven decision-making and ensuring more stable operations.

"The implementation of Tempo Operations Management has propelled our plant to advance its operation management further. Tempo Operations Management has become an indispensable mission-critical system for AGC Chemicals Company, and we eagerly anticipate its broader use and continued success in the near future."

Tetsu Honjo
general manager, DX Office, Company Strategy General Div., Chemicanls Company AGC Inc.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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