Daicel significantly improves data quality when Octave Tempo Operations Management replaces old analog systems

Key facts:

Company:
Daicel Corporation

Website:
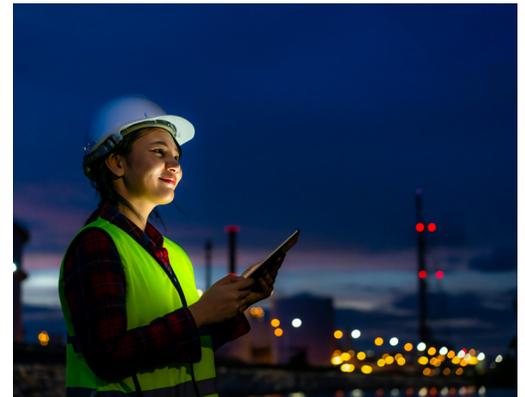daicel.com/en

Industry: Chemicals

Country: Japan

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

Key benefits:

- Eliminated duplicate data entry

- Simplified and improved shift handovers

- Improved data quality and faster access to information for post field work analysis

In 1996, Daicel Corporation began implementing a new approach to production innovation called the Daicel Way. The goal is to increase productivity through four phases: confirmation of need, infrastructure development and stabilization, standardization and systemization. The Daicel Way is an innovative mentality that shapes day-to-day operations and propels new improvements throughout Daicel Corporation.

The Daicel Way, which consists of four phases, has no end. It is an ongoing effort to continuously increase improvements by implementing, measuring and refining process innovations. One example of this is the "virtual plant" that was created for monozukuri manufacturing. Building on the existing production innovations of the Daicel Way, the virtual plant allows multiple plants to seamlessly work together as one large plant, which in turn allows production planning and energy demand to be optimized across the combined facilities and maximizes profits.

This focus has also led to changes in managing day-to-day operations. The stabilization phase of the Daicel Way emphasizes eliminating waste and loss in the field. Trips to the field, repair work and correcting abnormal conditions are all key known sources of waste and loss. As such, they are rigorously monitored and analyzed at Daicel Corporation. To aid in this analysis, every visit step (scope of work, time per job, work completed and other activities) must be recorded in Daicel Corporation's trouble management system. By monitoring the operator workload, looking for ways to optimize efficiency and checking the effects of their improvements, Daicel Corporation continuously works to eliminate waste and loss in the field. But there were difficulties with the existing tools and processes.

Logbooks for the chemical plants were managed using a legacy notes application or spreadsheets. Both methods provided poor search functionality and made accessing historical information difficult and time-consuming. The trouble management system was independent of the logbooks and required duplicate and manual data entries. To perform work analysis, Daicel Corporation had to manually tabulate the logbook entries (work records) against the trouble management system, where operators entered plant modulations and troubles and then analyzed them. In addition, the legacy notes application Daicel Corporation used was being retired, so a new software application had to be found.

How Tempo Operations Management solved the problem

Daicel Corporation chose Tempo Operations Management as its replacement for the legacy notes application and deployed it to the main production departments of two plants (including departments that had not previously used the legacy notes application). With the introduction of Tempo Operations Management:

- Work instructions and logbook records are entered into a central database in a structured manner.

- Work instructions and logbook records can be viewed together in the same software.

- Work records can be assigned an importance level.

Together, these functions are improving shift handovers and making it easier to transfer work efficiently and without omission. The detailed information that used to be manually collected and recorded from field work is now centrally entered in Tempo Operations Management, which automatically links to Daicel Corporation's existing trouble management system. Duplicate data entry has been eliminated and operators no longer need to browse multiple systems during shift handover.

At Daicel Corporation, improvements begin with understanding the current situation and end with confirming the effectiveness of those improvements. Implementing Tempo Operations Management has made it easier for Daicel Corporation to understand which plants have the most work items, how much time they take and what the trends are, thus work improvement analysis can be done quickly and accurately. Tempo Operations Management has also made it possible for Daicel Corporation to check the status of all major production departments within a single software package, providing a continuous bird's eye view of what's happening and where. Daicel Corporation believes this new visibility will improve situational awareness and speed up decision-making.

In the future, Daicel Corporation would like to standardize its logbook procedures and use artificial intelligence (AI) analysis of operator notes to better understand the stable state of its plants and the intensity and ratio of preventive versus post-event work. This would allow Daicel Corporation to further optimize resource allocation. Daicel Corporation also hopes to improve the accuracy and speed of its anomaly detection by further linking operator insights and logbooks to its process data. By connecting Tempo Operations Management to other databases, Daicel Corporation plans to create a comprehensive system that can discover production issues, present them to its departments and support the decision-making needed to solve them.

"When we started using Tempo Operations Management and saw that we were able to grasp the status of the main production departments in a single platform, we were convinced that the effects of expanding it would be beyond our imagination. At this stage, we have only replaced our conventional logbook with Tempo Operations Management , and full-scale use of the system is yet to come. We anticipate making full use of the functions of Tempo Operations Management for both operators entering logs and engineers analyzing and making decisions using the entries."

Keiichi Horikawa
AI Solution Group, Monozukuri Innovation Center, Daicel Corporation

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