

ASAHI TEKKO ACHIEVES REAL-TIME PRODUCTION MANAGEMENT WITH RED HAT DECISION MANAGER

ASAHI 旭鉄工株式会社

SOFTWARE AND SERVICES

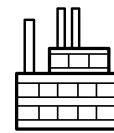
Red Hat®
Enterprise Linux®

Red Hat Decision Manager

Red Hat JBoss Enterprise
Application Platform

Red Hat Consulting

Asahi Tekko Co., Ltd., manufactures a wide range of automobile parts, including engines and transmissions. To keep pace with orders from Toyota Motor Corporation and other customers, the company needed to speed just-in-time workflows without expanding its physical footprint. Achieving this agility required replacing manual data collection with automated machine monitoring to track and manage quality and productivity. With help from Red Hat Consulting, Asahi Tekko used enterprise open source solutions from Red Hat to create an Internet of Things (IoT) mechanism and business rules engine for automated data collection and real-time insight into machine operations. These improvements have helped Asahi Tekko reduce its capital expenditure and employee overwork, as well as establish a Software-as-a-Service (SaaS) offering for other manufacturing companies.



MANUFACTURING INDUSTRY

490 EMPLOYEES

“We were looking for an open source solution that was simple and easy to use, and Red Hat’s system architecture met our requirements.”

TETSUYA KIMURA
PRESIDENT AND REPRESENTATIVE DIRECTOR,
ASAHI TEKKO CO., LTD.

BENEFITS

- Improved productivity with real-time data management and insight, as well as support for a collaborative DevOps approach
- Gained new business opportunities, including introduction of a new SaaS business model
- Reduced capital expenditure by an estimated ¥300 million and labor costs by ¥100 million per year



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MANUAL DATA COLLECTION AND LIMITED PHYSICAL FOOTPRINT RESTRICT EXPANSION

With the growing popularity of new business models—such as ride-sharing services that make traveling without owning a car easier—the automotive manufacturing industry is experiencing dramatic shifts.

Founded in 1961, Asahi Tekko Co., Ltd., manufactures a wide range of automobile parts and accessories, including engines and transmissions. Its customers, Toyota Motor Corporation and its affiliates, use a just-in-time vehicle manufacturing process, including detailed advance production plans, that eliminates waste and improves efficiency.

To keep pace with its customers' needs for predictable delivery, Asahi Tekko sought to improve production efficiency. Achieving these improvements would require increasing machine capacity, but the manufacturer's physical footprint could not accommodate additional machines needed to fulfill larger order volumes.

"Although we had business potential to accept orders up to about three years ahead, the factory's space was about 3,000 meters too short to accommodate manufacturing all of them," said Tetsuya Kimura, president and representative director of Asahi Tekko Co., Ltd.

To better understand its physical resource use, the company collected operational data from its factory machines, such as production quantity and downtime. However, machine production counters were reviewed and recorded manually, a time-consuming process that led to incorrect or incomplete entries.

To overcome these challenges, Asahi Tekko sought to partner with an experienced enterprise IT vendor to create and deploy a solution.

ENTERPRISE OPEN SOURCE SOFTWARE OFFERS AUTOMATED SOLUTION

The company decided to partner with Red Hat to improve its physical resource use and automate data collection processes using supported enterprise technology.

"We wanted to use open source software to keep costs down while innovating, but software that is not supported cannot be sold responsibly, so we decided on Red Hat as our trusted vendor for a simple, supported solution," said Kimura.

With guidance from Red Hat Consulting, Asahi Tekko created a cycle time monitor, an IoT mechanism that would automatically collect and display operational data to eliminate manual errors and improve productivity. Employees can use this data to focus on repairing or improving slow and broken machines instead of checking each machine's data.

The company deployed Red Hat Enterprise Linux and Red Hat JBoss Enterprise Application Platform to create a robust foundation for this solution. In addition, the company deployed Red Hat Decision Manager (formerly Red Hat JBoss BRMS) as its rules engine. Red Hat Decision Manager includes complex event processing (CEP) capabilities that detect the relationship between massive volumes of information in real time. With these capabilities, Asahi Tekko's IoT solution automatically detects and visualizes necessary site data, such as line production number and stop time, in real time.

"With Red Hat Decision Manager, you can describe various rules in an Excel-based decision table," said Ryuji Kurokawa, deputy general manager of corporate planning at Asahi Tekko. "There is no need to correct the program for each minor change."

Deployment of these Red Hat solutions was completed in just six months. With this implementation, Asahi Tekko is the first end-user company in the country to adopt CEP for its business environment. As a result of this project, Asahi Tekko received the 2016 Red Hat Innovation Award in APAC, an award that recognizes companies that achieve excellent business and technology results using Red Hat solutions.

IOT AUTOMATION IMPROVES COSTS AND PERFORMANCE GREATER EFFICIENCY WITH AUTOMATION

With the new IoT platform, Asahi Tekko's employees now have reliable access to data and data analysis to improve issue resolution and support innovative work. For example, employees can identify an issue in the production assembly line based on collected operational data and begin planning a resolution—before checking the physical site.

In addition, these improvements have helped support a DevOps approach to business that creates new opportunities for collaborative innovation within the company using real-time data.

“Red Hat helped us establish an effective DevOps work method,” said Kimura. “Now employees can look for solutions themselves using the cycle time monitor. With this shift in mindset, when I travel to the work site and talk to the employees, we often come up with ideas and solutions together. Establishing this culture was valuable for us.”

By increasing efficiency, Asahi's employees can accomplish more in less time. The company has decreased overworking by an average of 10 hours per day—the equivalent of 1.5 full-time employees.

SUPPORT FOR NEW BUSINESS OPPORTUNITIES

With more reliable IoT development and data collection using Red Hat's enterprise software, Asahi Tekko can also take advantage of new business opportunities. Machine performance improvements can now be made at a much faster speed and at a lower cost compared to competitors' consulting services, creating new opportunities for revenue from customers that demand rapid production.

The company can now offer its services and IoT mechanism to other manufacturers through a SaaS model.

Based on this model, Asahi Tekko established a new company, i Smart Technologies, to provide monitoring, data analysis, and consulting services. In its first year, i Smart Technologies gained over 100 new customers—77% of which are small and medium-sized companies—and has gained a competitive edge in system development and data improvement.

The company has also developed unique methods for data processing and monitoring and filed 15 related patent applications.

This expansion is supported by enterprise solutions from Red Hat that take advantage of open source community innovation while also ensuring necessary stability and security for enterprise IT environments.

“The attraction of open source software is that people in the communities create what they want to use themselves,” said Kimura. “That investment makes work happen faster and produces more innovative results. In this regard, our desire to bring innovation to the manufacturing industry is in common with open source. We're offering our solution not to just pursue profit, but to raise the level of the entire Japanese manufacturing industry to compete globally.”

CAPITAL EXPENDITURE AND LABOR SAVINGS

With an IoT solution built and deployed using cost-effective technology from Red Hat, Asahi Tekko has reduced its capital expenditure (CapEx) by about ¥300 million. In addition, the company has reduced labor costs by more than ¥100 million per year.

As part of these savings, the company has significantly reduced its new equipment fee by increasing production capacity per machine using Red Hat's enterprise software.

PLANS TO EXPAND SOLUTION AND PARTNERSHIP

Asahi Tekko's IoT deployment on an enterprise open source foundation serves as an example of success for the automotive manufacturing industry, as well as other industries in Japan. Asahi plans to implement its solution for other companies to help them achieve similar production and efficiency improvements.

The company also plans to add mobile and multidevice capabilities to its solution—using Red Hat Mobile Application Platform and Red Hat JBoss Fuse, as well as its current Red Hat environment—to let employees check production status on their smartphones and other mobile devices.

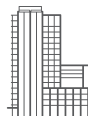
"There's a sense of security working with Red Hat, as well as ease of mind whenever something changes," said Kimura. "We're excited to continue to working with Red Hat's products."

ABOUT ASAHI TEKKO CO., LTD.

Asahi Tekko Co., Ltd. was founded in 1961. The company's line of business includes the manufacturing of motor vehicle parts and accessories, mainly focusing on automotive parts for Toyota Motor Corporation and its affiliates, including components for engines, transmissions, brakes, suspensions, and bodies. We promote transformation across the entire company—in work processes, organization, and technology development, as well as Kaizen activities at our production site. We have successfully established smart and budget-friendly manufacturing, contributing to the entire automobile industry.

ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.



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