



Transforming OCM's Operations with Rawcubes' Assessment

Manufacturer and distributor of concrete construction supplies

Phase 1

Machine Connectivity and POV

About OCM

OCM, Inc. is a subsidiary of OKABE Co., Ltd., a Japanese company established in 1917. OKABE is renowned for its concrete construction supplies and has been a global leader in the Metal Forming Industry for over 100 years. OCM has expanded its distribution model, with a nationwide network of dealers and independent manufacturer representatives. With 13 locations across the country, OCM maintains its commitment to superior product quality, exceptional customer service, and competitive pricing, setting the industry standard in construction supplies.

Challenges

- **Diverse PLC Systems:** OCM's production floor featured machinery equipped with PLC systems from different vendors. This included a combination of legacy and modern machines, leading to fragmentation and inconsistency in data capture and storage methods. Consequently, machines operated as independent entities in silos. For the ops team, managing these machines remotely posed significant challenges due to their disparate nature, making coordination in time more difficult.
- **Manual Data Entry:** The operators utilized a traveler card desk, to manually enter production output, work orders, inventory levels, and machine performance production data into the ERP system. They moved the desk along the machines, product lines, and based on the output of each machine, manually entered the produced products into the system. However, this process faced numerous challenges including human error, time consumption, resource intensiveness, scalability limitations, compromised data integrity, and security risks
- **Lack of Real-time Data Utilization:** OCM's ability to make timely and informed decisions, impacting overall operational efficiency and productivity was hindered. It also impacted the monitoring mechanisms resulting in an inability to gauge production efficiency accurately, leading to potential inefficiencies and resource wastage.
- **Legacy Machine Integration:** OCM- operated with machines spanning several decades. Legacy systems lacked digital connectivity, posing a challenge to integrate them into a unified data ecosystem.

Solution

- OEM Collaborations**

Rawcubes initiated an assessment to analyze OCM's shop floor's current state and identify any gaps. Following the analysis, discussions were commenced with OEMs to understand the intricacies of the different PLC systems used in OCM's machinery. By collaborating with PLC vendors such as Siemens and Omron, as well as OEMs, Rawcubes gained insights into the integration of PLC systems with specific machinery configurations.

- Real-Time Production Monitoring and Data Analytics**

After analysis, the proof of value (POV) was effectively demonstrated by showcasing our differentiators and capabilities. Through iDataOps, we developed a customized Remote Terminal Unit (RTU) system tailored to OCM's manufacturing ecosystem. Leveraging live data from a machine on their shop floor, we provided concrete evidence of our solution's efficacy.

Initial data acquisition from machine PLCs involved transferring the PLC data piece by piece into a SQL database. The data was then relayed from the SQL database to a Custom Remote Terminal Unit (RTU). To ensure seamless real-time data transmission from the Custom RTU to the iDataOps server, HTTPS was employed as the communication channel.

Following successful integration through the iDataOps analytical engine, real-time insights, OEE metrics, and production monitoring data were delivered, for machine 021-738 PLT 05 K3K6, equipped with the Siemens SIMATIC S7-1200 PLC System in a matter of 3 weeks. These insights were presented in a unified dashboard on the OCM shop floor, providing OCM with real-time insights.

Results and Impact

The collaboration between OCM and Rawcubes iDataOps yielded significant operational efficiency and data utilization improvements in phase 1.

Key outcomes included:

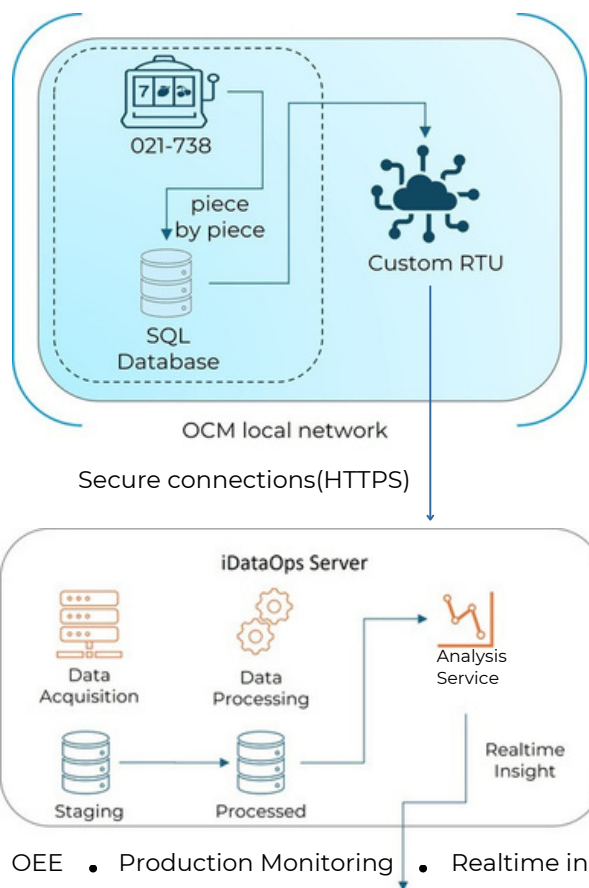
- Real-time Production Monitoring**

Enhanced data workflows and integrated systems streamlined the acquisition of precise real-time data metrics, encompassing critical parameters such as machine uptime, raw material inventory levels, actual material usage, and scrap generation. With Average Overall Equipment Effectiveness (OEE) metrics at their disposal, stakeholders gained instantaneous insights into equipment performance, enabling proactive interventions and timely adjustments to mitigate potential escalations of operational issues.

- Improved Decision-Making**

By providing real-time production monitoring and comprehensive data analytics, the solution empowered stakeholders with timely and actionable insights. This resulted in improved overall productivity and performance.

Machine Connectivity



Conclusion

The conclusion of phase one marks a pivotal moment in OCM's journey toward operational excellence. Through their partnership with Rawcubes, they've overcome significant obstacles in machine connectivity and data utilization, setting the stage for a more agile and data-driven manufacturing ecosystem. Phase two offers a deeper dive into OCM's organizational change management processes and the pivotal role of PLC replacement in driving transformative outcomes.

