

# CloudRail reveals €1.5 million savings potential per site for top pharma manufacturer

## Case Study



## Customer

This client is among the top five largest pharmaceutical manufacturers, with revenues exceeding \$30 billion. Listed in the Fortune 500, the company operates manufacturing sites in over 30 countries, each with 10-15 production lines.

## Challenge

Downtimes in the customer's highly automated production processes pose significant challenges for production managers globally. These processes often require tight tolerances for key parameters such as temperature, humidity and pressure. Early identification of deviations from target boundaries is essential.

To optimize processes, accurate machine data acquisition during condition monitoring is crucial. For years, this data acquisition has been error-prone and inefficient, hindering the reduction of downtimes and improvements in overall equipment efficiency (OEE).

Additionally, the heterogeneous production environments, comprising both brownfield and greenfield machines, have further complicated the digitalization efforts at this pharmaceutical manufacturer's production sites.

## Solution

CloudRail, the powerful connectivity solution, provides a unique Plug&Play technology for data acquisition in both brownfield and greenfield sites, enabling quick and easy integration. The solution scales from an initial Proof of Concept (PoC) to a managed IIoT ecosystem with thousands of devices.

The customer bundle for retrofitting industrial machines included the CloudRail.Box edge gateway, IO-Link Master modules and several sensors. Bechtle IT, one of Europe's leading IT service providers, handled consulting and cloud-service implementation.

The customer chose CloudRail because other solutions were either closed ecosystems or lacked flexibility in hardware or cloud integration. Previous edge gateways were essentially empty computers requiring extensive customization. Additionally, these solutions did not meet the scalability and IT-security needs of a global enterprise.

Recognizing the cost-effectiveness, security and rapid implementation of CloudRail, the customer opted for Cloud Rail technology and Bechtle for execution. The initial PoC was installed in only four days on a production line producing several hundred tubes with tablets per minute. Key performance indicators (KPIs) such as scrap factor, Overall Equipment Effectiveness (OEE) and Mean Time Between Failures (MTBF) were previously missing.

Following the successful PoC, the solution was ready to be scaled across other lines and sites.

CloudRail has joined Belden's Automation Solutions (AS) business, which includes prominent brands like Hirschmann, ProSoft Technology, OTN Systems and Lumberg Automation. The combination of CloudRail's strengths in data acquisition and cloud connectivity with Belden's expertise in industrial networking and edge computing creates a comprehensive networking infrastructure solution. This synergy enhances automation and digitalization efforts, providing seamless connectivity from sensors to the cloud.



## Results

By leveraging the joint offer from CloudRail and Bechtle IT, the customer established an initial IIoT Proof of Concept (PoC) within four days.

This rapid setup was facilitated by CloudRail's Plug&Play functionality, which ensures a standardized roll-out process. All edge devices and sensors are managed and monitored via the cloud-based CloudRail.DMC – a central, cloud-based platform used to manage and monitor all CloudRail edge devices. This platform simplifies IIoT data acquisition and management, making it scalable and secure for enterprise use.

CloudRail met the stringent security requirements of pharmaceutical production with features such as end-to-end encryption, Trusted Platform Module (TPM), built-in firewalls and remote firmware updates.

CloudRail integrates with major cloud platforms like Amazon Web Services (AWS), Microsoft Azure and Google Cloud, as well as on-premise services, leveraging their full functionality. Frequent updates ensure long-term compatibility.

Once the industrial sensors and machines were connected to the cloud service, Bechtle developed advanced, customized applications on the cloud platform. Insights from the monitoring system reduced the scrap rate of a tablet production line from 20% to 8%, resulting in savings of approximately €7,000 per day. The significant reduction in implementation time and effort meant the Return on Investment (ROI) for this IIoT PoC was achieved within one day.

The scalable, fully managed CloudRail solution allows the customer to apply learnings from the PoC to additional lines and other use cases. Using the same system and architecture, the customer can seamlessly transition from the initial PoC to a large-scale roll-out, potentially saving about €50,000 per day at each production site.

These results, achieved in an already optimized, highly automated production environment, indicate even greater savings potential for IIoT solutions across various industry segments.

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