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Transforming Radiaant's Operations with Rawcubes' iDataOps

Introduction

Radiaant, a Tier 1 Vendor for Large Retail Brands, is one of the most distinguished export houses, known for manufacturing premium home textiles, furnishing products, and incredible apparel across the globe. With global distribution centers and clientele like Walmart, Zara, Target, Kohl's, West elm, and many more, they cater to multi-volume orders with committed deliveries.

Their vision is to be among one-of-the-most valuable and trusted home furnishing and apparel export houses for every market segment and deliver to the global geography by exceeding its customer's expectations.

Industry - Textile Manufacturing

Use Case- Maximizing Operational Efficiency through Predictive Machine Monitoring Platform

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"We saw a disconnected view of our machine data which impacted production. Our decision-makers struggled to get the insights needed to build effective decisions and future strategies."

Leadership at Radiaant

Challenge

The manufacturing industry is dynamic; the materials, vendors, line capacity, and quality process change with every order. Radiaant has journeyed from a startup to a global brand management leader. They commenced their journey with 20 employees and 14 machines and have become an organization of repute with 7 home textile and garment manufacturing units equipped with global-level technology and over 3000 employees today.

Disconnected equipment data leading to costly downtime, poor product quality, and ineffective supply chain management

As the client's business grew, so did their production processes and machine data complexity. Predictive machine maintenance and accessing advanced OEE was no longer an option but a necessity, and with outdated forms of technology, they generated inaccurate data leading to the failure in identifying defect rates through machine monitoring, poor tracking and analysis which resulted in the inability to respond to recalls and missing critical deadlines.

Disconnected data at the equipment level led to difficulty in calculating production performance, alerting production support in real time, maintaining digital service history records and quality checks in real-time. These un-integrated systems highly affected productivity and inflated the team's working hours.

With hundreds of suppliers, global distribution centers, and clientele, they also faced challenges in maintaining high operational costs, lack of real-time visibility of equipment data, unexpected equipment failure, and costly equipment repairs. Also, ingesting key data sources in a structured and unstructured format was not optimal for advanced data analytics causing limited scope of innovation. They struggled to access real-time information about the performance of machines, and without any predictive solutions, collaborating across geographies, business operations, & vendors at scale became nearly impossible.

As a result, with its complex, expensive and cumbersome machine monitoring system, the client fell short of meeting increased customer expectations; and lacked a 360-degree view of their plant floor and shop floor to enable data-driven decisions.

Solution

Unified machine monitoring software that streamlined manufacturing processes for operational excellence

As Radiaant went through various POCs, the deciding factor came down to these questions, "How can we create maintenance schedules based on machine specifications to prevent future breakdowns or emergency maintenance issues? How can we access a fully-integrated OEE control center to unveil each machine's availability, performance, and quality metrics? And how can we utilize predictive remaining useful life (RUL) & mean time to failure (MTTF) that are aligned specific to where the equipment and machinery are at in their operational processes?" Finally, how can we give a real-time view to order managers and executives to build strong partnerships and business pipelines?

After various rounds of POCs with different vendors, Radiaant chose Rawcubes iDataOps because of the software plus services approach we proposed. They understood that unifying all the different operations and varied equipment could not be handled by any one application or just service providers. To tackle this challenge, it required out-of-the-box thinking and thought leadership of their precise business problems. We spent the next 18 months setting up and deploying their digitalization journey of smart manufacturing with iDataOps and an integrated data management software tailored uniquely for fast-paced manufacturing.

Phase 1 : Reviewing the state of machines with a diagnostic assessment

Our team reviewed Radiaant's existing manufacturing process and asset monitoring & maintenance technology. As the manufacturing landscape is very dynamic given the fast fashion trend, the client needed quick real-time data insights from their manufacturing processes. We identified the production process that needed optimization based on asset availability and also understood opportunities for automation. After evaluating their existing machine monitoring system, we assessed the modules they used to track their supply chain process. In addition, we established and created a solution that enabled the connectivity of machines and facilitated monitoring of their conditions and output in order to meet their present and future requirements.

After a successful assessment, we made a road map for them, outlined an implementation plan, and shared a compelling POC to move forward.

Phase II : Plant-wide data-driven service management platform

At the beginning of Phase 2, we implemented Rawcubes' iDataOps for Radiaant's machine service management. Radiaant needed a very robust machine monitoring platform that could provide them with real-time equipment data at every step. So we onboarded the machines and the details of all the products they were handling in the product catalog which also included the bill of materials (BOM) of the products describing their different components.

With iDataOps, they could onboard, monitor, and manage service history from any number of machines. With QR code assigned service history management, we assisted them with digital maintenance records of all equipment, including temperature, technical specifications, inspection logs, and consolidated the machine data into a unified dashboard.

This enabled them to extend the lifetime of critical assets and leverage predictive maintenance techniques that utilized machine data analysis to anticipate maintenance needs, guaranteeing timely repairs are performed to preempt problems.

This also enabled the next phase of the transformation which was to calculate the health index for each piece of equipment within the power grid, allowing for prioritization of maintenance for machines that necessitate immediate attention.

Phase III : Proof of value with real time machine monitoring

As the final step to the digitalization of the machine monitoring process, we developed IoT devices to capture data from all the equipment. Using this enriched data, we created dashboards and a data layer with a fully-integrated OEE control center to unveil each machine's availability, performance, and quality metrics. For the devices that were connected to the platform, we could determine the remaining useful life (RUL) and mean time to failure (MTTF). This enabled them to track data at an asset level, discover issues, and mitigate them in real-time.

Further, we established a benchmark for assessing Overall Equipment Effectiveness (OEE), Key Performance Indicators (KPIs) and optimizing the general operational efficiency. We enhanced the shop floor with real-time production performance display and monitoring available anywhere from the top floor to each production line. No more siloed data and lack of visibility of crucial information; the production heads and floor managers received reliable machine data every single time.

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Results

Radiaant implemented Rawcubes' iDataOps across several phases, which resulted in the total transformation of all processes, teams, and systems across their factories and warehouses. Some of the significant results noted are-

- 30% higher machine uptime was recorded, which resulted in lesser downtimes, lower repair costs, and accurate real-time alerts.

- 20% increase in throughput/uptime with real-time visibility across end-to-end machines, helping them meet their customer's defined KPIs.

- Remarkable reduction of 80% for manual data analysis activities with lower data science dependency with our product iDataOps.

- Total savings of over $1M year on year with services and product engagement by rationalizing applications, process, and resource allocation optimization.

Future with Rawcubes

Our focus for Radiaant wasn't just machine efficiency but building a data-driven digital culture with alignment and collaboration of all the teams, from the top floor to the shop floor in the enterprise, which is key to the success of transformation initiatives and how operations can further achieve success.

Rawcubes is the catalyst for next-generation data-driven manufacturing. To navigate this ever-so-complex environment quickly, we shared how our products, DataBlaze and iDataOps, are helping Radiaant accelerate its equipment monitoring efficiency.

We leveraged turn-key predictive machine analytics solutions to ensure uninterrupted production flow and real-time monitoring of equipment.

Our machine monitoring platform tracked the overall equipment effectiveness (OEE), including machinery availability, performance, and quality, on daily, weekly, and monthly bases as errors could lead to production downtime. Moreover, each machine could be individually monitored to assess its performance. If any faults were detected during the production process, service maintenance issues could be raised with priority levels and utilize the machine's service history for diagnostics.

"With Rawcubes, Radiaant has seen exponential growth, and now we have bigger goals, further enhanced operations, and better ways to cope with challenges"

Leadership at Radiaant

30%
Higher machine uptime was recorded

80%
Remarkable reduction of 80% for manual data analysis

$1M
Total savings of over $1M year on year

Contact Us :
www.rawcubes.com
charles.bachmann@rawcubes.com

Head Office
Rawcubes Inc
One Pierce Place Suite 455E,
Itasca, IL 60143 USA

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