KAPTICHE
Capture Wise

Shift Performance Analysis
(Manpower Efficiency)

www.kaptiche.com

About the Client:

Leading Crayon Manufacturing company based in China with an annual turnover of $33 billion, producing millions of wax crayons and nearly exported their products all around global educational markets.

Business Challenge:

Being a reputed organization, the company needs to monitor its production performance to achieve constant quality. Irrespective of their shift timings, Different teams with various shift schedules put them in challenging task to identify or to calculate their exact productivity of resources used during production time.

Due to manual interventions in the production flow, sometimes the resource could make false values in order to complete their target production, which leads to incorrect production rate & the company failed to notice it. In the end, they couldn't be able to provide standard information to measure and analyze their production rates.

The company finally came to know that they find difficult to track employee's productivity. The floor supervisors were faced challenges to collect significant data like time required for them to mix wax components, and time acquired for them to sort crayons, time is taken to arrange crayon based on colors, the time required for packing process, etc., to estimate employee performance rate.

During the raw material mixing process, Less experience of shift labor and lack of material measurements shop floor worker mixed their raw components in inappropriate ratio results produce the defective product at the end. Due to the irrelevant production database and monitoring system, the company couldn't be able to identify and resolve these manual-errors

Kaptiche's Solution:

Kaptiche – an intelligent process automation tool facilitated them by capturing the company's entire production flow by building an intelligent capture system throughout their production processes like melting process, pigment mixing process, mixture molding process, final labeling of products, etc.

Kaptiche advanced Artificial intelligence, and Machine Learning based solution was monitored the product-wise production performance and mapped the same with respective floor worker.

Machine level PLC-based interaction to capture production units includes melting process, pigment mixing process, mixture molding process, etc.,

Shift supervisor would map the respective machine to shift wise operator through an iPad based application, which carries real-time performance metrics in a trend graph.

Any deviations arise with the given threshold on production capacity the device would trigger a quick email to the supervisor and shows an alert in the dashboard screen.

Once the deviation identified and rectified the reason for deviation needs to be measured in terms of duration by shift supervisor as FDC - Fault Detection and Classification.

This cumulative information would facilitate plant head with SPC - Statistical Process Control in terms of accumulating the major reasons for production loss and plan for a quick decision to identify the alternatives to achieve planned equals the actuals in production results.

Value additions

→ The captured information will be available in the servers for monthly or yearly based analysis. The firm can able to monitor the entire production process and help them to minimize their internal failures. With the help of data availability, the quality management team could able to track their production-oriented metric values, which ensures them whether the production flow is running as planned.

→ Kaptiche Artificial Intelligence-based system recorded the total shift timings of the workers required to complete the overall production process. Kaptiche trained to record information like time required to manufacture the final product, time duration acquired for quality test, final packing process, etc. which helps them to estimate the throughput time.

→ Kaptiche with a real-time dashboard and analyzing capability generates a report to their management team, which helped them to track their demands and to check whether the overall processes implemented based on their strategies. Kaptiche with tracking ability provides a complete path to the management team to check whether the cumulative products are matched towards their respective demands and also help them to identify the problem in their labor force and makes sure them to take corrective actions on them.

→ Performance gaps planned and actuals have been identified with specific reasons based data maintenance team as well on the machine level performance with preventive & predictive maintenance.

Business Benefits:

→ Company become a proud member of the industry advanced SMART factory 4.0 movement.

→ Kaptiche helped them to track their employee performance rate. And also facilitate them to identify any labor requirement in their production process.

→ Kaptiche with real-time dashboard facility ensures them to monitor whether the production process is implemented based on their strategy or not and help them to identify wherever

issues occurred during entire production flow.

→ Kaptiche with readily available data enables them to predict their relevant problems and company can able to achieve their assured quality level and also makes sure them to maintain their target demands.

→ Kaptiche with advance AI-based solution helps them to measure the difference between actual shift timings and expected shift timings to provide complete shift performance rate.

→ Kaptiche enabled IM – Intelligent Manufacturing at a very minimal change in the process.

→ The entire manufacturing is now data-driven with Statistical Process Control.

→ Kaptiche fits in with the existing MES (Manufacturing Execution System) and ERP (Enterprise Resource Planning) without replacing any process/tags/masters.

→ Kaptiche Zero-touch policy enabled IIoT (Industrial Internet of Things) without any correction in the production machinery PLC ladder logic.

→ Kaptiche generates an overall shift based efficiency report to their management team. So, production management can able to predict its future annual production rate.

→ Cumulative data helps to arrive OEE – Overall Equipment Efficiency .

→ The factory is operated based on aps - Advance Planning and Scheduling with the real-time data.

→ PoF Physics of failure methodology helps effective decision and control over processes and mechanisms that create a failure to predict reliability and better performance.

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