CASE STUDY

VISUALIZATION & REPORTING

MAX SUITE

Data-driven performance management in manufacturing

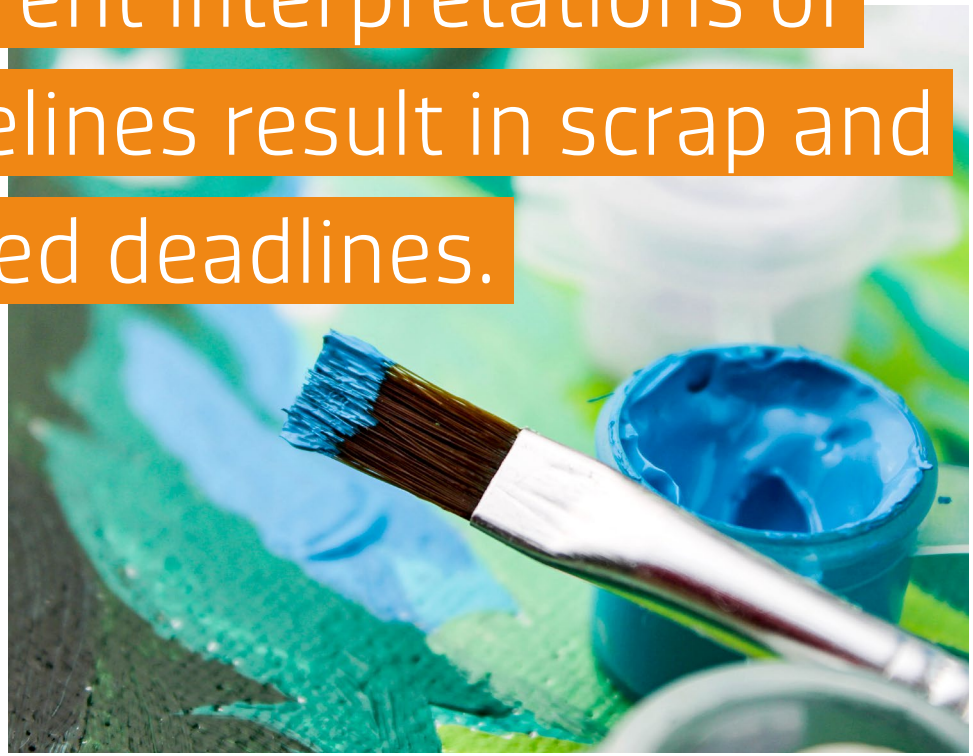
A large consumer products manufacturer with multiple facilities located in several different countries selected SYSTEMA to address requirements for visualizing KPIs and providing insights necessary to drive production optimizations.
A core requirement was to provide 24 / 7, “anywhere” visibility into production metrics to users at various locations and organizational levels.

SYSTEMA
Art of Automation

An Industry Challenge: Too Many "Versions-of-Truth"

Envision an art class with 25 people working on a classic "paint-by-numbers" art project. In such a project, participants are provided with an image that is divided into many parts, each small part is associated with a number, and each number is associated with a color. By following the number codes, each participant should produce a virtually identical version of the image once the colors are filled in. In reality, each participant will likely select different hues / tones / shades of green, blue, orange, purple, and so forth. They will use different techniques as they apply the colors to the paper which will result in less pigment or more pigment being applied to the page. In the end, the works of art will certainly be similar images, however, each version will have slight variations based on the exact colors used, effort applied, technique, and style. Even very clear and specific guidelines (like: "use the color blue") can be interpreted in many ways by different individuals. These variations and different interpretations of colors and techniques result in works of art that are unique and even beautiful.

Different interpretations of guidelines result in scrap and missed deadlines.



In the world of manufacturing, variations and different interpretations of clear and specific guidelines result in scrap, missed deadlines, and dissatisfied customers. Granted manufacturing is far more complex than paint-by-numbers, one must admit there are some stark similarities process-wise. In factories where manual processes prevail and each operator is tasked with uniformly executing process step(s), the actual outcomes can range in quality from "good" to "scrap" depending on process variations (in materials selected, equipment / machines used, and methods) which can and do occur at the operator level. Oftentimes, resulting issues don't become evident until material lands squarely in the category of a "scrap event" or "loss" and throughput expectations are unmet.

Similarly, when it comes to manual data collection and reporting, many “versions-of-truth” can appear as various interpretations and representations of data occur. Variations in interpretation and representation of shopfloor production KPIs can easily obscure production issues from detection, whether intentional or not.

Visibility into production data provides insights that are critical to making business decisions.

Additionally, manual data collection and reporting lacks timeliness, accuracy, and visibility into the activities and results generated on the shop floor like:

- Is all shopfloor equipment operating properly?
- When and how frequently is equipment experiencing downtime, both scheduled and unscheduled?
- Is production on track with estimates of where it should be?
- Are operators adhering to processes and procedures for all quality control and production execution steps?
- What are the actual scraps / losses as a result of mishandling, material defects, and so forth?

Visibility into production data provides insights that are critical to making informed business decisions regarding production processes, methods, and operator training opportunities. For a variety of reasons, many manufacturers of consumer products, as well as manufacturers for other industries, still rely on manual efforts on the shop floor and urgently want comprehensive visibility into overall operations.

IT Challenge: Automation & Integration of Systems

From an IT perspective, a lack of automation and systems integration (like ERP, MES, equipment, quality management, and other manufacturing IT) prevents timely, contextual, and accurate evaluation of KPIs and overall performance. As a result, many manufacturers struggle to:

- optimize overall equipment effectiveness (OEE)
- quickly identify and resolve quality issues
- fulfill orders on time and as promised
- maximize profitability by improving margins and reducing costs
- accurately measure and evaluate employee performance and provide targeted feedback and training

From a manufacturing perspective, there is an urgent need for contextualized, real-time information. Timely data provided with context can not only inform the decision-making process but can also be leveraged to verify that, once optimization efforts are in place, they actually produce the expected results.

By integrating systems, automating the data collection process, and contextualizing data, real-time dashboards with meaningful insights quickly become the reality. Next-level possibilities using collected data include trend identification, root cause analysis, and advanced analytics capabilities.

Complex manufacturing challenges:

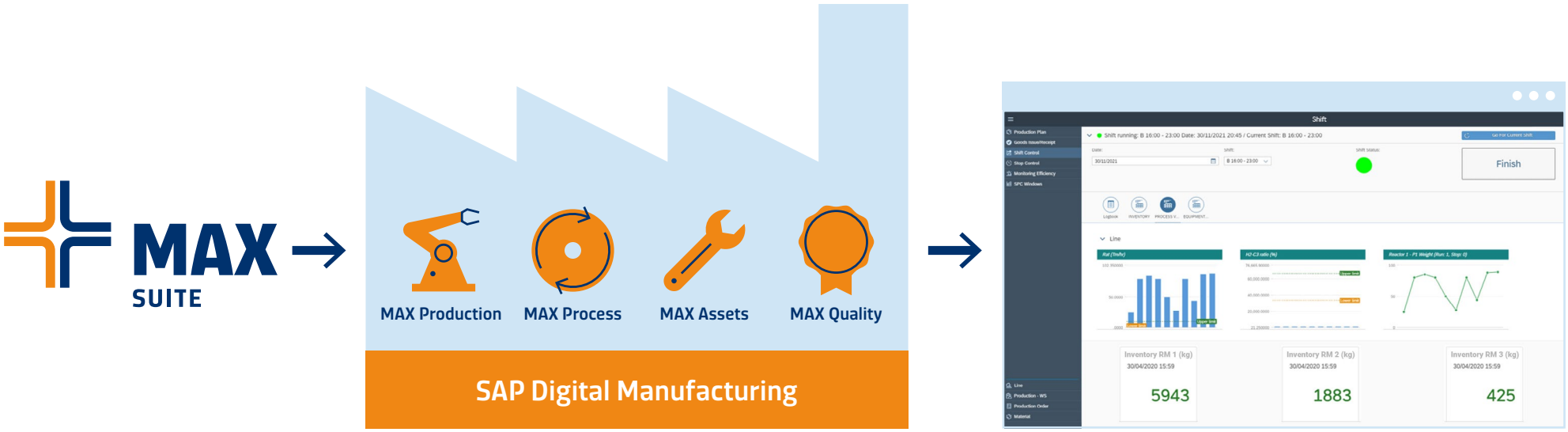
Optimize overall equipment effectiveness (OEE)

Quickly identify and resolve quality issues

Fulfill orders on time and as promised

Maximize profitability by improving margins and reducing costs

Accurately measure and evaluate employee performance and provide targeted feedback and training

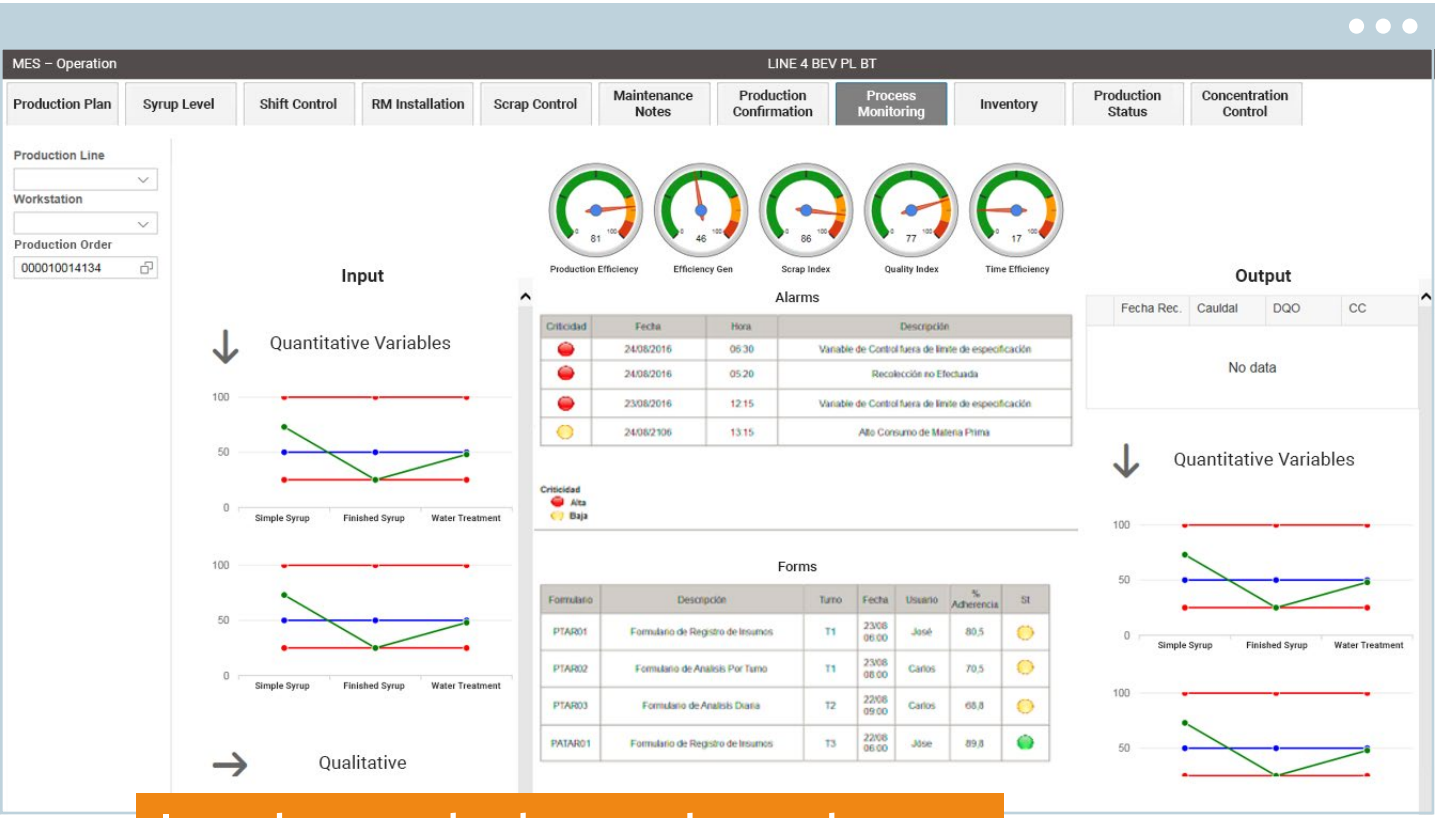


MAX Suite provides critical insights for data-driven decision making.

The Solution: SYSTEMA's SAP MAX Suite

This manufacturer recognized the efficiencies that could be achieved regarding production optimizations when decisions are data-driven rather than instinctual. Further, they were aware that each production site had different approaches to reporting which made it difficult to accurately compare and evaluate production performance across sites, production lines, production areas, and workstations.

Given the manual nature of this consumer products manufacturer's processing and reporting efforts, KPI dashboards were a core requirement when evaluating manufacturing execution system (MES) options. After evaluating their options, they selected SYSTEMA's SAP MAX Suite and laid out their requirements – which included a strong emphasis on user dashboards for visualizing KPIs in real-time and insights to support data-driven decision making. MAX Suite supports monitoring, management, and optimization of production activities based on data provided through ERP and shop floor systems integration. Production planning activities conducted within the ERP are integrated with actual results produced on the shop floor using SAP Plant Connectivity (PCo). This integration provides important context for visualization of planned versus actual results to help determine true material consumption and replacement needs, maximize resource allocations, and optimize production.



MAX Suite dashboards provide visibility into overall shopfloor operations all the way down to detailed dashboards at the operator level.

Isolated data leads to wrong decisions. Contextualized data allows for confident decision-making.

Contextual Data for Real-Time Insights

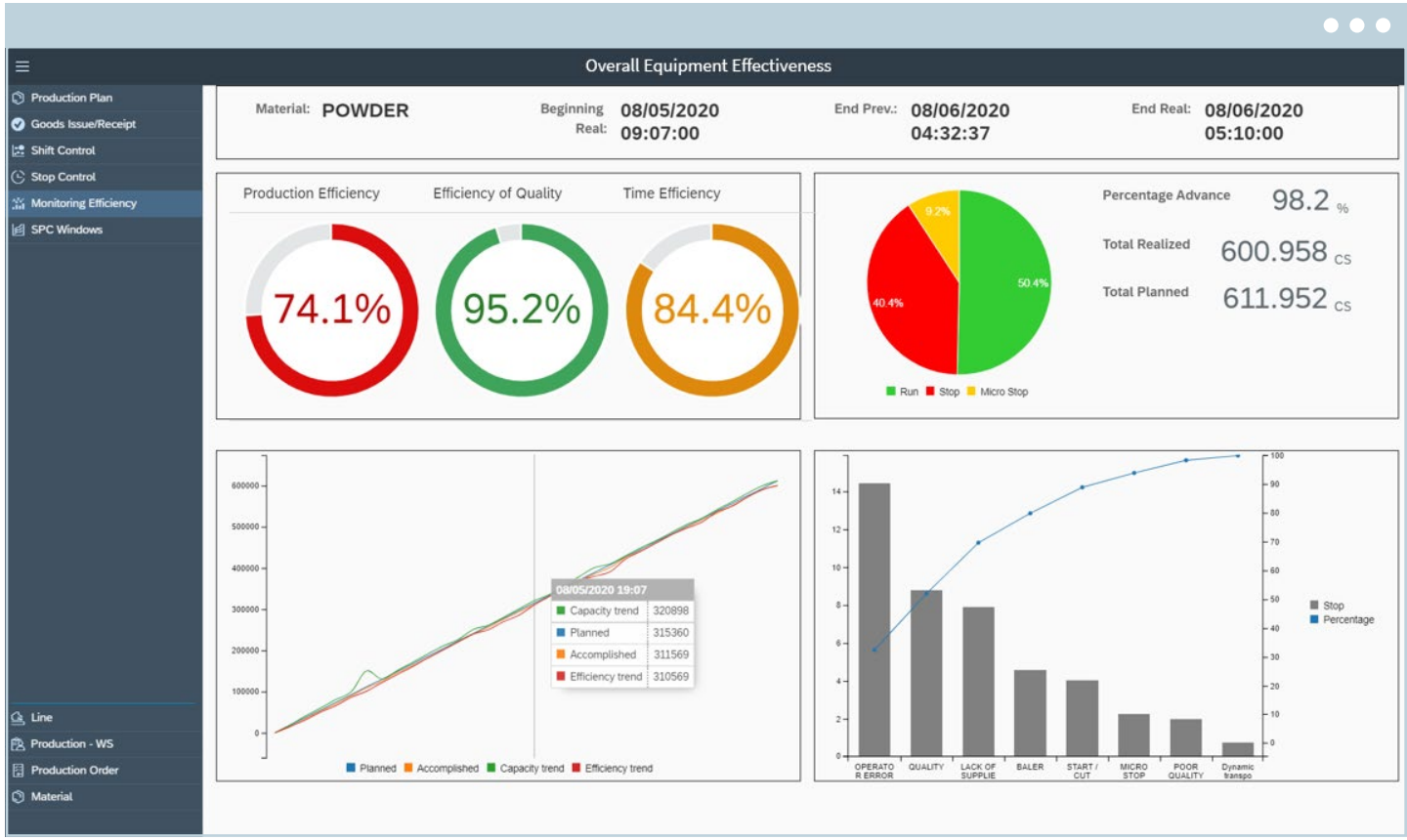
Isolated data leads to wrong decisions. Contextualized data (what, where, when, who, relative to whom, etc...) allows for confident decision-making. Contextualization of data is only achievable with the integration between mission critical business systems.

Dashboards were customized to provide visibility into operations and user permissions were defined for each level of the organization. On the shopfloor, equipment operators were granted visibility into KPIs and dashboards for their local workstation operations. Supervisors were given insights into individual workstations, production lines, and production areas. Plant managers gained visibility into the overall plant operations as well as drill-down capabilities to view detailed dashboards down to the workstation level. Executives have complete access to business information including cost, expenses, order fulfillment, and more.

When transforming production from manual to automated processes, the possibilities for visualizing and evaluating the collected data are endless. A side-effect of that is that it can be difficult to think beyond the daily, raw-data-style reports that have been the standard.

That said, once the capabilities for visualizing KPIs with additional context information were realized, the raw-data-style reports were quickly relegated in favor of the new capabilities for real-time, contextualized insights. Again, this is new territory for organizations and requires some adjustment and change management. For instance, the new dashboards quickly detect production issues that are visible in real-time to users at all levels of the organization.

This means that shop floor operators, supervisors, and plant managers must be prepared to respond and resolve these issues quickly as their results are also visible in real-time. Another significant change that requires some adjustment for shop floor personnel is the 24/7 accessibility which includes access to workflows, notifications, alerts, and messages that may require immediate action.



MAX Suite dashboards provide real-time visibility into critical KPIs such as OEE.

MAX SUITE

By partnering with SYSTEMA and implementing MAX Suite, this manufacturer was able to:

- save time and reduce labor through automated data collection and visualization
- improve OEE by reducing equipment downtime and improving utilization
- leverage ad-hoc, standard reports, and dynamic reporting and analysis capabilities for data-driven decision making
- achieve a “single-version-of-truth” for KPI evaluation

REQUEST A CONSULTATION

Save time and reduce labor

Improve OEE

Enable data-driven decision making

Gain real-time visibility into KPIs

Click here for a detailed demonstration of SYSTEMA’s SAP MAX Suite capabilities.

Feel free to contact us with questions at contact@systema.com.

SAP Partner

SYSTEMA Art of Automation

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