LEVERAGING CRITICAL DATA TO DRIVE MANUFACTURING DECISIONS

Best-in-Class manufacturers leverage their data to make better decisions. Do you have access to the data you need to make the best decisions possible?

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Manufacturing Intelligence (MI) projects are initiated to improve manufacturing operations by turning data into actionable information that drives business results. The latest technology now provides unparalleled insight into manufacturing systems.

Sixty percent of CEOs say ... "Need to do a better job capturing and understanding information rapidly in order to make swift business decisions" ...

Source: IBM, Industry Studies, Customer Interviews

Sort All That Data

A typical manufacturing system can easily contain millions of data points. Sorting through this data to determine how to best use it creates unique challenges, including:

Data Overload. With the massive amount of data available, having the time to sort through it to find what you need, when you need it, becomes a frustrating exercise that often results in abandoning the search and making a decision based on the limited information available.

Untimely Data. Looking at yesterday's data is not always conducive to improving today's operations. Historical data is useful for certain analysis and comparison of metrics, but real-time data that manufacturers can act upon when variances occur is more important.

Lack of User-Based Data. A manufacturing enterprise contains various users who want to extract value from this data, and each user requires a unique view of the data

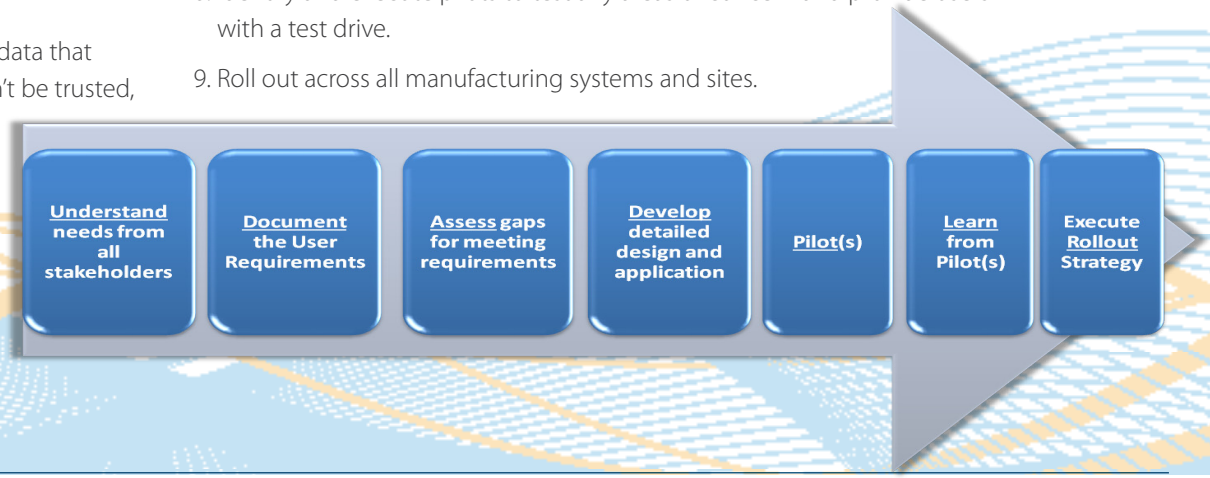
Lack of Context-Based Data. Information with no context is just data that is interesting, but not useful. Visualizing related information provides understanding—a basis to make wiser decisions.

Inaccurate Data. An additional challenge is reporting inaccurate data that typically leads to lack of user confidence in the data. If the data can't be trusted, then there's no point in spending the time to look at it.

The Plan to Address Challenges

A well-thought-out plan to address such challenges is essential for delivering expected business results. The plan should focus on how to convert the data into useful information. But who determines what information is useful? This in turn leads us to ask each manufacturer what information they require to enable better decision making. This approach focuses the effort on the users' needs, not the endless data points available. A typical plan might consist of the following steps:

1. Identify users and requirements for each user role.
2. Identify how each user will use the requested data to improve operations.
3. Identify KPIs required and standardize for apples-to-apples comparisons.
4. Identify data sources (PLCs,HMIs, Historians, ERP, CRM, WMS, LIM, etc.) to access.
5. Identify data presentation interfaces, such as dashboards, Web pages, HMIs and smartphones, that best suit each user.
6. Select software solutions to collect, integrate and present the information.
7. Identify gaps in infrastructure and technology for achieving project goals.
8. Identify and execute pilots to test any areas of concern and provide users with a test drive.
9. Roll out across all manufacturing systems and sites.



CLIENT SUCCESS SNAPSHOTS

Reduce Downtime and Product Giveaway

Challenge: Bakery products division lacked the understanding of downtime causes and losses due to net waste as a result of product giveaway. They desired a solution which identified and reported on specific downtime causes and reported accuracy of net packaging weight.

Objective: Measure and ultimately understand performance inefficiencies due to downtime, implement tools and training required to improve productivity and reduce losses due to product giveaway. Required solution must be within budget constraints and installation be relatively simple, not requiring complex customization. System should provide a framework for future enhancements and added functionality after proof of concept phase.

Results: The client decreased downtime as a result of fully understanding specific downtime causes and implementing relevant measures to improve operator and line performance. As a result of understanding product giveaway, they put programs in place to more accurately package finished product. Our team accomplished this through developing and deploying a data logging and OEE measurement solution. The data reports analyzed provide valuable insights to management regarding OEE, downtime and product waste.

Making the right decision at the right time can save manufacturers millions of dollars per month.

Using Data-Driven Decisions to Improve Operations

Challenge: Edible oil manufacturer required MI plan for ingredient track and trace and inventory control.

Objective: Improve Oilseed Processing and Nutrition operations through the implementation of various manufacturing intelligence tools, including process data analysis to improve manufacturing efficiency; performance analysis to reduce asset downtime; and ingredient and product tracking to mitigate food safety risks.

Results: Created a Roadmap based on what information is needed to make better decisions. This approach focuses the effort on the users' needs, not the millions of data points available. Interviewed over 20 users from IT, maintenance, engineering, quality, operations and management. Meetings provided alignment on initial pilots, functionality required and visualization/reporting. Provided clear plan to implement appropriate solutions to deliver actionable manufacturing information.

Developing User Requirements to Charge Up Operations

Challenge: New generation automotive battery manufacturer required a plan to address operational data management.

Objective: A new manufacturing intelligence system to record critical process and battery manufacturing parameters including downtime, OEE, and maintenance information. Data will allow for better quality control, provide better integration of the various systems and support better decision making by production, maintenace and management personnel..

Results: Created User Requirements for downtime tracking, OEE, quality checks, maintenance management and visualization and reporting. Provided various options in detailed analysis. Manufacturer considering similar deployment in European facilities.

MES System Helps Manufacturer See Data Clearly

Challenge: Major contact lens manufacturer needed MES system for new manufacturing system.

Objective: Standard functionality to perform traceability, recording of quality data, reporting, and scheduling.

Results: Developed software to allow production schedules from Oracle database to be downloaded to line PLCs. Actual production and quality data is collected from PLCs and transferred back to Oracle database for reporting. Training manuals were created to document the new HMI standard.

Improving decision making has a significant cost impact due to the number of areas affected. The required data is most likely available - you just need to turn it into ***Actionable Information.*** A proven methodology and best practice will help ensure success and avoid common pitfalls.

Start leveraging the data you already have available to make a positive impact on your business.

Batch and Packaging OEE Data Delivered in Real-time

Challenge: Major food manufacturer needed batch and packaging OEE data collection and reporting system for over 50 packaging and process lines

Objective: Develop and deploy system across manufacturing facility to allow operators to verify and add information to downtime events.

Results: Developed and deployed Batch and Packaging OEE collection and reporting system across 50 packaging and process lines. System collects data directly from PLC and allows operators to enter downtime and quality information. Using thin client technology for the HMI, the system provides OEE and other custom KPIs to operators and all plant personnel with web-based reports. Includes performance, recipe management, quality analysis and SAP integration.

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