

Food & Beverage

Global Packaged Foods

18 Global Sites

5 Product Families

5-7 Year Program Duration

6 Deployment Waves



Production and Quality Management with Schneider Wonderware MES

Customer Objectives

Preserve Market Share

- Drive Re-formulations to Improve Customer Acceptance
- Improve Product Consistency
- Move to a Centre-Led Quality Process

Grow Margins

- Take New Market Share with New Products
- Shorten the Product Innovation Cycle
- Move to Low-Volume High-Mix Production Model

Improve IT Agility

- Single Code-Base Across Different Facilities, Countries and Product Families
- Platform Architecture to Support On-going Evolution of MES

Solutions and Products

- Wonderware MES Quality
- Wonderware MES Operations
- Wonderware MES Performance
- Wonderware Archestra System Platform
- Wonderware Skelta BPM
- Wonderware Enterprise Integrator



Functionality

- SAP-MES Integration
- EQMS-MES Integration
- Production Order Management
- Quality Specification Management
- Technical Process Parameter Management
- Automatic & Manual Test Results Entry
- SPC and Capability Charting
- Material Verification
- WIP Tracking

Background

Our customer has been in business for over 100 years, growing into a global provider of canned, bottled, and packaged liquid and baked goods. As consumer tastes have evolved and niche food producers have entered the market to serve those evolving tastes, our customer experienced declining market share, revenue, and margins. As a result, company executives set objectives to preserve market share and grow margins, implementing the dual strategies of improving brand integrity and increasing the rate at which they develop new products and bring them to the market.

Callisto Engagement

As the customer examined the impact of these strategies on business and manufacturing operations they realized the existing processes and IT systems that support those processes at the enterprise (ERP) and plant (MES) levels were not adequate to the task. Callisto Integration was hired as the MES partner that could provide both the consulting and engineering services required to support this new company direction.

Program & Project Approach

Callisto's initial involvement consisted of a two-phased consulting engagement designed to first determine the feasibility of developing solutions based on the customer's preferred technology vendors (SAP and Schneider Wonderware) and, once the feasibility had been proven, to determine the program approach and overall solution architecture, including business process design, master data partitioning, functional partitioning, change management and preliminary system design.

A multi-year roadmap that would see functionality deployed to the plants in multiple waves was developed.



Quality Pilot

The first project was the development and deployment of Quality functionality to the lead site, part of the baked goods division. Requirements and design were executed with the lead site and a selection of other sites that represented a cross-section of the different levels of automation and complexity existing in the different plants within the business unit. Including a cross-section of plants in the design phase allowed Callisto to design a solution architecture with sufficient configurability in the plant and product models that rollouts to subsequent plants could be performed with no changes to the code base.

Quality Rollout

Sub-sequent deployments of the Quality Solution to other baked goods plants begin with a site analysis, where the Callisto engineering team documents the site's plant and product models in order to determine how to configure the solution for that site. At the same time, perceived gaps between a plant's existing quality processes (highly manual, paper-based) and the quality processes and functionality embedded in the Quality Solution are analyzed. In support of our customer's strategy to move

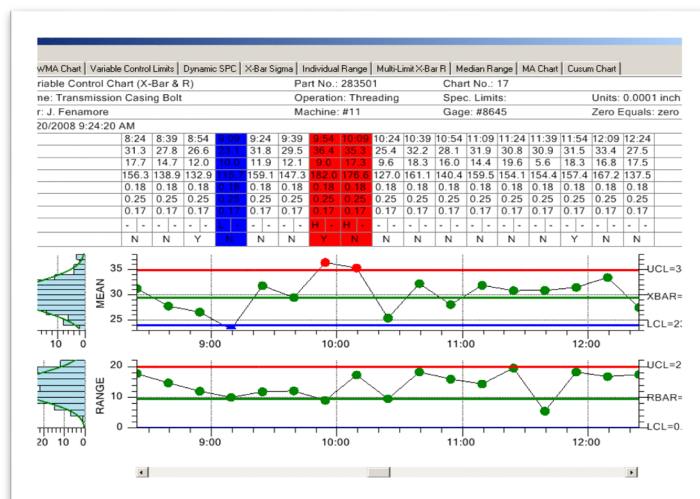
to centre-led, standardized quality processes, the majority of gaps are addressed through operational process changes, i.e. the team works with plant personnel to define and implement revised processes that will allow the plant to use the Quality Solution as-is. Only in the case of fundamental physical plant differences or product structure differences that cannot be accommodated within the core model are new extensions to the model implemented. Once new extensions have been incorporated into the core solution, that becomes the basis for all new plants. The updated core solution is only deployed back to existing plants if there is a compelling business reason or as part of a regular technology refresh cycle.

In order to control program costs and to ensure local front-line support resources have sufficient knowledge of the solution, plant engineering, IT, and operations resources play a significant role in deploying the solution to a site. Callisto creates the local plant instance of the solution by configuring a copy of the core solution with plant and product model, and performs integration testing in a test environment. Once integration testing has successfully completed, customer resources are responsible to promote the system to the production environment and provide start-up support to the shop floor.

At all times, Callisto is responsible for the ultimate performance and support of the system.

WIP Tracking & Inventory Management Pilot

The second wave of functional development was started in the liquid products division; a division whose products are subject to stricter regulatory oversight. This effort is taking place in parallel with the on-going Quality Solution rollout to the baked goods division. This WIP & Inventory project focuses on tracking WIP through critical-to-quality sections



of the process, in order to prevent the accidental mixing and mislabeling of product. The approach is to add the new functionality to the existing quality functionality, deploying the full new solution to the plant.

WIP Tracking & Inventory Management Rollout

Within the liquids division a different approach is being used to manage the rollout of the MES. Because the functionality is critical to food safety, the customer wishes to deploy it across the division as rapidly as possible. The customer does not have sufficient technical personnel to meet the project deadline, so Callisto is providing all the resources to support the rollout.

Downtime & OEE Pilot

A separate Downtime Tracking & OEE pilot was deployed at a single liquid product site. The purpose of the OEE pilot was to demonstrate the feasibility of the Wonderware MES Performance package as an alternative to the existing OEE software used in the packaging areas. While the competitor's software performed well in packaging, it is more complex and costly than the Wonderware offering, and not well suited to use in the batch and continuous portions of the process.

Additionally, the inclusion of a second vendor’s technology in the MES layer would lead to a more complex overall MES solution, which is contrary to the customer’s stated objective of improving IT agility.

The OEE pilot has been completed, and the system is in the process of being extended to the remaining lines in the plant.

Future Program Phases

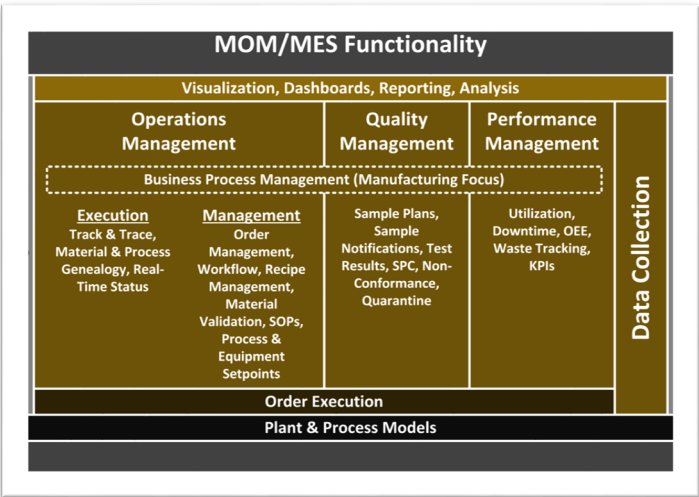
Future phases of the program include incorporating the previously piloted Downtime & OEE functionality into the core solution; Recipe Management, which will focus on improving the efficiency and quality of recipe management processes within the plant; and Formula Translation, which will provide full recipe integration between the PLM and the MES, allowing for standardized product formulations to be converted to plant-specific recipes.

Overseas Deployments

Several of the plants to which the solution is being deployed are in the Asia-Pacific region. In order to manage deployment costs, Callisto and our customer entered into a global/local systems integrator arrangement with an overseas integrator whereby Callisto manages the core solution (the code base from which each plant’s local instance of the solution is derived), and the local integrator manages plant-facing activities. Deployments to the plants are shared, with Callisto implementing the plant and product models, and the local integrator managing integration with the controls layer, deployment to production, and start-up support.

Change Management

Within the baked goods division the MES program required a significant change management effort. Historically, the baked goods division has used minimal IT



technology on the shop floor, meaning that plant personnel needed to go through a significant learning curve.

In order to reduce training costs, and to maximize sustainability of the solution, a train-the-trainer approach was used. At the lead site, Callisto trained the production supervisors, who are the designated “super-users” (2nd level operational support) of the system. The production supervisors then led (with Callisto on-site support) the user acceptance testing effort and start-up efforts.

Super users from the next site scheduled for deployment participate in the user acceptance and start-up phases of the previous site, in order to ensure the super users have the required understanding of the system to support the deployment team and their plant personnel when their plant deployment begins.

IT Change Control

The new MES is the first plant system our customer has deployed with an architecture consisting of a common, corporate-owned code base, with a unique instance containing local configuration data deployed to each site. The customer determined that their traditional IT change

control processes were not suitable to manage the MES solution on a global basis.

The customer retained Callisto to develop new change control processes and guidelines specifically for the MES, and to train internal IT and outsourced technical support staff on the new processes.

MES Centre of Excellence

When a manufacturer begins multiple MES initiatives based on a common platform, there are financial and operational benefits to be realized from developing common solution approaches and components that are used in multiple applications for multiple sites. This includes both solution & software components, as well as standardized IT infrastructure design and configuration. Additional benefits in cost and risk reduction come from ensuring that “lessons learned” from each project become part of the company knowledge base and are shared with future project teams.

With projects being sponsored by different business units and implemented by different project teams, it is difficult to ensure common solution architectures and standardized, configurable applications will be developed.

Corporations can address this challenge in different ways: they can allow each project to proceed as a stand-alone effort, based on the business justification for that project; they can implement an oversight function so that each project is executed as an independent effort within a set of prescriptive guidelines; or they can implement a centralized project delivery function that is responsible for all aspects of all projects across all sites.

Best practice among manufacturing companies implementing global MES programs is to implement the concept of an MES Center of Excellence (COE) to provide the required oversight function and ensure maximal return from their MES investment. This approach balances

individual projects against the overall MES strategy, allowing the project teams to address the business needs of their customers (the plants), while at the same time assuring that the project contributes to the overall MES landscape.

The purpose of a COE is to develop relevant guidelines and standards; and to provide oversight, guidance, and support to project teams to ensure that individual projects follow guidelines and contribute to the development of a common solution library. The COE influences all aspects of solution development including solution architecture (solution components, the segmentation of functionality between components, and component integration), master data design, solution design (particularly with respect to standardization and configurability) and coordination with other MES and enterprise projects.

The COE is a cross-functional team, with representation from operations, IT, engineering, and the software/integration community, having broad expertise in the company’s operations, the existing manufacturing IT landscape, and in the MES software.

Based on Callisto recommendations, our customer has implemented an MES COE within their global headquarters. Membership in the COE includes Callisto as the lead integrator, and the customer’s IT, engineering and supply chain groups. The software vendor is also represented. The COE has oversight responsibilities to complement the individual project teams to ensure that the customer’s longer term strategic MES goals are met, while at the same time addressing the immediate needs that gave rise to the project.

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