

EMEA2009

April 2009

Metrics that Matter

*How to select the best measurement system and technology to
optimise food and beverage manufacturing operations*

The consumer packaged goods industry faces increasing competition for market share between myriad of foods and beverages available to consumers, so manufacturers need to cut costs while optimising plant operations. A metrics program can help managers to make informed decisions in response to these pressures.

What Part of the Curve Are You On?

Metrics programs' effectiveness often depend on where an organisation is on the Manufacturing Systems Maturity Curve. Most operational-type metrics are sources from three main stages in the evolution of manufacturing systems:

1. Process control and repeatability efforts are directed toward the technical details of the production process with a primary focus on achieving consistency and process repeatability. Most metrics implemented in this phase measure "what happened" and are used for "after-the-fact analysis" of quality and product variability

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2. Productivity and asset utilisation focuses on metrics that monitor and analyse “what is happening” at the current time and enabling increases in production efficiency, capacity utilisation, yield and labor reductions.

In this stage, it’s also typical to find a heavy focus on automating all possible manual tasks — engineering humans out of the process supported with metrics and information that engage the remaining workers to intercede only on an exception basis.

3. Horizontal and vertical integration addresses enterprise manufacturing effectiveness that spans the supply chain. Metrics and systems are focused on “what do I want to happen and how do I make it happen?”

In this phase, it’s typical to employ manufacturing-oriented score cards or indexes compiled from multiple metrics that lead to better use of resources and enhanced performance across the supply chain. Engineering the remaining workers back into the process to drive process improvements is critical to sustaining gains.

It’s All About Strategies

Selecting the best metrics system and underlying technology solution requires careful planning, execution and organisational change management. Planning for the technical solution should focus on three criteria:

1. Think big, execute small. Size up and drive your metrics program with a comprehensive vision and plan for sustainable change. Best practices confirm that successful solutions are people driven. Leadership must regulate and pace the speed at which the organisation can assimilate and effectively integrate metrics into daily management activities.

2. Keep it simple. Use industry solutions that are built on integrated architectures versus reliance on complex custom interfaces and application programming. This will reduce long-term total life cycle costs and the in-house skills required to support the system.

In addition, only collect data that counts and can be turned into keenly actionable information. Avoid falling into the trap of collecting everything because you can't determine what truly matters. Take the time to define what data really matters and how it's presented and analysed without too much staff effort.

3. Select a technology partner. Choose a supplier that has relevant industry experience and a comprehensive/ integrated suite of products that range from control systems technology through information management applications. With enough time and money, any application can be made to work, but today's business pressures don't allow this.

Make certain you have an adequate voice inside the supplier organisation with an executive sponsor and a senior technical architect. When things go wrong, which they will, this will allow you to get through to the decision-makers and escalate the situation in a timely fashion.

Convergence Matters

The sweet spot for generating manufacturing metrics resides at the manufacturing execution system (MES) layer of the architecture. In most companies, it's clear who is responsible for real-time and event-driven data (process control/engineering staff) and transaction-driven business data (IT staff).

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However, it's often unclear who owns the grey zone in between. To realise the full benefits of integrated metrics and manufacturing intelligence systems, companies must often go through some amount of cultural change and improved boundary/responsibility definition.

To drive the process improvements and business gains targeted by these systems, formalise ownership of the data accuracy, the system performance, and the method for integrating these tools into the strategic and daily management practices of the organisation.

How Fast to Move

How fast an organisation moves along the Manufacturing Maturity Curve depends on:

- How willing the organisation is “to change.”
- How well new ideas are accepted.
- How improvement is being driven — by sustainable vision or by reaction to management pressures.
- How effectively the metrics program is integrated into the company's culture.

Regardless of where an organisation may be on this curve, a flexible-sustainable metrics system requires change management leadership and support at each level of the operation. Leaders need to communicate, define, coach and teach the organisation how to fully embrace performance metrics and involve all employees in the production process to progress from reporting yesterday's performance and problems to contributing to tomorrow's improvements and opportunities. Rockwell Automation Food Industry Solutions www.rockwellautomation.com/go/tj10food Rockwell Automation Beverage/Brewing Industry Solutions www.rockwellautomation.com/go/tj10bev

The sweet spot for generating manufacturing metrics resides at the MES layer of the architecture.

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Notes to editors

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