Advanced Automation, Cloud Computing, and Recipe Management for Improving Batch Manufacturing Operations

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The pharmaceutical, food & beverage, and specialty & fine chemical industries are primarily batch manufacturing operations.

However batch manufacturing operations can be found in almost every industry from glass & ceramic to mining & metals to pulp & paper to textiles & building materials.

In fact, many processes that are thought to be continuous are actually batch operations.
These industries are seeing an increase in the diversity and complexity of the mix of product and packaging they must manufacture.

Even the functional characteristics of their products are more highly specific and complex.

This has made manufacturing operations more complex even as the need for flexibility, rapid response, and improved time to market grows.
Automation suppliers continue to enhance their products and services based upon the models, terminology, and principals defined in the ISA 88 Batch Control standard and the ISA 95 Manufacturing Operations Management standard.
Improving Batch Manufacturing Enterprises

- This is helping batch manufacturing enterprises improve their operation, more effectively integrate their manufacturing and business systems, and improve their product recipe management—in both development and commercial manufacturing.

- This includes the use of the ISA 95 standard to define overall system architecture and the touch points with related information systems.
Improvements in IT technology are also leading to the deployment of production management functions in off-site data centers for use by multiple manufacturing sites.

These include functions such as product recipe management, scheduling, and plant performance monitoring and evaluation.
Starbucks is doubling the number of Clover coffee-brewing machines, which connect to the cloud and track customer preferences, allow recipes to be digitally updated and help staffers remotely monitor a coffee maker’s performance. Also in the works: connected fridges that indicate when a carton of milk has spoiled.
The pharmaceutical industry in particular is going through a dramatic transformation and many believe survival will depend upon proper use of mobile and social media technology. Some important applications include:

- **Sales**: Drug product literature and other data for both doctors and potential patients
- **Patient spontaneous adverse event reporting**
- **Personal medical monitoring**
- **Patient clinical trial monitoring**
- **Doctor patient consultation**
Baxter's Beat Bleeds and is designed to help hemophiliacs manage their condition.

Janssen health management app, Care4Today, can send alerts to family members when someone doesn't take their medication and produce charts showing adherence to treatment regimens.

Novo Nordisk's NovoPen 5: In the fiercely competitive diabetes market, little improvements that make the patient's life easier can give a company the edge over rivals.

After winning FDA approval for its orphan cystic fibrosis drug Vertex faced a new challenge--showing physicians why it is a $294,000-a-year treatment. The app brings together safety and efficacy data, prescribing information, and a video explaining the science of how the drug works.
This session will highlight how leading manufacturers and their suppliers are using standards, IT technology, cloud-based solutions, and advanced analytics to improve operations and reduce overall support.

It will also highlight improved ISA-88 based recipe design and management to address business needs and improve customer response and their bottom line.
Questions
Thank You

For more information, contact the author at cresnick@arcweb.com or visit our web pages at www.arcweb.com
Case Histories:

- Jeff Moore, Sr. Electrical Engineer, Gallus BioPharmaceuticals
  - Jeff has over 30 years of experience in the pharmaceutical and biopharma industries with a primary focus in instrumentation, process control, and site-wide automation design/support
  - His experience includes validation, cyclotrons, DCS systems, plant-wide SCADA/PLC control systems, batch process design (including S88), historians, and manufacturing intelligence
Case Histories:

- Stefan Malmsten, Industrial IT Manager, AkzoNobel
  - Stefan drives the company’s efforts in making the most value out of global manufacturing/information systems, enabling continuous efficiency improvements through better visibility and global harmonization.
  - Today these solutions range from inbound deliveries management, through internal manufacturing processes and increasingly also ranging to product performance in the end customer’s processes, being a differentiator towards competition through efficient service packages connected to their products.