THREE STRATEGIES TO BETTER BATCH VISUALIZATION
Latest Technology Ensures Throughput and Quality
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Introduction

In batch manufacturing, increasing competitive pressures demand advanced process control solutions to improve manufacturing efficiency and profitability. Analysts forecast the global batch control systems market to grow at a CAGR of 4.31% during the period 2017-2021 (Research and Markets, 2017). Control system performance can significantly impact a manufacturer’s bottom line, particularly in operations with processes requiring precise batch sequencing and control.

Current market trends in batch manufacturing include expecting more productivity with fewer capital investments, an increasing need for skilled workers, and the adoption of newer data-related enabling technologies. The current business climate is characterized by a growing emphasis on performance and quality along with strict regulations on the safety of products.
OPERATING CHALLENGES

Many existing batch facilities run sequential-based processes that require considerable manual intervention and fine-tuning. The result is an increased risk of error and scope for inefficiencies. Plant operations personnel are being tasked with squeezing more out of plant assets, being more effective at troubleshooting batch processes, and identifying new methods of reducing production costs. Automation solutions should be designed to reduce cycle times, increase operational flexibility, reduce engineering and training requirements, and ultimately, optimize efficiency and throughput. Specifically, batch personnel need more visibility into their operations to be proactive—for example, to anticipate upcoming work activities or to identify potential production problems that could lead to downtime. Several new strategies can be employed to better predict and streamline batch operations.
STRATEGY 1: TIME-BASED VISUALIZATION

Perhaps the most significant advancement in batch automation is a new human-machine interface designed to help operators see their batch production like never before. Intuitive visual analytics enable the ability to predict future events. Visual displays are easy to use and provide operators with look-ahead views providing greater insights into upcoming events or abnormal situations. Providing time-based batch visualization gives personnel the flexibility to conduct more tasks concurrently, improving productivity. They also know immediately when there is a delay.

Operators can control what they see on their HMI—and how they see it. Batch process timelines indicate what single unit phases are coming up and when actions need to be taken. Operators see all the manual tasks that must be completed so they can plan ahead. They can even click on the batch and see the path it is going to take through the unit.
STRATEGY 2: WORKFLOW-BASED MESSAGING

In addition, time-based visualization can show operators the timelines of multiple units and phases, with a complete list of manual tasks appearing on their timeline. By expanding the message pane, the operator gets a fast and complete summary of all the messages and operator actions that will need to be addressed. This helps in understanding the context of active processes.

Timeline View showing instructive prompts that assist with operations planning.
STRATEGY 3: ADVANCED TROUBLESHOOTING

Recent HMI advancements also make troubleshooting faster and easier. Visual analytics provide deeper insights into abnormal situations and potential events. This visual intelligence can be accessed by engineers working in the field via an app on their mobile device, keeping them connected wherever they are.
A DEEPER DIVE: INTELLIGENT VISUALIZATION

Honeywell offers Experion® Batch, which leverages Experion distributed control, batch automation, and patent-pending visualization technology combined for improved efficiency, quality, and throughput.

Unit Timeline View
In Unit Timeline View, users can see all process steps that need to take place, in one spot. While in this view, users can see past, present, or future unit procedures, operations, and phases, as well as manual interactions in context, on the same timeline.
A DEEPER DIVE: INTELLIGENT VISUALIZATION (cont.)

Message Center
All current and future batch instructions can be seen in the dedicated Message Center. There, users can respond in real-time, with automatic delay notifications.
A DEEPER DIVE: INTELLIGENT VISUALIZATION (cont.)

Troubleshooting with Procedure Explorer
Prompted by automatic delay notifications, users can locate and troubleshoot delays with Procedure Explorer.

Procedure Explorer allows the user to drill down and easily determine and resolve the root cause of an issue.
A DEEPER DIVE: INTELLIGENT VISUALIZATION (cont.)

Viewing Choices
Operators can view all the units in their scope at one time.

Units can be filtered by messages, delays and alarms.
A DEEPER DIVE: INTELLIGENT VISUALIZATION (cont.)

Predict and Control
The projected future path of a selected batch is displayed. Plus, current batches can be compared with “golden batches” in real-time.

With Experion Batch, you can increase operational efficiencies, bridge operator skills gaps, and ensure repeatable quality, every time.
BENEFITS FOR BATCH PLANTS

Modern batch automation systems can overcome longstanding frustrations by offering unprecedented levels of availability, efficiency, productivity and reliability. The user experience, meanwhile, has been transformed—offering personnel clear, intuitive, touch-enabled displays and interactive workflows that facilitate better planning, eliminate surprises, and reduce stress.

Leading-edge control capabilities deliver increased throughput, lower costs and improve regulatory compliance.

- Maximum asset utilization
- Rapid response to interactive instructions
- Efficient batch process planning
- Efficient troubleshooting, reduced downtime
CONCLUSION

New batch solutions deliver the breadth of batch management and control that manufacturers need to thrive amid economic and business pressures and uncertainties.
For more information
To learn more about Honeywell’s approach to batch automation, visit www.honeywellprocess.com/Batch or contact your Honeywell account manager.

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