INDUSTRY SOLUTION

OPTIMISE THE OPERATING POINT AND MAXIMISE YOUR ROI

Advanced Process Control for Food & Beverage

Advanced Process Control for Food & Beverage is engineered to improve yield and quality, and reduce specific energy consumption, to optimise manufacturing operations.

Overview

The food and beverage industry is highly competitive. In a world where volatility is the new normal, manufacturers face dual pressure from competitors brought on by price war, product innovation, and consumers demand that's driven by population growth, change in taste preference and disposable income. In order to stay profitable, manufacturers have to ensure the plant is running at maximum efficiency.

To overcome these challenges and stay relevant, manufacturers are always looking out for cost-effective means of manufacturing, standardising equipment and exploring automation to drive operational effectiveness and efficiency across the entire manufacturing production facility. An important part of the strategy is to proactively look inward into its processes, and identify ways to build a stronger and nimble automation systems to drive operational excellence across the entire manufacturing plant.

However, optimising process operation with conventional control remains a challenge:

- Time delays prevent accurate adjustment
- Control actions interact with each other
- Disturbances are frequent
- Optimum conditions are unknown
- Product quality measurements are infrequent

Comprehensive Advanced Process Control (APC) from AVEVA, helps manufacturers overcome complex challenges by using modern, state-of-the-art technology to provide automatic control systems that are capable of releasing process potential. By offering hybrid rule-based and model-based predictive control, it enables process operations to realise their full potential by moving the process closer to active constraints — resulting in reduced process variability and increased profits for manufacturers.

Achieve Peak Operating Performance

APC simultaneously controls a number of process parameters that maintain the product within specification. Taking into account process dynamics, interactions, constraints, and economics, the solution predicts future process behavior and takes control to optimise actions before product measurements are out of specification, reducing the process variability and allowing the system to work closer to its limits. The solution helps manufacturers increase operational efficiency by:

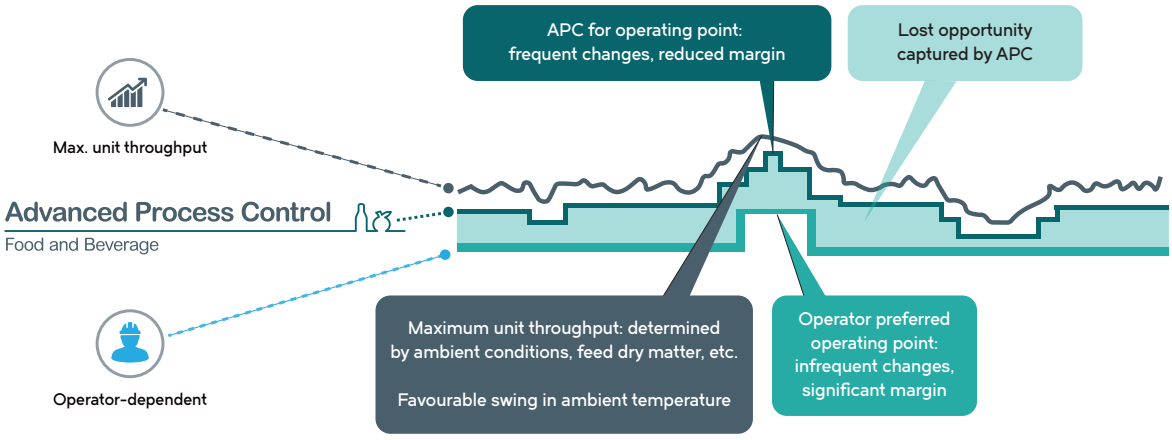
Predicting the future using mathematical models

Calculating the optimum trajectory to move controller set points and valves to maximise profits and objective function every minute

Using advanced process control to find optimal tradeoffs when conflicts among goals exist

Reducing specific energy, increase yield and profitability

APC challenges the operating point(s) to deliver significant benefits to industrial equipment (e.g. industrial oven and autoclave), liquid processing equipment (e.g. evaporator & dryer, and pasteuriser), and solid processing equipment (e.g. grain drying) to improve operations capacity, maximise operational flexibility resilience, and ultimately squeeze out more production yield:



Benefits of Advanced Process Control

APC helps manufacturers improve their economic performance, while honoring operating and equipment constraints, and shifting operations to more profitable conditions:

- Maximise production rate and value
- Minimise specific energy consumption per unit of product
- Improve yield or recovery per unit of feed, while
- Maintaining sustainable and safe operation

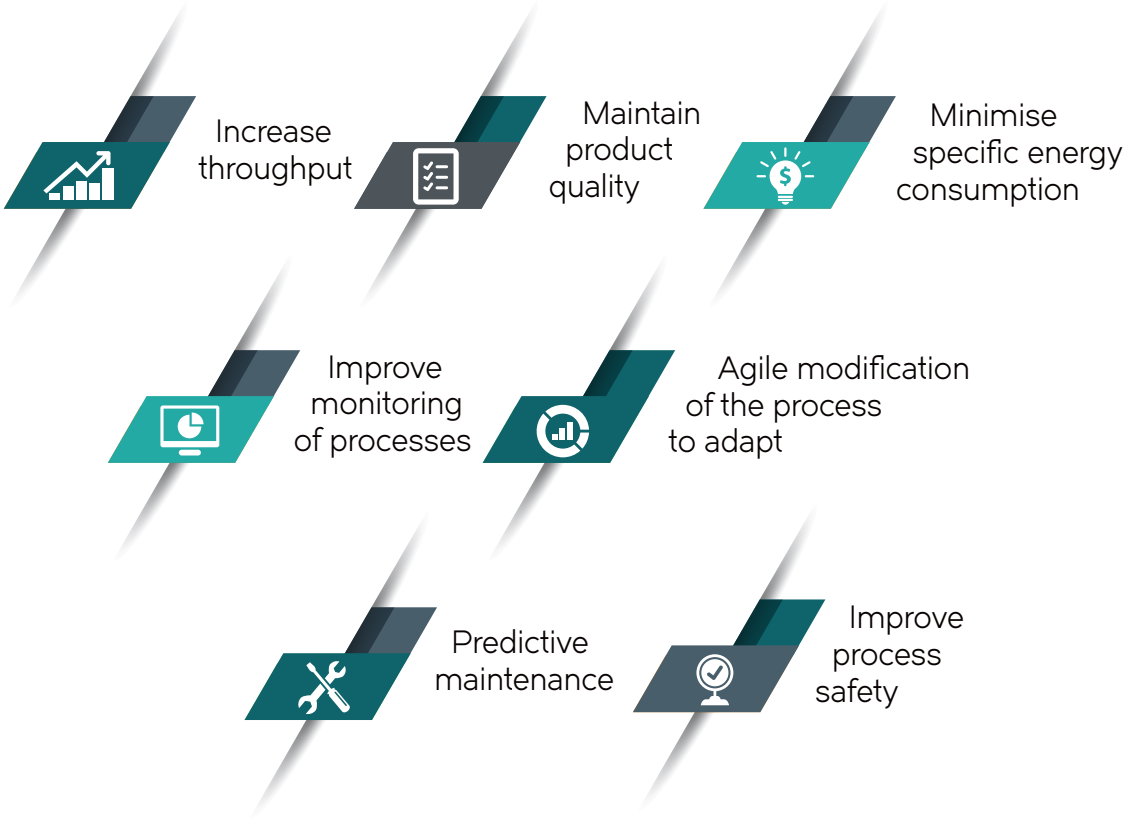
Increase in Production
Ability to accommodate multiple settings for multiple products, reducing the variables to ensure higher production rates

Quality Improvements
The closed-loop capability can automatically manipulate, monitor and control variables such as, dryer feed rate, inlet air temperature, and powder moisture, to achieve the desired final product

Specify Energy Savings
Optimise energy production as it is designed to match energy production against the variables demand

Real-Time Optimisation
Operator can focus on key parameters to maximise throughput by operating closer to constraints in real-time

APC optimises plant performance and stabilises operations by minimising the fluctuations of key controlled variables:



Delivering a taste of success

One of our customers achieves peak operating performance with AVEVA's Advanced Process Control:

Spray dryer optimisation

Dryer produces 8 tons/hour of product:

- 10% increase in throughput
- 8% reduction in specific energy consumption

ZERO product quality violation:

- Achieved ROI in <2 months
- €600K saved/year

Results

APC closed the loop:

- Improve throughput and quality
- Maximise production by minimising downtime
- Achieve significant year-on-year savings

Customer FIRST Software Maintenance and Support Program

Our Mission: Your Success

Advanced Process Control offers the award-winning Customer FIRST Software Maintenance and Support Program. Customer FIRST is a flexible portfolio of services that help protect and extend the value of your AVEVA Industry Solutions across the entire lifecycle. A Customer FIRST Agreement establishes a formal service relationship with AVEVA, enabling access to the latest software upgrades and providing expert technical assistance, optional services and self-help tools to help you improve your operational effectiveness.

- For more information on Customer FIRST, please visit: sw.aveva.com/support/customer-first
- For more information about Advanced Process Control, please visit: sw.aveva.com/operate-and-optimise/optimise-operations/advanced-process-control