

F&B Manufacturers Turn to Technology as Business Challenges Mount

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Understandably, hygiene and food safety are serious business for companies in the food and beverage (F&B) industry. F&B businesses face tremendous pressure ensuring that they are running a profitable and tight ship.

Some of the challenges F&B manufacturers face today are:

- *Strict Regulations* – Regulations can be imposed by external agencies, government authorities, or regulatory boards within the F&B industry itself. F&B manufacturers and product handlers need to ensure that they comply with environmental legislation, factory audits, etc.
- *Expansion and Globalisation* -- Manufacturers face the challenge to standardise production in terms of cost, productivity and quality control when manufacturing under different circumstances or at different locations as their business grows.
- *Population and Society* – An ageing, more health conscious and diversified population creates means fast changing consumption patterns, which leads to requirements for new material and labelling and so on.
- *Environment Friendliness and Sustainability* -- Numerous drivers exist in this area, from adoption of eco-friendly material to new packaging designs. Manufacturers are always in a constant drive to reduce wastage to be cost effective.

What can F&B manufacturers do in view of these challenges?

Today's F&B manufacturers need to run machines and production lines that are designed and configured to cope with the ever-increasing demand for product range diversity. One key area that many manufacturers have been making improvements on is at changeover time. Modern production lines allow manufacturers to quickly and flexibly integrate sequential operations into an overall manufacturing system, ensuring that even small batch-sized production runs can be accomplished with minimum waste of time and resources.

Visualisation and Productivity

Manufacturers need to drive productivity like never before. Directly linking production to retailer demand is a growing issue. As a result, pressure on line productivity is increasing, meaning downtime must be constantly reduced to avoid production disruption and potential penalties.

Manufacturers today want clear visualisation on their entire production system. Managers need to have a view on everything on the factory floor, so that they can immediately make adjustments and solve problems as they arise. Be it deploying engineering support or

continuous production analysis, enhanced visualisation is key as a basis for line improvement programs.

Information Management and Verification

Ensuring a production facility runs at optimum capacity and quality levels requires a lot of information. Data must be gathered in real time from multiple devices onto one platform, and directly communicated to the manufacturer's information network, thereby saving additional hardware costs and complexity.

For instance, OMRON offers controllers that deliver plantwide monitoring and control capabilities, and in-built database functionality that provide a secure, robust and easy to implement system.

These controllers allow manufacturers to inspect, measure, store and analyse production data, and share it within the supply chain where required. Automatic data collection can be employed to achieve accurate and reliable monitoring and recording, providing detailed production information in the event of a recall being required, thereby minimising financial losses and protecting brand reputation.

A view into data and information also extends to better energy management. It is vital for manufacturers to monitor and analyse where and when energy is used and to base decisions on this information, such as reducing extract fan or conveyor speeds to idle while production is halted for short periods of time.

Manufacturers need to ensure that they have automated energy monitoring solutions in place. Solutions that include sensors for electrical, airflow and temperature measurement, where all data is shared with the line controller.

Quality Inspection and Traceability

There are many facets of quality in manufacturing -- product, primary and secondary packaging, correct product/pack combination and code verification such as date codes -- within the factory environment. A system that allows 100 percent in-line inspection systems to check all product parameters is a vital part of reducing scrap and maintaining plant productivity.

Manufacturers today can achieve this through automation and robotics technology. Specifically, they deploy vision sensors and automated systems that can effectively manage inspection projects at much higher accuracy and speed than human workers can achieve.

Furthermore, F&B manufacturers must record and present, as well as share with the supply chain, traceability information of their production. Automation and robotics technologies adopt serialised numbers, or unique codes, vision sensors and controllers as well as RFID systems to allow for the effective tracking of products and production processes. Manufacturers can easily recall items if required, which helps to build confidence among consumers, enhancing brand reputation.

Robotic Product Handling and Safety Services

Robots are playing an ever increasingly important role in the F&B sector. They provide a safer, more flexible, efficient and hygienic solution to a growing number of diverse projects. A growing trend is for robots to be deployed on the factory floor working effectively and efficiently right next to human workers.

Equipped with built-in integrated hardware and software controls, as well as vision and safety capabilities, OMRON's delta-type robots are a good example. These CE-compliant and USDA-certified robots also comply with hygiene requirements that are crucial for food manufacturers.

Automation solutions that encompass sensors, light curtains and switches through to controllers are also useful for further ensuring safety on the factory floor. In fact, automation and robotics today not only raises productivity levels in the factory, but also helps to maintain appropriate safety levels to protect personnel.

Finally, F&B manufacturers need to ensure that automation and robotics systems are fully tested and ideas are validated before actual deployment and implementation. They need to ensure that when testing ideas, tests replicate, as close as possible, actual conditions for areas such as product handling, motion control, vision and safety. As mentioned earlier, when it comes to F&B, manufacturers must view all aspects of the production process and product handling with stringent control and zero room for compromise.