

More efficiency, less machine downtime: This is how the food industry remains competitive

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Production costs are rising, trained staff are rare, and competition remains stiff – the food industry is under great pressure. According to [DLG-Trendmonitor 2024](#), manufacturers are reacting by increasingly investing in automation, sustainability and digitalisation – not only so that they can produce more efficiently in the short run, but also to be able to secure their future viability. The sector is at a turning point. Current developments are already showing, where the journey is going – and which answers the food industry is finding for the most pressing questions of tomorrow.

Trend 1: Everything from one source – Complete solutions instead of piecemeal measures

The current challenges do not leave food manufacturers any leeway for inefficiencies. Ever more companies are therefore placing their trust in complete solutions from one source, which cover all the production stages from processing right through to packaging and labelling, and even up to pack inspection. The benefits are obvious: Instead of linking individual modules from various manufacturers, this solution provides end-to-end systems, which are tailored to each other from the start. This reduces interface problems, makes servicing easier, and increases the availability of the line. Those opting for an integrated solution are also creating the optimum foundation for future automation solutions – these can be installed more easily, if machine controls and data flows are already harmonised.

Trend 2: "Lean" packaging, secure protection

Manufacturers are currently confronted with rising raw material prices, growing regulatory demands and sustainability targets. The reduction in material usage – for



example thinner films or lighter trays – holds the promise of a double benefit: It reduces costs while at the same time meeting the ecological requirements. But of course, packaging must still ensure that product safety is maintained above all else. The sector is reacting with machines, which can reliably run thinner films as well as recyclable mono materials or paper fibre-based alternatives, and also by installing inspection systems that can detect pack leaks or process faults at an early stage. Material reduction does not however just work as an isolated approach, but in combination with innovative packaging technology and smart quality control, which are tailored to the particular materials.

Trend 3: Product change "on the sprint"

The demand for ever smaller batch sizes and greater product diversity means that the classic production line quickly reaches its limits. Every product change means time loss, conversion work, and often unnecessary costs. With new line concepts it is possible to achieve product changes during running operation – "on the fly" so to speak. While the last packs of the previous product are still running off the transport conveyor at the end of the line, the line is automatically being switched section by section to the new item. The result: Production stoppages and empty running times are reduced to a minimum, while existing capacity is used to its maximum. This makes it possible to increase the overall output by up to ten percent – with the same staff and machine.

Trend 4: Maintenance that thinks in advance

Delays in production – for example in delivering to retailers – can result in high penalty payments, which quickly eradicate the entire margin on a product. This means that line availability nowadays has a much greater importance than even several years ago. Predictive maintenance solutions focus on precisely this. Sensors constantly monitor the status of critical components, and they supply data about temperatures and wear patterns. This enables the threat of breakdown to be detected at an early stage, before it gets to a complete machine stoppage. Servicing work can be planned in a targeted manner and scheduled for times of low production, and the lifespan of the line is also extended.



Trend 5: AI-supported vision systems – A smart eye on every pack

AI-supported vision systems open up a new dimension in quality control, by working with previously trained models instead of rigid algorithms. This means that an actual product image is compared with a reference model. By using a specified tolerance value, the system decides whether the discrepancy is still acceptable, and if not the system separates out the product, when it is above a certain threshold value. The technology is very useful, where rule-based systems are up against their limits, for example with product classification, portion inspection or aesthetic evaluation. Such systems are much more flexible when handling complex fault patterns, even on high-speed lines. In future the use of AI in other applications will also contribute to increasing the efficiency of production processes, and improving product quality and safety, as well as reinforcing the strength of innovation in the food sector on a sustainable basis.

Summary: Remaining flexible, staying ahead

The food industry is a "sleeping giant", when it comes to automation and digitalisation. There is frequently still a lot of unused potential, particularly in the case of medium-sized companies. Businesses, which systematically exploit these current trends, are able to transform challenges into competitive benefits – and they remain nimble in a dynamic market.

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About the MULTIVAC Group

Packaged expertise, innovative cutting-edge technology and strong brands under one roof: The MULTIVAC Group offers complete solutions for the packaging and processing of food, medical and pharmaceutical products, as well as industrial items – and as the technology leader, it continues to set new benchmarks in the market. For more than 60 years the name MULTIVAC has stood for stability, strong values, innovation and future security, as well as quality and excellent service. Founded in 1961 in the Allgäu region of Germany, the MULTIVAC Group is today a global solutions supplier, which supports small and medium-sized companies, as well as large corporate businesses, in designing their production processes to be efficient and resource-saving. The product portfolio



comprises a wide range of packaging technology, automation solutions, labelling and marking equipment, inspection systems and packaging materials. The product range is complemented by practical and customised solutions for food processing - from slicers and portioning machines right up to bakery technology. All the packaging and processing solutions are individually matched to customer requirements in the company's own application and development facilities. Around 7,400 MULTIVAC staff in more than 80 subsidiaries worldwide ensure that the company remains close to its customers, as well as providing the maximum customer satisfaction - from the first project concept right through to after-sales service. Further information at: www.multivac.com

