

Does ChatGPT snack? Harnessing AI for efficiency and innovation



Artificial intelligence (AI) is transforming all our lives and the savoury snacks business is no exception. **Sebastian Emig** considers the impact that AI is already having

IN the dynamic landscape of the savoury snacks industry, professionals continually strive to meet the evolving demands and preferences of consumers. This ever-changing market presents exciting opportunities for growth and innovation. To stay ahead of the competition, we must embrace cutting-edge technologies.

We can harness the power of AI to optimise production processes, enhance food safety and develop enticing new products. I would like to delve into the realm of AI and examine its transformative impact on the savoury snacks industry so far, exploring how it revolutionises sorting, ensures food safety compliance, improves cleanliness, enables predictive maintenance, drives new product development and streamlines supply chain management.

AUTOMATE SORTING FOR SUPERIOR QUALITY

Traditionally, the sorting of food items was a labour-intensive and time-consuming process. However, with the advent of AI, the landscape has changed dramatically. AI-driven food machines with advanced X-ray scanners, lasers, cameras and robots can now automate the sorting process based on size, colour, and weight. This technological leap ensures the accurate classification of food products such as nuts, expediting the sorting process and eliminating human errors. By harnessing AI for sorting, professionals

in the savoury snacks sector can enhance product quality and deliver a consistent consumer experience.

ELEVATE FOOD SAFETY AND QUALITY CONTROL

AI is pivotal in elevating food safety standards and quality control in the savoury snacks sector. With its image analysis capabilities, AI technology can identify defects and imperfections in raw materials, enabling manufacturers to optimise production processes and minimise faults. Moreover, AI can analyse data from sensors that monitor food quality during storage and transportation, facilitating early detection of potential issues that could compromise the product's quality.

By integrating AI-enabled cameras, processing plants can detect and rectify food safety violations in real-time, promoting good hygienic practices among workers and ensuring compliance with food safety regulations.

ADVANCE THE CAUSE OF CLEANLINESS

Maintaining cleanliness is of paramount importance in food processing. While traditional clean-in-place (CIP) systems are effective, they consume substantial amounts of water. However, AI-enabled technologies such as self-optimising clean-in-place systems (SO-CIP) can revolutionise hygiene practices.

These advanced systems leverage AI algorithms to measure food residue and microbial debris on equipment, optimising the cleaning process. By reducing water usage, as well as the time, and energy needed to achieve effective cleaning, SOCIP systems provide a more sustainable approach to hygiene, benefiting both the environment and the bottom line.

ENHANCE EFFICIENCY WITH PREDICTIVE MAINTENANCE

Predictive maintenance is a key application of AI. It empowers professionals in our sector to monitor equipment continuously and predict maintenance needs.

By analysing data from sensors and machine performance profiles, AI algorithms can forecast when equipment will require attention, allowing operators to carry out proactive maintenance before breakdowns happen. This approach not only minimises costly downtime but also extends the lifespan of machinery, optimising operational efficiency and reducing overall maintenance costs.

DRIVE NEW PRODUCT DEVELOPMENT

AI serves as a catalyst for innovation in the creation of new savoury snacks and flavours. By leveraging AI algorithms to analyse consumer preferences and emerging trends, professionals can gain valuable insights ►

into the market, enabling them to develop products that resonate with consumers. Furthermore, AI can analyse the chemical composition of foods, facilitating the discovery of novel flavour combinations that strike a balance between taste and health.

Through AI-driven product development, professionals in the savoury snacks sector can captivate consumers with exciting new offerings, expanding their market share and fostering brand loyalty.

STREAMLINE SUPPLY CHAIN MANAGEMENT

Efficient supply chain management is crucial for success in the savoury snacks sector. AI can be used to optimise supply chains, ensure compliance with food safety regulations and enhance transparency.

By employing AI to monitor and test products at every step of the supply chain, companies can guarantee adherence to industry and consumer specifications. AI also enables more accurate forecasting, facilitating efficient pricing and inventory management.

In addition, AI-driven tracking systems enable transparent traceability from farm to consumer, bolstering consumer confidence in the safety and quality of savoury snacks.

CHALLENGES AND OPPORTUNITIES

While the benefits of AI in the savoury snacks sector are undeniable, several challenges persist.

For instance, patchy access to standardised data remains a significant hurdle. Operators often grapple with scattered and inconsistent data sources, making it more difficult for AI-driven support systems to offer accurate predictions

and analyses. In addition, increased transparency and consumer involvement in decision-making processes will be vital to fully capitalise on the potential of AI. Moreover, specialised skill sets are required for data gathering and analysis, emphasising the need for continuous professional development.

The initial investment associated with AI deployment is another challenge, particularly for small and medium-sized enterprises. However, as AI technology matures and its value becomes more evident, the costs will likely become more justifiable.

Looking ahead, AI holds immense promise for our sector as a catalyst for innovation, efficiency and growth. Its potential to reduce waste, predict market trends, improve hygiene practices, manage costs and boost revenue all position AI as a transformative force promising many opportunities. By embracing AI while navigating the challenges, manufacturers and suppliers can deliver high-quality products that resonate with consumers, fuelling their success in an increasingly competitive market.



SNACKEX 2024 – WE ARE ON A ROLL!

The excitement over SNACKEX, our renowned international trade show dedicated to the snack industry, is already reaching unprecedented levels as the event gears up for its next incarnation in June next year. With over 100 companies already registered and plenty of others already in the pipeline, we have received an overwhelming

wave of positive feedback from snack businesses across the globe. This remarkable response reflects the industry's eagerness to showcase innovation, network with industry leaders and explore all the latest snack trends in a single dedicated space.

This overwhelmingly positive feedback from companies around the world is reinforcing the event's reputation as a must-attend global platform for the snack industry. It not only demonstrates the level of anticipation for SNACKEX but also serves as a testament to the event's track record of delivering exceptional value and opportunities to its participants.

Exhibiting companies recognise the immense value of connecting with industry leaders, potential partners and suppliers, who can open doors to new business opportunities. SNACKEX's reputation for fostering meaningful connections has made it a focal point for snack professionals looking to expand their networks and establish fruitful partnerships.

As the countdown to SNACKEX continues, the positive feedback from over 100 registered companies and countless others expressing their interest has set the stage for an extraordinary event. Snack professionals can look forward to joining us in Stockholm to witness a truly remarkable showcase of the latest trends and developments in the savoury snacks sector. ■

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Innovative optical sorting solutions for the food industry



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