

# New production heights for snacks producers

**Algerian snack manufacturer Maravilla increased production capacity by 25% by installing customised high-performance solutions from tna, the leading provider of start-to-finish single-source solutions for the snack industry. The replacement of an outdated manual process with optimised and automated conveying systems enabled Maravilla to achieve its primary goal of boosting production capabilities, while also fuelling company growth and improving overall profitability.**

In light of the growing demand for snack products in the domestic Algerian market and overseas, Maravilla wanted to boost production capacity to ensure it stayed competitive in this dynamic sector. Working with tna, Maravilla integrated nine tna roflo<sup>®</sup> high throw vibratory conveyors, alongside three mini feeders into its potato/corn pellet line. The snack manufacturer also updated its current control systems by investing in cutting-edge integration technologies from tna. As a result of the installation of tna's equipment, Maravilla now benefits from a more efficient production process and reduced plant downtime.

## High-quality conveyor solutions

In every production line, plant managers want to optimise the speed and performance of their manufacturing to ensure targets are met. Products therefore need to be processed more quickly and efficiently. Incorporating effective conveying equipment into production lines is critical to achieving this. In addition to this manufacturing challenge, Maravilla's product range goes beyond simple potato snacks. The company also produces potato-based snacks and light corn-based extruded snacks in a variety of sizes (mini, medium and large) and flavours (pizza, cheese and paprika seasoning) to name just a few. The snacks market is a thriving industry, particularly in Algeria, due to changing eating habits with more people favouring mini-size bags of chips.

To maintain and improve its production capabilities and overall efficiency, and to fully benefit from these emerging opportunities, Maravilla needed a flexible, high-performance conveying solution that could be easily integrated alongside existing systems for a smoother distribution process. tna's roflo<sup>VM</sup> 3 was the ideal solution for achieving the company's production objectives and reaching higher efficiency levels. Part of tna's complete range of processing and packaging solutions, the high-performance roflo vibratory conveyor offers a unique throw pattern. It incorporates an innovative reaction base design combined with an intelligent microprocessor, for a much greater stroke length at a lower frequency. This feature enabled Maravilla to improve throughput by 25% and achieve a smoother transfer of its products throughout the process.

Due to increasingly stringent food safety regulations in the country and with an eye to reducing the risk of cross-contamination, Maravilla was also looking to integrate a simple design system with smooth surfaces and no blind spots or areas where product and microorganisms could build up. tna's roflo<sup>VM</sup> 3 features no metal-to-metal bacteria build-up areas and all conveyor trays are fully welded or scalloped, meaning Maravilla now benefits from reduced contamination risk. Additional components that require regular cleaning are also easy to remove to ensure the highest levels of hygiene. All tna conveying equipment in the new system is made from food-grade stainless steel and has few moving parts where food can become trapped. This facilitates the cleaning process, keeping downtime to a minimum.

## Tailored systems

In an effort to take efficiency to the next level, Maravilla was also looking for effective product transfer, highlighting the need for a system for linking the conveying system to the fryer. Taking the company's requirements into account, tna [see page ??] implemented three tailored mini-feeders to facilitate smooth product transfer between systems. Using optical sensors, mini feeders monitor pellet levels to enable rigorous quality management in the hopper. For instance, when the level of raw pellets is detected as being low, the controls system immediately alerts plant managers of a problem on the line. This enables quick corrective action. The intelligent design of these systems therefore minimises stoppages and increases simultaneous transmission between different components in the production line. As a result, Maravilla was able to maximise production capacity and overall efficiency of the entire production process.

## Total control from start to finish

In addition to the installation of a brand-new distribution system into its existing production line, Maravilla also wanted to improve process automation. However, integrating new technology into an

existing production line can be challenging as existing technology requires careful configuration in order to optimise the production process.

A key requirement for an efficient line is communication between all equipment. Line integration is the first step towards operational efficiency as it ensures that each component communicates effectively with the others. In the case of Maravilla, it was important that the new conveyors were synchronised with the current line so that all individual components can operate simultaneously at their highest level of performance.

In keeping with those objectives, tna installed a fully integrated control system across Maravilla's entire production line. Using a combination of programmable logic controller (PLC) systems and sensors, operators can now accurately control the speed at which product is transferred from the feeder into the fryer and the optimum frying temperature, as well as having complete control of the seasoning system. This ensures the process only begins once the product is inside the drum and avoids unnecessary waste. With a PLC at the heart of the control system and a clear, concise Human Machine Interface (HMI) system providing machine status and production data, Maravilla experienced additional advantages including better workforce efficiency, improved product quality and enhanced product safety. For example, due to the installation of tna's automation systems, operators at Maravilla can now monitor any unusual activity and react quickly and efficiently, before any further processes are affected, significantly simplifying operations and reducing the risk of human error, tna stated.