

Success Story

Improve the quality and the production process
for a dairy product factory

Iris Fine Foods



dairy product factory

Company description

Iris Fine Foods is a family owned business founded in 1918. It produces single portions of milk-based desserts like fresh cheese and Belgian chocolate mousse. The company continues perfecting their current product range and creating new products, such as the high-protein chocolate mousse and sugar-free chocolate mousse. Their products are available in different formats, going from individual portions to bulk packaging. They sell mainly via local markets and local supermarkets.

Their mission is to produce products that are made with the greatest care & the finest ingredients. They aim to bring their customers traditional recipes with a modern twist. By including varieties that are low-fat, sugar-free and/or high-protein, Iris Fine Foods wants to make sure that everyone can enjoy their products regardless of their diet.

The factory produces in five half-days a week up to 25000 cups of desserts. Every production day needs one hour of preparation for 3 hours of production where two persons are needed on the production-line.

Motivation and challenges

Iris Fine Foods participated in the Cotemaco project to investigate some of the challenges in their production process. First of all, they wanted to explore the possibilities to produce for different markets. They would like to be able to sell its products in „zero waste“ stores by improving the generated waste by single portion products. But they were also interested in selling larger amounts of single portions and larger packages to increase their profits and expand their business. This asks for adjustments in their production processes such as automatic labelling, sealing and packaging.

Secondly, Iris Fine Foods wants to know if a cobotic solution could be suitable in their factory in order to improve the quality of their products. Chocolate mousse, for example, is an unstable product that asks for a relatively labor-intensive production process and quality control. When whipping egg whites, factors such as the temperature in the production room and the humidity in the room have a great influence on the quality of the product, as well as then seasonally varying structure of the protein. Deviations in all factors can result in a change in the fluidity of the product. For this reason, manual checks must always be made to ensure that the portions were filled correctly. The risk of deviations and lower quality for this product was high and needed to be improved.

Analysis

Minimizing and automating the packaging of their products entailed a number of conditions that were taken into account in the analysis. The new system needs to have a built-in price calculator, tarra calculation and labelling system and the size of the portions should be customizable: standard jam jars or yaourt jars should fit.

Also, requirements on the refilling- and cleaning process were formulated as well as the dimensions and weight of the machine in connection with its transportation to and placement at the customer's location.

And finally a chocolate mousse dispensing machine with quality check and better regulation of conditions under which it is produced and preserved was needed.



Technical realization

It became clear early on in the process that an immediate move to a robot-automated manufacturing solution would not be appropriate for this small business at this time. No expertise in mechatronics is available within the company, the solutions had to be plug-and-produce and present a low financial risk for the company.

For automatic labelling, sealing and packaging of the products, producer Presa was contacted. For 22.000 EUR a labelling machine could be provided. However, this solution does not seal the product.

Complete carousels can also be provided, which seal, label and have a metal detection of the cups. At the end of the carrousel the cups must be packed manually. This solution asks for an investment of 80.000 Euros. The final solution, to add a cobot for packaging costs approximately 150.000 Euros.

Within the Cotemaco project we cannot make further detailed analysis of a fully automated filling, sealing and packaging station. This case gets closed with a negative advice for using a cobot on their factory floor, in the actual status of the SME.



Result: Improvement of the chocolate mousse dispensing machine

Using a cobot for improving the quality of the actual machine is out of scope because a human operator will still be needed to validate the movements of the robot. Using vision systems would be out of budget to make them "independent".

To find an alternative solution for Iris Fine Foods, the producer of the chocolate mousse filler of Iris Fine Foods, Food Boscolo Machines, was contacted to find out if there is an alternative to the current machine for improving the filling of the cup in order to automate the quality and weight check. It turned out that the current machine was not suitable for chocolate products and a powerdrop machine would be a better solution. The investment would take 18.000 euros. Investing in a new machine is out of scope of the Cotemaco project.



Interview

Marc Claeys, co-owner of Iris Fine Foods: „We were eager to find out if a cobot could help us tackle our challenges in automating our production and quality improvements. A feasibility study on the proposed solution was performed and we definitely saw the opportunities for our company. Not only for our products and processes, but also for enhancing the working conditions for our employees. However, the formed solutions were out of budget and unfortunately not yet in line with our actual status as a small family owned business. But the gained insights in possibilities in the future are very valuable for our company. It absolutely gave us future prospects and inspiration. The Cotemaco team really thought with us from a hands-on perspective and in terms of feasibility for SME's. They were also realistic about the complexity. The process was a very positive and valuable experience.“



How could COTEMACO support you?

Via the SME support programme, COTEMACO engages with SMEs from the automotive and food sectors through field labs. These regional field labs in the Netherlands, the UK, Belgium and Germany are showcasing key production steps in the automotive and food industries, in order to tackle current low sectorial awareness and knowledge gaps. The field labs will exchange knowledge on different manufacturing tasks, such as handling and (un)loading. With the COTEMACO programme, manufacturing SMEs are guided through the process of adopting collaborative robotic and shop floor digitalisation technologies, from the exploration of technological opportunities to the detailed definition of a business plan.



What is COTEMACO?

The project, which is an initiative of Interreg North-West Europe, aims to support around 60 SMEs in the automotive and food manufacturing industries with so-called „test environments“ and to encourage them to integrate collaborative robotic systems and digital technologies into their business. Accordingly, in addition to increasing production flexibility, the relocation of production abroad will be curbed and the number of jobs in manufacturing increased, which will generally lead to an improvement in the competitiveness of the companies involved.

In the project new technologies are implemented in application examples - the aim is to move from the prototype in the laboratory environment to the transfer to production, taking into account the legal situation and certifications.

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