

Siemens Xcelerator helps Spain to drive the digital transformation of its food and beverage industry

Due to impacts from the coronavirus pandemic and the geopolitical environment, as well as broader macroeconomic effects of inflation, the food and beverage (F&B) industry has been facing major challenges, which range from fractured supply chains to inflation-induced higher prices. As a result, more and more companies in the F&B industry are acknowledging the need to intensify their efforts in embracing digital transformation. Regarding optimization, the F&B industry is focused on two aspects: first, it aims to streamline processes for maximum efficiency and enhance supply chain resilience. Second, it strives to achieve sustainability goals. Yet, its ultimate priority is to remain competitive in the market.

Owing to the taste, quality and variety of its products that are exported globally, Spain is one of the leading countries in the F&B industry. It's positioned as the fourth largest agri-food exporter in Europe. According to the Spanish Ministry of Economy, Trade and Business Secretary of State for Commerce, more than 30,000 companies export food and beverage products from Spain, representing almost 20 percent of the country's exports.

The F&B industry in Spain is already undergoing an enormous transformation through the digitalization of its plants and processes. The following examples showcase the country's digital transformation with the help of Siemens technology: from sustainable and resilient hop production to the digitalization of olive oil production and the efficient energy management of a large multinational soft drink company.

Siemens is helping its customers with offerings from its open digital business platform Siemens Xcelerator.

Deoleo

Deoleo is currently the world's largest international producer, bottler and marketer of olive oil products. The company sells brands such as Bertolli, Carapelli, Carbonell, Koipe and Figaro. It employs more than 600 people worldwide and its headquarters is located in Rivas-Vaciamadrid, Spain. In 2022, Deoleo generated sales of €827 million, increasing sales by 18 percent compared to the previous year.

Deoleo's sustainability and manufacturing objectives require an efficient digital system that provides a centralized platform for reviewing the different variables throughout the entire value chain. To meet this requirement, Deoleo has implemented Opcenter software from the Siemens Xcelerator portfolio.

In addition, the olive oil producer uses Siemens Opcenter RD&L (Research, Development and Laboratory) software as its platform to streamline, optimize and align all data management for formulated products and to enable a seamless transition of product data and definitions throughout the entire manufacturing process by integrating R&D labs with plants.

Deoleo has a strong track record of sustainability improvements. As a result of its ongoing commitment and its implementation of Siemens technology, the company reduced its Scope 1 and 2 emissions¹ of carbon dioxide (CO₂) by more than 2,350 tons in 2022 compared to the previous year. This represented a reduction of 66 percent. Deoleo remains committed to leading sustainable development in its sector, allocating 36 percent of its investments to sustainability initiatives in 2022.

¹ The Greenhouse Gas (GHG) Protocol Corporate Standard classifies a company's GHG emissions into three scopes. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Source: https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf

Coca-Cola Europacific Partners

Coca-Cola Europacific Partners (CCEP) is the largest independent bottler by revenue for the Coca-Cola Company. It produces, markets and distributes its products in Western Europe, Australia, Indonesia and the Pacific Islands. The whole group has two million customers in 29 different countries. CCEP's Iberia Business Unit, which includes Spain, Portugal and Andorra, has seven soft drink bottling plants and four mineral water plants. In Spain, CCEP has more than 270,000 customers, who serve more than 130 million potential consumers. In 2022, CCEP generated sales of €17.3 million, an increase of 26 percent compared to the previous year.

In the area of climate, CCEP has set the goal of becoming a carbon-neutral company by 2040 across its entire value chain in Europe – ten years before the European Union's objective. To achieve this goal, CCEP has established a roadmap that includes reducing its carbon footprint in all areas of its activities by controlling the consumption of energy, water, raw materials and, of course, the reduction of CO₂. To monitor these KPIs, Siemens' Energy Manager PRO software has been implemented in the factory in Seville, which is able to monitor all relevant KPIs, enabling a complete market analysis of all plants.

Ekonoke

Ekonoke is a start-up company that has set itself the goals of ensuring sustainable cultivation of plants that have a high climate risk and of redefining the food value chains. The company combines the latest scientific knowledge in indoor farming with new technologies to ensure climate-resilient hop cultivation. In 2018, Ekonoke became a pioneer in indoor hop cultivation. The start-up is still in the process of scaling itself up to an industrial level and – as a result – currently still has very little revenue (2023: €92,000).

Hops are highly vulnerable to weather fluctuations, drought and high temperatures in the summertime. Indoor farming is more and more becoming an alternative cultivation method to increase the resilience of hop farming.

Indoor farming is the indoor cultivation of hops on several vertically stacked levels. Indoor hop cultivation fulfills this set of requirements through the combination of the

renunciation of pesticides, proximity to the breweries and independence from climatic conditions. This farming method leads to up to 95 percent less water consumption and exclusive use of renewable energy. It also improves efficiency: While one harvest per year is possible outside in the fields, up to four harvests per year can be achieved in indoor cultivation.

Ekonoke has set itself the goal of improving the resilience and profitability of hop production. After testing in the laboratory phase, indoor hop cultivation will be industrialized using Siemens technology to replicate the cultivation method for use in other countries and to take the project to an industrial scale. Ideally, the indoor farming facility should always be located close to the breweries. The aim is for the hops to stop travelling around the world and for the technology and knowledge to do the travelling. Once the idea has been successfully tested, Siemens' task will be to digitalize this prototyping technology with the aim of making it fail-safe.

The press feature with background information on the customer references and the Spanish food and beverage industry is available here:

<https://press.siemens.com/global/en/feature/siemens-xcelerator-spain>

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In fiscal 2023, which ended on September 30, 2023, the Siemens Group generated revenue of €77.8 billion and net income of €8.5 billion. As of September 30, 2023, the company employed around 320,000 people worldwide.

Further information is available on the Internet at www.siemens.com.