



NEORIS
manufacturing

Digitizing Cemex's Supply Chain



Context

At the end of 2021, Cemex's cement operation in Poland faced a significant challenge due to an increase in market demand. The high activity at the plants led to long truck loading wait times, reaching up to 8 hours in some cases. This issue was further compounded by the situation at Cemex's cement plants in Spain, where the hardware used for load management had become obsolete, making maintenance unfeasible and putting operational continuity at risk.

In response, Cemex, a multinational leader in the manufacturing and distribution of construction materials, identified the need to implement a technological solution that would automate and optimize the entire loading process, reducing wait times, eliminating unnecessary queues, and ensuring a more efficient and reliable service for both drivers and internal staff.

The Challenge

Cemex aimed to optimize its operations by reducing truck loading cycle times and improving the experience for drivers and internal personnel with a fast, intuitive, and 24/7 available service.

The company faced several challenges, including:



- 01 The hardware used in the plants was obsolete and lacked spare parts, putting daily operations at risk.
- 02 Truck loading times were high, limiting plant productivity.
- 03 Drivers had to leave their trucks and walk through the facilities to complete various procedures, increasing the risk of accidents.



Our Proposal

To address this issue, the Mexican company entrusted NEORIS with developing an innovative digital solution that:



- Replaces outdated systems with modern and accessible options, such as Raspberry computers, providing a cost-effective and quick-to-implement alternative.
- Streamlines the loading process to optimize plant operations and increase productivity.
- Allows drivers to complete all necessary procedures from inside their trucks, improving safety and reducing accident risks.

The project implementation was carried out in phases, beginning with the development of a pilot for bulk cement loading in Spain. By the end of 2022, the solution had been deployed across all plants in the country, as well as at the first loading point of Poland's largest plant. In 2023, the remaining eight loading points in Poland were completed, and a year later, the capability to handle bagged cement loads was introduced in UK plants.

The Solution

Digital Loading Journey (DLJ) focuses on optimizing the cement loading process across multiple regions. The solution developed by NEORIS consists of two components: a mobile application, used by drivers, and a web portal, utilized by Cemex's internal staff.

The **mobile application** offers several benefits for drivers, including:

- Receiving and validating workload assignments in real-time through mobile app registration.
- Automating the integration of tare and gross weight readings into dispatch tools.
- Managing wait times more efficiently, reducing truck queues and minimizing safety incidents (LTI or TRI) since drivers no longer leave their trucks.
- Accessing a digital invoice copy, regardless of shipment conditions or the OLS connection status.
- Reviewing loads and checking in at the weighing area without needing to interact with scale operators.
- Opening the plant's exit gate via the mobile app, eliminating the need for human intervention.

The platform features an intuitive interface available for Android and iOS. From a technological standpoint, this is Cemex's first mobile app developed under the Ionic framework, allowing for a single-code version across both app stores, optimizing the development and deployment process.



For the web portal, Cemex's internal staff can:

- Register drivers, assign them a specific truck, and grant them plant access.
- Track the truck's journey from the plant to its destination in real-time.
- Filter loads by status and generate a QR code in case of a technical failure, allowing drivers to access the loading area.
- Monitor assigned materials and the occupancy level of different plant loading points.
- View a dashboard displaying trucks in the loading process, the materials they carry, sales orders, and other details—without needing to check cameras or communicate via radio.

The Results

The success of DLJ is reflected in both efficiency gains and an improved user experience. Key results include:



The project, which began with an initial version, has been continuously enhanced and expanded to new plants in Poland, Spain, and the UK.



Loading cycle times have been reduced by **up to 50%**, enabling faster deliveries and improved operational performance.



The system provides real-time information to Cemex's drivers and internal staff, improving communication and reducing delays.



The adoption rate has increased by **72% among Spanish users and 76% among Polish users.**



Since its launch, the volume of processed loads has increased, with **69,000 additional loads handled in 2023 compared to 2022.**



Currently, the expansion of the solution to other Latin American regions is being evaluated, along with its implementation in Poland for bulk aggregate loading, further expanding its scope and functionality.



Testimonials

"The combination of operational improvements and a user-centered design makes this project not only innovative but also a significant step forward in digitizing the cement plant supply chain."

ARNALDO COLMENARES
ASSOCIATE DIRECTOR AT NEORIS SPAIN