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CASE HISTORY

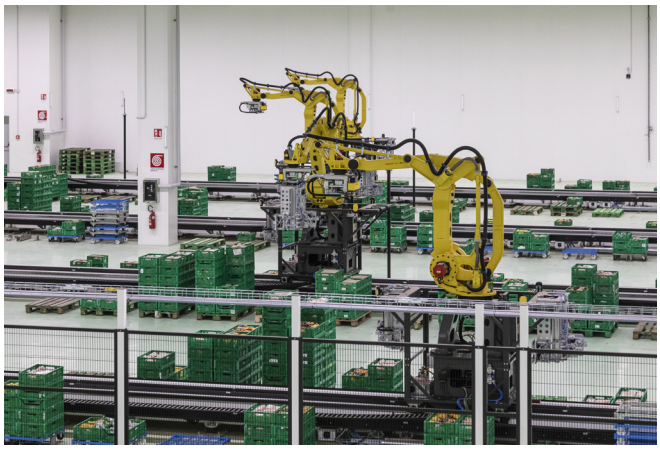
CONAD NORD OVEST

MONTOPOLI IN VAL D'ARNO (PI) ITALY

Grocery

The Company

Conad Nord Ovest is one of the five cooperatives that make up the Conad Consortium, a leader in Italian food distribution. The cooperative operates in Valle d'Aosta, Piedmont, Liguria, the Province of Mantova, Emilia, Tuscany, Lazio, and Sardinia, employing over 18,000 people and managing 620 stores. With a turnover exceeding 5 billion euros and 371 entrepreneurial members, Conad Nord Ovest is among the largest companies in in-dependent distribution in Italy.



Innovation, digitalization, optimization of the logistics network, and efficiency of the sales network are key points in Conad Nord Ovest's strategy to ensure distinctive service and high competitiveness. The logistics network, consist-ing of 17 centers, ensures extensive coverage across the territory, guaranteeing quality, effi-ciency, and a focus on sustainability. An integrat-ed supply chain model allows for optimal syn-chronization of flows between warehouses and stores for all temperature ranges (ambient temperature, fresh, frozen), reducing environmental impact and im-proving operational efficiency.

The Project

Conad Nord Ovest has initiated a collaboration with System Logistics to create the first automatic picking facility for fruits and vegetables in Italy, located at the Logistics Hub in Montopoli Val d'Arno. This project represents a significant step in the development of the logistics hub, aligned with the goal of promoting responsible, innovative, and environmentally-conscious commercial policies. The Montopoli Val d'Arno logistics hub is Conad Nord Ovest's largest Distribution Center in terms of size and volume handled, and one of the most innovative in central Italy. The hub spans approximately 55,000 square meters, of which 23,000 are refrigerated and 32,000 are allocated for various goods. Since its establishment, ongoing investments have led to modernization efforts that have continually enhanced the efficiency of the entire logistics platform in terms of costs, transport, and emissions. Today, Montopoli prepares and ships about 75 million packages annually, including 28 million fresh items (fruits and vegetables, meats, cold cuts, cheeses, dairy products, gastronomy, bakery, and fresh fish) within the Tuscan network, and the remaining 47 million various goods across the sales network, excluding Sardinia.

The Solution and Results

System Logistics designed and implemented the new automatic picking system for fruits and vegetables, inaugurated at the Montopoli Logistics Hub. This facility is a novelty for the organized large-scale retail sector, as it utilizes a fully automated system for fruit and vegetable picking for the first time in Italy. The facility covers an area of 6,000 square meters and employs state-of-the-art robots for the ventilation, preparation, and preservation of produce. The core of the project is SortMate, one of the latest technologies developed by System Logistics, particularly effective for large-scale distribution and the management of fresh products. This solution autonomously manages the entire inbound and outbound sorting process of fruits and vegetables, from the arrival of goods to distribution at various destinations, improving accuracy and timeliness of handling. Utilizing anthropomorphic robots with integrated vision and automated guided vehicles (AGVs), SortMate ensures efficient and safe handling of pallets, with a capacity to manage up to 43,000 crates per day and the ability to assemble pallets for 240 stores, making the process much faster and more efficient compared to traditional methods.

Modularity, flexibility, and scalability are among the main features of the solution developed by System Logistics, allowing for future developments and expansions based on operational needs. The system installed in Montopoli consists of 12 anthropomorphic robots moving on 4 linear tracks and 24 laser-guided AGVs, along with conveyors (rollers and chains) necessary for the movement of goods, employing the same timing and methods as traditional processes. The facility was installed in one of the sections of various goods at the hub converted to fresh: the conversion work involved the creation of a new ammonia refrigeration system that replaced two pre-existing freon systems, the establishment of 6 new docks to enhance unloading activities, and the removal of all barriers (walls and other building elements) in the existing department. All systems are managed by highly customized software that plans, schedules, and distributes orders among various production units, ensuring effective control and management of warehouse processes and activities. The implementation phase of the project began in November 2021 and was completed in October 2022, adhering to the scheduled timelines.

Sustainability

The innovative automatic picking facility is an excellent example of how technological innovation can improve environmental and operational sustainability by reducing CO_2 emissions and optimizing transport. The digitalization of logistics flows decreases internal warehouse movements and prevents stock damage, optimizing procedures related to returns and perishable goods. This helps reduce food waste and ensures the freshness of products at points of sale. Additionally, the automation of the facility reduces strenuous tasks for operators, improving working conditions and increasing workplace safety.

Technical Specifications of the Facility

- **Area:** 6,000 sq m.
- **Robot:** 12 anthropomorphic robots moving on 4 linear tracks.
- **Automated Guided Vehicles (AGVs):** 24 laser-guided AGVs.
- **Conveyors:** rollers and chains.
- **Management Software:** highly customized, plans and coordinates warehouse activities.
- **Ventilation:** Advanced ventilation systems mirroring traditional processes.
- **Cold Conversion:** Ammonia refrigeration system, replacing previous freon systems.
- **New Docks:** 6 new docks to enhance unloading activities.
- **Department Conversion:** Removal of walls and other building elements in the existing department.