

CASE STUDY

AUTOMATING TO IMPROVE INVENTORY MANAGEMENT AND CUSTOMER SERVICE



THE CUSTOMER AND THEIR REQUIREMENTS

Stemilt Growers is a family-owned and operated business that grows and distributes a variety of fresh fruits, including apples, pears, cherries, peaches and nectarines. Stemilt has a legacy of innovation and sustainability within the farming industry. The company is known for providing outstanding service and a wide selection of products, including unique, trademarked apples such as Rave® and Piñata®.

Stemilt was supporting product distribution through three different warehouses, which introduced inefficiencies and required extra product moves to enable transport companies to pick up loads at one location. In addition,

spreading out inventory over three warehouses complicated inventory management and limited the company's ability to deploy automation.

When a natural disaster struck one of the three warehouses, the company decided to consolidate inventory into one automated distribution center. In planning for the new distribution center, Stemilt identified the need for an automated storage and retrieval system that could provide dense storage of heavy pallets of fresh fruit while delivering the throughput required to support all distribution from a single facility.

MOVING FRUIT WITH A BUTTON INSTEAD OF A FORKLIFT

"Before we implemented PowerStore we had forklift drivers continually bringing pallets of fruit to quality inspectors. Now inspectors can just push a button and the pallets are delivered to them automatically."

-Ubaldo Guizar
Inventory Manager
Stemilt Growers





THE CHALLENGE

While the benefits of consolidating inventory in a single automated facility were significant, the company had rigorous requirements for an automation system. Pallets of fresh fruits can weigh up to 2,000 pounds, and not every automation system can handle that weight. In addition, different varieties of fruit needed to be stored at different temperatures to maintain freshness. The automation system needed to be able to support multiple temperature zones and ensure each product was stored in the right zone.

Even with multiple zones within the automation system, some particularly temperature-sensitive varieties of apples or pears would need to be stored in special rooms outside the automation system. It was essential that the automation system integrate with Stemilt's ERP system to provide complete visibility into inventory inside and outside the automation system.

"We move a lot of fruit in and out of the warehouse on any given day, and knowing where everything is at all times helps us manage freshness and increase productivity," said Ubaldo Guizar, Inventory Manager at Stemilt. "We needed to make sure we could quickly locate product no matter where it was stored."

The company also had specific throughput requirements. Consolidating three warehouses into one storage and retrieval system meant that the new system would have to support throughputs of 282 pallets an hour in and 207 pallets an hour out.

Finally, the company wanted to be able to automate the movement of fruit from an adjacent packing facility into the new distribution center for palletizing and storage.

"We knew we wouldn't realize the full benefits of automation if we were manually moving products from packing to palletizing," said Gordy Schulze, Distribution Manager at Stemilt. "We needed to think about product movement holistically, and that meant finding a way to link the two facilities."



THE SOLUTION

"We visited several food-and-beverage sites using PowerStore and were impressed by its density, speed and ease-of-use," said Schulze. "Once we confirmed that PowerStore could handle the weight of our pallets and meet our throughput requirements, it was clear it was the right choice for us."

Swisslog's PowerStore is a high-density shuttle system for pallet warehousing. The simultaneous use of robotic storage and retrieval devices, along with lifts working independently across multiple vertical layers, allows PowerStore to support extremely high-density storage with exceptional throughput rates. Compared to manual storage, PowerStore can store 60 percent more pallets in the same space.

The modular PowerStore system for Stemilt is sized to hold more than 13,000 pallets across five levels with 25 RowCarriers and 25 AisleCarriers. The PowerStore SupplyCarrier ensures efficient and reliable inbound and outbound pallet delivery at high speeds. Three quality control stations were designed into the PowerStore system to eliminate the need for drivers to manually deliver pallets to quality inspectors.



THE RESULTS

"The combination of consolidating and automating our distribution operation has allowed us to realize significant cost savings and productivity improvements," said Schulze.

One of the metrics the customer service-focused distribution center monitors closely is truck load times. Following the move to the new automated distribution center, load times were cut to one-third of what they were previously.

"Trucks don't want to sit on the dock any longer than they have to," said Schulze. "The faster we can get them loaded and on the road, the happier they are and the better the service we can provide to our customers."

Quality inspectors also saw a huge increase in productivity using the automation system compared to having pallets delivered to them by forklift. Inspectors at each of the three quality stations can now inspect up to 40 pallets an hour.

The complex process of managing freshness across a range of different varieties of fruits has also been simplified.

"Before we were always moving product from room to room to make sure fruit stayed at the right temperature," said Guizar. "Every day

was a challenge to find the right room for the right fruit. Now we have automated that entire process. Just push a button and fruit moves to the right zone."

"Anything you want to know you can easily pull out of the system," added Schulze. "We can track every single pallet and know exactly when each entered storage to ensure we are always shipping on a first-in, first-out basis."



According to Schulze, the new automated distribution center has also reduced stress on employees and managers by simplifying processes and normalizing work hours.

"In the past, we were sometimes here late into the night getting orders out. Now, we are able to

Overall, Stemilt experienced a 41 percent reduction in warehouse labor costs, allowing the company to re-allocate personnel to other parts of the business.

maintain standard hours while still meeting the needs of our shippers and customers. Treating people well is an important part of our culture, and automating storage and retrieval has shortened work hours and reduced stress."

Another benefit of the system is its energy efficiency, which supports Stemilt's sustainability objectives. PowerStore is designed for efficient operation, and the modular design provides the flexibility to shut down modules when not needed.

"We have a few slower periods during the year based on growing seasons, and with PowerStore we can shut down modules to improve energy efficiency during those periods," said Schulze.

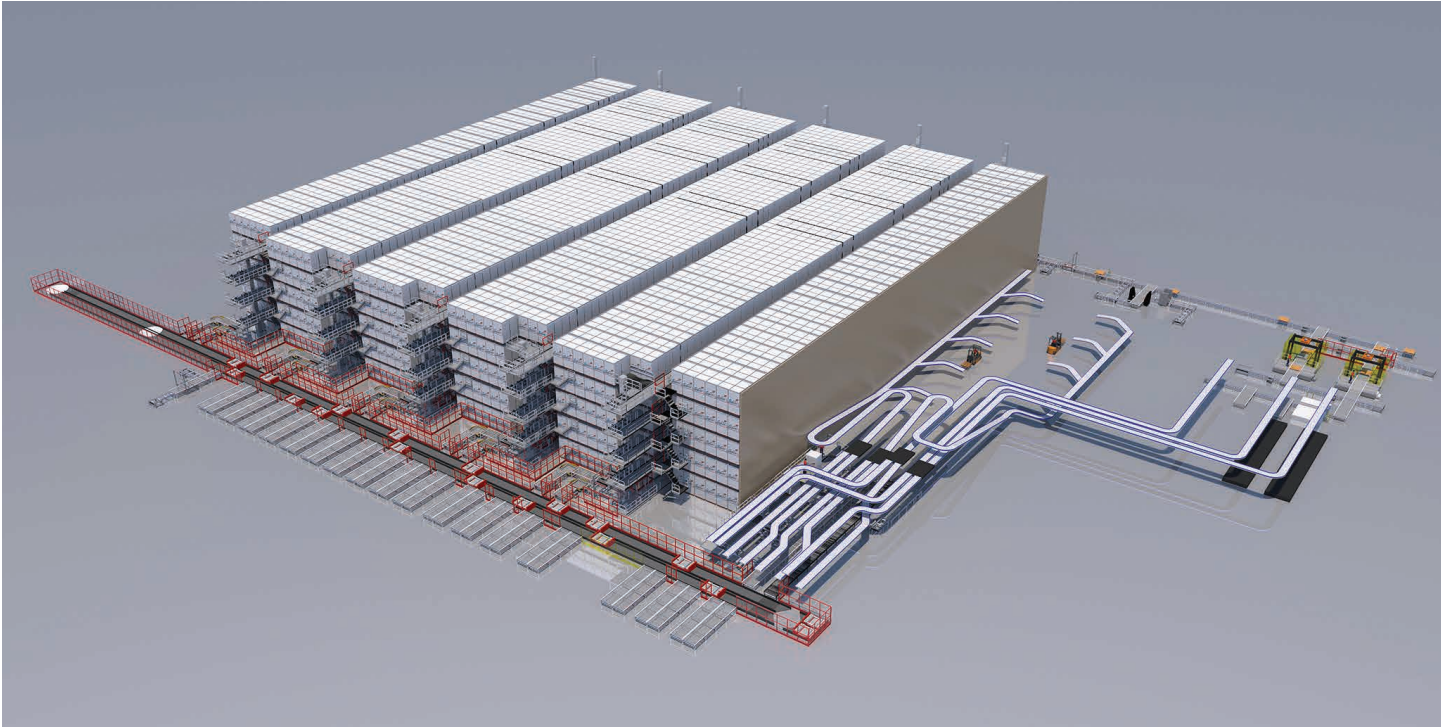
The modular design of the PowerStore system also provides a well-defined growth path. "We have the storage we need now, and the system is meeting all of our expectations," said Schulze. "But we also left space around the system so we can easily expand storage capacity in the future as we continue to grow."

The system is controlled by the PowerStore Director module within Swisslog's SynQ software platform, which is integrated with Stemilt's ERP system. SynQ allows Stemilt to manage inventory based on how long the product has been in storage, immediately locate any product, and efficiently ensure product is stored in the right temperature zone. Stemilt maintains multiple

temperature zones within the PowerStore system, ranging from 33°F to 37°F.

"I expected the software integration to be one of our biggest challenges," said Schulze. "But our IT team worked closely with Swisslog, and it went very smoothly and very quickly."

Stemilt also relied on Swisslog to install a ProMove Conveyor system between the adjacent packing plant and the new distribution center. Swisslog's ProMove is a multifunctional conveyor system that provides energy efficient pallet transportation between packing stations in one facility and the automated palletizing systems in the new distribution center.



FACTS AND FIGURES AT A GLANCE

POWERSTORE SYSTEM

5 Modules – 5 Levels

13,250 Pallet Locations

Peak Throughput (PPH): 282 In / 207 Out

25 RowCarriers and 25 AisleCarriers

SupplyCarrier Loop with 14 SupplyCarriers

10 Vertical Conveyors

Pallet Conveyor

Temperature Zones: 32F-34F and 36F-38F

3 Custom Quality-Control Inspection Stations

