

CASE STUDY 02

Mixed SKU Fulfillment

Dexterity's Full Task Robots Transform the Baked Goods Fulfillment Process by **Automating Picking** and **Packing** Workflows

Leading Baked Goods Distributor

Baked Goods Fulfillment

Dexterity's robotic systems are **in production 24/7** powering order fulfillment, unit-level picking, and outbound kitting for large enterprise customers. Unlike generally available robots, which require installing expensive and bulky material handling equipment, Dexterity's robots operate within **existing workflows** at human-level skill in a human-sized footprint. Our robots share **networked intelligence** to coordinate actions, improve performance, and provide real-time insights into upstream and downstream operations.

“Stop wasting time. See all the bakeries you want.
Give me a plan to deploy your bots at scale.”

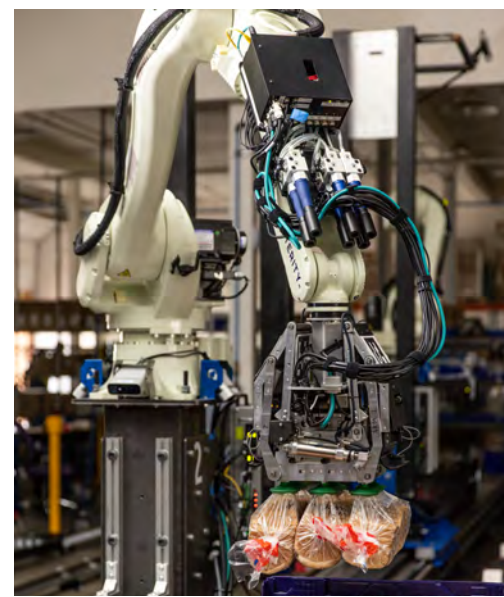
- CEO



MIXED SKU PALLETIZATION &
DEPALLETIZATION



PARCEL PACKAGE
SINGULATION



ORDER FULFILLMENT
& LINE KITTING

Supporting of one of the largest baked goods manufacturers in the world



10K+

unique SKUs picked in
production



11M+ Units

picked in production to
date



24/7 Guarantee

with white glove service
and a performance SLA



Problem

Facing soaring demand, one of the world's largest consumer goods manufacturers sought to add automation to help **fulfill expanded orders** from their customers. Traditional automation, however, could not handle the **variety** and **delicacy of baked goods** that company produced.

The company sought a partner that could help meet the challenges of their 24 / 7 operation keeping the country's grocery stores well stocked with baked goods.

CHALLENGES:

- Increased fulfillment volume
- Labor shortage
- High turnover
- Recruiting challenges

KEY REQUIREMENTS

- ✓ Support **revenue critical** operations in a 24/7 environment
- ✓ Pick and pack **individual loaves of bread** autonomously without damaging product
- ✓ **Low capex** and simple integrations with existing warehouse infrastructure

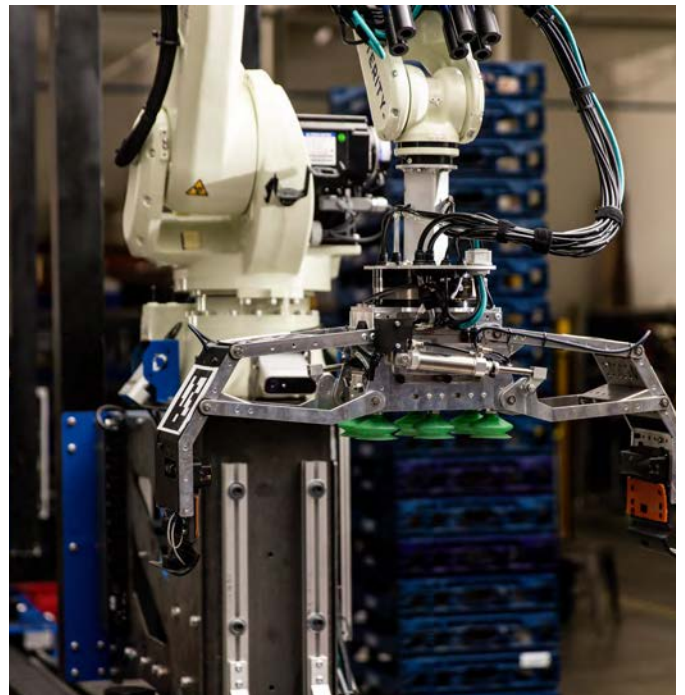
Dexterity's Mandate

Dexterity was asked to enable one robot with a human-sized footprint to pick over **10,000 unique individual baked goods**, lift stacks of trays of goods, and move dollies loaded with trays to outbound staging areas. The manufacturer required the bots to be installed in a rapid timeframe, execute fulfillment at a **faster rate than experienced operators** and require virtually no manual intervention. Additionally, the manufacturer required complete transparency regarding bot operations so they could quickly identify opportunities for optimizing production or distribution.

Dexterity's mandate was to automate and streamline the fulfillment process.



CLOSED GRIPPER TO PICK INDIVIDUAL ITEMS



OPEN GRIPPER TO PICK HEAVY TRAYS

Dexterity's Solution

Using the **Dexterity platform**, robots are given a variety of capabilities that enable them to perform some of the most complex tasks in a warehouse.

Vision helps them look at trays of baked goods and determine what to grab. A **sense of touch** gives them the delicacy to pick items and gently pack them into trays and ensure that trays are securely nested onto one another. Dexterity's robots **communicate** with one another, enabling them to share their learnings from each pick, and to better coordinate picking as they move up and down picking streets.



MACHINE
LEARNING



MULTI-
ROBOTS



SCHEDULING



MOTION
CONTROL



COMPUTER
VISION







MOBILITY



FORCE
CONTROL

All of this is coordinated by a **data auditing system** that tracks what goods are picked, at what rate, and where they are loaded. This provides a layer of **unit-level insight** previously unavailable to the customer.

 79 CUSTOMERS	 508 SKUS	 789 UNITS/HR	 15.2 STACKS/HR
4.2 UNITS ORDERED	423 UNITS CUT	105 UNITS NOT FULFILLED	98.9% FILL RATE
105 STACKS INSERTED	120 STACKS COMPLETED	8 AVG STACK HEIGHT	11.2 AVG TRAY FACTOR

Ultimately, Dexterity's solution went well beyond simple robotic automation.

OPERATIONAL INSIGHTS TO DRIVE STRATEGY

DEXTERITY'S DIFFERENCE

Commodity robots powered by the Dexterity Platform that scales across applications

Human-sized footprints with minimal disruptions

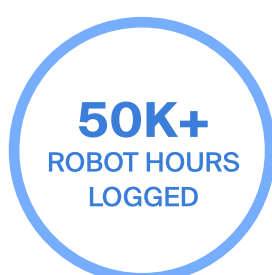
Full-stack approach from controls and machine-learning, to 24/7 support



Results

After development, testing, implementation, and optimization, Dexterity's robotic solutions delivered significant value to the customer. Since being installed, Dexterity robots have fulfilled over **21 million units** of baked goods and counting, increasing on time **fill-rates to 98%** and unlocking previously unseen **network-level intelligence** to further optimize production and delivery scheduling.

The next time you're at a grocery store, you might be handling baked goods picked by Dexterity's robots!



Let's solve your toughest challenges in the warehouse

Dexterity delivers intelligent robots with human-like dexterity that enable customers to unlock the maximum value of their workforce. Dexterity solves labor shortages by delegating repetitive tasks so employees can focus on higher-level, cognitive work. Its full stack robotics solutions automate routine tasks for logistics, warehousing, and supply chain operations and can be deployed to perform a wide variety of complex manipulations in unpredictable environments.

Learn more at www.dexterity.com.



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Backgrounds in robotics, logistics and academia

Over 180 Engineers and Support personnel across the West (HQ), Midwest and East Coast

200M+ in Funding



LET'S GET STARTED

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