Leading Apparel Giant Achieves Fulfillment Excellence with **Automation and MAO**
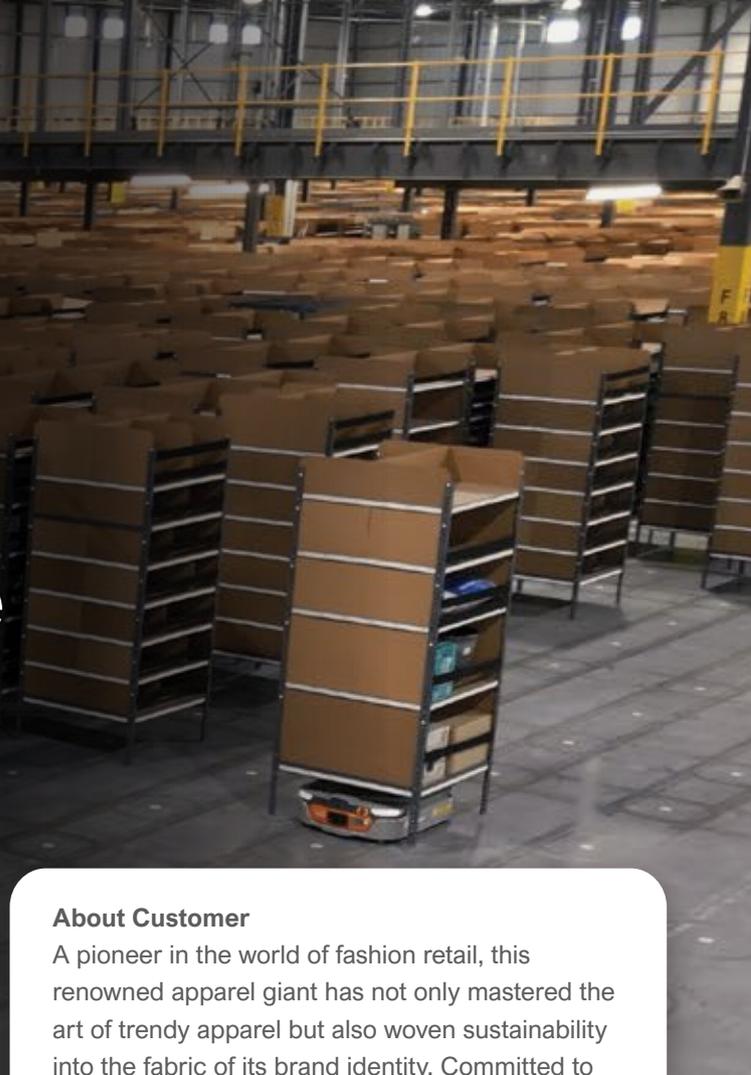
The Challenges:
Streamline, automate and optimize disparate fulfillment processes

The warehouse operations of a leading apparel retail giant faced several significant challenges. To begin with, they had separate warehouses for retail and online fulfillment, which led to unnecessary logistical complexities.

At the same time, they needed to:
- Establish a warehouse-opening framework comparable to the process of launching physical stores
- Automate and improve workflows from inbound processes to outbound shipments
- Reduce their reliance on Warehouse Management Systems (WMS)
- Accommodate various inventory sub-classifications with their associated business logic in the picking process
- Optimize downstream operations to improve overall transportation efficiency

This omnichannel retailer began the search for a robotic automation solution, one that could handle its vast inventory of 600,000 items of clothing, merchandise and beauty products, all stored in different manners, such as goods on hangers, cartons and single SKU pieces.

About Customer
A pioneer in the world of fashion retail, this renowned apparel giant has not only mastered the art of trendy apparel but also woven sustainability into the fabric of its brand identity. Committed to bringing the latest styles to a global audience, this retailer sets the bar for innovation and responsible sourcing. Their intricate supply chain ensures seamless delivery, while their unwavering focus on customer experience continues to shape the future of fashion, one captivating design at a time.

Geography: Robbinsville, NJ

GO Solutions: 139 Goods-to-Person; 20 Sortation & Smart Conveying;

Fulfillment Specs:
- Warehouse size: 110,000 sq ft
- Number of shifts: 2
- Working hours in a shift: 7
- Days-on-hand: 2.5 months

GO Impact:
- Achieved a rapid payback period in just 2.7 years
- Experienced a remarkable 50% reduction in order fulfillment times, leading to substantial labor cost savings
- Automation has skyrocketed the UPH rate from 50 to an impressive 300
- 60% reduction of variable cost per unit
- Over 80% tote utilization, cutting down transportation costs significantly

The Solution:
Multiagent orchestration (MAO) of GTP bots and mobile sorters for fast, intelligent fulfillment

This fashion powerhouse deployed over 160 Autonomous Mobile Robots (AMRs), including Goods-to-Person (GTP) robots and mobile sorters, for automated, flexible forward-area picking, conveying and sorting.

They also deployed the GreyMatter multiagent orchestration (MAO) platform, which seamlessly integrates fulfillment software, smart mobile robots and human workers to continuously model and execute optimal real-time workflows, actions and priorities. This integrated approach accelerates inventory movement in an end-to-end solution, enabling the client to fulfill 7-8 Million Pieces each year with speed and precision.

GTP bots for forward-area picking and fulfillment

GTP bots deliver individual items to warehouse workers, increasing efficiency and reducing picking and packing time. Parallel batch picking enables the simultaneous picking of multiple orders, markedly improving pick productivity. Additionally, mobile transport units automatically move completed orders to retail consolidation and packing stations, contributing to a seamless workflow.

With the ability to adapt to changing inventory profiles, demand patterns and peak periods, this global fashion leader can pick, pack and execute orders "before time," setting new benchmarks for fulfillment efficiency.

Ranger MoveSmart (RMS) bots for packed-order sortation

RMS bots sort packages based on carriers and zip codes for fast, precise routing and fulfillment. Through MAO, the sortation bots seamlessly adapt to changing demand patterns and provide flexible throughput, optimal capacity utilization and on-the-fly destination scaling, with the capability to sort an impressive 1,200 parcels per hour. Unlike fixed sortation solutions, RMS bots eliminate significant upfront investments while ensuring immediate value in terms of time, cost and accuracy.

Utilizing Greyorange application integrated with GreyMatter, this retailer is able to:

▶▶ Palletize sorted shipments within Shipping Handling Units (SHUs)
▶▶ Sync vital shipment information, minimizing the need for manual intervention and ensuring accuracy
▶▶ Deploy load-aware chute selection, effectively reducing manual touchpoints in both the sorting and packaging processes

GreyOrange
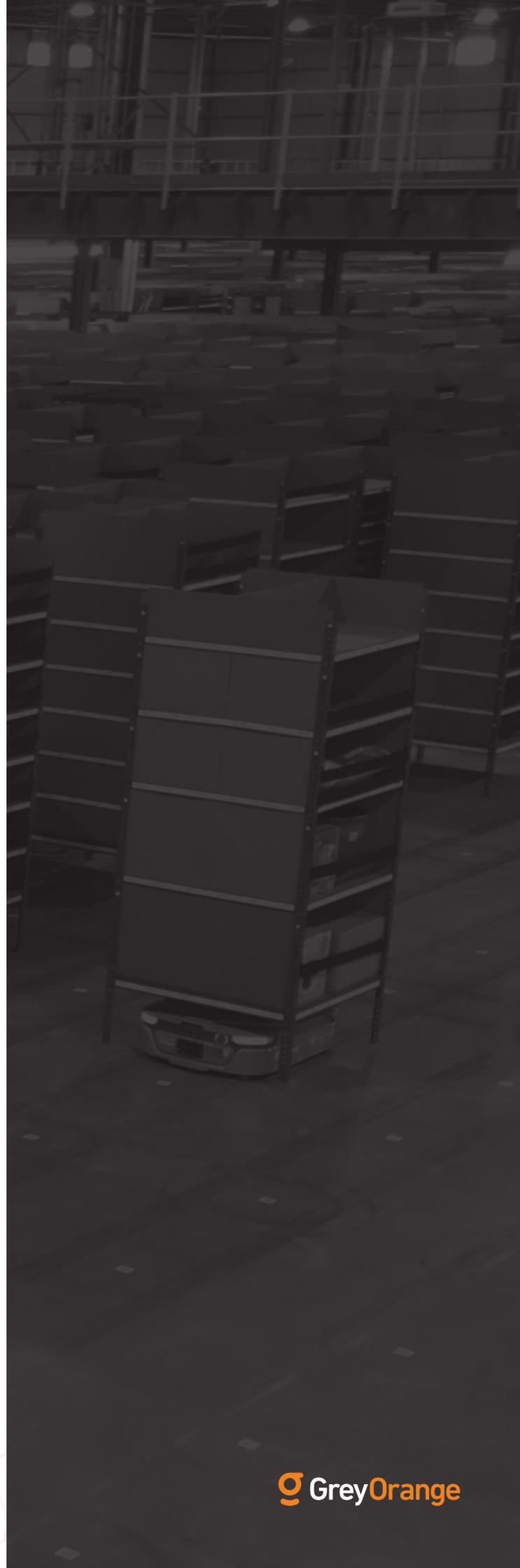
Expected Impact:
Omnichannel fulfillment in half the time with 6x greater efficiency

Today, this retailer boasts a state-of-the-art, agile omnichannel fulfillment center that efficiently handles both online and retail orders. The center employs automation for inbound processes as well as picking, packing and sorting operations. This guarantees optimal inventory levels and a real-time complete snapshot of stock (online and in-store), establishing the Robbinsville fulfillment center as a blueprint for future warehouses to be built for evolving customer demands. Furthermore, precise inventory management spans buffer zones, Very Narrow Aisles (VNAs) and the forward pick area, ensuring optimal inventory levels at all times.

As a result, the warehouse facility has achieved the following:

- **SKUs Fulfilled:** A staggering 250,000 SKUs are processed from this location in a single day, serving both e-commerce and retail needs
- **Replicability:** The model can be seamlessly replicated across all of this apparel giant sites without the need for complex integration
- **Payback Period (estimated):** 2.7 years
- **Order fulfillment times:** 50% reduction, resulting in significant labor cost savings
- **Operational efficiency:** Automation has boosted the unit per hour (UPH) rate from 50 to 300
- **Tote utilization:** Increased to over 80%, lowering transportation costs

This comprehensive transformation has also helped them to reduce warehouse theft and damages. Overall, automation and orchestration in this fulfillment center have ushered in a customer-centric era of omnichannel inventory management excellence.
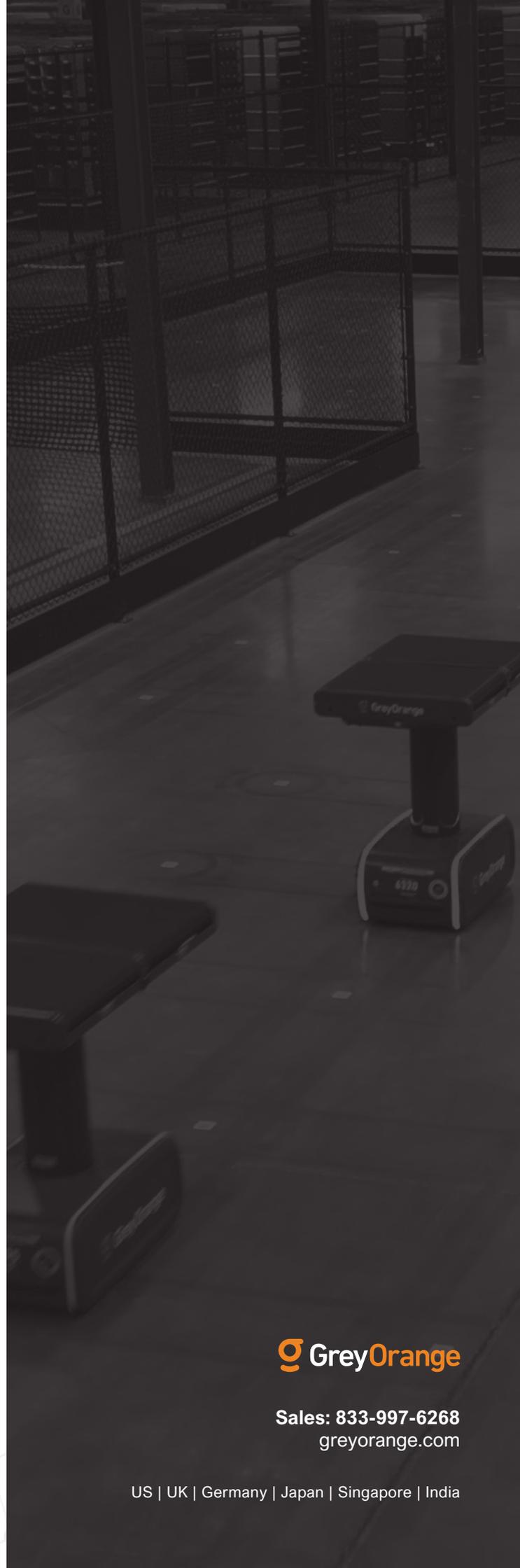
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