GreyOrange

Automating Fulfillment with **Robotic Sortation**

Nothing goes out of style faster than fashion. The market expects retailers to satisfy customer expectations with the right products and styles – at the right time, place and price. A try-and-buy fast fashion environment means nearly 96% of buyers expect free shipping and 79% want free returns. As a result, fulfillment centers not only have to flex to meet unpredictable demand and seasonal trends, but must also be able to process more orders and returns faster than ever – all while protecting their bottom line.

How is all of this possible?

The world's leading brands use modern automation technologies to gain competitive advantage.

INTRODUCING ROBOTIC SORTATION

Robotic sortation is the automation of inventory sorting and order processing in a distribution center by autonomous mobile robots (AMRs). Typical advantages of a robotic sortation solution include:

- Increased order accuracy and throughput
- Optimized inventory flows
- Maximized storage efficiency
- Dynamic real-time distribution and order prioritization
- Highly scalable capacity
- Low-risk integration with existing operations
- Flexible distribution to fulfill fluctuating order volumes

Robotic sortation enables priority order fulfillment, repurposed returns and accelerated shipping times. But most importantly, automating the end-to-end fulfillment process delivers an immediate and sustainable productivity boost to fulfillment operations and optimizes labor costs.

HOW TO KEEP A CUSTOMER

Provide fast, free fulfillment. The majority of shoppers **(62%)** expect their orders to arrive in less than three business days even when they choose free shipping.

Do (a lot) more with less

Almost half a million warehouse jobs will be created in 2022 due to ecommerce. But with historically low unemployment – and a labor crunch predicted for the foreseeable future – the idea that the workforce will solve today's fulfillment speed and efficiency challenges simply isn't realistic. To deliver products to market fast and efficiently, companies will have to do more with leaner workforces – which is what automation is all about.

CAPACITY CRUNCH

Ecommerce fulfillment is driving a shortage of nearly **500,000** warehouse jobs in 2022.

Trim supply chain costs

Ecommerce has achieved massive scale by bringing the store right to the customer. The challenge is that ecommerce creates home delivery costs that amount to 20% of an item's value, versus 5% to 7% when that product is delivered to stores. Given that 60% of U.S. online transactions provide free shipping, the added cost of ecommerce is considerable. But these costs can be defrayed by creating efficiencies in the warehouse. For example, by leveraging intelligent robotics, companies can accomplish exponentially more with a much leaner workforce. Automated warehouses are capable of meeting online shoppers' demand for same-day delivery and adapt to fluctuating order demand.

Cut losses with reverse logistics and returns management

The cost of ecommerce can also be optimized using reverse logistics. A type of supply chain management, reverse logistics moves goods from customers back to sellers or manufacturers. It uses processes such as returns, not just from the retail store customer back to retailers, but also from retailers back to distributors, and distributors to manufacturers. There are various types of reverse logistics, but for retailers one of the most important involves returns management. The process focuses not just on handling product returns, but also trying to avoid them. Take re-returns as a case-in-point. Re-returns involve the return of an item a second time, which activates extended return policies that enable the issuing of store credit. For instance, an item bought on clearance that isn't normally returnable does end up being returnable if it turns out to be broken. In another example, a retailer rejects a return and gives it back to the purchaser without a refund; this scenario could happen with custom-made items.

In short, returns are a complicated process, where having an automated solution is critical to make the process smoother and easier for customers, and less labor-intensive – and less costly – for the retailer.

MARGIN SQUEEZE

Next-day delivery costs 20% more than standard delivery. Home delivery costs 20% of an item's value versus **5%** to **7%** when delivered to stores.

One-size (manual processes) don't fit all

One-size clothes don't fit all – and neither do manual processes. That's why automation isn't just about being fast, but also more flexible. Growth in SKU variation and associated packaging variation is a major challenge for fixed automation. When large irregular items were just 3% to 4% of SKUs being shipped, a manual process could handle them at an acceptable labor cost. The increase of shippable SKUs to over 10% highlights the need for automated mobile sortation. In short, an automated system is flexible and capable of not only processing a broad spectrum of package types, shapes and weights, but also enabling future expansion and reconfiguration at marginal additional cost.

GREAT EXPECTATIONS

A substantial majority of customers **(66%)** expect free shipping on every online order.

6 WAYS **ROBOTIC SORTATION** DELIVERS RESULTS

01 **Adapt to meet skewed demand**

Accommodate frequent channel-demand variance of ecommerce versus in-store retail

02 **Fulfill fast for the now-delivery demands**

Provide high-speed fulfillment for same-day delivery

03 **Process many happy returns**

Handle returned inventory faster and more efficiently

04 **Keep customers loyal and intact**

Meet complex omnichannel and multi-brand fulfillment expectations to enhance customer retention

05 **Scale up during peak season**

Generate high productivity and throughput despite the labor crunch

06 **Flex with SKU variability**

Store and fulfill a wide variety of SKUs

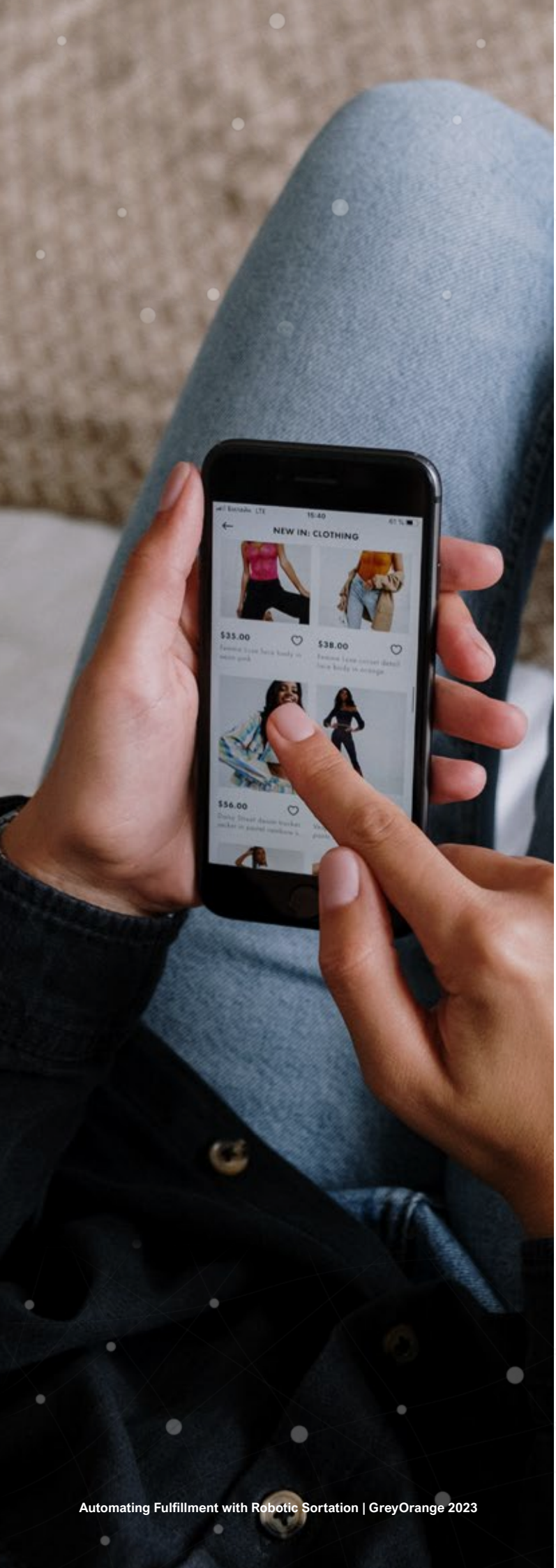
THE WORLD'S LEADING BRANDS USE **ROBOTIC SORTATION**

Traditional in-feed conveyor lines and shipping lanes are static and inefficient. In contrast, robotic sortation is flexible and efficient – and much more cost-effective. Robotic sortation offers easily scalable points-of-entry, faster implementation and enhanced modularity. With dramatically improved operational flexibility – including the ability to operate in minimal space – it facilitates palletizing operations, packing stations and other applications.

Whether your facility requires a low-speed, low-complexity system – or a high-speed multi-divert automated conveyor system – robotic sortation solutions provide the versatility to sort a wide range of product sizes and weights.

The result is heightened efficiency and accelerated fulfillment at scale.

The following case studies show how the GreyOrange Ranger Move Smart (RMS) robot – powered by the GreyMatter fulfillment platform – enhances efficiency, throughput and cost efficiency for leading brands' fulfillment operations. GreyMatter continuously solves to drive optimal decisions, efficient orchestration and rapid execution across the fulfillment operation. The platform instantly models the best decisions to drive optimal workflows and execution, and seamlessly integrate fulfillment software, smart robots and people.



01

CASE STUDY
Dafiti

Challenge

Dafiti, an ecommerce seller of footwear and fashion products, faced a complex fulfillment situation. The company's flow of inventory to ecommerce and in-store retailers involved a mix of manual picking, order consolidation and VAS activities. But increased order frequency and direct-to-consumer shipments meant Dafiti needed to execute a growing number of shipments, while relying less on human labor. What's more, it wanted to limit sortation errors across a wide variety of package types to improve efficiency and customer satisfaction.

Solution

GreyOrange implemented the Ranger Move Smart (RMS) robot to enhance order sortation, consolidation and automatic generation of shipping manifests. Powered by the GreyMatter fulfillment platform, RMS has optimized Dafiti's multiple fulfillment center workflows and automated sorting – ranging from cross-dock orders and inbound item processing, to consolidation and packing of outbound orders – all in the same RMS field. The robot will facilitate the sorting of packages to over 120 destinations to reduce warehouse footprint, storage costs and handling times while maximizing efficiency.

Impact

RMS is projected to double Dafiti's fulfillment throughput, compared with the rate of standard conveyor systems. RMS is predicted to save Dafiti up to $2 million off the cost of manual operations within seven years, while reducing forecast labor requirements by 60%.

02

CASE STUDY

Global footwear and apparel brand

Challenge

A leading global footwear and apparel brand was challenged by a complex manual fulfillment operation. Its warehouse handled parcels ranging from individual packages, to pallets containing large cases, requiring a mix of sortation and value-added service (VAS) activities. Labor requirements were unusually high during peak periods. Receiving and storing inventory involved pallet breakdown, data entry and label printing. To complicate matters, the client had to manually sort shipments going to 52 separate dispatch destinations.

Solution

GreyOrange implemented RMS to enable the client to move from a manual to an automated sorting process. Powered by the GreyMatter fulfillment platform's sorting logic, RMS let the company sort parcels for all 52 destinations with reduced manual touchpoints. RMS implementation was simple and easy, with no major system integration required.

Impact

RMS substantially reduced the company's labor force needs with a go-live time of just six months. While benefiting from installation time that is 50% less than traditional conveyor systems, the client is projected to save as much as $1 million in seven years.

03 CASE STUDY
Leading apparel brand

Challenge

A leading apparel brand processed both ecommerce and in-store orders at one of its omnichannel fufillment centers. The distribution hub experienced highly volatile volume changes throughout the year. The client needed to enhance the efficiency of material movement by creating flexible destinations for interchange between gaylords and pallets. Its requirements also included a cost-effective, flexible and scalable outbound sortation solution capable of achieving 1400-package hourly throughput.

Solution

GreyOrange's software-first approach positioned the client to achieve various objectives simultaneously. RMS allowed the company to boost efficiency by enabling various GreyMatter features, including automated and flexible sortation and one-click configuration management. Cutting lead time to sort cases for B2B order fulfillments, the RMS sorting system enabled easy reconfiguration of the client's system to meet fluctuating volumes. Moreover, RMS enabled interchangeability between gaylords (smaller parcels) and gravity conveyors (large cases) so the client could flexibly reallocate destinations as the volume of parcels and cases changed. The result was enhanced throughput.

Impact

RMS was ready to deliver peak fulfillment in six months. The robot is projected to deliver cost savings of up to 60% compared with a rigid conveyor network.

WHY RMS?

Software-first technology.

Flexible. Scalable. Smart.

Modern fulfillment requires dynamic optimization across every touchpoint in the flow of inventory, orders and shipments.

The GreyMatter fullfillment platform fuses software and robotics with AI and machine learning to orchestrate high-yield decisions and scalable performance. Easily configurable changes let the user define flexible sortation logic, create flexible integration channels, and easily switch between multiple sort configurations.

GreyMatter considers predictive and real-time data regarding orders, promises, inventory, shipping windows and resources – all to orchestrate how workers and robots work as a team to fulfill the right orders at the right time.

Demand-Driven. Fluid architecture.

Ecommerce requires that companies rely on systems that have future-proof designs and are reliable, cost-effective and easy to deploy within their existing infrastructure with minimal changes. GreyOrange Ranger™ MoveSmart (RMS) robots operate in fleets to efficiently and fluidly move parcels from receiving through dispatch, flexing up or down to handle market fluctuations. The GreyMatter fulfillment platform allows robots to communicate with each other. As a result, GreyMatter, working in tandem with RMS and RTP (Rack-to-person), constantly recalculates order fulfillment priorities and optimizes inventory movement patterns.

The RMS system has a much lower upfront cost than comparable traditional systems. As a result, Using GreyOrange's Robots-as-a-Service model, customers are able to convert their Capex to Opex. With RaaS customers do not need to worry about performance, maintenance or upgrades, and they only pay for what they need in a given year. GreyMatter's AI-enabled mobile sortation system is easily scaled across retail and logistics industries. RMS can augment or replace rigid systems to deliver scalable and portable conveying and sorting whenever and wherever it's needed – especially during peaks. Capable of operating in footprints where rigid systems won't fit, RMS optimizes your current facilities and enables you to scale in new ones.

Adaptable applications. Shared resources.

As the pandemic vividly demonstrated, supply chain realities can change overnight. Retail stores shut down, with literally zero foot traffic for extended periods, leaving many stores lying dormant. However, a few leading retailers decided to utilize their footprint and scale up quickly to extend their fulfillment network into hyperlocal microfulfillment distribution centers to execute ecommerce orders. GreyMatter's AI-enabled system easily scales up or down with demand for investment-friendly performance with capacity effectively pooled and reallocated automatically, based on demand, application and location. The mobile sorters (RMS) are designed to move and transfer goods within a specific area or sections of a warehouse. Seamless integration with other automation equipment – such as carton erectors, packing machines, and ASRS – optimizes resources across the warehouse. The software choreographs the cross-utilization of robots in different sections of the same facility based on need.

Waveless order fulfillment

- Adapt to changing business flows without required system changes. Reconfigure or swap destinations as needed with GreyMatter fulfillment operating system
- Dynamically distribute shipments to multiple end-sort locations to execute fulfillment all from one platform

Dynamic process flow orchestration

- Define and customize process flows basedt on various parameters including SKU ID and shipment type
- Avoid congestion and negative impacts to operations – if end-sort location becomes unavailable – with a bot that parks itself with a pre-defined buffer
- Meet different shift and business needs with switchable multiple sortation configurations

Choice of induction

- Select from manual, conveyor, auto and semi-auto induction options depending on operational/business requirements

Multi-flow multi-robot orchestration

- Intelligently orchestrate material flow – across robotic agents, hardware and software systems – to generate higher throughput
- Leverage smart conveying to make real-time changes and customize material flow among multiple station types

Improved sorting

- Automate barcode scanning to achieve sorting accuracy of up to 99.99%

GET IN TOUCH

It's the right time to implement robotic sortation at your fulfillment center. **Contact a GreyOrange** representative to learn more today.

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