PARTNERSHIP

Powering up: Automating the future of luxury logistics

VOGUE BUSINESS FOR GXO LOGISTICS
As the world grappled with the impact of a once in a generation pandemic, reliance on warehouses — comprising nearly 25 billion square feet globally — surged, as e-commerce boomed. Up by 20 per cent from 2020, the number of warehouses worldwide is expected to hit around 180,000 by the end of 2025, amassing 30 billion square feet collectively (based on current average) — almost double the size of Greater London.

While the expansion of logistics real estate is reflective of 2020 global e-commerce sales exceeding $4 trillion during the pandemic, the supply of talent required to sustain such sizable operations has been challenging. High attrition rates; rising wages; limited availability of skilled team members; and social distancing measures during Covid-19 wreaked havoc on fulfilment operations across the globe, compelling brands to explore alternative logistics solutions — including warehouse automation in particular.

Often regarded as the not-so-glamorous wings of the fashion industry, logistics and warehousing have been catapulted into the spotlight by rampant yet unpredictable consumer demand during the pandemic. The market for warehouse automation is expected to reach $51 billion by 2030, with a compounded annual growth rate (CAGR) of 23 per cent from 2021 to 2030. According to McKinsey and Company, four in every five retailers surveyed from a pool of fifty had plans to bolster investments in automation over the next two to three years. Contrary to concerns around using robotics to replace manual tasks, companies seem to be keen on employing automation to complement human involvement with improved speed and accuracy.

Key developments in the warehousing world

Considering how fulfilment expectations have evolved since Covid, with the potential to make or break a brand’s relationship with its consumers, long-time leaders in customer experience, including Nike, Uniqlo, Asos, and even younger direct-to-consumer players such as Skims, have been quick to optimise their warehousing operations.

Asos, for instance, unveiled plans to level up its warehouse capabilities last summer, with $100 million...
investment. As of February, this year, Nike has integrated about a thousand collaborative robots (aka cobots) to assist team members with sorting, packing and movement around its distribution centres. German e-commerce giant Zalando is leveraging collaborations with various automation providers to enhance last mile delivery and bolster operations. Launched in 2019, Kim Kardashian-founded shapewear company Skims had a backlog of three million customers in its first year. Fast forward to summer 2022, the Soft Lounge Slip Dress alone brags a waitlist of half a million. While the exponential demand is flattering, the brand has had to bring in autonomous mobile robots (AMRs) across its warehousing facilities to fast track fulfilment and optimise productivity, as explained by CEO and co-founder, Jens Grede, in an interview with Vogue Business.

Automating for sustainability

While substantial consumer demand is raising the bar for warehouse automation, so is fashion’s returns challenge. Seemingly harmless from a consumer perspective, bracketing (over-ordering online in pursuit of the right size or style) can severely inhibit retailers’ supply pipelines. Any upsurge in items going back into fulfilment centres is likely to limit the capacity to accommodate outgoing inventory. In e-commerce, the cost of delivery can account for about 10 per cent of an item’s retail price. With returns however, factoring in costs for workers and storage, the handling costs are around two-thirds of the original price. Brands therefore end up incentivising customers with credit to simply keep or donate any potential returns, given losses they would otherwise have to bear.

Besides cost-saving, returns can also cause brands to fall short of sustainability targets. According to the latest Vogue Business Index, while over half of consumers surveyed say they do not know enough to comment on whether or not a luxury brand is sustainable, about 63 per cent regard a brand’s environmental policies as important while considering a luxury purchase.

GXO Logistics, a global leader in warehousing solutions, is on a mission to modernise fashion’s supply chain. According to the company, as many as four out of every ten items purchased online are returned. Of those, three can be resold, whereas one could potentially end up in landfill or recycling. To combat this, one of the company’s key sustainable offerings includes sophisticated automated returns systems with bespoke scanning cameras, which can speed up returns and identify damaged products. As a result, 97 per cent of all returns can be resold, about 3 per cent are donated to charity and
the remainder, and less than 1 per cent goes to landfills, according to the company. This type of technology also enables brands to better manage inventories and improve margins. Not to mention the several tons of environmental waste that is avoided.

Max Alexander, GXO Logistics’s VP of strategic accounts, fashion and e-commerce, explains: “At one of our new automated returns locations, a conveyor sorts and directs incoming products to a bench where they are received by a team. The conveyors are lined with fixed cameras which automatically scan labels instead of requiring handheld barcode readers. The benches can be illuminated by UV lights to help employees quickly assess the quality of any incoming or returned unit. Products are graded and sorted using sophisticated technology, which determines the end destination such as dispatch or recycling. A system of automated guided vehicles then takes the products to the appropriate location.”

In pursuit of building warehouses of the future, today, GXO Logistics has a robust R&D strategy with a global team of approximately 1,000 technology experts piloting more than 200 new technologies to create supply chains that are faster, leaner and smarter.

A matter of choice

As fashion and luxury companies pour millions into reimagining warehouses, the number of solution providers continues to grow. This has been boosted further by advancements in logistics technology — supply chain as a service (SCaaS) covering subscription-based options; point solution providers for job-specific automation; and integrated deployments covering end-to-end solutions, to name a few. Marketplaces are also upping the stakes when it comes to fool-proofing their logistics. Shopify, for one, acquired warehouse automation developer, 6 River Systems, for $450 million to gear up on AI-enabled fulfillment for its sellers. From contract logistics and SPL (third party logistics) providers, to fulfillment leads and reverse logistics, brands are spoilt for choice when it comes to strategically sealing the deal with the right automation partner.

As the world’s largest pure-play contract logistics provider, GXO Logistics has become an authority in the fashion and luxury goods warehousing sector. This is evident in its operational partnership with Kering, pioneering a 1.7 million-square-foot carbon negative logistics campus in Northern Italy in 2021, followed by a number of high-tech collaborations across the globe with industry trailblazers such as Matchesfashion.
Vogue Business uncovered the path to value-driven automation in conversation with Phil Shaw, who leads Technology & Innovation Centers of Excellence at GXO Logistics.

Where does warehouse automation sit within the consumer journey since Covid?

Consumers have pushed brands to the limits of what it means to be truly omnichannel, magnifying the importance of supply chain management as a competitive advantage. Today, a brand’s investment in logistical automation can truly alter the dynamics of its relationship with its customers. From ensuring SKU availability on every touchpoint — store, website, app — to various delivery modes and missions, such as home delivery, gifting, BOPIS (buy-online, pick-up-in-store) and finally after sales, with returns, exchanges and secondment. Warehouse automation lays the groundwork for a seamless customer experience.

How can various fashion warehousing processes be automated?

Warehouse automation is generally a function of business needs, complexity of logistics processes, and levels of manual input required. More than 30 per cent of GXO Logistics’s revenue is from automated sites — a percentage six times greater than our competitors.

We started by identifying the stages of ordinary warehouse processes where we could potentially free up employees from physically demanding or repetitive roles and use their talents on more engaging and value-added tasks.

Fashion brands handling vast quantities of SKUs, in particular, can achieve higher efficiencies by implementing a warehouse management system (WMS) to integrate all other automated functions such as GTP (goods-to-person) systems, conveyors, scanners, etc. It helps to have a basic understanding of the various automation technologies available and see how these can be mapped to the different stages in the fashion warehousing process.

What challenges do brands face in the automation process?

One of the key hurdles brands have to overcome when pursuing automation is the upfront investment. This is even more challenging when brands do not have clarity on their end-to-end processes, resulting in automation that is often not fit for purpose. Working with a logistics solutions provider can help brands first seize the low hanging fruit and then work their way up. Once the company has evidence of positive results from these initial investments, it becomes easier to train employees step-by-step and prepare them for handling automation at scale.

What are the key benefits of warehouse automation?

Overall, the benefits of automation can be realised from three frontiers — brands, employees, and customers. From the perspective of brands, warehouse automation, when designed strategically, helps increase throughput and accuracy using a combination of employees, software and machines. By shifting physically demanding or repetitive processes to robots, companies can expect considerable increases in productivity. Productivity gains are also reflective of improved employee satisfaction. For instance, collaborative robots (aka cobots), designed to reduce walk-time in facilities thereby minimising the risk of injury, are capable of doubling the productivity of employees. Other technologies such as AGVs (automated guided vehicles) enable frontline teams to spend more time on value-added tasks such as improving picking and packing accuracy. Employees also feel more supported by wearable tech such as ergonomic barcode scanners, which reduce interference with natural range of motion so teams can work comfortably; and exoskeletons, which provide chest and back support to reduce lower back fatigue and injuries. At GXO Logistics’s automated facilities, improved employee satisfaction has lowered staff turnover by 30 per cent compared to the group average, translating into enormous cost-savings for our partner brands.

Lastly, automated logistics can truly help meet those elevated expectations from luxury consumers. Beneath the gloss of high-tech automation, there still exists a human touch retained purposefully to delight consumers right from placing an order to unboxing a luxury item.

How can brands optimise ROI?

Depending on the level of upfront investment they are undertaking, brands are generally aware of the expected return on investment (ROI). To estimate their ROI, companies can consider benchmarking the current budget for staff, existing systems, attrition and training, against the purchase costs of proposed automated systems. The new cost should ideally factor in both the cost-savings (from autonomous equipment and staffing), and expenses (from training, implementation and maintenance). However, ROI is not merely a function of costs. Brands should also consider how automation will help create value in other areas of the business. If upgrading to a new warehouse management software (WMS) solution, for example, businesses should evaluate how this can optimise product offerings, delivery and omnichannel capabilities, as well as customer experience.
How can various fashion warehousing processes be automated?

Five key stages in fashion warehousing where brands can leverage automation.

**Receiving and sorting**
Products are received into the warehouse from multiple sources such as suppliers, manufacturers, returns, etc.

**Packaging and shipping**

Once products are picked, they need to be packed in the most suitable packaging material with minimum environmental impact. Packages are then weighed, labelled and shipped.

*Automate with* - OMS to convey delivery details to the carrier followed by purchase and printing of labels for each order, automated carbonisation, AGVs, AMRs

**Put-away and storage**

After sorting, SKUs are put away for storage into pallets or shelves within the warehouse or relocated by cross docking to other storage facilities. This may include combining multiple SKUs to form multipacks.

*Automate with* - WMS, scanners, ASRS systems, GTP systems, AMRs, AGVs

**Picking**

Items are retrieved from the storage systems and packed for shipping. Without automation this is prone to human errors occurring as a result of manually ticking items off a pick sheet or using handheld scanners.

*Automate with* - pick-to-light put-to-light systems, voice picking and tasking, AGVs, AMRs

**Order management system**

While a WMS (warehouse management system) facilitates automation of operations within the warehouse, an OMS (order management system) connects the storefront to the inventory in the warehouse.

*Automate with* - Digital technologies like Cloud and AI to reflect instantaneous stock updates across consumer touchpoints
**Warehouse automation technologies**

Commonplace warehouse automation technologies can be mapped to various stages in the fashion warehousing process to free up employees from risky or repetitive jobs and use their talents on more engaging and value-added tasks.

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<thead>
<tr>
<th>Automation technology</th>
<th>How does it help?</th>
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<tbody>
<tr>
<td>Automated identification and data capture (AIDC)</td>
<td>AIDC technologies are used to identify, track and collect data about various items. These mainly include use of RFID, mobile barcodes, handheld scanners, etc.</td>
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<tr>
<td>Automated sortation</td>
<td>Automated sortation uses RFID, barcode readers and scanners to recognise incoming items on a conveyer system and divert them to a desired point location in the warehouse.</td>
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<td>Automated storage and retrieval systems (ASRS)</td>
<td>High-density storage and retrieval systems comprising of high volume of SKUs stacked in narrow aisles and modular designs. Often require loaders, tote shuttles and vehicular support.</td>
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<td>Autonomous guided vehicles (AGVs)</td>
<td>Material-carrying vehicles guided from point A to point B with the help of magnetic lanes, wires or sensors, which allow the vehicle to follow a set path. More suited for simple, open layout warehouse than congested spaces with human traffic.</td>
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<tr>
<td>Autonomous mobile robots (AMRs)</td>
<td>Advanced version of AGVs using GPS and laser guidance to traverse through warehouse and navigate any obstacles such as human traffic.</td>
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<td>Goods to person (GTP) systems</td>
<td>Mainly comprising of conveyors, carousels and vertical lift systems, GTP technologies help improve picking speed and free up warehouse space by reducing congestion.</td>
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<td>Pick-to-light and Put-to-light systems</td>
<td>Picking and ticking items off a paper checklist is prone to human error. By replacing paper sheets with barcode scanners synced with bulbs, pick and put to light systems eliminate the task of reading from a paper pick sheet. Using the order list contained in the bar code, workers are guided to illuminated racks containing the listed items thereby reducing search time and inaccuracy.</td>
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<tr>
<td>Voice picking</td>
<td>Similar to pick-to-light systems, voice picking employs speech recognition software and headsets to direct workers to pick up or put away racks. This rules out the need for handheld barcode scanners allowing workers to focus solely on their task using optimised pick paths.</td>
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<tr>
<td>Warehouse management system (WMS)</td>
<td>A WMS integrates with other technologies used in various warehouse processes to capture data, monitor stock levels and help analyze the overall automation workflow across different supply chain functions.</td>
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The big debate: The future of work

While brands are powering up their tech in the quest for agility and accuracy, digitisation is sparking debate about the future of work. And although the narrative of “people versus technology” is convenient, it is not an accurate view of the landscape. Advancements in technology are not only enabling greater precision, productivity and accuracy, data also shows that tech plays a critical role in improving safety and the employee experience by reducing many manual aspects of work.

While the potential reduction of warehouse jobs remains a concern for some, the World Economic Forum posts that, by 2025, “technology will in fact create at least 12 million more jobs than it destroys”. And ironically, attrition and insufficient talent supply are key reasons brands turn to automation. In a 2020 supply chain study by Accenture, over 60 per cent of companies surveyed pointed to talent availability as the main driver for robotics and automation to keep step with the hike in operations. Apart from constraints of labour availability, the case for automation is further strengthened by business’s eternal pursuit of speed and efficiency. In addition, a region’s social factors may also influence the level of industrial automation implemented by home brands. As with Uniqlo for example, Japan’s dwindling birth rate (estimated to slash the country’s population by a third to 88 million by 2065) and ageing population (with approximately one in five people being above the age of 70), were a deciding factor for the brand to fully automate its flagship warehouse. Parent company Fast Retailing, which had already replaced ‘90 per cent of its human workforce’, developed a two-armed robot in partnership with a local robotic start up, to lift and box T-Shirts for dispatch — a task which, thus far, was possible only with human involvement.

As the debate on the future of work continues, how can fashion best employ automation to optimise the brand ecosystem? For fashion and luxury, this translates into upskilling existing colleagues in areas of emerging tech and building enablement opportunities for the new workforce to consider careers in fashion fulfilment.

Humanising automation

While STEM fields such as AI, machine learning and data are slowly gaining traction among fashion design, retail and marketing graduates, the application of these technologies in fashion’s supply chain context could do with refresh from the industry itself. GXO Logistics, for example, runs a graduate programme for women in...
leadership, advocating a career in fashion supply chain right at the start of their professional ladder. With LVMH committing to hiring 25,000 people under the age of 30 in all facets of their business, including supply chain operations by the end of 2022, it’s hardly surprising that brands such as Louis Vuitton and Dior are considered as a positive force for change by luxury consumers. As reported by Harvard Business Review, tech-savvy candidates are also offered a 10-15 per cent boost in wage premiums when compared to their non-computer literate counterparts — a key incentive for fashion graduates to consider options in supply chain automation.

Without doubt, the future is about the optimal combination of people and technology. By learning to combine people with the power of technology, companies can create a great place to work, improve warehouse efficiencies, satisfy consumer demands and reduce environmental footprint, thereby enriching the complete brand experience. After all, automation doesn’t necessarily imply the absence of humans. At least, as of today, we still have a long way to go before technological singularity.