

Shining a light on warehouses: how automation is transforming logistics



Ever wondered what goes on inside a giant high-tech logistics site? We share our insights from a visit to a next-generation site run by GXO Logistics, revealing how technology is meeting the changing needs of today's consumers.



Aude Martin
Senior ETF Investment Specialist

In recent years technology has transformed the logistics industry. From unmanned aerial vehicles to item-picking robots, innovative technologies are revolutionising how goods are stored and dispatched.

Earlier this year, we visited a GXO Logistics*-run site in the UK to see the latest logistics technology for ourselves, shining a light on this hidden world. Arriving at the warehouse, the first thing we noticed was that the carpark was virtually empty.

Despite occupying 638,000 square feet – making it comfortably bigger than the grounds of Windsor Castle – the site runs with only around 200 staff, split across three shifts providing 24/7 coverage.

End-to-end digitisation

The term 'digital warehouse' made sense to us as soon as we stepped into the facility: automation begins the moment goods enter the warehouse, and continues through to pallets being loaded onto delivery trucks.



Matthew Kemp
Senior Investment Sales Manager

Something that surprised us was how quiet and neat the warehouse was, as we expected a lot of noise from conveyor belts and vehicle reversing sirens. However, as Neil Shelton, Chief Strategy Officer at GXO Logistics, quite rightly said, "A chaotic solution is a site which does not operate efficiently."

The warehouse handles all size of orders, from small Sainsbury's* Local deliveries comprising 10 different products on a smaller pallet to the biggest Tesco* supermarket orders, with single products displayed over 20 pallets.

The site is fully automated, with a monorail and conveyers transporting goods in different areas for picking, sorting, pallet and goods gathering, wrapping, goods and delivery information labelling. Different sensors and optical technologies are leveraged to check whether the goods are safely placed on pallets throughout the site.

Inside the warehouse: the technologies in use

The packing station was particularly interesting, as we could witness collaboration between employees and technologies, including ‘cobots’ – robots that are designed to operate collaboratively with humans. Robot packing arms can pack twice as fast as their human counterparts, but struggle with certain smaller or more delicate items. This is where humans step in to ensure delicate goods aren’t damaged.

The labelling station was also fascinating. In a single 12-hour day a worker can label 80,000 cases. This incredible rate of productivity is possible thanks to automated trays and artificial intelligence camera systems helping optimise the workflow. Labelling outbound goods means the system knows exactly how many goods, and which particular goods, are headed to which location.



Inside the site, a range of technologies aim to maximise efficiency.

Company focus: GXO Logistics

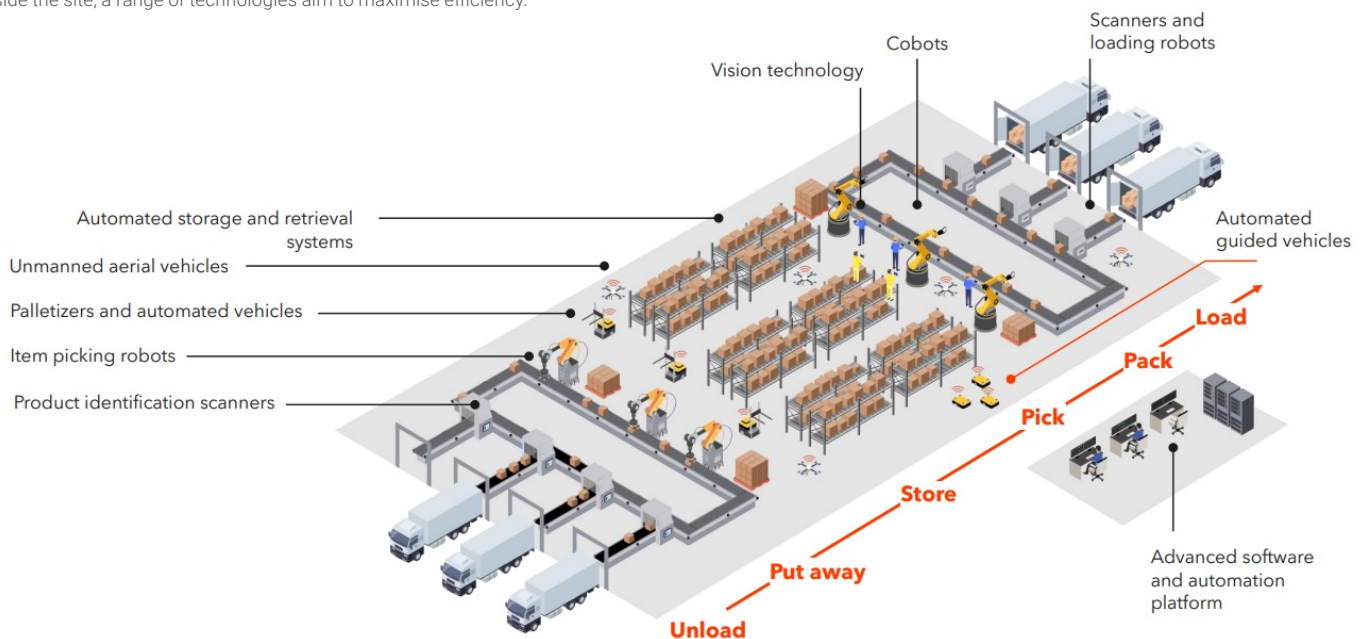
GXO Logistics provides bespoke warehousing and fulfilment services and operations to clients across industrial and manufacturing, food and beverage, omnichannel retail and consumer packaged goods, and tech and consumer electronics.

The needs of GXO Logistics’ clients vary widely, as each has unique requirements.

Nonetheless, GXO Logistics has the same common objective for all partners who outsource logistic activities with them: reduce costs while increasing volumes, capacity, efficiency, safety and warehouse usage. Ideally, a warehouse should be used to its maximum capacity.

By the numbers: GXO Logistics’ technology advantage

- More than 30% of revenue from tech-enabled warehouses, compared with an industry average of around 8%¹
- Over 10,000 pieces of technology operational in customer sites globally²
- Site-level automation can drive around an estimated 80% staff training time reduction³



Source: GXO Logistics, 2023.

1. Source: GXO Logistics, third-party research.

2. Source: GXO Logistics.

3. Source: ibid.



From left to right: VettaFi's Richard Lightbound, Matthew Kemp and client Graham Withers Peregrine Black.

The expert's view: the themes behind the technology

Our expert partner in robotics and automation Richard Lightbound, pictured above, left, was with us on the day of our visit, and he shared some thoughts after the trip. Below is a summary of his key points.

The world is increasingly integrated and demanding, and subsequently relies on a complex, almost magical, movement of goods globally. Resilience in systems is only as good as the weakest link.

Advancement in supply chain and logistics technologies spans many areas, such as automation and robotics in and out of warehouses, at ports, multi-modal transportation, planning and beyond.

Things moving generally require energy, and the world is seeing a shift of electrification, which aims to reduce the total energy requirement.

Any disruption across any of these areas (from a price or availability or time perspective) can cause significant disruption and inflation, as seen by events such as COVID-19, the Suez Canal disruption, the shortage of chips, etc. Global resilience depends on making fail-safe and dependable systems.

A key theme to think through that applies beyond supply chains and logistics is the concept of maximum efficiency. This is the idea that assets and consumption can be optimised both through superior technology and policy changes such as three or more person lanes.

Many have pointed to Tim Cook's supply chain background as his 'super power' helped him take Apple to a multi-trillion-dollar market cap. There's a reason why Apple* partners with GXO Logistics in the US.

Conference insights

This month one of our research partners attended The Manifest: The Future of Supply Chain & Logistic conference, where various innovators within the space, including GXO Logistics, Zebra*, Rockwell*, Ocado*, Symbotic* and Kardex*, were in attendance.

Additionally, they were joined by other major logistics ecosystem players such as DHL*, Maersk* and Walmart*, among others. Here are the three biggest takeaways from the event:

1. Reshoring is a boon for logistics, not just manufacturing
2. Inefficiency does not scale. Best practices are necessary as one weak link nullifies and impacts the efficiency of other areas. Companies like GXO Logistics have figured out how to test and automate across numerous facilities globally and implement new software and hardware
3. Humanoid robots are getting pretty good. The utilisation of robots remains low, but we're now at an inflection point where their capabilities far exceed humans at both 'rapid, repeatable' tasks and, increasingly, tasks requiring greater dexterity or with more unpredictable variables

* For illustrative purposes only. Reference to a particular security is on a historic basis and does not mean that the security is currently held or will be held within an LGIM portfolio. The above information does not constitute a recommendation to buy or sell any security.



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