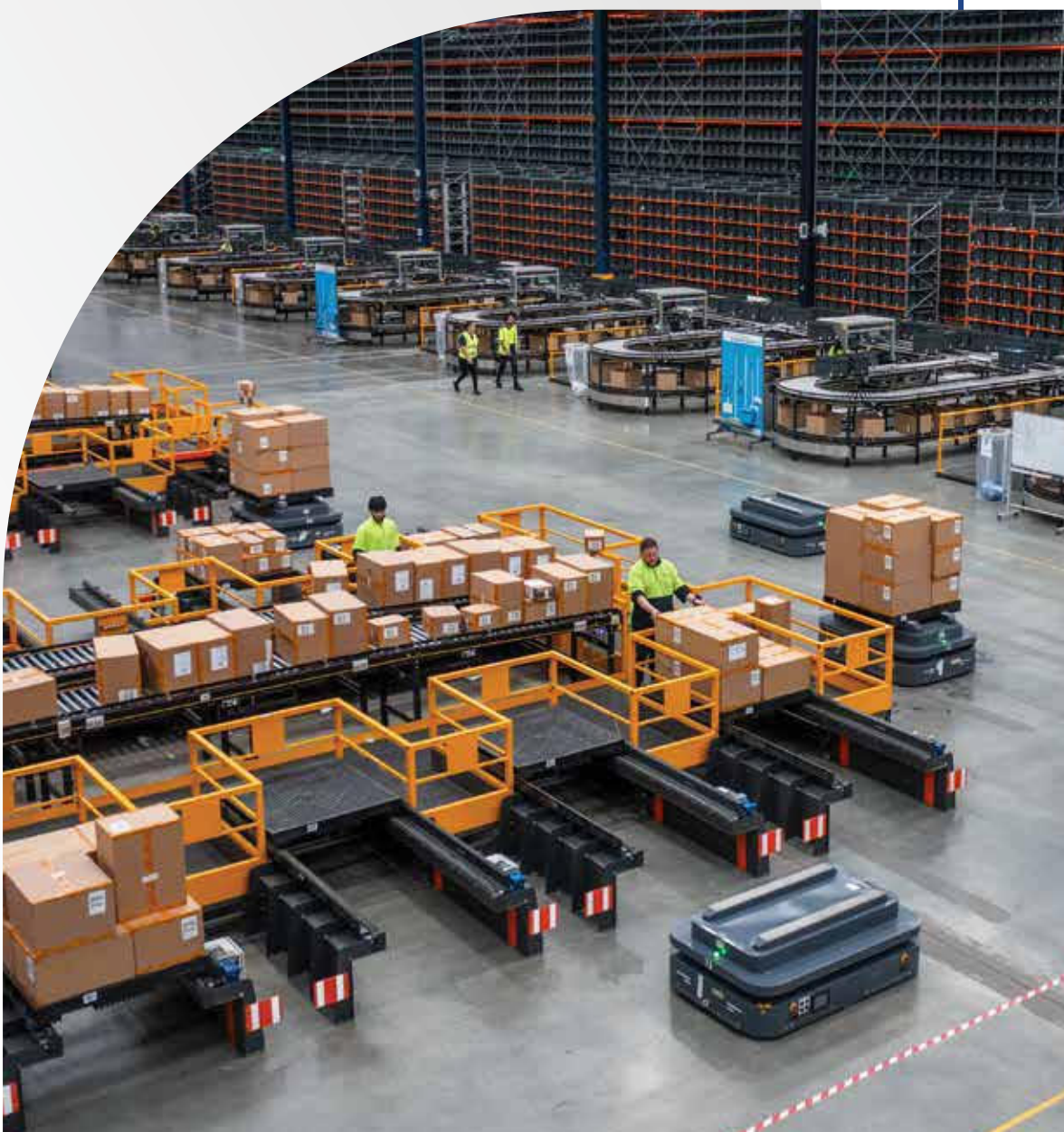
ADDVERB

4 Reasons to Combine Fixed & Flexible Automation



The last decade has been one of continuous disruption for warehouse logistics and global supply chain. Businesses have faced a multitude of complex challenges, from the rise of e-commerce and SKU proliferation to the ever-increasing pressure to slash delivery times. Instances of supply side disruptions and shortages which had been rising even before the pandemic, revealed the limitations of global supply chains when pushed to the breaking point during the pandemic.

Although the darkest days of the pandemic are behind us, most in the logistics sector expect its lingering effects to impact their business for some time to come. In a recent CNBC survey, more than half of logistics managers at major companies and trade groups said they do not expect the supply chain to return to normal until at least 2024 or 2025.

Logistics businesses today are facing several uphill battles, some familiar, some new. Labor market constraints remain a problem, making it difficult for warehouse managers to hire enough staff to keep up with surging demand.

In a new industry report by MHI and Deloitte, 57% of supply chain executives said hiring and retaining qualified workers was their single biggest challenge. Thanks to the law of supply and demand, that means any qualified labor that is available will come with a hefty price tag.

Due to the labor shortage, businesses have trouble adapting to changing demand, leading to inefficient operations and longer delivery times. Staffing pressures have only increased with the growing expectation for services like same-day delivery, and the need for businesses to manage a larger and more varied number of product SKUs.

Given the manifold challenges those in the logistics sector face today, it is perhaps no surprise that 87% of survey respondents in the same MHI and Deloitte survey believe that by 2027, autonomous, connected, and intelligent warehouses "will be the norm."

Power of Automation

Challenging times are an engine for innovation, and that is exactly what has been happening in logistics. Seeking to gain an edge over competitors, forward-looking companies are embracing warehouse and material handling automation solutions to ensure continued timely deliveries and quickly scale their business to remain in sync with demand. Of course, different businesses have different logistics challenges, and there is no one-size-fits-all automation solution. **A company's size, the type and variety of products being shipped, industry demand, and even the physical layout of the warehouse or factory, all determine which combination of technologies is optimal for their specific logistics needs.**

Today there are two "flavors" of automation available in the industry: fixed (rigid) and flexible (mobile).

Both serve the same ultimate purpose of boosting speed, efficiency, and safety, allowing factories and warehouses to get more done with less staff by outsourcing repetitive, time-consuming, or even dangerous tasks to an army of robot helpers. Automation lets human warehouse workers do their jobs faster by providing mechanized assistance with everything from picking and packing to sorting and storage.

Fixed automation (sometimes called rigid automation) is an automation solution that requires static infrastructure like racks, shelves, tracks and conveyors, utilizing machinery like carton shuttles, pallet shuttles, and stacker cranes for automated storage and retrieval.

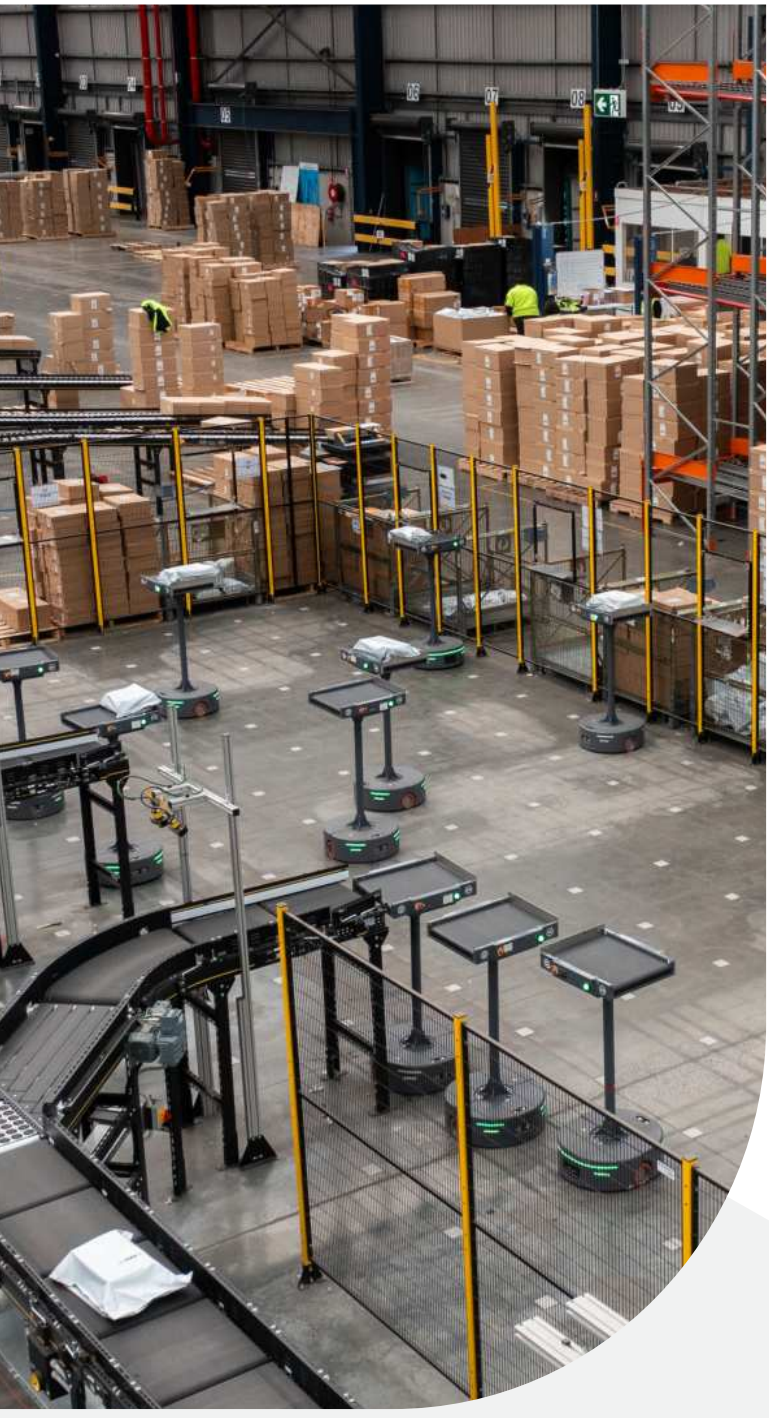
Flexible automation involves systems that are completely mobile, such as Autonomous Mobile Robots, Sorting Robots, Automated Guided Vehicles, and more. Rather than being bolted to the ground like fixed automation solutions, flexible automation is configurable and modular to scale operations as needed.

Despite their similarities, how they work and how they are implemented vary considerably. Let us look at the factors why you should combine fixed and flexible automation.

> **"Human and Robot create a symphony of efficiency in modern warehouse where automation empowers human potential and collaborations breeds success."**
>
> **— Sangeet Kumar**

01 Counter labor shortage

For starters, let us come to a common definition of the types of warehouse automation currently available.



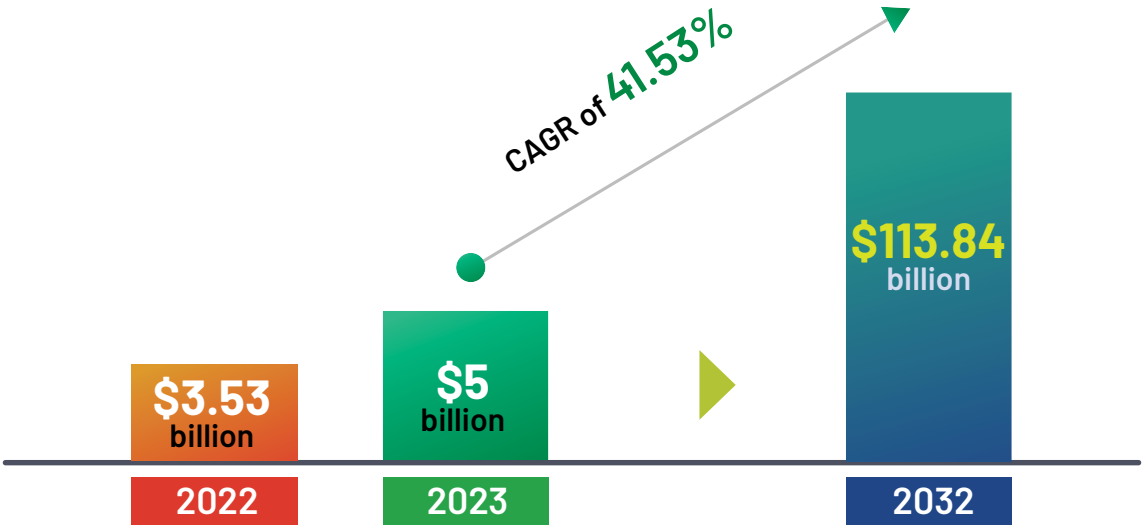
> **Instawork reported that, on average, people got paid $2.54 more per hour. Almost 20% of companies increased wages by $3 per hour. However, even with these pay increases, 73% of warehouse operators are facing labor shortages.**

Post pandemic demand has created new difficulties in an already highly constrained labor market. **A Workforce Institute study found that even before the pandemic, the manufacturing industry was facing a 6 million worker shortfall.** On top of that, the industry's move to reshoring due to the pandemic has only worsened the labor shortage. Without enough workers to do the necessary order picking and handling in warehouses, companies are being forced to decide between automating more of their logistics processes or running the risk of being unable to deliver products on time.

If we break down the labor workforce deployed in a warehouse, we find that almost 60% of the workforce is engaged in picking, and around 70% of their time is wasted in moving from one location to another. **A right combination of Fixed Automation solution like a Carton Shuttle System clubbed with a fleet of Mobile Robots can help create a truly dynamic Goods-To-Person system that would help eliminate the wasteful employee travel time.** Integrating an intelligent Cobot for picking at the GTP stations, would further help create a completely autonomous warehouse automation solution

02 Enable Micro-Fulfillment

The global micro fulfillment market size was valued at



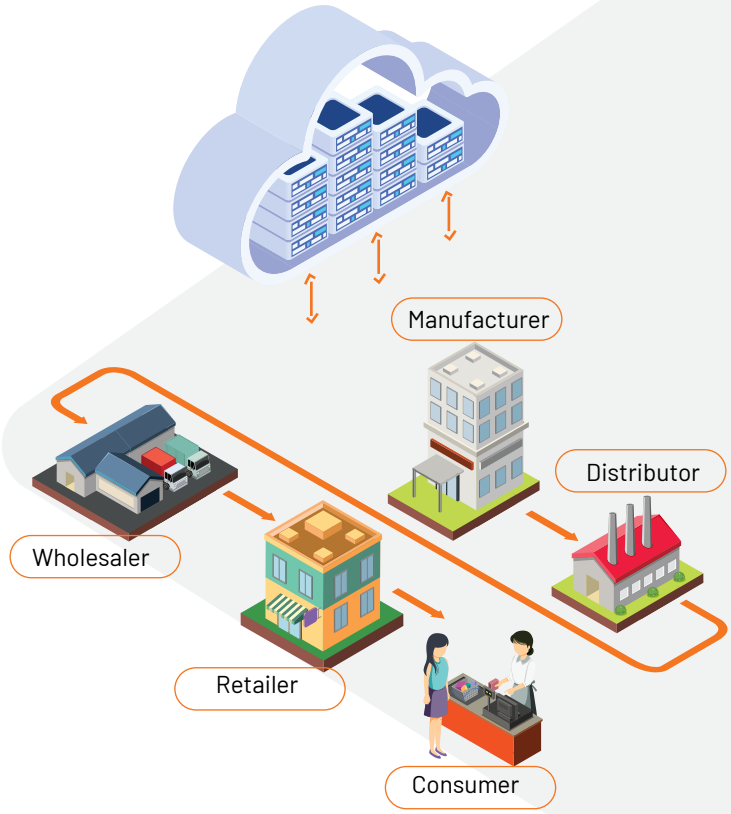
https://www.precedenceresearch.com/micro-fulfillment-market

Micro-fulfilment Center (MFC) refers to the small-scale fulfilment centers (warehouses) that help to cater to the e-commerce demand in urban areas. MFCs enable quick and accurate picking, packing, and shipping of orders to customers and solve the complex problems of last mile, enabling a business to deliver to a customer within an hour of placing an order across different delivery models including home delivery or curbside delivery. A network of MFCs can essentially help an e-commerce business to create a sustainable competitive advantage by ensuring fast product picking, quick last mile delivery and reduced fulfilment expenses.

Since the MFCs are in the heart of the cities, they are typically built in a very small space up to 15,000 sq. ft. and as they need to fulfil orders very fast, they require right automation solution that helps in handling a wide variety of items, optimizes order picking and packing but also enable easy restocking as MFCs cannot hold a large amount of inventory. This can only be done through a configurable software and the right mix of fixed and flexible automation. MFCs need to optimize the space as they have a very small footprint, utilizing the available vertical height of the system allows you to handle more volume. A fixed automation system like a Carton Shuttle helps not only in inventory storage but also in buffering and sequencing of the inventory to help you deliver the order faster. **Since the order frequency and volume can keep on changing, it is important to keep a flexible material flow in the MFCs and this is where Autonomous Mobile Robots can play an important role.** Instead of fixed conveyor networks, AMRs can be used for order picking and consolidation, giving ample room for changing the material flow depending on the business requirement. Robots can be added orremoved to meet the business requirement. A completely automated material flow also allows for high inventory visibility, that is critical for an MFC.

03 Lights-out Warehouse

Intralogistics and the warehouse distribution industry are experiencing tremendous growth, which presents new challenges for businesses in the sector. With the dawn of the phygital era, both offline and online channels are merging to create omnichannel fulfillment requirements. A combination of fixed and flexible automation enables a customer to implement a lights-out warehouse, that was not possible earlier. A warehouse operation typically comprises of five broad operations, inward, storage, picking, sorting, packing, and shipping along with two broad handling units Pallets or Cartons and Crates. A combination of fixed and flexible automation solution like Mobile Robots, Sorting Robots, Pallet & Carton ASRS systems, Multi-Carton Picking Robot, Vision Picking robot along with conveyor systems enable automation of all the processes. Also, an effective warehouse execution system enables strong integration between different robots and



automation systems, providing effective tracking and tracing of inventory and prioritize the order fulfilment sequences to meet the business requirements. An intelligent powered WES by cloud can levearge AI tool effectivly optimise task , manage the inventory and material flow based on on warehouse conditions and work priorities.

Automating end-to-end solutions give warehouse operators and managers a holistic view of their operation, enabling them to execute complex operations and manage a variety of tasks.

04 Scale and Configuration For Tomorrow's Marketplace

In the ever-changing landscape of logistics, predicting even the near future can be challenging. While businesses might be tempted to hastily adopt automation to match technological trends, success lies in a methodical approach. It's crucial for companies to assess their needs before selecting the right blend of automated technologies.

Automation offers a solution for handling unpredictability and facilitates rapid scalability without workforce adjustments. By enhancing speed and efficiency in operations, businesses can swiftly process orders, meeting client demands reliably. This adaptability, achieved through modular systems, prepares businesses to tackle unforeseen changes.

The most effective solutions are those that can quickly adjust, especially in unexpected scenarios. Flexible automation can be reshaped as business requirements evolve, ensuring nimble logistics operations. This could entail introducing or removing Autonomous Mobile Robots, Sorting Robots, or Automated Guided Vehicles. The modular and configurable software driving these robots enables seamless module swaps to accommodate new functionalities.

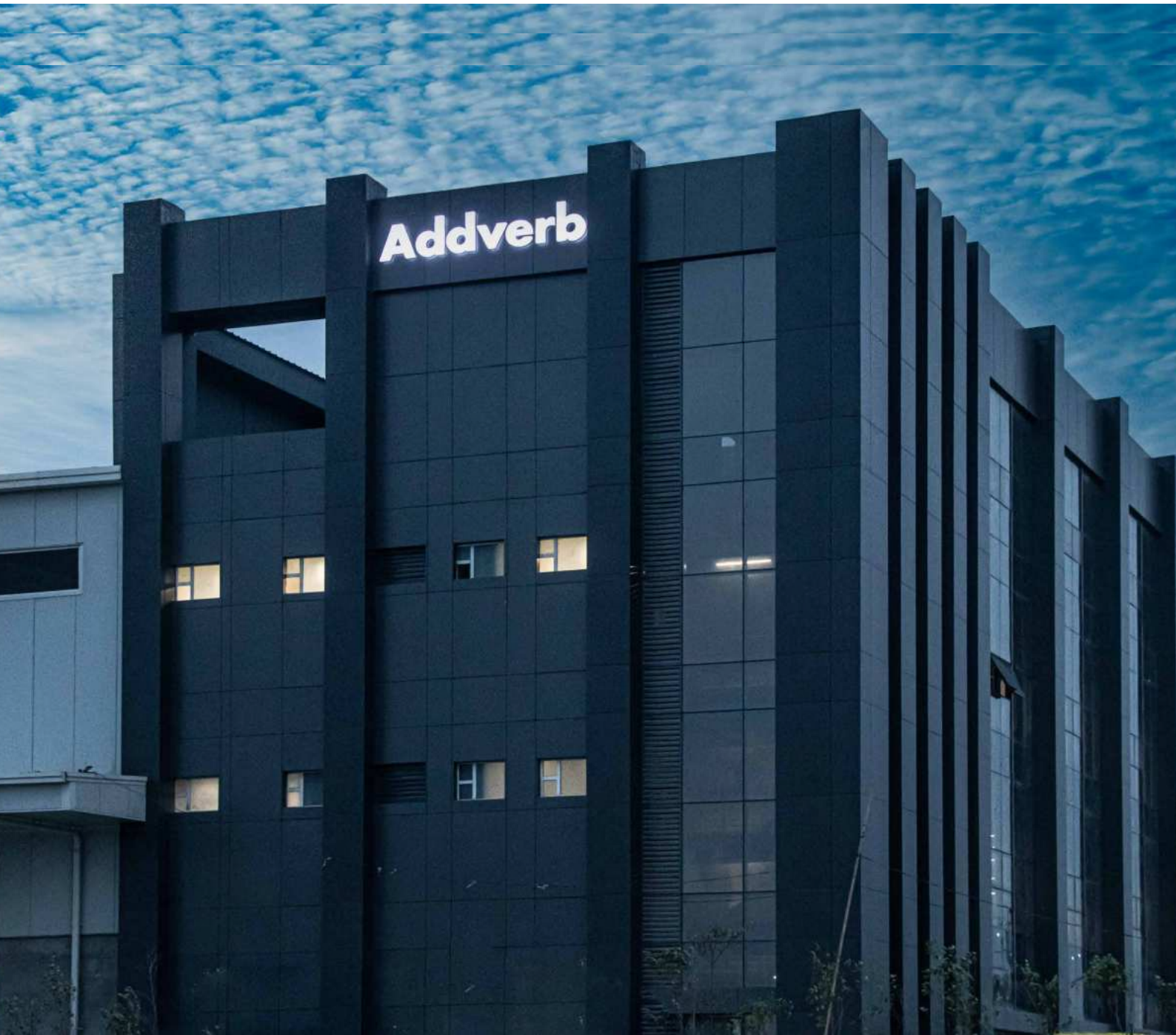
> **Automated and efficient warehouses in the survey were 76% more likely to boost inventory accuracy to 99% or higher, 36% more likely to have reduced labor costs an average of 3% per year, and 40% more likely to consistently ship within one day of an order's placement**

An effective software dynamically adjusts robot paths, optimizes movement, and adapts batch picking to enhance efficiency. AI not only supplies data but also fine-tunes workflows for optimal output. With its quick data processing, real-time decision-making, and self-learning capabilities, AI proves valuable for logistics and warehouse management.

For navigating automation complexities, one needs an experienced partner, aiding in the design and transformation of logistics operations. Through tailored software, hardware, and consulting, companies can uphold efficiency and reliability in supply chains.

About Us

Addverb Provides end-to-end smart robotic solutions, transforming warehouses into efficient ecosystems. Its 'Addverb Advantage' approach includes discovering client challenges, designing tailored automation, seamless delivery, and dedicated after-sales support. This ensures reliable, accurate solutions that meet individual needs. Addverb's solutions, blending fixed and flexible automation, enhance fulfillment speed, accuracy, and productivity. The company's diverse clientele includes Amazon, Flipkart, DHL, Coca-Cola, Unilever, and more, totaling over 300 customers across various sectors Addverb's innovative technologies, powered by enterprise warehousing software, drive its impactful solutions for industry leaders.



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Fixed & Flexible Warehouse Automation Solutions

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