



Warehouse Vision Study

The Rise of Collaborative Intelligence

Frontline Workers
Growing Affinity for Tech

Explore how human-centered solutions are reshaping warehouses, enabling technology and people to collaborate for smarter, more intuitive operations.



Empowering Performance

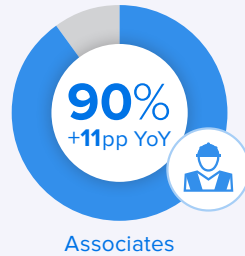
Today's warehouse workers bring elevated expectations to the workplace, inspired by the technology they rely on in their daily lives. They seek employers who provide advanced tools that simplify tasks, improve accuracy and enhance their experience. However, labor challenges persist, with decision-makers highlighting difficulties in attracting skilled workers, reducing training time and meeting seasonal demands. Augmenting labor with technology and devices is emerging as the most effective way to introduce automation into warehouse operations. This balanced approach supports employees while enabling companies to meet operational demands, ensuring workers and technology collaborate seamlessly.


Labor Challenges Persist in Warehousing

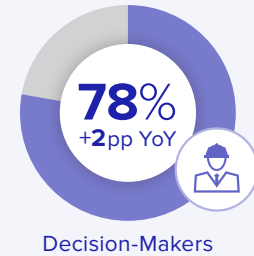
Decision-makers highlight ongoing workforce struggles impacting operations



Tech First: The Smart Path to Warehouse Automation

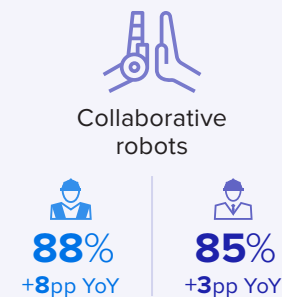
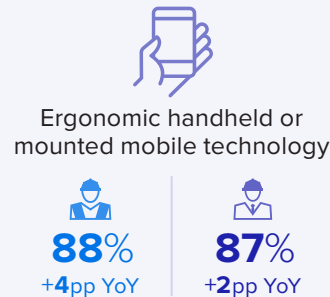



Acknowledge augmenting labor with technology and devices first is the best way to introduce automation into a warehouse



Aligning Forces: Rising Demand for Tech-Driven Solutions

Percentage of respondents that agree technologies are important for modern warehouse operations



Transforming the Frontline

Flexibility, Safety and Innovation in Warehousing

Warehousing is undergoing a significant transformation as technology redefines workers' roles in achieving operational success. Today's associates and decision-makers recognize automation as a game-changer in eliminating repetitive, manual tasks. Nearly three-fourths of associates say they spend too much time on tasks that could be automated, highlighting a pressing need for advanced solutions that enhance efficiency and free employees to focus on higher-value work.

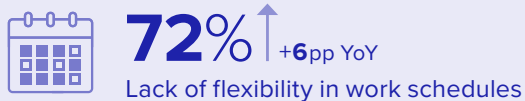
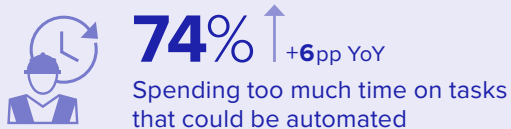
Beyond productivity gains, automation is driving safer, more adaptable workplaces. Over eight in 10 associates and 82% of decision-makers agree that technology is helping frontline workers exceed productivity goals while reducing physical strain and preventing injuries. By enabling workflows to respond seamlessly to shifting demands, advanced tools ensure warehouses can maintain peak performance during high-demand periods.

For decision-makers, the priorities are clear: invest in automation to mitigate errors, offset labor challenges and meet critical service-level agreements. In a competitive market, these steps are essential for unlocking new levels of flexibility and building a workforce equipped to handle the demands of a dynamic supply chain.



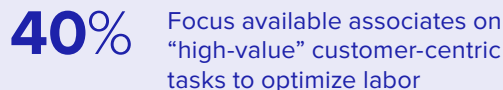
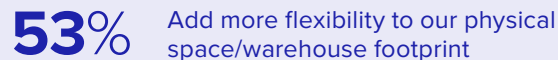
Time for Change: Warehouse Workers Seek Automation and Safety Improvements

Percentage of associates concerned about:

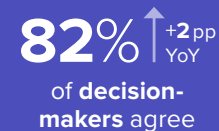


Automation Priorities: Ranking Top Drivers

Percentages of decision-makers currently automating or planning to automate workflows within three years, ranking each statement in their top three priorities



Productivity Gains: Technology Helps Frontline Workers Excel



The increased use of technology and automation helps frontline workers meet or exceed productivity goals

Raising the Bar

Paving the Way for the Warehouse of Tomorrow

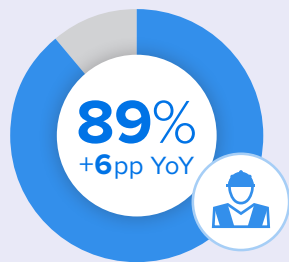
Modern tools and automation are advancing the warehouse landscape, empowering workers and enabling operational transformation. By enhancing efficiency and simplifying tasks, advanced technologies redefine how teams engage with their work. When workers are equipped with such tools, 89% of associates feel more valued and connected to their roles, while 81% of decision-makers agree that automation improves overall morale. These findings demonstrate the critical role of technology in fostering a motivated and high-performing workforce.

Technology's role extends beyond workforce engagement to workforce retention. An overwhelming 93% of associates and 91% of decision-makers agree that adopting robotics and modern devices is essential for building a resilient workforce. Warehouses that embrace these innovations are better positioned to attract and retain skilled talent in a competitive market, ensuring they remain agile and prepared to adapt to the demands of an ever-changing industry.

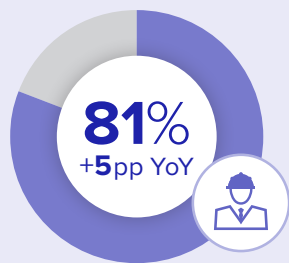
The benefits of automation ripple across the organization, driving improvements in efficiency, accuracy and scalability. By increasing worker productivity, reducing errors and shortening cycle times, automation enables warehouses to meet service-level agreements and handle seasonal demand with greater flexibility. These advancements allow warehouses to optimize processes, laying the foundation for long-term operational excellence.



Boosting Morale: Tech Tools and Automation Drive Employee Value



of associates feel more valued by their employer when they are provided with the technology tools and automation to help them work



of decision-makers agree adding automation to collaborate with frontline workers will improve overall morale

Unlocking Potential: Key Benefits Driving Automation Adoption

Ranking according to decision-makers

- 1 Increase worker efficiency and productivity
- 2 Reduce order errors and manual picking
- 3 Reduced cycle time
- 3 Reduce operational and facility supply spending
- 4 Deploy within existing facilities without major infrastructure changes
- 5 Provide flexible scale to meet seasonal volume demands

Recognizing Technology's Role in Attracting Talent

93%
+7pp YoY
of associates agree



Warehouse technologies, robotics and devices would help attract and retain workers

91%
+3pp YoY
of decision-makers agree

Pushing Boundaries

The Power of Technology, Driving Front-Line Performance

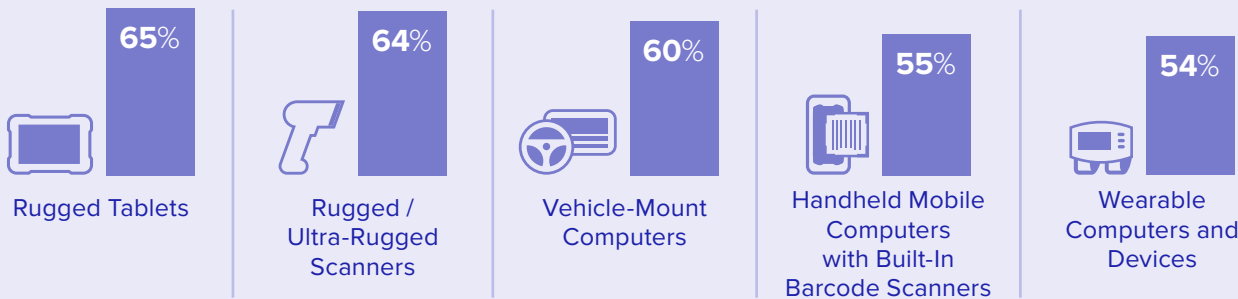
Human-centered automation is redefining warehouse operations, providing workers with devices that enhance safety, efficiency and precision. Mobile computers, handheld scanners and wearables improve ergonomics, reduce fatigue and enhance comfort, alleviating physical strain for workers. These technologies also enable teams to access real-time data, communicate seamlessly and perform tasks with precision, even in the most demanding environments. Integrating these tools enables warehouses to increase productivity while creating a safer, more sustainable working environment.

More than half of warehouses plan to adopt handheld mobile computers within the next five years. Decision-makers are also prioritizing wearables (64%) and rugged tablets (65%) to address current challenges and prepare for the future. As operations become more complex, the demand for reliable, high-performance technology continues to grow. Equipping teams with innovative devices empowers workers to adapt and excel in fast-paced, competitive environments, driving sustained efficiency and flexibility.

AI-powered applications further elevate these technologies by enhancing safety, improving product quality and optimizing inventory management. From hazard detection to predictive analytics and anomaly detection, these tools represent just a fraction of AI's transformative potential for warehousing. By blending human expertise with advanced automation, warehouses are scaling operations with agility, maintaining excellence under pressure and adapting to the ever-changing demands of today's dynamic supply chain.

Human-Centric Automation: Decision-Makers Highlight Device Adoption Plans

Decision-makers plan to implement in 1 to 5 years



Driving Change: The Impact of AI Apps

Where decision-makers see the highest impact of AI apps on handheld devices



Safety:
Detect potential hazards, issue alerts for prevention



Quality Control:
Detect issues or anomalies



Inventory Management:
Forecast needs from past data, streamline stock levels, maximize space

A Vision for the Future

Elevating the Workforce, Modernizing Warehousing

The warehouse industry is on the cusp of a significant transformation, with technology emerging as a catalyst for unlocking new levels of operational potential. Advanced solutions, from automation to data-driven insights, are turning warehouses into high-performance hubs where innovation and human expertise converge to deliver measurable results. Today's workforce sees advanced technology as essential—not only for enhancing safety and productivity but also for driving engagement and evolving warehouse operations to meet modern demands. For decision-makers, this is a pivotal opportunity to adopt innovative tools that optimize processes and build a resilient, adaptable workforce equipped for the future.

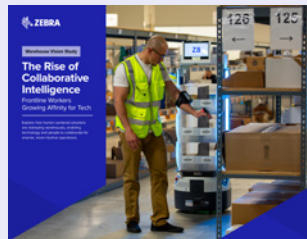
About the Study

Zebra Technologies commissioned a global research study to explore the trends and technologies shaping warehouse and distribution center operations. Conducted online by Azure Knowledge Corporation, the study gathered insights from over 1,700 associates and decision-makers across manufacturing, retail, transportation, logistics and wholesale distribution.

The series focuses on three key themes:



Unlocking Warehouse Precision
Where Data and Visibility Drive Peak Performance



The Rise of Collaborative Intelligence
Frontline Workers Growing Affinity for Tech



The Great Warehouse Convergence
Where Technology, Efficiency and Innovation Align

To view the entire Warehouse Vision Study series, visit zebra.com/warehousingvisionstudy

To learn how Zebra can help your warehouse performance reach new heights, visit zebra.com/warehouse

About Zebra Technologies

Zebra (NASDAQ: ZBRA) empowers organizations to thrive in the on-demand economy by making every front-line worker and asset at the edge visible, connected and fully optimized. With an ecosystem of more than 10,000 partners across more than 100 countries, Zebra serves customers of all sizes, including 94% of the Fortune 100, with an award-winning portfolio of hardware, software, services and solutions that digitize and automate workflows.



NA and Corporate Headquarters
+1 800 423 0442
inquiry4@zebra.com

Asia-Pacific Headquarters
+65 6858 0722
contact.apac@zebra.com

EMEA Headquarters
zebra.com/locations
contact.emea@zebra.com

Latin America Headquarters
zebra.com/locations
la.contactme@zebra.com

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