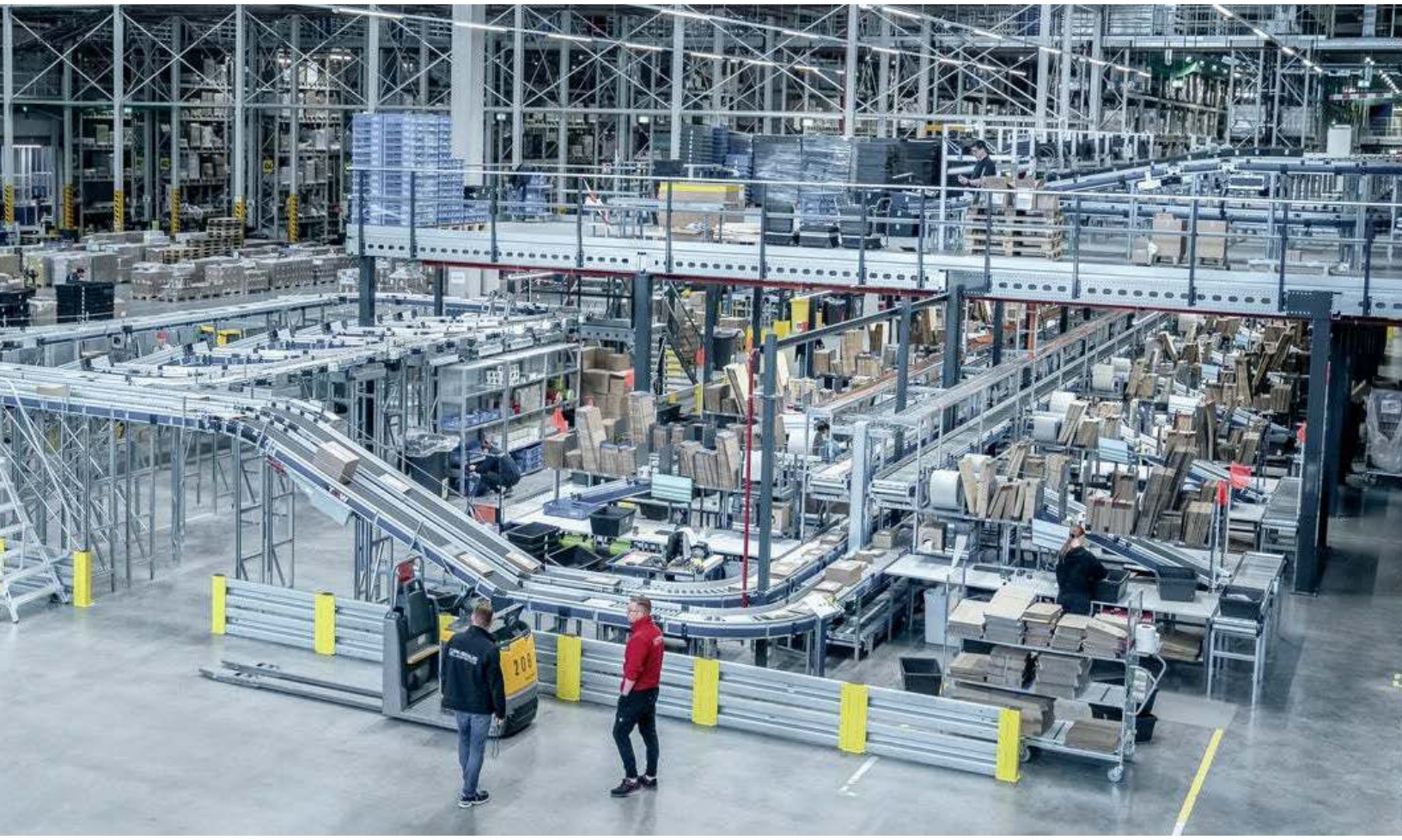
MODERN MATERIALS HANDLING

RESEARCH REPORT

Integrated Warehouse Systems Survey Report



New survey finds adoption of integrated warehouse systems is accelerating as organizations race to close the widening gap between their connected and manual operations.

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Introduction

Integration has become the driving force in warehouse automation. What may have been a technical side note just a few years ago has become integral to faster, smarter operations. Companies that connect their systems see measurable gains in speed, accuracy and efficiency, while those still working in silos are feeling the pressure to catch up.

Integrated warehouse systems aren't just a trend in 2026; they're shaping how the fulfillment industry invests, competes and grows. In fact, nearly all (75%) Integrated Warehouse Systems Survey respondents view connected systems as essential to achieving the full benefits of automation. That view is reshaping how companies plan and prioritize technology.

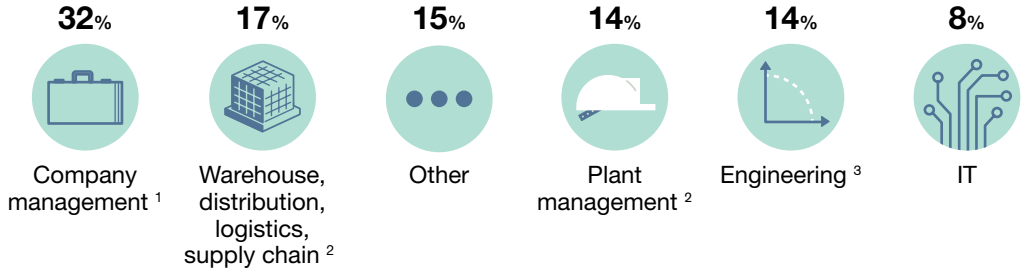
The survey findings show that even small steps can make a big difference when automation and integration become part of a broader integrated strategy. For the survey, Kardex worked with Peerless Research Group to better understand how companies are approaching warehouse integration in modern warehouses. This report highlights what's driving investment decisions today and where the biggest opportunities lie as the next wave of automation takes hold.

Snapshot of the Survey Sample

Which best describes your job function?

[Q29, 30, 31 & 32] The Integrated Warehouse Systems Survey drew responses from companies representing a wide range of facility sizes, industries and job roles. About 23% of participants manage large-scale operations of more than 250,000 square feet, while 17% operate warehouses between 100,000 and 250,000 square feet. The remaining 60% manage smaller facilities under 100,000 square feet. Respondents span multiple job functions, including company management (32%), warehouse, distribution, logistics or supply chain (17%), plant management (14%), engineering (14%) and IT (8%).

Figure 1
Which best describes your job function?



[1] CEO, president, VP, GM, etc. [2] director, manager, supervisor, etc. [3] plant, materials, industrial, manufacturing, project, other

Figure 2
Which best describes the nature of your business?

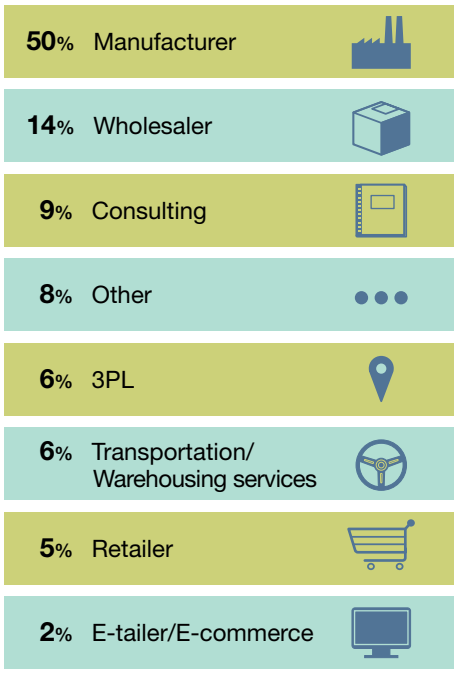
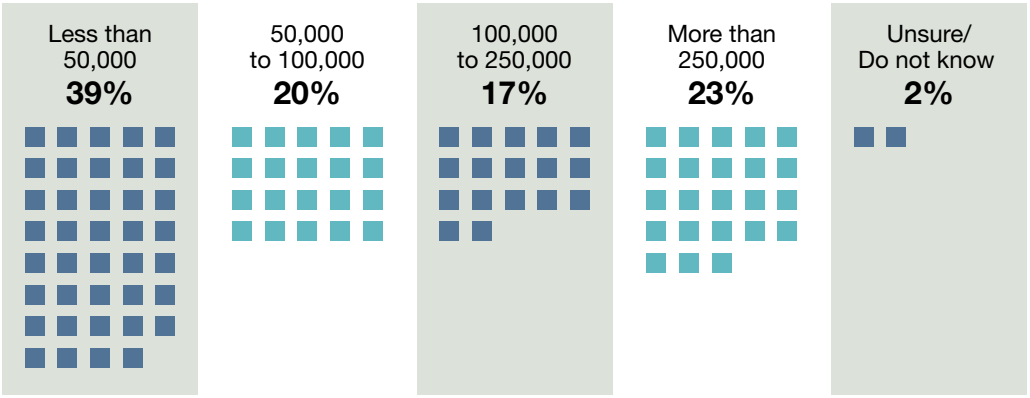


Figure 3
What is the primary product or service at your location?

- 3% Aerospace
- 6% Automotive and transportation equipment
- 5% Business/consulting services
- 6% Chemicals/Pharmaceuticals
- 5% Computers and electronics
- 5% Electrical equipment
- 6% Fabricated metals
- 11% Food, beverage and tobacco
- 3% Furniture
- 6% Industrial machinery
- 15% Other manufacturing
- 6% Other non-manufacturing
- 3% Paper/Printing
- 2% Primary metals
- 3% Retail trade
- 2% Textiles/Apparel
- 6% Transportation/Warehousing services
- 8% Wholesale trade

Figure 4
What is the total square footage of all your warehouse/distribution center facilities?



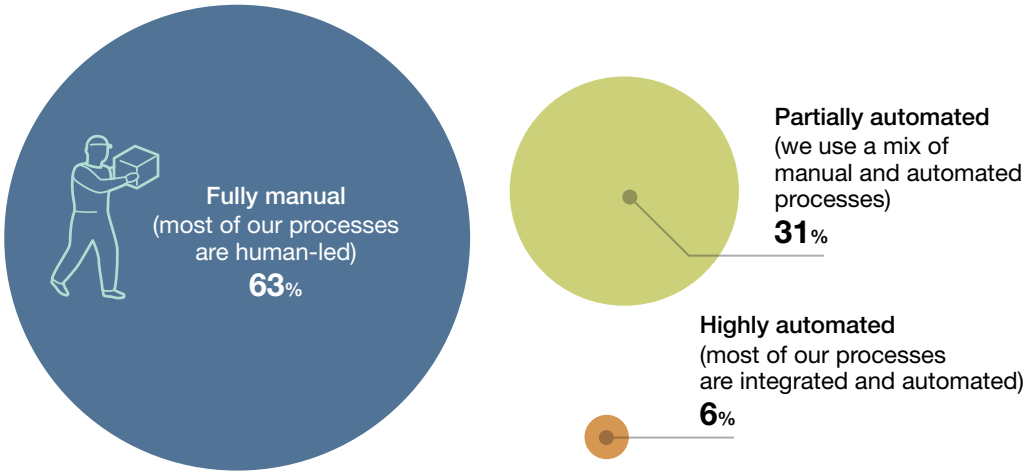
How would you describe your company's current level of warehouse automation?

Half of the respondents come from manufacturing companies, followed by wholesale (14%) and consulting (9%). The industries represented include food, beverage and tobacco (11%), wholesale trade (8%), automotive and transportation equipment (6%), chemicals and pharmaceuticals (6%) and other manufacturing (12%). About 10% of companies report annual revenues between $100 million and $249.9 million, while 14% fall between $50 million and $99.9 million. The remaining 48% report annual revenues below $50 million.

[Q1] More than half (63%) of the survey respondents say their operations are still fully manual, with most processes being human led. Thirty-one percent run partially-automated facilities that rely on a combination of manual and automated processes, and 6% are highly automated. This data reflects an industry in transition, where manual operations remain common but automation continues to advance.

Figure 5

How would you describe your company's current level of warehouse automation?



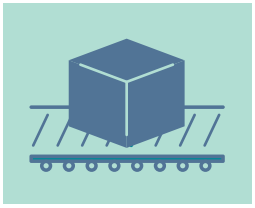
Advanced Systems Take Hold

Which of the following foundational technologies for process improvement are currently in use in your facility/DC?

[Q2] Companies that have already adopted some level of automation rely on several foundational technologies to improve daily operations. About 63% use barcoding or RFID for automatic data capture and inventory tracking; 53% rely on simple conveyors and sortation; and 17% use pick-to-light, put-to-light or voice-picking systems to guide workers.

Figure 6
Which of the following foundational technologies for process improvement are currently in use in your facility/DC?

63%
Barcoding/RFID
Technologies for automatic data capture, tracking inventory at item, box, or pallet level



53%
Simple Conveyors and Sortation
Conveyors for moving items between fixed points and basic sortation for directing products

17%
Pick/Put-to-Light and Voice Picking
Systems that use lights or voice commands to direct human workers

None of the above **17%**

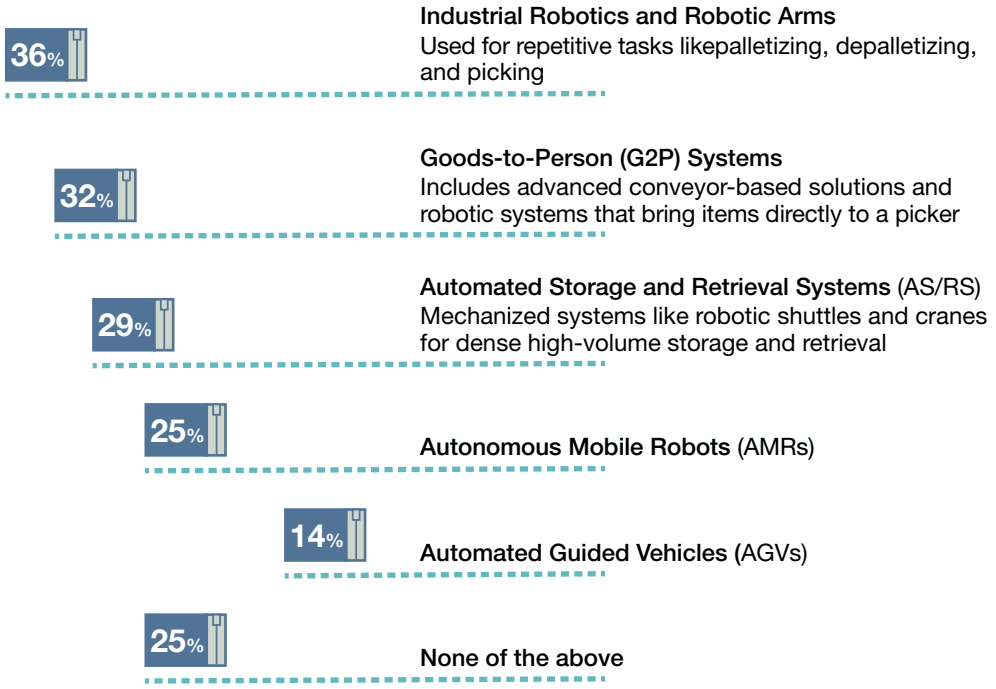
Which of the following advanced automated hardware technologies representing the next level of complexity and requiring more sophisticated software integration are currently in use in your facility/DC?

[Q3] When it comes to more complex automated hardware technologies, 36% of companies are currently using industrial robotics or robotic arms; 32% use goods-to-person systems (including solutions that bring goods directly to the picker); and 29% are using automated storage and retrieval systems (ASRS). Others have implemented autonomous mobile robots (AMRs) and automated guided vehicles (AGVs).

Figure 7

Which of the following advanced automated hardware technologies representing the next level of complexity and requiring more sophisticated software integration are currently in use in your facility/DC?

(Select all that apply)



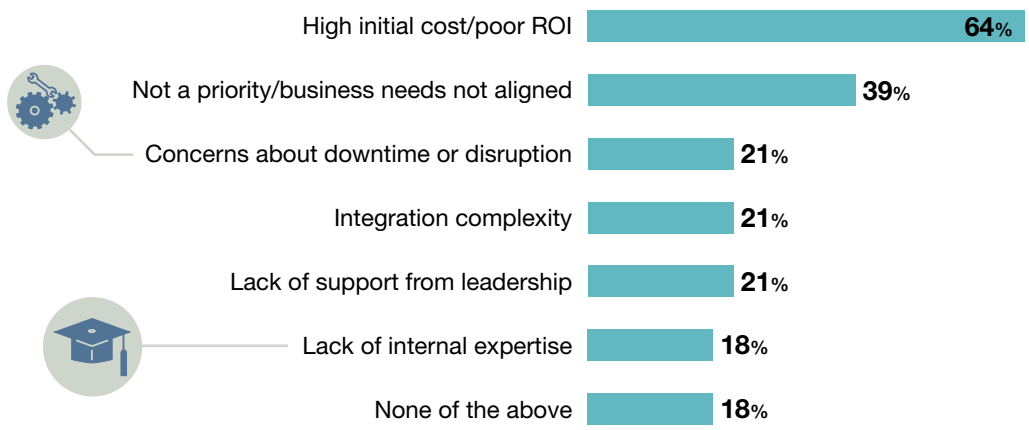
For any technologies not in use from the previous list, what are the primary reasons for not implementing them?

[Q4] Companies that haven't yet implemented these automated technologies say it is due to high initial cost or poor ROI (64%), while 39% say such investments either aren't a priority or they don't align with their own business needs. Others are concerned about integration complexity (21%), lack of support from leadership (21%), concerns about downtime or disruption (21%) or lack of internal expertise (18%).

Figure 8

For any technologies not in use from the previous list, what are the primary reasons for not implementing them?

(Select all that apply)



The report data suggests companies view automation as more of a gradual evolution, not an all-at-once transformation. Most are starting with proven technologies that enhance visibility and control before taking on larger, more complex projects.

Do you use a Warehouse Management System (WMS)?

[Q5,6 & 7] Warehouse management systems (WMS) play a central role in how many facilities run their operations. Sixty-seven percent of respondents say they use a WMS to manage inventory, track orders and coordinate warehouse activity. Of those users, 72% say their WMS connects with other systems to improve data flow and automation.

Figure 9
Do you use a Warehouse Management System (WMS)?

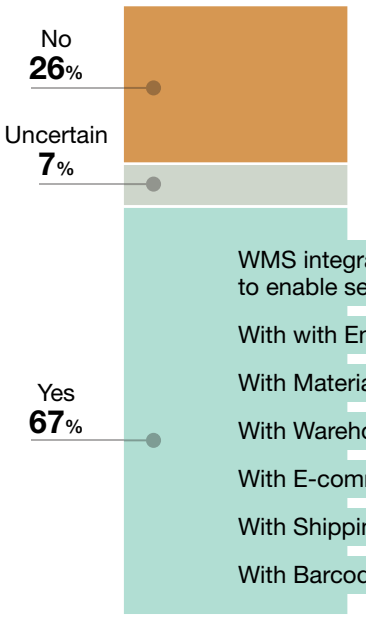


Figure 10
Which of the following "integrations" with WMS?

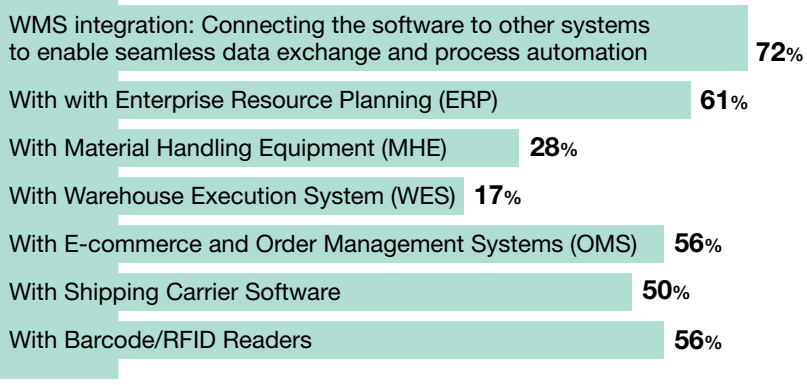
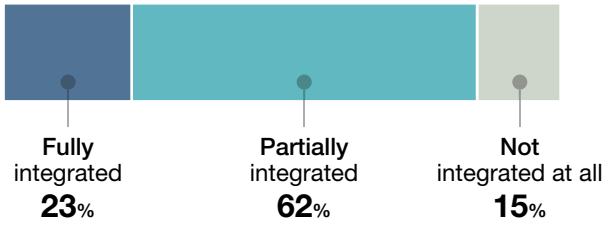


Figure 11
How would you describe the current level of integration between your warehouse systems?



Most companies link their WMS with enterprise resource planning software (61%) or e-commerce and order management systems (56%). Another 56% connect barcode or RFID readers and 50% integrate shipping software, with many also linking their WMS to material handling equipment (28%) or a warehouse execution system (17%).

Across all respondents, 23% say their warehouse systems are fully integrated, 62% say they are partially integrated and 15% are not integrated. The results show that progress in automation depends as much on connectivity as on the technology itself.

Optimal Material Flow Management

How would you describe material flow integration in your warehouse?

[Q8&9] For operations that have already connected their core systems, the next challenge is making sure both materials and data move in sync. Sixty-eight percent of survey respondents say they've achieved partial integration of material flow within their facilities while 32% report full integration.

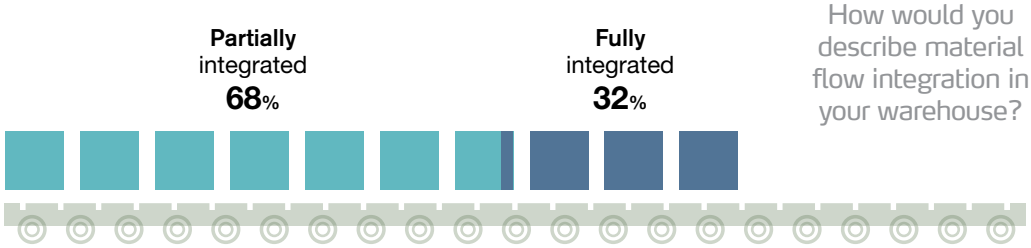
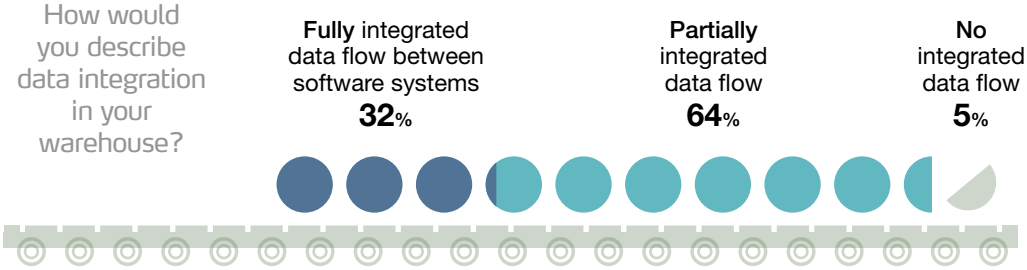


Figure 12
How would you describe material flow integration in your warehouse?

Figure 13
How would you describe data integration in your warehouse?



On the data side, 64% have software systems that are partially connected, 32% say they're fully integrated and 5% have no such connections in place. These results show that most warehouses have made progress linking people, equipment and systems, but that full end-to-end integration remains a work in progress.

Who was responsible for integrating your system?

[Q10] Companies take different paths when it comes to managing system connections. Forty-three percent handle integrations internally through their IT or engineering teams. Another 29% work with a system integrator or consulting firm, while 24% use multiple vendors to manage different parts of the process. It's clear that integration has become a shared effort between in-house experts and external partners, with a focus on each company's requirements and available resources.

Figure 14
Who was responsible for integrating your system?

We handled integration **internally** with our **IT/engineering team** **43%**

A **system integrator** or **consulting firm** handled it **29%**

We used **multiple vendors** for different parts of the integration **24%**

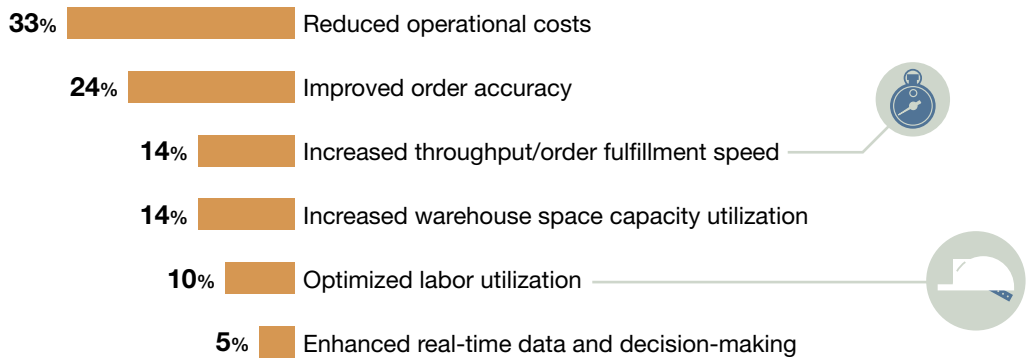
Other **5%**

The Power of Connectivity

What is the primary driver for integrating multiple automation technologies?

[Q11] System integration isn't just a technical upgrade; it's a strategy that makes warehouse operations run in sync. Survey respondents cite lower operating costs (33%) as the leading reason for integrating automation technologies, followed by improved order accuracy (24%), faster throughput and fulfillment speed (14%) and better use of space (14%). Integration is proving to be the link between better accuracy, lower costs and faster performance.

Figure 15
What is the primary driver for integrating multiple automation technologies?



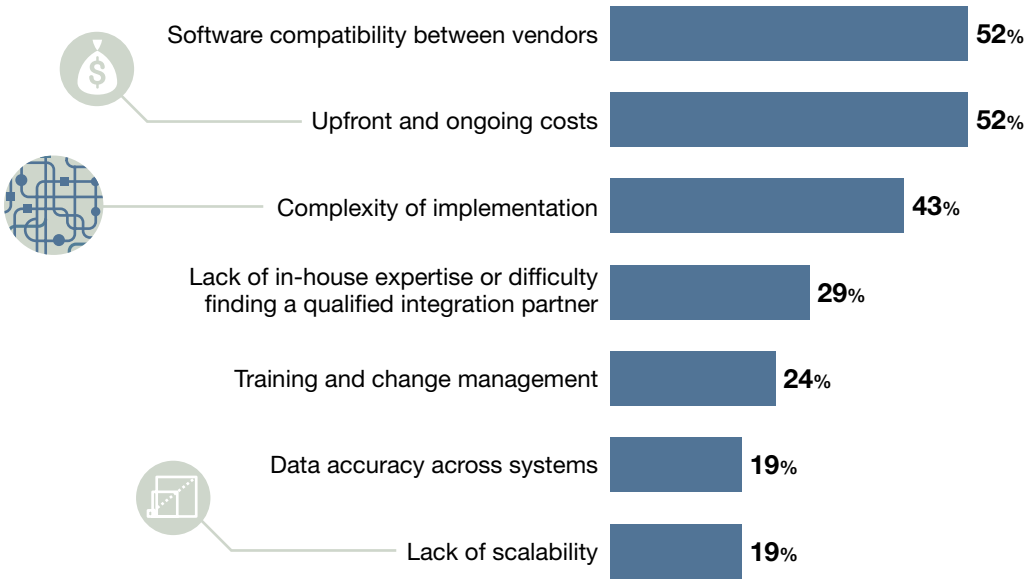
What are the main challenges you have faced with automation integration?

[Q12] Companies encounter a few different challenges when bringing automation systems together. About half (52%) cite software complexity between vendors, and a similar share are concerned with upfront and ongoing costs. Another 43% say integration itself can be complex, while 29% note limited in-house expertise or the need for qualified partners. The results show that integration takes planning and coordination, and that it remains a critical step in today's connected, high-performing warehouse operations.

Figure 16

What are the main challenges you have faced with automation integration?

(Select all that apply)



Based on your experience in warehouse automation over the past 3 years, what advice would you give to a fellow professional just beginning their warehouse/DC automation planning?

[Q13] Survey respondents shared simple, hard-earned advice for anyone beginning their automation journey. "Be certain to choose the right partners," one said. Others recommended "building for future needs, not immediate ones" and "fixing existing issues and implementing in phases." Several stressed "thorough planning and execution," while others encouraged teams to "automate as much as possible." The message is consistent: the most successful automation projects are built on smart planning, strong partnerships and a long-term vision.

Figure 17

Based on your experience in warehouse automation over the past 3 years, what advice would you give to a fellow professional just beginning their warehouse/DC automation planning?

If I could do it again, I'd…

"Be certain to choose the right partners"

"Have more of a long range plan"

"I would automate a much as possible"

"Fix existing issues and implement in phases"

"Leave yourself a way to expand your operations beyond your initial imagination!"

"Keep solutions simple and start small as proof of concept pilot"

"Focus on keeping it simple - simplicity is the key"

"Hire more external consultants"

"More thoroughly vet partners/vendors"

"Make sure to scope the warehouse's needs in detail upfront as secure buy in on the budget much earlier in the process"

"Work with a single expert in the space"

"Start with a comprehensive DC Planning & Capacity Optimization project with a consulting firm"

"Build for future needs, not immediate. If you don't, you will be behind the curve at the time of completion"

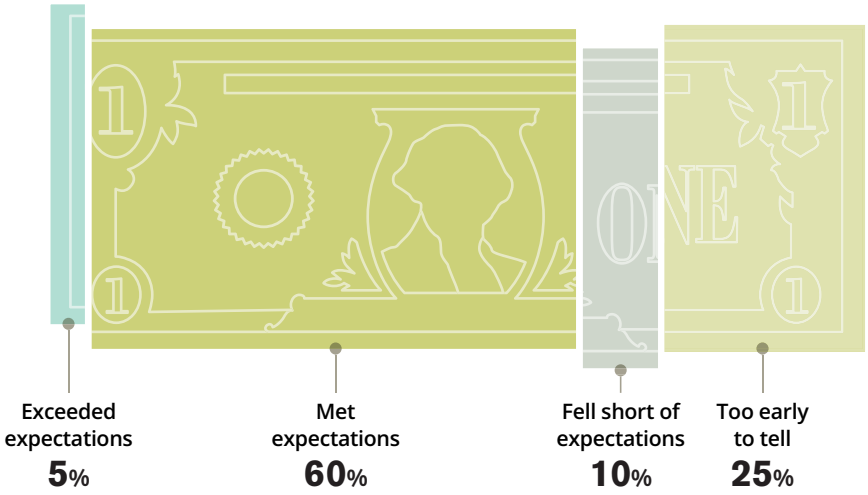
"Get several "solutions" for your specific warehouse needs. Get a layout on what works for your current footprint"

Integration Unlocks Value

Has your warehouse automation delivered the ROI you expected?

[Q14] Automation is delivering measurable results for most companies investing in it, with 60% saying their projects have already met ROI goals and another 5% saying they've exceeded them. Ten percent say results haven't met expectations and 25% note that their projects are still too new to measure.

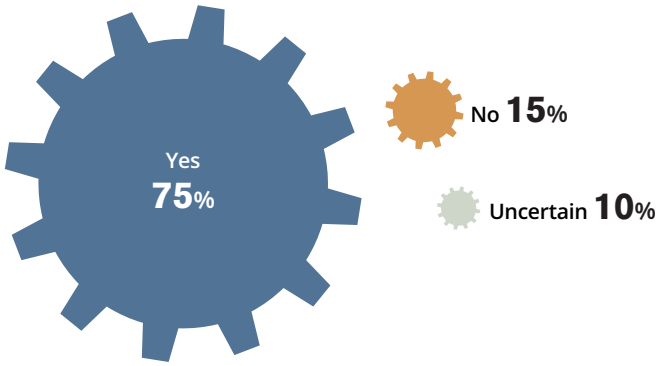
Figure 18
Has your warehouse automation delivered the ROI you expected?



Is integration essential to achieving the full benefits of warehouse automation?

[Q15] Nearly all (75%) of companies agree that integration is essential to achieving the full benefits of warehouse automation. The finding confirms what many operations are learning firsthand: automation performs best when systems work together. Integration links equipment, software and data so materials move efficiently, information stays accurate and operations stay on track.

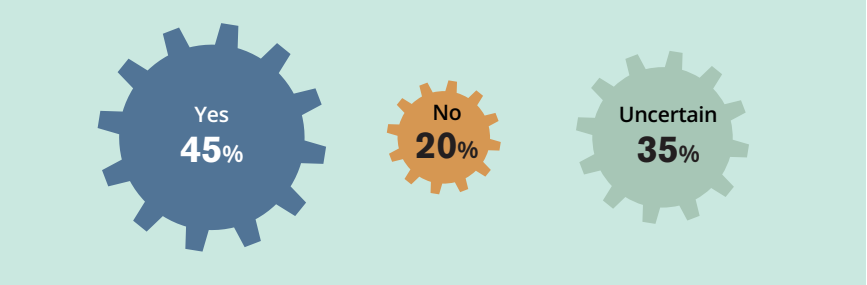
Figure 19
Is integration essential to achieving the full benefits of warehouse automation?



Are you planning to further integrate systems or automation technologies in the next 12-24 months?

[Q16] Among companies that are already partially or fully automated, momentum toward deeper integration remains strong. Over the next 12 to 24 months, 45% of professionals plan to further connect their systems or automation technologies, while the rest either are evaluating their next steps or not currently moving in this direction. Cumulatively, it's clear that most organizations view integration as an ongoing process rather than a one-time project.

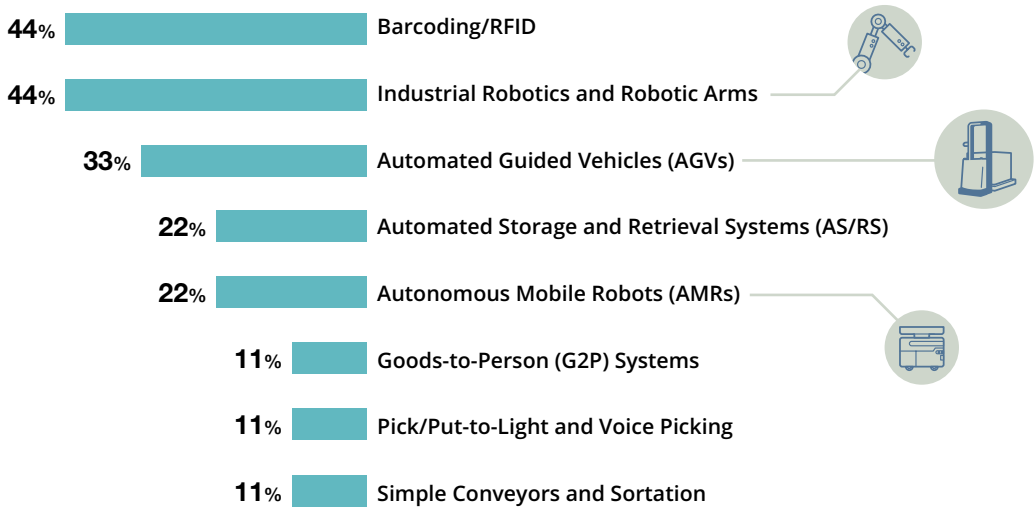
Figure 20
Are you planning to further integrate systems or automation technologies in the next 12-24 months?



What systems are you planning to integrate next?

[Q17] Asked about their future automation plans, 44% of respondents will implement barcoding or RFID and an equal share are exploring industrial robotics and robotic arms. Another 33% plan to add AGVs, while 22% expect to integrate AMRs or ASRS systems. These plans show a clear push toward technologies that boost speed, accuracy and control.

Figure 21
What systems are you planning to integrate next?
(Select all that apply)

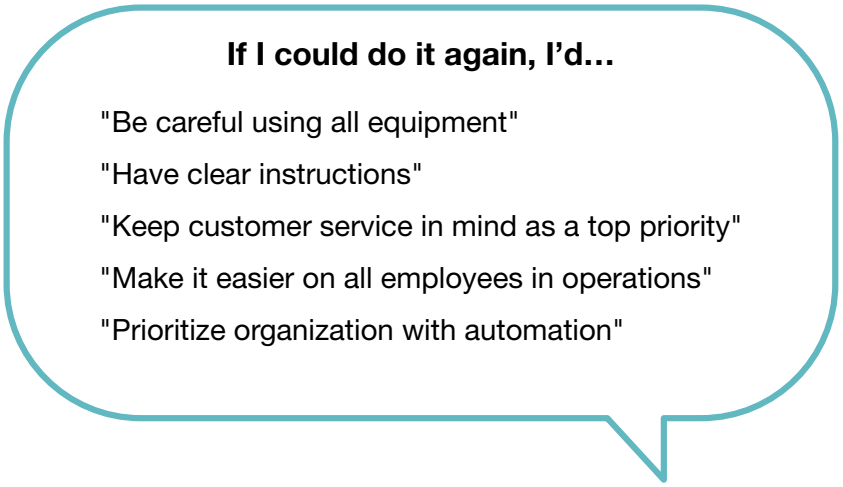


Based on your experience in warehouse automation over the past 3 years, what advice would you give to a fellow professional just beginning their warehouse/DC automation planning?

[Q22 & 23] Seasoned automation users say success starts with fundamentals: clear instructions, safe operations, and a strong focus on customer service. Several also stressed the importance of organization and designing automation to make daily work easier for everyone. For those who've deployed automation without full system integration, most (75%) report the expected ROI, with the remainder still tracking results.

Figure 22

Based on your experience in warehouse automation over the past 3 years, what advice would you give to a fellow professional just beginning their warehouse/DC automation planning?

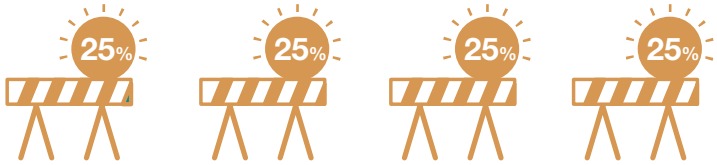


Manual Operations, Future Plans

What are the primary barriers preventing you from integrating your systems?

[Q18 & 19] Some operations are taking a slower path to integration, balancing costs, capabilities and priorities. About 25% of those running largely manual operations cite cost as the main barrier, another 25% point to limited software capabilities, and the same share say integration isn't a priority for their company right now.

Figure 23
What are the primary barriers preventing you from integrating your systems?
(Select all that apply)



Costs too much **money**

Lack of **software** capabilities

They **don't need** to be integrated

None of the above

Figure 24
Do you plan to integrate them in the future?

Yes
50%

Uncertain
50%

Even so, 50% of these respondents say they plan to integrate in the future, while the rest remain undecided. This is a sign that interest in automation is growing even among companies that have yet to take the first step.

How would you approach your integration strategy?

[Q20] When asked how they would approach integration, respondents' opinions were split evenly. Half (50%) say they'd manage the process internally through their IT or engineering teams, while the other half would turn to their automation equipment provider to lead it. Manual operations are clearly beginning to map out how integration could work for them.

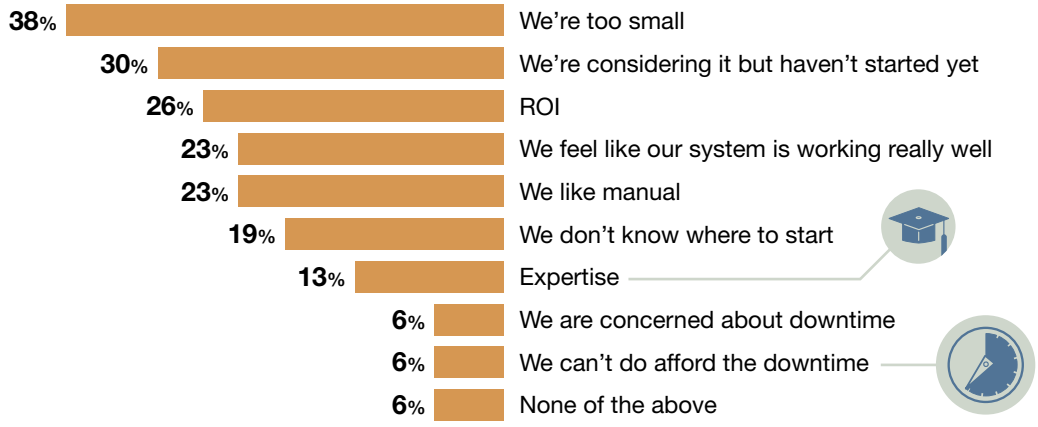
Figure 25
How would you approach your integration strategy?

Preparing for What's Next

What are the primary barriers preventing you from to automating?

[Q24] Among companies still running manual operations, 38% say their facilities are simply too small for automation, while 30% have considered it but haven't yet taken the first step. Uncertainty about ROI remains a factor for some (26% say this is what's holding them back), while others are staying manual by choice. For example, 23% say they prefer the control and predictability of hands-on processes.

Figure 26
What are the primary barriers preventing you from to automating?
(Select all that apply)



Do you plan to automate in the future? And when do you plan to automate?

[Q25 & 26] Despite those reservations, automation planning is gaining traction. Twenty-six percent of respondents say they're preparing for future investments, and nearly half (47%) are evaluating the best path forward. Of those ready to act, most expect to implement automation within the next 12–24 months, indicating steady progress toward greater efficiency.

Figure 27
Do you plan to automate in the future?

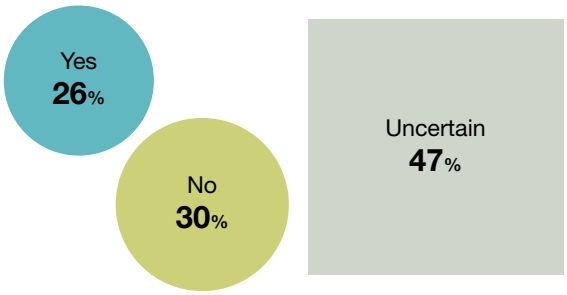
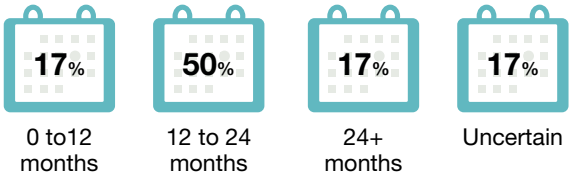


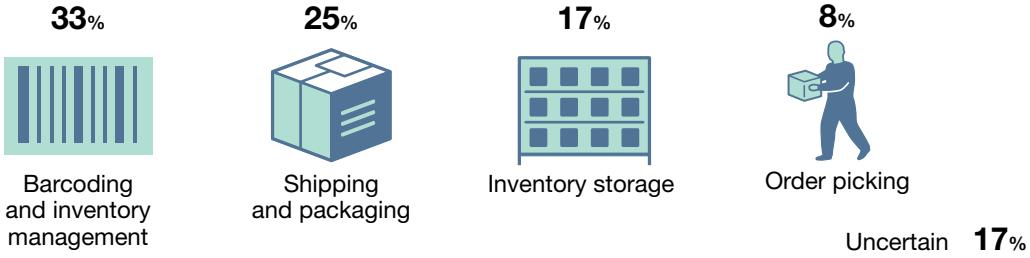
Figure 28
When do you plan to automate?



Which area of the warehouse would you automate first?

[Q27] Right now, barcoding and inventory management top the list of automation priorities (33%) for companies that are either just starting or continuing their automation journeys. Shipping and packing follow closely at 25%, while 17% would start with inventory storage and 8% with order picking. By starting with barcoding and inventory management, companies can lay the groundwork for real-time visibility and smarter, more connected automation.

Figure 29
Which area of the warehouse would you automate first?



Conclusion

Automation and integrated warehouse systems have become table stakes for warehouse and DC operations of all sizes. Companies are proving that measurable gains in accuracy, efficiency and throughput come from steady, well-planned investments. Whether it starts with barcoding, conveyors, vertical lift modules (VLMs) and ASRS, or full-scale robotics and other advanced technologies, each step toward integration helps operations work smarter, move faster and make better use of available space.

Integrated warehouse systems are no longer a question of "if" but "when." As the gap between connected and manual facilities continues to widen, organizations that move now will be better equipped to handle shifting demand and rising customer expectations. Delaying integration only widens that gap.

About Kardex

Kardex is a leading global partner for intralogistics solutions in an attractive and growing market. The Group offers premium automated products, standardized systems, and lifecycle services that guarantee high availability and low total cost of ownership. Kardex provides an intelligent entry into automation with its dynamic storage and retrieval systems, offers integrated material handling systems, small parts storage systems, and automated high-bay warehouses, and acts as a global AutoStore partner, offering flexible and modular storage and order fulfillment solutions. The Group employs around 2,900 people in over 30 countries. Kardex Holding AG has been listed on the SIX Swiss Exchange since 1989.

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