

Value-driven warehouse automation

A new approach to warehouse operations that maximizes returns from digital investments



Investment in warehouse automation is now essential

Warehouses, once viewed simply as a place to store goods, now have the potential to make or break a company's relationship with their consumers.

The rapid growth of ecommerce and 'lot size one' production demands, driven by changing customer expectations of what 'on-demand' really means, has forced warehouses to evolve into ever more efficient, agile, 24/7 operational epicentres. Companies have turned to warehouse automation to keep up, with Accenture's 2020 Supply Chain Survey¹ showing it is the **third biggest investment priority** for senior supply chain executives. Between 2015 and 2019 companies invested an average of **\$11 billion** annually into warehouse automation.²

At the same time, companies have struggled to source enough skilled workers to keep pace with the size of ramped up operations. **Three out of five** companies are turning to automation and robotics as a result (Figure 1).

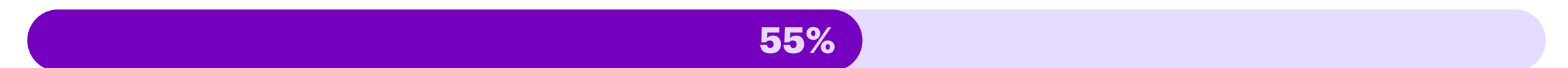
In 2020, COVID-19 amplified both labor shortages and the pressure on global logistics networks, spurring even more investment into warehouse automation. One study estimates that, post-COVID-19, warehouse automation is expected to attract **15% more investment** in the next five years than previously predicted.³

Figure 1: Top three drivers for automation and robotics in warehouses⁴

Labor availability constraints



Increasing velocity, volume and throughput of work



Addressing new and changed business requirements



Source: Accenture's 2020 Supply Chain Survey

Labor challenge is a dominant theme emerging from interviews with more than a dozen warehousing and logistics senior executives



1. Sparse labor markets leading to increasing labor costs

2. High labor attrition due to monotonous tasks

3. Greater health concerns and social distancing due to Covid-19

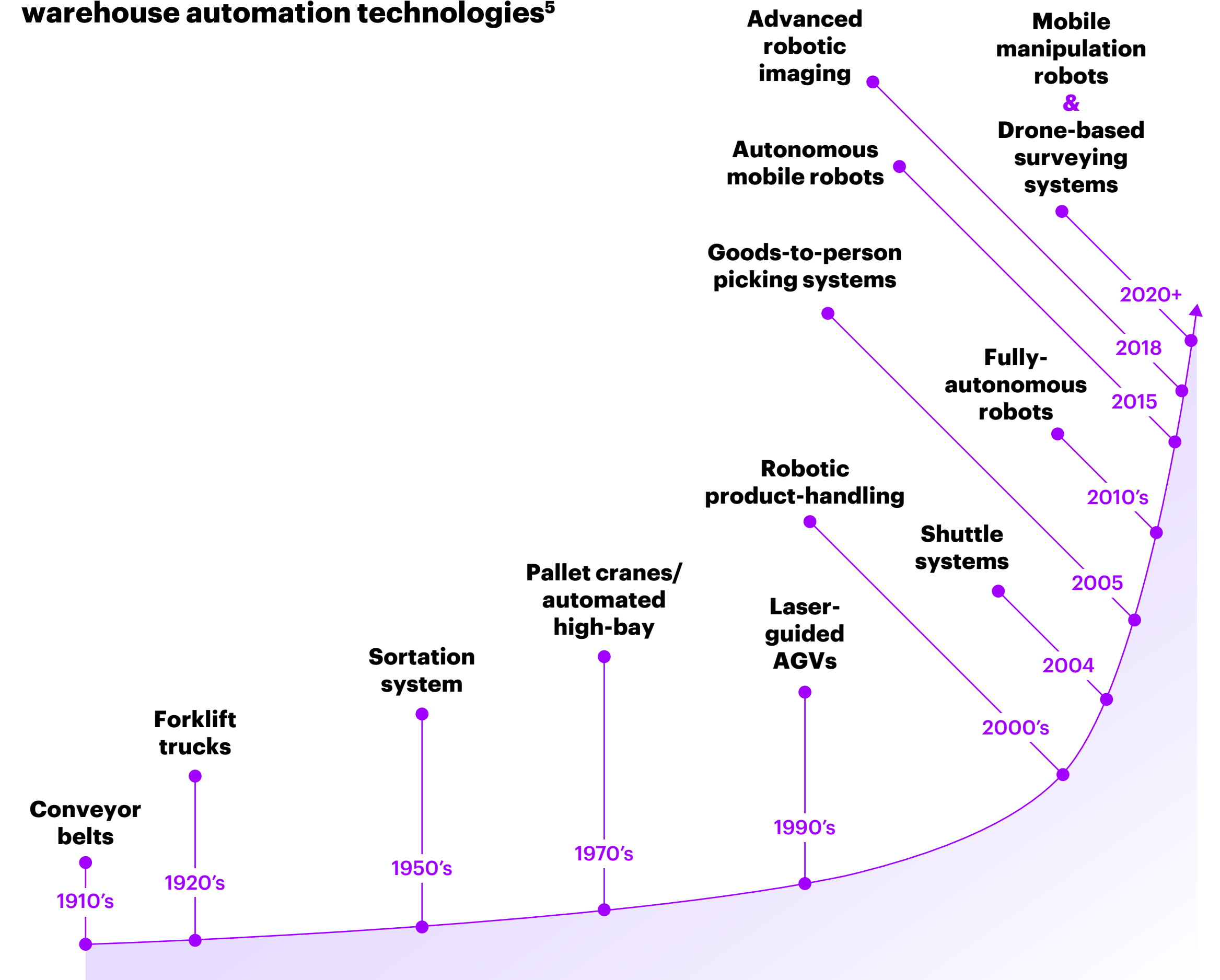
4. Lack of skilled labor that can adapt to the changing warehouse needs

Autonomous warehouse systems are on the rise

COVID-19 has increased the emphasis on supply chains to meet demand requirements which has hastened the pace of adoption of technologies in warehouses both in terms of automation and autonomy. The endless options and solutions available for innovative applications makes the selection process overwhelming. But we know that to deliver at speed and scale, warehouse executives cannot just invest in any and all automation and autonomy solutions—they must choose the right technologies for their company’s strategy, supply chain, industry, and warehouse.

The right level of automation and autonomy will not only enable faster, safer, and more efficient day-to-day warehouse operations. It will also cut costs and improve delivery times, creating a faster, leaner, more scalable, and sustainable operation, ultimately providing the end-consumer with loyalty-driving level of service expected in this on-demand economy.

Figure 2: The rate of innovation in warehouse automation technologies⁵



Source: Accenture analysis on warehouse design and automation

“We moved to an almost fully automated system quite a few years ago. In terms of efficiency, the warehouse works 24–7, 365 days with minimal amount of human staff. In terms of quality, we have very few accidents where anything’s damaged or anyone is hurt. It helps the warehouse run really smooth, really quickly, really efficiently. As long as the maintenance systems are fully updated, it’s absolutely faultless.”



Steve, UK warehouse supervisor

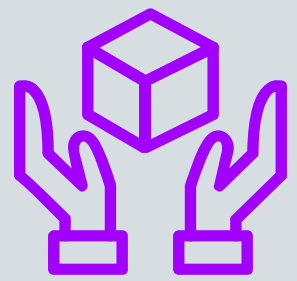
“At our warehouse, they have this automatic cleaning robot. They just press one button and it drives around and cleans the floors at night after we close. So through the whole night, the floors are cleaned, everything is wiped down. Safety hazards are taken care of, and we are ready to restock everything fresh for next day for new customers. As the pandemic continues, I feel it helps reduce some of the commotion in the warehouse resulting in lesser health risks.”



Lanisha, USA warehouse operator

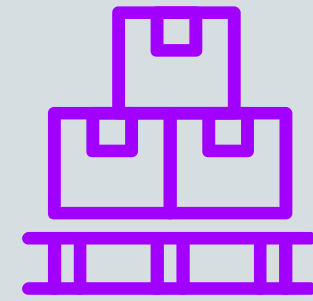


Various warehouse functions can be automated and autonomized—either partially or fully.



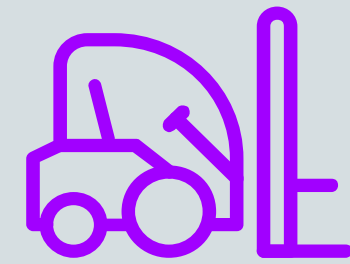
Receiving

- Boom conveyors with suction lifters for loose loads
- Conveyor with inline weight & bar codes scanners
- Automated guided vehicle (AGV)/Autonomous Mobile Robot (AMR) for unloading



Deconsolidation

- De-Palletizers
- Robotic layer pickers



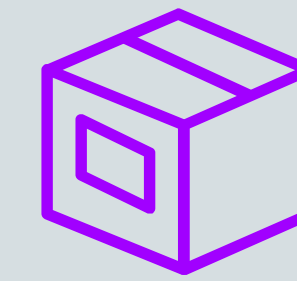
Put-away & Storage

- Conveyors
- Miniloads, shuttles, cranes, Automated storage and retrieval systems (ASRS), carousels
- AGVs/AMRs to move pallets, chases and shelving



Picking

- Goods to person (GTP), AGV, carousels, auto store, rota pick
- Sorters: cross-belt, tilt tray, shoe, bombay, spider, pocket & hanging; robotic induction
- Robots—layer picking, case picking and each, lifting beam
- Pick by light & voice systems
- AGV/AMR pallet picking
- Caddy-pick, AGV/AMR zone picking



Packing

- Palletizers, palletizing robot Auto tote stacker, auto shrink-wrapper
- Auto baggers, boxers, labelers
- Automated packing, automated void fill machines



Staging, Loading and Shipping

- Automated pallet loading
- Boom conveyors, flexi conveyors
- AGV/AMR loading
- Automated truck loading

However, companies are struggling to build the right solutions and derive the desired returns on their warehouse automation investments.

1. The key constraint on new solutions—old best practices

What were tried and true in the past, will fail fast in the future

Today's approach: a case study

We spoke to a large US-based medical technology company that had started internal warehouse operations automation (including investing in cobots) and integration projects that included warehouse management system (WMS) and mobile connectivity, with a focus on inventory management, material handling, and cash-flow. After 18 months, the robotics initiative was shelved due to lack of visibility on return on investments (ROI). The Chief Financial Officer (CFO) viewed reduction of headcount as a key parameter for investment and, since that did not happen, the robotics project was disbanded. The company decided to only continue with the integrated warehouse initiative.

Where did it go wrong?

- Only traditional KPIs were measured, with no view of the bigger picture
- The focus was on short term results, not long-term value
- Human-machine collaboration was not optimized in the design planning


Narrow views = narrow results

Companies have a myopic approach towards warehouse automation and autonomy. They look at automation as an answer to a specific problem or a way to increase efficiencies of specific processes. When using automation to plug labor shortages, companies often fail to build a harmonious relationship between humans and machines.

And in the rush to justify returns, they apply technologies that are familiar and deliver quick wins, irrespective of the type of warehouse operations. Instead of creating the right digital architecture to seamlessly integrate legacy technologies with new ones, they are simply deploying point solutions.

The result?

Efficiency gains are incremental, and companies fail to realize the full potential of warehouse automation and autonomy.



“We haven’t really cracked the puzzle of integrating machines and humans in our warehouses. The perception battle continues.”



Senior Executive, South Asian retail chain

“Many clients come to us asking about AGVS or autonomous vehicles, not knowing if it’s a fit. Those requests are easy to understand, as they have vehicles right now. Adding pick to voice or pick to light by client that are already picking is another common request. Clients usually go for technologies that are similar to what they are already doing, and where it’s easy to see that the technology could result in an efficiency gain. We strive to work with the customers’ specific data to ensure AGVs, autonomous vehicles or any automation system will truly see a great ROI.”



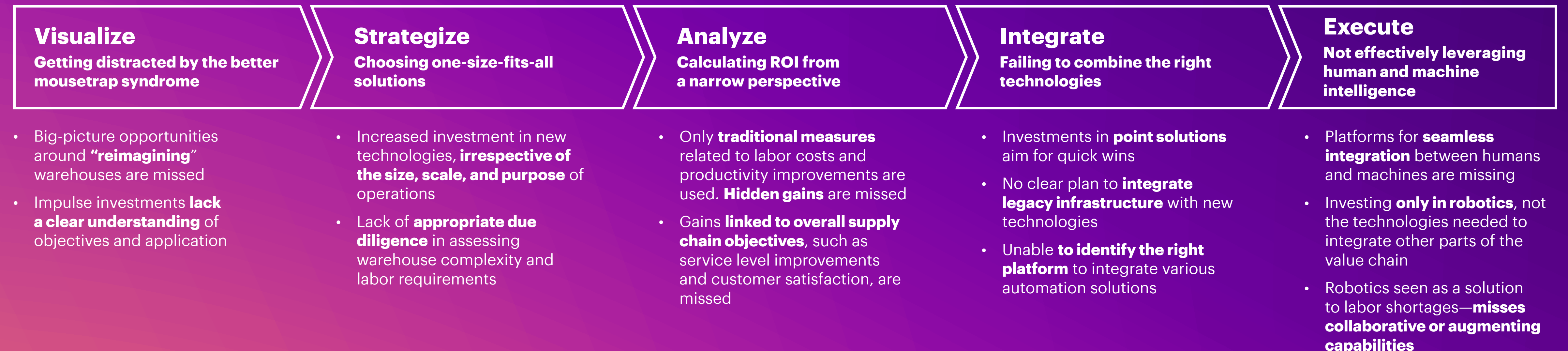
Reed Langton, Regional Manager, Bastian Solutions
(a Toyota Advanced Logistics company)

2. The 'better mousetrap' syndrome, and other obstacles

Companies visualize new, quick-fix solutions and end up executing siloed, digital projects that add incremental value, but fail to achieve the scalability required to drive strategic returns

Distracted by the latest shiny objects, companies choose technologies irrespective of the needs of their warehouses or the types of operations at play, resulting in point solutions.

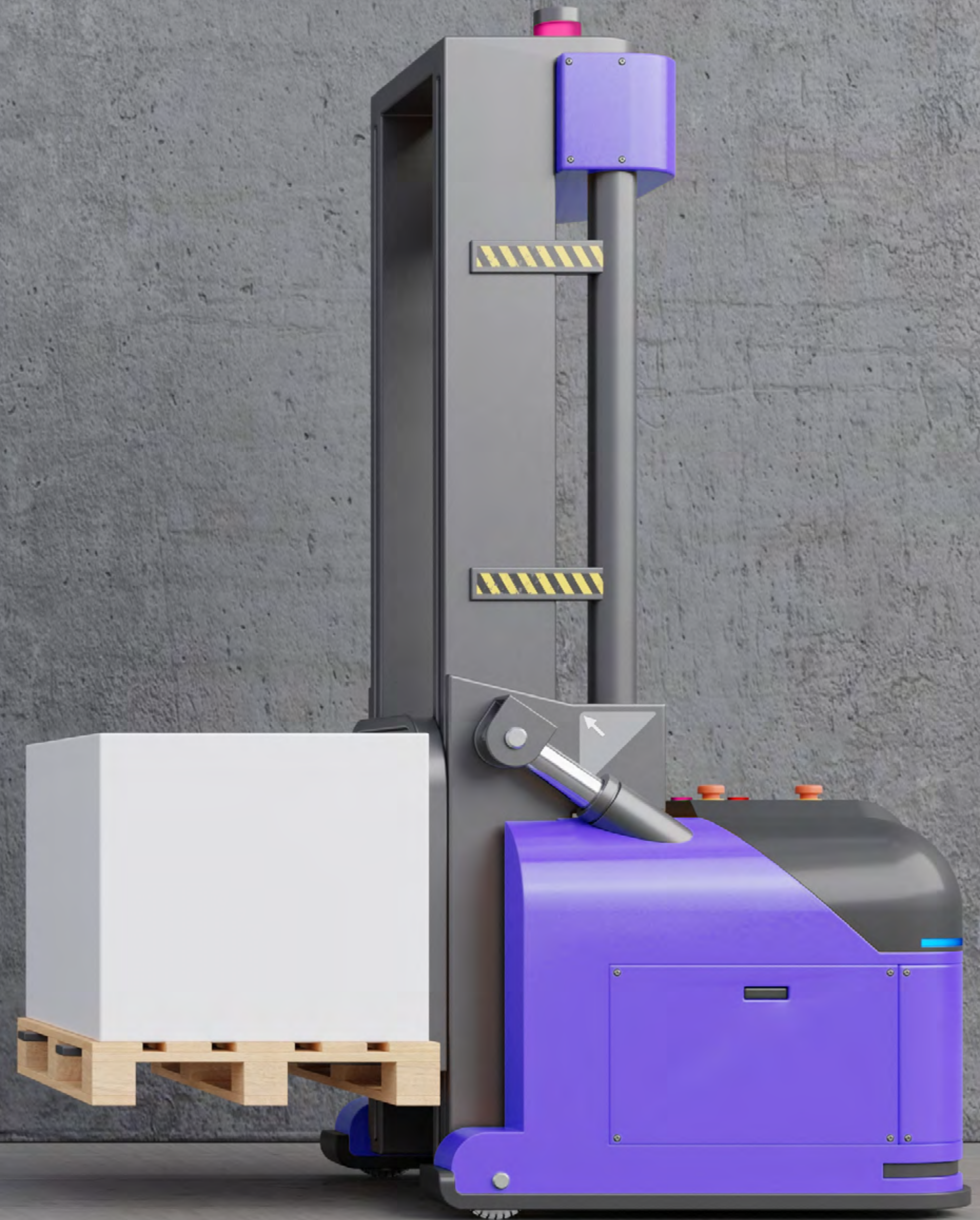
They still use old metrics to measure returns on their investments and fail to capture holistic benefits. As a result, the full potential of human and machine collaboration remains untapped.



“It is easier to make a case for investment with the cool shiny objects that would visibly improve the digital quotient of their warehouse and make a case for investment to the CFO.”



Warehouse executive, multinational industrial company



A new path forward for warehouse automation

Businesses are rapidly adjusting to the new normal brought on by COVID-19. As a result, the role of warehouses is expanding and becoming more complex.

Executives need to transform their warehouses to deliver more impactful, longer term value. With the right strategies in place, warehouses can be more productive and efficient, drive customer-centric experiences, and operate sustainably. Accenture has identified 4 key elements that are essential to transforming warehouses into drivers of new value and growth.

1. Align around a broader vision

Re-evaluate the relevance and role warehouses are expected to play in overall supply chain strategies.

2. Avoid one-size-fits-all solutions

Categorize warehouses based on the complexity of operations and labor intensity requirements to identify the right technology solutions.

3. Measure all that matters

Identify and include the less obvious but vital returns when calculating ROI.

4. Build digital architecture for end-to-end connectivity

Integrate and combine technologies to facilitate impactful automation and autonomy.

Let's look at each of these elements in detail.

1

Align around a broader vision

Re-evaluate the relevance and role warehouses are expected to play in overall supply chain strategies

The pandemic has challenged old ways of working. What worked for so many years may no longer be relevant.

Before embarking on an automation journey, executives must re-evaluate the role and function each warehouse is expected to play as part of the supply chain. They must ask fundamental questions to help establish the relevance of the warehouse, for example:

Does our warehouse strategy align to the value our business aims to deliver?

Does it make more sense to move to a mini-fulfilment center or a mega-fulfilment set-up to better align with overall supply chain objectives?

Have I evaluated the rent vs buy vs lease options?

Do the changing dynamics of my market require a more mobile warehousing set-up?

Is the warehouse strategically located?

Is there a more accessible or convenient location, closer to the customer, that I need to consider?

Have I evaluated the warehouse processes and flows to eliminate unnecessary movements?

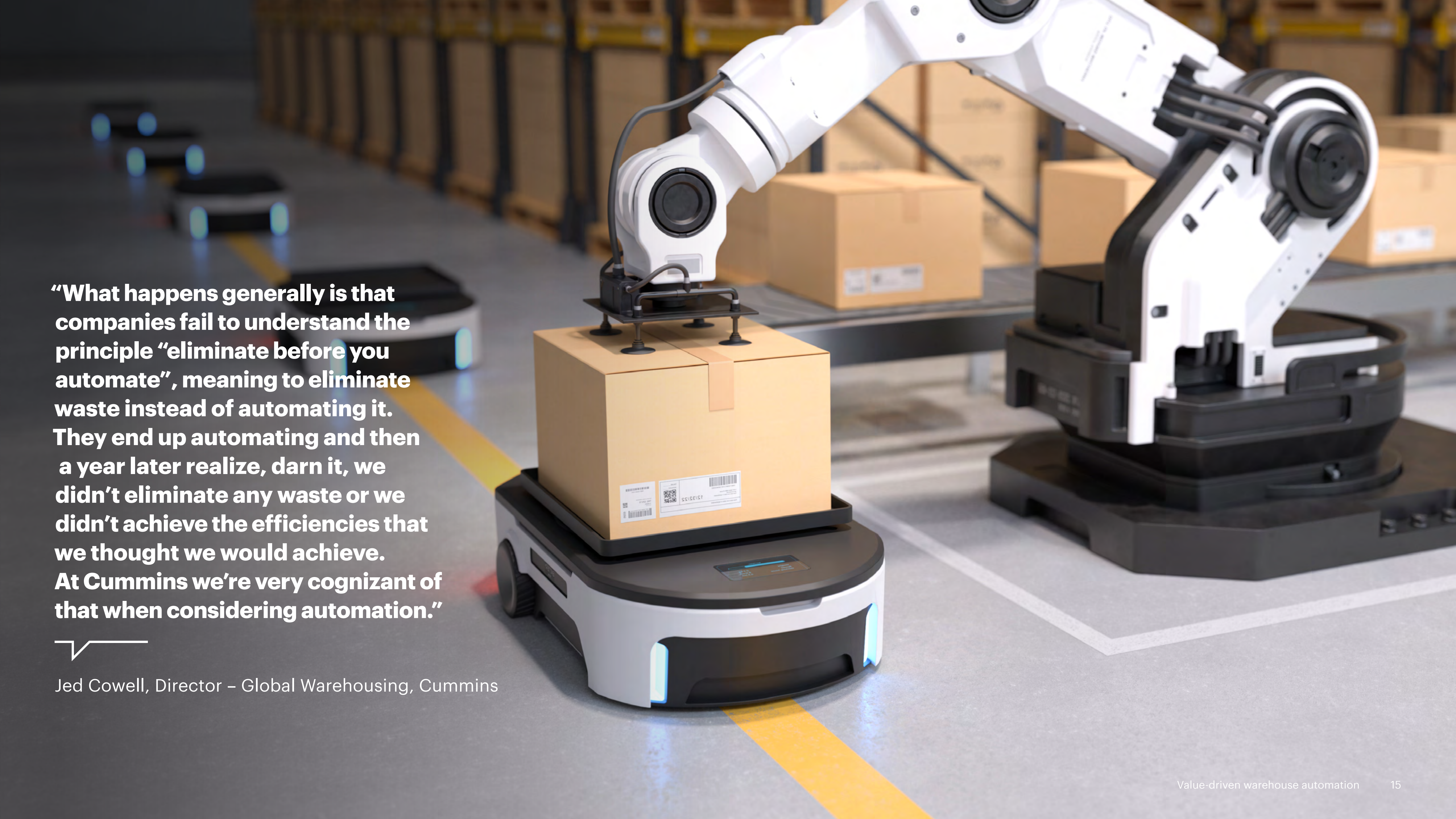
Is there a better dock set-up or layout that can help reduce movement of goods and people to the bare minimum?

Do I need -as-a-service or buy options when it comes to my technology choices?

Do I want to wholly own the technology and operations, or would it make sense to go for a service model?

Is the set-up scalable?

Will I be able to scale the technologies deployed today as and when required in the future?



“What happens generally is that companies fail to understand the principle “eliminate before you automate”, meaning to eliminate waste instead of automating it. They end up automating and then a year later realize, darn it, we didn’t eliminate any waste or we didn’t achieve the efficiencies that we thought we would achieve. At Cummins we’re very cognizant of that when considering automation.”



Jed Cowell, Director – Global Warehousing, Cummins

2

Avoid one-size-fits-all solutions

Categorize warehouses based on the complexity of operations and labor intensity requirements to identify the right technology solutions

The success of a warehouse automation strategy hinges on skillfully integrating people, processes, and systems to the right degree.

Warehouses are a maze of movements (of goods and people) and processes (of activities and flows). But since every warehouse has its own purpose and range of functions, depending on the supply chain model, these movements and processes can be wide-ranging and complex.

The combination of variables such as size, scale, velocity, number of stock keeping units (SKUs) etc., all contribute to the level of complexity of operations in warehouses. And as the workforce must continuously navigate this maze to get products out to delivery, the labor requirements to run different operations efficiently may vary significantly. A one-size-fits-all solution simply would not work.

“If you have a small building that’s got 120 people doing repetitive tasks, you can quickly redeploy your people and adjust the ebbs and flows. It’s hard to justify automation typically, except for maybe an occasional cobot. But in bigger sites, like a one million square foot building, you have a lot of common movements, and an automated solution might be able to help you there.”



Brad Poller, Warehousing Program Manager, Cummins

“When it comes to new technologies, we are very practical, and we work with concrete use cases and it relates to the culture and maturity level of our client. From the past what we have learnt is that while integrating new technologies you must quickly assess the exact level of maturity and exact level of adequacy of the technology for your business and more specifically the business of each client.”



Philippe DE CARNE, Executive Vice President, Geodis

So to identify the right solution companies must categorize the type of warehouse operations that align to their business model. Our **Warehouse Classification Matrix** in **figure 3** categorizes warehouses based on the degree of operational complexities and labor intensity—low to high. For example, a micro-fulfillment in quadrant I that has a moderate number of SKUs to manage with a small workforce pool, contrasts a mammoth scale operation in quadrant IV that manages thousands of SKUs while fulfilling ‘lot size one’ orders, which require a complex workforce organization. The technology requirements for each quadrant will vary because the requirements are so different.

Identifying which quadrant a warehouse’s operations sit in is a critical step towards identifying the right technology solutions.

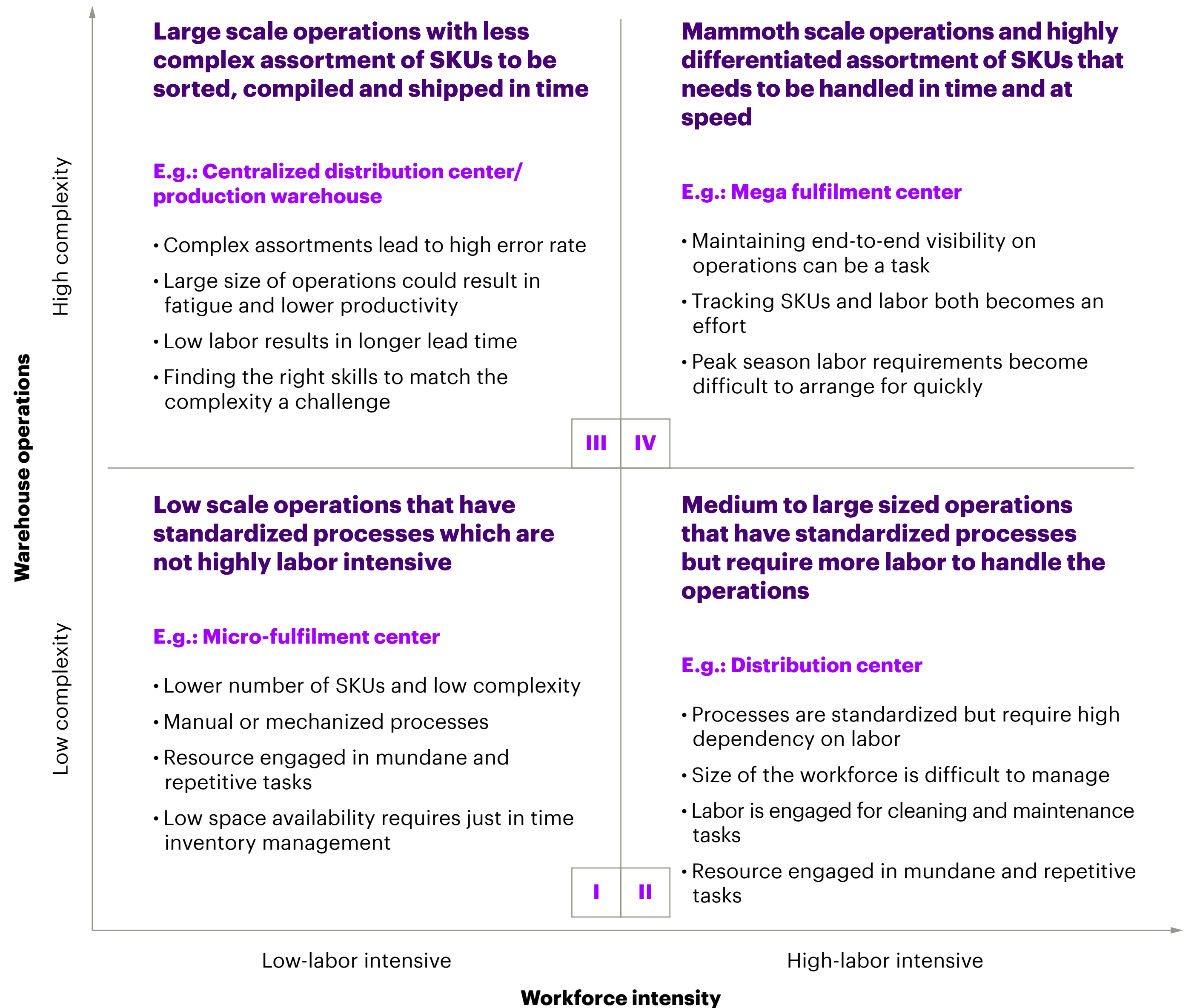
*Low warehouse operations complexity: Lower scale of operations, less complex processes, lower velocity of SKU movement and the lesser number or assortment of SKUs handled in a warehouse

*High warehouse operations complexity: Large scale operations, higher velocity of SKU movement, highly complex of processes or the large number and assortment of SKUs handled in a warehouse

*Low-labor intensive: Lesser number of labors are required to carry out operations

*High-labor intensive: Higher number of labors are required to carry out operations

Figure 3 – Warehouse Classification Matrix



3

Measure all that matters

Identify and include the less obvious but vital returns when calculating ROI

Executives must include less obvious, non-traditional metrics when calculating ROI to deliver a more 'balanced' view of value

Beyond the obvious metrics of labor costs and productivity, there are hidden gains—we call them the “not-so-obvious” returns—not being considered, captured, or accounted for. For instance, with better visibility and traceability, businesses will immediately have clearer accounting of inventories. But in the long term it also leads to accurate delivery times, which increases customer trust and in turn boosts sales.

The returns from automation are therefore greater than a first glance suggests and require a more holistic approach. “Not-so-obvious” metrics can provide game-changing insights, proving companies are in fact meeting ROI aims, while also building more relevant, resilient, and sustainable operations.

“For automation and robotics initiatives, showing ROI to Chief Financial Officers has been a challenge because one of the key performance indicators (KPIs) looked at is labor cost reduction in terms of headcount. Big picture or other efficiency measurement KPIs are not looked at or are missing.”



Warehouse Executive, multinational medical device manufacturer

Comprehensive (but not exhaustive) list of types of metrics to measure returns

	Obvious returns	Not-so-obvious returns
Workforce	<ul style="list-style-type: none"> • Rationalization of labor costs 	<ul style="list-style-type: none"> • Lower attrition rates • More focused training and upskilling investments • Better health and safety coverage • Higher labor flexibility • Lower exposure to labor market fluctuations
Space	<ul style="list-style-type: none"> • Cubic space saved • Utilities, maintenance expenses reduced 	<ul style="list-style-type: none"> • Savings from deferring capital expenses in the near term, owing to expansion requirements • Better inventory visibility and tracking • Opportunity to generate additional revenue by subletting the extra space or savings from releasing it back to the landlord
Service levels	<ul style="list-style-type: none"> • Improved quality and accuracy • Incremental revenues • Improved accuracy levels • Reduced damage and waste 	<ul style="list-style-type: none"> • Early detection and correction of errors and defects • Increased customer satisfaction scores • Decreased number of service complaints and refunds • Increased customer retention • Higher customer acquisitions levels
Productivity	<ul style="list-style-type: none"> • Difference in productivity level 	<ul style="list-style-type: none"> • Improved employee satisfaction through empowerment • Failure and downtime costs minimized • Faster placement and retrieval of inventory • Lesser labor burnout and fatigue • Reduction of non-value add time such as walking, picking, etc. • Improved scenario planning (in-bound, out-bound, etc.)
Visibility and Traceability	<ul style="list-style-type: none"> • Clear accounting of inventories 	<ul style="list-style-type: none"> • Excess inventory storage costs saved • Accurate delivery times • Faster reaction times to low stock situation
Sustainability	<ul style="list-style-type: none"> • Reduced wastage • Reduced energy consumption 	<ul style="list-style-type: none"> • Sustainable use and use of packaging materials, picking materials, etc. • Lower carbon footprint from smaller physical footprint • Safer and healthier jobs • Sustainable energy consumption through greener solutions
Flexibility	<ul style="list-style-type: none"> • Expansion of operations 	<ul style="list-style-type: none"> • Resiliency to adjust to volumes and SKU's fluctuations • Greater impact across multiple sites including geographies and sectors (ex. software commonality) • Lessons learned and best practices development in scaling process

4

Build digital architecture for end-to-end connectivity

Integrate and combine technologies to facilitate impactful automation and autonomy

To generate desired returns from warehouse automation investments, companies must design the right the digital architecture for their warehouses.





Generate intelligence with data on the cloud

Action: Deploy intelligent technologies to generate insights for real-time decision-making

At any given point in time, vast quantities of data are being generated in a warehouse. Each SKU that enters, leaves, or is returned to the warehouse carries the imprint of its journey through the entire supply chain. Additionally, datapoints related to warehouse space, labor, and other running and maintenance activities are captured to improve processes and efficiencies. All this data is captured in parts, or on an ad-hoc basis. Executives can therefore only generate siloed, incremental insights. And while all this data is highly valuable, decision-makers across the value chain cannot leverage it in real time.

“The COVID-19 pandemic confirmed the importance of harnessing the value data can bring to our business. It has intensified our focus around real time information, crucial to continue steering the future of supply chains and consequently enabling our vision as an organization. Data availability and analytics will allow us to continue tackling the impact of both internal and external elements to our business.”



Thierry Driesens, Digital Transformation Officer
at DHL Supply Chain

“Artificial intelligence and adaptive algorithms are critical for improving background systems so they fetch smaller, high frequency, complex orders, in a more accurate and more efficient way. Also, if those systems could be self-learning, companies could maintain speed with changing lot sizes, changing materials requirements, and demand.”



Prof. Christoph Dönges, SALT Solutions

The way forward: Executives must make data visible to the entire value chain. Storing data in the cloud makes it accessible anytime, anywhere, to all decision makers. Running intelligent algorithms using data analytics, machine learning, or artificial intelligence gives meaning to the millions of daily warehouse datapoints that enable intelligent technologies such as robots, autonomous vehicles, computer vision systems, natural language processors or virtual agents. Continuous insights extracted from these technologies are critical for concurrent planning and scenario analyses, needed to help run agile warehouse operations and boost problem-solving capabilities. For example, Tesco (quadrant I) is using artificial intelligence (AI) to help with order predictability and machine learning (ML) and augmented reality (AR) to automate its fulfillment processes.

Value realized: When data is fully leveraged it reveals patterns that help companies achieve a greater level of transparency and accountability in warehouse operations. Generating intelligence continuously and in real time will enable warehouses to achieve greater efficiency, improved service levels, and better accuracy in predicting demand to aid resources planning.





Enable autonomy in processes and systems

Action: Build a smart core capable of autonomous response capabilities

The insights generated using intelligent technologies needs to be fed into an integrated platform that can control and operate various warehouse technologies and execute decisions autonomously. Equipment, systems, and workforce need to be in constant communication with each other in order to efficiently and accurately process, assemble, and ship orders.

“At the end of the day, automation needs to be fed by orders. So, the automation technologies need to be integrated to a standard execution system to pass off the order for execution of various tasks.”



Srikanth Vuligonda, SCS Capability Deployment Director, Cummins

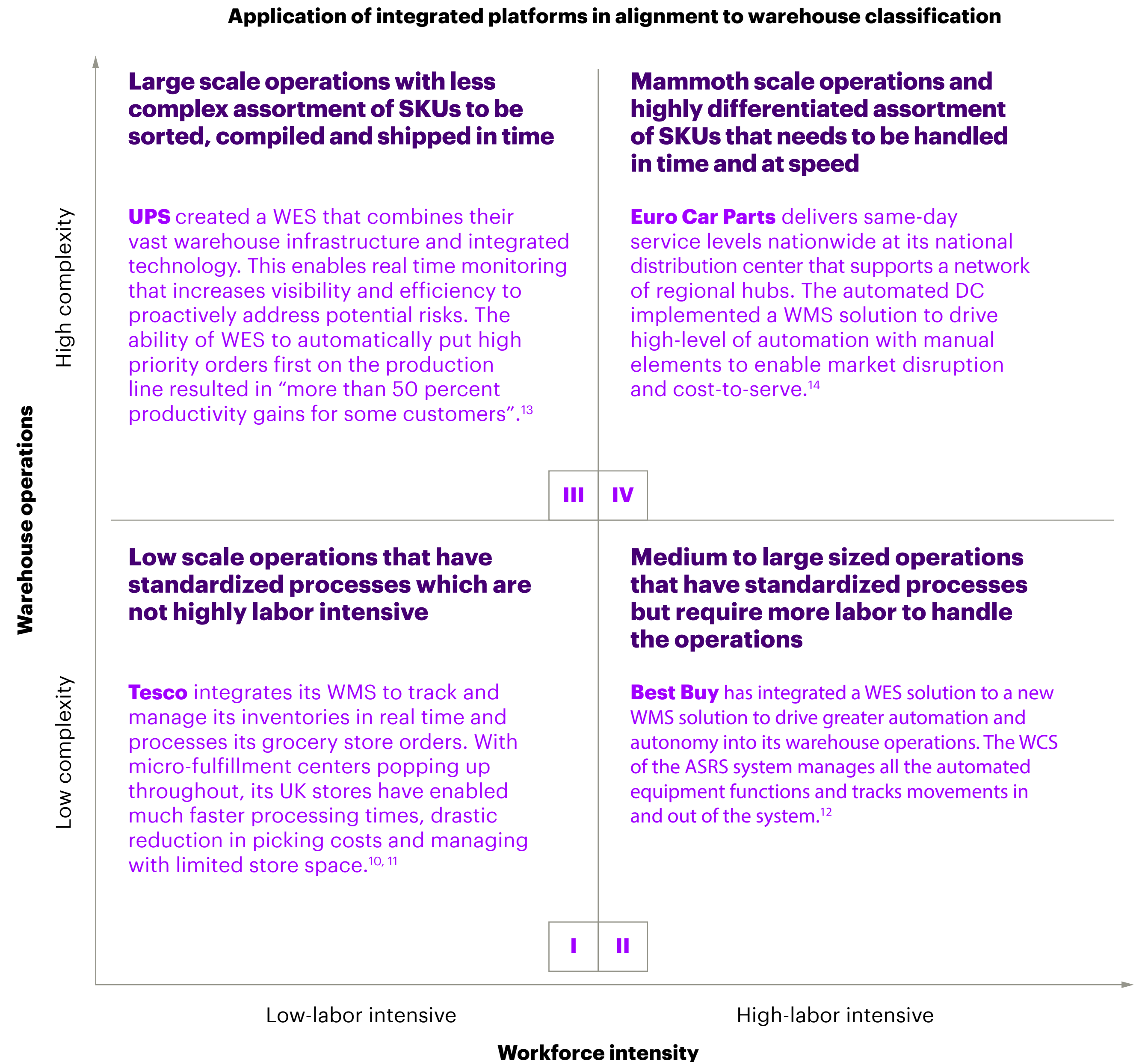
“We integrate our warehouse automation technologies to our WMS because otherwise it would be a nightmare and we need the integration and full connection of all the devices to our WMS. Everything should be connected otherwise you will have systems within systems and this is not going to fly. Very quickly you will be lost because of not having the accuracy of inventory or the accuracy of fulfillment—you won’t know where you are. So, when you serve tens of thousands of orders in a day, you need to go with full WMS integration as well as accuracy of data in the system.”



Philippe DE CARNE, Executive Vice President, Geodis

The way forward: An integrated platform—or smart core—autonomously manages the flow of activities and processes to enable better coordination of movements of both goods and people around the warehouse. The type of platform a warehouse requires, depends on the levels of autonomy and automation desired, based on the quadrant the warehouse belongs to. But most require one of three systems: a warehouse management system (WMS) responsible for operations and processes; a warehouse control system (WCS) that orchestrates the flow of automated technology activity; and a warehouse execution system (WES), which is a hybrid of the two. For example, Euro Car Parts, which sits in quadrant IV, opted for a full WMS/WCS to operate its highly complex and highly labor-intensive warehouse operations, enabling same day order fulfillment.

Value realized: An integrated platform enables greater level of visibility and connectivity for warehouse operations. This ultimately leads to higher autonomy in the tasks and processes, saving time and resources. As a result, operations become more flexible and resilient to fluctuating demand pressure, and customer experiences are consistent and improved.



A smart core of execution systems can help automate the planning, execution, and control processes across the warehouse



Defining boundaries and understanding overlap is key to ensuring good functionality execution and efficiency.



Create collaborative harmony between humans and machines

Action: Design warehouse solutions to maximize human and machine collaboration

To execute decisions on the ground companies need robotic solutions that work in collaboration with the workforce. But just introducing a few robots to the warehouse will not solve productivity problems. Rather, it can lead to job insecurities, a lack of trust, and greater inefficiencies.

“We’ve got machines that obviously pick the right items for you, we’ve got machines that weigh the things for you. It just makes everything a lot faster and you’re more productive. Without them it would be much slower and we wouldn’t make as much money. I definitely need it.”



Lynda, Warehouse Worker, UK

“Our associates across the globe recognize the benefits of working with collaborative robots – it has been an aspect we have always looked at from a change management perspective, to communicate not only what the technology means for the business but how it helps our shop-floor employees fulfil their tasks safely and faster. In my experience, understanding the local regulations, be it via the worker’s council or Human Resources, is a solid first step to get associates onboard the journey. I know some would think otherwise, but actually our colleagues around the globe are really embracing technology and definitely hungry for more.”



Thierry Driesens, Digital Transformation Officer at DHL Supply Chain

“Automation technologies have the advantage of consistently providing high level of quality and reliability. Focus automation on the items that are highly controlled and standardized and then use humans where you need specialization, flexibility, and perhaps a little bit more thinking than a robot is capable of. That way, you don’t have to use humans as robots and take away thinking from them.”



Prof. Benjamin Bierwirth, Frankfurt University of Applied Sciences

The way forward: Warehouses will always need human labor because of the variety and complexity of everyday tasks. Therefore, robotic applications are more than just a solution to labor shortages. Robotics investments accompanied by upskilling programs help realign the workforce to the new operations. While humans are intellectual decision-makers and value creators, robots add a multiplier effect by enhancing that understanding and doing things faster, at-scale, and with near-zero errors. Robotics help the workforce achieve better quality and consistency in operations. They take on the repetitive, energy-consuming, and mundane tasks, creating a more sustainable, healthy, and hazard-free working environment. The human workforce is elevated to do more skillful and value-added tasks, resulting in more meaningful and fulfilling careers in warehousing and logistics. For example, UPS is deploying autonomous mobile robots that enables them to synchronize labor and machines to achieve dynamic fulfillment within their warehouses.

Value realized: A human-centric approach towards robotics integration enhances productivity while protecting vulnerable jobs and enriching the warehouse work experience. Workers are better equipped and trained to do jobs that require intuition and human intelligence. Robotics help turn warehouses into more responsible, safe, productive, and positive places to work.



Painting a bigger picture

Considering the 24/7 digital economy we operate in today, the pressures COVID-19 has placed on the supply chain, and the increasing consumer demand for instant, sustainable commerce, warehouse executives cannot risk delaying a strategy shift. But it is evident that old approaches towards deploying new technology solutions will not deliver the desired levels of return. It's time for a greater strategic shift. The value is clearly already there to be unlocked. But executives must have the foresight to visualize

the true, long-term potential of the right technology investments. Automation and autonomy applications tailored to warehouses and their operations, backed by a holistic ROI approach and end-to-end connectivity, will result in more efficient, competitive operations, a fulfilled and thriving workforce, and a resilient business prepared for any opportunities or crises ahead. Follow the new approach to warehouse automation to unlock untapped, unprecedented gains.

A framework to maximize value from warehouse automation



Research methodology

Phase I: Ideation

- We conducted a **design thinking workshop** to collaborate with experts from various teams in Accenture such as SAP, Robotics Practice, Marketing, Industry X, Supply Chain and the Detroit Innovation Center, to formulate, define and refine our hypothesis and build out the research report framework.

Phase II: Secondary Research

- We leveraged primary research findings from existing **Accenture research surveys**
- We conducted extensive secondary research to understand what are the major challenges that companies face in their warehouse operations are and why companies turn towards automation to solve their operations issues.

Phase III: Expert Interviews

- We talked to more than a dozen senior executives from **companies** who have been investing in automating their warehouse across multiple industries including Med-Tech, Industrial Equipment, Consumer Industrial Goods, Retail and Consumer Goods to learn from their warehouse automation journey.
- We interviewed executives from **global warehousing solution providers** to understand their take on warehouse automation and how they go about recommending the right solutions to their customers.
- We interviewed **3rd party Logistics Providers** to understand what their approach is towards warehouse automation and the challenges they are facing on their journey.
- We also interviewed **academic experts** specializing in the domain of supply chain to gain from their insights and expertise of the warehousing and logistics sector.

Phase IV: Video Interviews

- We conducted 50 **video interviews** of 25 supervisor and 25 floor level workers of warehouses, from various companies across multiple geographies, to understand how automation has made their jobs easier or how they would like automation to help them do their jobs better.

Phase V: Design Thinking Workshop

- Once we built a concrete storyline, we conducted **a design thinking workshop** by bringing together both internal experts (SAP, Robotics, Detroit Innovation center, Supply chain, Industry X, Marketing and Operations) **and solution providers** to brainstorm on the solutions around the three resolution points of our story to provide a robust solution framework.

Phase VI: Conducted Pilot Runs with Experts for Relevance and Validity

- We presented the **research to a large audience** of more than a hundred client facing supply chain and warehouse operations experts, both internal and external to Accenture, to gather their inputs and feedback that further validated and enriched our story.
- We worked with the **client facing teams** to gather relevant case studies that have been sighted in the study.

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