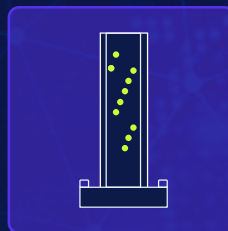


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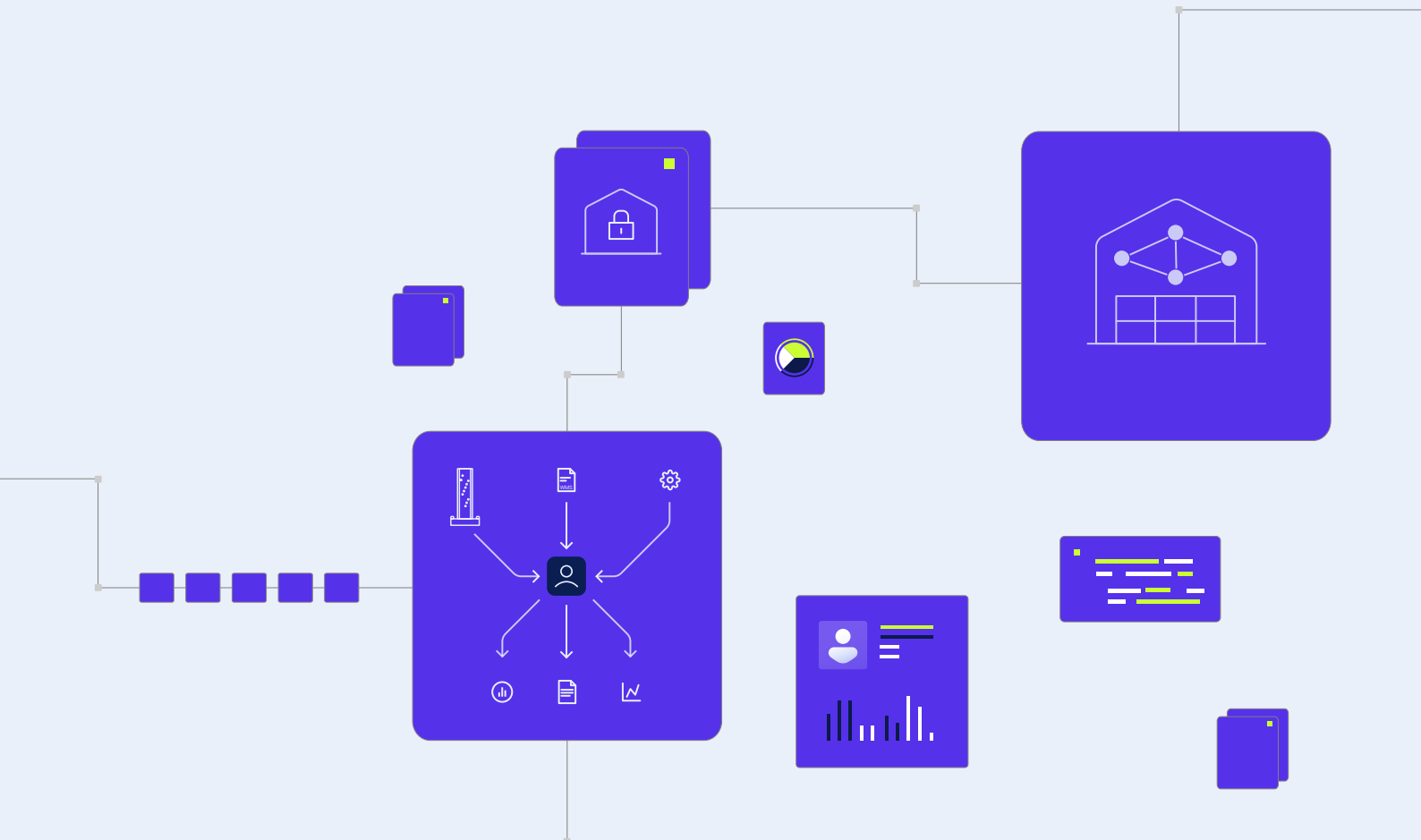
# The journey to Adaptive warehouses

How robotics, machine learning and AI agents will redefine the warehouse sector



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Warehouse management and operations today rely on static rules that are rarely updated or tested. The future we envision - even the near one - will be driven by real-time data and insights, enabling warehouses to dynamically simulate and optimize strategies - e.g. adapting pick paths or inventory plans instantly, making operations more agile and efficient.

In this whitepaper, we will explore how warehouses can transition from being fully manually operated (**blind stage**) to incorporating sensors, barcodes, and WMSs (**the observable warehouse**); then integrating robots and AI assistants (**the intelligent warehouse**); and eventually adding an extra layer - AI agents that act independently - as we enter **the adaptive** stage where warehouses become more intelligent, dynamic and autonomous.

The components for warehouses to become agile and 'sentient' are already in use and deployed by several big players. The need for automation and robotics becomes increasingly more obvious, with Amazon, for example, anticipating that automation could save \$10 billion annually by 2030 ([source](#)). Walmart's investments in automation and AI are expected to generate "an estimated \$20 billion in earnings before interest and taxes by fiscal 2029" ([source](#)).

The transition to **an intelligent and then adaptive warehouse** is an inevitable journey, we consider, as new technologies emerge, more data becomes available and more intelligent systems become.

While we believe that the transition will happen for many reasons that are related to efficiency, optimization, and cost-reductions, it will also spark new opportunities for growth, skill development, and a new focus for people working with warehouses and across the supply chain.

**The Adaptive warehouse** - a concept in its early stages that integrates data, AI, and AI agents - will self-optimize and learn, enable autonomous operations, and ultimately deliver unprecedented levels of speed, efficiency and resilience.

# 1. Introduction: The warehouse at a crossroads

The warehouse of today faces multiple and very different challenges that have surged after the pandemic. The most common issues are related to inventory, workforce, safety and maintenance, infrastructure, and, of course, the explosive growth of e-commerce sales, forecasted to go from \$5.13 trillion in 2022 to \$8.09 trillion by 2028 ([source](#)).

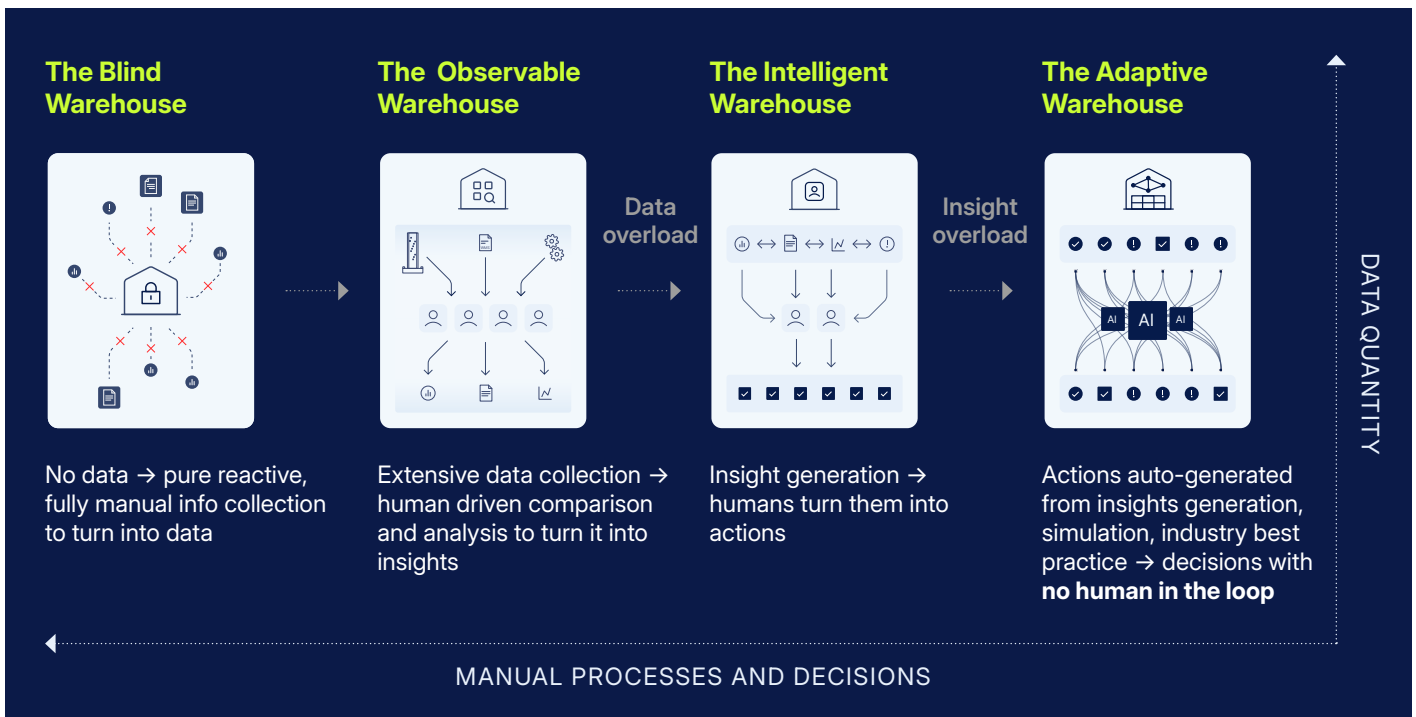
These disruptions have negative consequences in terms of **operational efficiency, resource optimization and costs** that can no longer be addressed through outdated manual processes. Consumers expect seamless experiences across various platforms, which means warehouses need to adopt multi-channel fulfillment strategies.

This role will only continue to evolve, integrating more and more new strategies to streamline inventory management, optimize space, reduce costs, and become greener, until we will have gone **from blind to adaptive warehouses**.

**Warehouses are evolving from simple storage facilities into critical, tech-enabled logistics hubs that play a powerful role in today's supply-chain ecosystem. They play a central role in meeting the expectations of the modern consumer.**



## 2. The evolution of the warehouse: From Blind to Adaptive



### 2.1 The Blind Warehouse

Warehouses used to function with limited or no real-time visibility, gathering all their information, managing processes, and addressing challenges manually. Some still do. Inventory was tracked using paper-based systems or spreadsheets, which meant that stock counts used to be updated during scheduled audits and not in real time.

This has and continues to lead to critical errors (misplaced items, stockouts, or overstocking), and to a more reactive attitude towards troubleshooting.

Decision-making is slow in a blind warehouse and prone to human error.

### Key characteristics of traditional warehousing:

- **No real-time visibility:** There is no live overview of the warehouse data points, which negatively impacts inventory and overall operations
- **Reactive problem-solving:** A reactive approach means that teams would only address issues after they've appeared, often leading to disruption or revenue losses
- **High inefficiency and error rates:** Human errors are common and frequent in blind warehouses:

**"Organizations with poor inventory management practices have an average inventory accuracy rate of just 63%."**  
([source](#))

### The data problem:

Most of these issues are tightly related to the way data is gathered, analysed, and used in decision-making. In a blind warehouse, data tends to be:

- **Not timely:** Collecting data only during audits or scheduled counts is time-consuming, inefficient, and can lead to outdated information that negatively impacts decision-making
- **Not complete:** Due to warehouses being assessed in "slices", data becomes very fragmented and fails to provide a comprehensive overview of the entire warehouse
- **Not accurate:** Manual data entry is prone to human error.

### Key benefits of the Blind Warehouse:

- **Lower technology-associated costs:** Costs with implementing automated, intelligent devices to track, gather and analyze data can be expensive on the short term
- **No need for new training or change management:** Maintaining the same way of operating reduces friction with employees and the need for training for new technologies. Operations run in the same way they ever did
- **Reduced vulnerability to tech disruptions:** Operating independently from major technologies means that these warehouses will not be impacted by any disruptions like bugs, connectivity, software updates, or other types of tech failures.

Benefits of a Blind Warehouse are limited and can also turn into liabilities. Avoiding a transition to more advanced operations to reduce costs may actually prove costly in the long term, especially in a competitive market. What seems like simplicity can become a bottleneck on the path to profitability. While tech disruptions pose risks across all industries - not just logistics - the benefits of adopting technology, as we will see, are significantly greater.

Manual, traditional data gathering and process handling create longer maintenance and optimisation processes. Operators who choose this path are bound **to lose a very important competitive advantage in the market, miss opportunities, and deliver lower customer satisfaction.**

**The era of blind warehouses is close to its end, as these methods are no longer sustainable.**

**Taking the next step:** The disruption caused by moving from a blind to an observable warehouse is significant. From all stages in this journey, disruption is the most powerful here because it brings a complete change of paradigm. It's important for teams to understand how they will benefit from switching from manual to digital tracking and what opportunities this will bring to them. Change management plays a critical role here, as does partnering with the right suppliers to bring technology into the warehouse.



## 2.2 The Observable Warehouse

An important step in this transformation was switching from blind warehouses to the “**observable**” warehouse, enabled by the emergence of new scanning technologies and automated data gathering systems that change the way data is captured. These new tools - such as barcodes, RFID tags, scanners, WMS (warehouse management systems) and automated robots - eliminate several manual processes, increasing inventory accuracy, while also being cost-efficient and bringing little disruption to warehouse processes.

Barcodes, for example, have made a great difference in reducing errors -

“Manual processes typically yield **1 error per 300 items counted, compared to just 1 error per 3 million scans with barcode systems**” ([source](#))

while RFID tags enable an increase of inventory accuracy from 63% to 95% ([source](#)).

Other technologies like autonomous data gathering robots, sensors, camera-based systems have also contributed to a smoother, faster, more accurate scanning process in the warehouse.

The surge in data generated by modern warehouse technologies initially required human interpretation, making centralized systems essential. The development and deployment of Warehouse Management Systems (WMS) provided real-time insights and enabled teams to make informed decisions more efficiently. As warehouses continue to evolve with advanced technologies and become adaptive, WMS platforms remain critical—but they must also adapt, becoming more intelligent and easy to integrate with new systems.

**However, this move is just one milestone along the automation way, as it still leaves some blind warehouse critical issues unsolved.**

### Key characteristics of the Observable Warehouse:

- **Multiple ways of tracking resources:** Tracking technologies like barcodes, RFID tags, WMS, LMS, fleet management systems for robots have been deployed in warehouses since the late 90s, with a more widespread adoption in the 2000s, changing the game for tracking and boosting transparency
- **Automated data collection but manual insight generation:** Warehouses now gather extensive amounts of data thanks to automation, but tracking systems remain disconnected. This means it's still up to humans to collect, measure, compare, and turn insights into action—making the process slightly better, but far from optimal
- **Improved responsiveness:** Real-time data enabled faster troubleshooting, but processes still remain **reactive** as new technologies don't act based on the data they gather
- **Human error is reduced but not eliminated:** Technology has helped reduce human error, but challenges like misinterpretation and delayed human decisions still negatively impact operations.

### Key benefits of the Observable Warehouse:

- **Increased inventory accuracy:** As more tracking technologies started being deployed, accuracy plummets. [Autonomous robots](#) equipped with sensors become a game-changer, enabling considerably more location scannings and creating data maps that can lead to up to 99% inventory accuracy
- **Reduced error-associated costs:** Access to data also translates into reduced costs associated, for example, with faulty inventory tracking, misplaced items, overstocking, lost product etc.
- **Operational efficiency:** From day-to-day operations to larger scale ones, using digital data systems ensures a better allocation of resources, budgets and a more informed decision making process. Creating digital maps of the warehouse enhances transparency

- **Better reporting and analytics:** The Observable warehouse assists human teams in analyzing performance, potential risks and opportunities by providing them with high volumes of data. Nonetheless, as we stated before, these data sources are disconnected so the process is not as smooth as possible
- **Increased safety in the workplace:** As robots can take over more repetitive and dangerous tasks, safety in the warehouses may increase.

This stage opened the way for real-time visibility, accelerating decision making, and reducing costs in the Observable warehouse.

However, these emerging technologies are mainly used to speed up data gathering, but analysis and decision-making depend on human interpretation. The Observable warehouse has gained better visibility, is far more responsive, but it is not intelligent just yet.

**Taking the next step:** Once technology has been brought into the warehouse, the transition to the next step becomes easier but not challenge-less. **In this stage, teams have to understand how to manipulate data generated by the digital systems and make proper use of them. As AI will be introduced in the next step, it is very important for both benefits and risks to be properly understood in order for human teams to make room for efficient AI assistance.**



## 2.3 The Intelligent Warehouse

The next major step in the warehouse evolution comes through the integration of **analytics, artificial intelligence (AI), and machine learning (ML)**. Warehouses begin to turn data into insights, and predictive models, basic automations, and optimized workflows become possible.

At this stage, **AI becomes essential for insight generation, but human intervention remains critical in the final decision making process, in**

**turning the insights into action.** We see better workflows, improved stocking decisions, and a faster decision-making process overall with the **support** of AI.

For the first time, we can talk about a **proactive approach**.

### Key characteristics of the Intelligent Warehouse:

- **Data-driven optimizations:** By using real-time data and AI, many processes in the Intelligent Warehouse become more agile. Time-consuming, low-value-adding processes become automated.

**“AI-powered tools can unlock 7 to 15 percent additional capacity in warehouse networks by identifying additional daily spare capacity, understanding variability in resource availability, and evaluating opportunities to improve efficiency.”** [\(source\)](#)

- **Proactive decision making:** Artificial Intelligence can forecast inventory shortages or high-demand items, anticipate problems, and make suggestions that can be used to timely meet potential issues
- **Human-centric:** the Intelligent Warehouse relies more on technology, but humans still validate insights, models, and actions, and make the final decisions
- **Predefined rules and strategies:** AI follows predefined strategies and rules. It can use data to make recommendations, but these will be based on the rules it was trained to follow, leaving humans to adjust them if necessary
- **Predictive analytics for stock levels and demand:** Using AI's support to forecast demand reduces errors and cuts costs

**“Applying AI-driven forecasting to supply chain management, for example, can reduce errors by between 20 and 50 percent - and translate into a reduction in lost sales and product unavailability of up to 65 percent.”** [\(source\)](#)

## Key benefits of the Intelligent Warehouse

- **A new level of accuracy and efficiency:** The Observable Warehouse has already made the first step towards efficiency and accuracy, but the Intelligent Warehouse takes things to the next level with predictive analytics, a proactive approach to problem-solving and forecasting, and faster processes due to automation of low-value-adding activities
- **Basic automations:** In the Intelligent Warehouse, the AI enables some basic automations of lower risk, time-consuming or manual processes prone to error tasks, such as data entry, inventory tracking and task completion
- **Scalability:** AI and ML enable operational scalability, allowing warehouses to grow by using predictive analytics and real-time data to respond to market changes. These technologies can be scaled within the warehouse environment and retrained to adapt to evolving needs—whether that means expanding operations, adopting new business strategies, or scaling internationally
- **Better decision making processes:** In an Intelligent Warehouse, decisions are made based on big amounts of centralized data analysed with the support of artificial intelligence that can model them to predict potential outcomes
- Last but not least, one critical characteristic of machine learning systems is their capacity to “learn” and improve over time as they get more data. This stands valid beyond just logistics, as we are not discussing - yet - about AI agents that are trained and personalized for specific purposes within the warehouse.

**Taking the next step:** In the Intelligent warehouse, human intuition meets machine precision, setting the stage for the final step: the Adaptive Warehouse, a combination of AI, robots, AI agents, and high-level human management, fit for the supply chain of the future. We are witnessing another shift in paradigm, where human teams must make room, this time, for AI agents that act independently, making decisions and allocating tasks. The biggest challenge is related to building trust and to creating a clear image of the benefits that come with the adaptive warehouse.



## 2.4 The Adaptive Warehouse

**The Adaptive Warehouse is a warehouse that predicts disruptions, learns and adapts dynamically, and acts autonomously to maintain efficiency and resilience.**

AI “agents”- intelligent systems that can make decisions and coordinate tasks without human intervention, together with robots and AI, would work quasi-independently on process optimization and decision making without needing human supervision at all steps.

This goes beyond inventory management to include asset utilization, task management, people and vehicle coordination, and full warehouse optimization.

### Key characteristics:

- Adaptive warehouses **combine robotics, artificial intelligence (AI), and agent-based systems to automate and optimize operations**
- **Real-time data** is used to provide visibility into operations, predict failures, and enable proactive decision making
- As autonomous robots and automated task management take the place of manual processes, **the need for human intervention is reduced, moving people into more strategic, high-value roles**

- The adaptive warehouse is **an intelligent, agile ecosystem that learns, adapts and evolves** based on a sum of factors, from supply chain disruptions to new safety standards, regulations, market conditions, and more
- Access to more data than ever, interpreted by AI, with fewer humans involved in certain decision-making processes.

Observable / Intelligent Warehouse	Adaptive Warehouse
<ul style="list-style-type: none"> <li>• Products arrive at the inbound area</li> <li>• They are distributed based on predefined, often static rules, such as placing fast-moving items in one area or separating goods by weight or category</li> <li>• Trucks dwell in the yards, waiting to be allocated a gate</li> <li>• Time is wasted and costs are growing.</li> </ul>	<ul style="list-style-type: none"> <li>• Before even arriving, intelligent agents dynamically allocate gates</li> <li>• Trucks don't have to dwell in the warehouse yard waiting for gates to become available</li> <li>• Agents are assessing the best directed putaway plans for the inventory based on live conditions and predicted patterns. Operator tasks are automatically updated</li> <li>• AI agents simulate new scenarios and adapt.</li> </ul>



## 3. Why the Adaptive warehouse is the future

The Adaptive Warehouse is one that continuously senses, decides, and acts to optimize itself in real time, without waiting for human intervention. This new approach is not about replacing humans - it's about making warehouses **faster, smarter and more resilient**.

Powered by real-time data, artificial intelligence, and agentic autonomy, an Adaptive Warehouse responds dynamically to change, improves from experience, and evolves its operations proactively.

### An Adaptive Warehouse is:

- **Self-optimizing:** The creation and refinement of strategies. Constantly adjusting workflows, inventory placement, and labor allocation based on live conditions
- **Self-learning:** Through experimentation, feedback and adoption performance improves over time without reprogramming
- **Hyper-automated:** AI lead orchestration and execution with humans, robots and other AI counterparts
- **Collaborative and integrated:** Agents interact with systems and agents inside and outside of the warehouse to negotiate best outcomes.

### Key benefits of the Adaptive Warehouse:

- **Efficiency and performance:** Tasks and resources are allocated in a more optimal way. Integrating AMRs (autonomous mobile robots) with AI and agents leads to a boost in performance, faster detection of issues, faster resolutions, and continuous optimizations.
- **Resilience:** The e-commerce market evolves at a rapid pace, putting a lot of pressure on the entire supply chain. Every player must adapt

quickly and use the best tools and strategies to stay ahead of the competition. Customers are more inclined to value a great customer experience -

**"58% of consumers will sever a relationship with a business due to poor customer service" ([source](#)).**

This being said, the warehouse of the future needs to become more resilient to challenges, and this can be achieved by employing new strategies for cost savings, scalability, and decentralisation

- **Workforce empowerment:** As stated before, AI can be used to make better decisions on how to attract and retain talent or to increase safety in the workplace. Repetitive, time-consuming tasks become automated, processes across the warehouse are improved, leaving humans to transition from manual roles to higher-value, supervisory, and innovation roles
- **Sustainability:** Automations lead not only to increased efficiency but also to a greener approach in warehouses. Adaptive warehouses can use data and make decisions on how to reduce waste (for example, minimize HVAC/lighting usage by intelligent robot scheduling), or cut down on energy usage by having robots operate in the dark. AI can also be used to track and optimize energy usage across the entire warehouse, making the warehouse of the future greener and more sustainable.

In a volatile supply chain world, adaptive capabilities are not optional - they are a competitive necessity.

**"Organizations that develop adaptive supply chain capabilities grow revenue 2-3x faster than their peers."**  
McKinsey & Company, 2022

## 4. The formula for adaptation: Data + AI + Agentic AI

Achieving true adaptability requires more than technology - it requires the right combination of elements working together.

### 4.1 Real-time, complete and accurate data: The foundation

**"In warehouses with real-time inventory data, picking errors drop by over 25%."**  
Deloitte, 2023

For the intelligent and adaptive warehouses to work, a strong foundation of accurate, real-time, complete data is essential. This information, which can be gathered through intelligent data gathering robots, IoT devices, barcodes, or sensors, enables managers - and AI agents - to make faster, better decisions that lead to:

- Increased accuracy by continuously monitoring inventory
- Improved efficiency, as many manual, time-consuming tasks become automated
- Cost savings, as real-time visibility over stock, for example, can reduce both over and under-stocking.

A [2025 study on end-to-end digital supply chain solutions](#) places demand for real-time data as one of the most important trends to have a critical impact on strategy and operations. Complete, accurate, and timely data - captured through robotics and warehouse automation, is the bedrock. Without it, AI cannot function effectively.

### 4.2 AI: Turning data into intelligence

Traditional AI models can detect patterns, forecast trends, and suggest optimizations, helping human managers make smarter decisions faster. However, it's important to mention that -

**"Traditional AI models [...] operate within predefined constraints and require human intervention" ([source](#)).**

This being said, the data previously gathered generates important insights for warehouse managers who are now able to better forecast demand, plan, troubleshoot issues, and allocate resources.

**"Applying AI-driven forecasting to supply chain management, for example, can reduce errors by between 20 and 50 percent." ([source](#)).**

Artificial Intelligence uses all the data it receives to monitor and detect disruptions, reduce time spent on manual processes, and recommend optimal strategies in terms of slotting, inventory, or maintenance. In this case, AI is an assistant that improves performance, but its role is to **support** humans.

### 4.3 Agentic AI: Moving from insight to action

**"Agentic AI exhibits autonomy, goal-driven behavior and adaptability. The term "agentic" refers to these models' agency, or, their capacity to act independently and purposefully" ([source](#)).**

**Agentic AI is the game-changer. We go from being an assistant that passively makes recommendations to an autonomous actor that can perceive, decide, and execute in real time. The agent bridges data gathering, data analysis, and action and decisions are made on the fly, without human intervention.**

What this means is that now tasks are managed end-to-end, as the whole tech ecosystem collaborates to make decisions, learn and adjust based on changing conditions, and continuously self-optimize without human reprogramming.

**Agentic AI: The key enabler of the adaptive warehouse**

Agentic AI refers to systems that possess the autonomy to **perceive an environment, reason about it, make decisions, and act** — without needing human initiation at each step.

These AI-based warehouse agents would gather information from all other intelligent systems, databases, and rules to:

- **Make autonomous decisions** (e.g., changing slotting strategies based on simulations, reducing inventory inaccuracies by detecting out-of-stock products or by keeping a real-time visibility over inventory) to ensure a seamless operational flow
- **Coordinate dynamically with other agents** (e.g., warehouse agent talks to trucking agent) and assign tasks to humans and robots to increase productivity and reduce idle time

- **Manage workflows** like pick path planning, task allocation, picking and packing, as well as rerouting workflows during disruptions
- **Proactively enable equipment maintenance** by tracking machinery data and scheduling troubleshooting to avoid downtime and prolong equipment lifespan
- **Adjust workforce schedules** and staffing based on predicted demand or important upcoming events
- **Reduce costs** associated with waste or human errors by anticipating and acting on optimized strategies.

A multi-agent AI approach would mean having an ecosystem of specialised agents for different tasks, leading a distributed decision-making process. Multi-agent networks could manage slotting, shipping, financials, energy efficiency while constantly learning and adapting.

Without agentic AI, intelligent warehouses would still require pre-programmed rules and guidelines and human commands, which would affect productivity and speed negatively.



Traditional AI	Agentic AI
uses fixed rules, requires human intervention, can only perform tasks it was trained for, it can only provide recommendations	is autonomous, capable of adapting, improving, and following new rules, provides recommendations, and acts on them without human intervention

## 5. Challenges and considerations

Adopting an adaptive model brings important questions related to:

- **Governance:** Agentic systems need to operate within ethical and operational guardrails, but these key factors can spark difficult conversations even in manually handled processes. Many details and nuances are taken into account when sensitive decisions have to be made, that cannot be easily turned into “rules” for the AI to follow
- **Change Management:** Training AIs is not enough, and even in the case of agentic networks, humans will still play a very important role. It is critical to develop processes on how human teams can work efficiently alongside adaptive AI
- **Capabilities gap:** Implementing all these automations is a challenging task for which many warehouses will need expert tech skills. [Innovative AI, robotics companies](#) will be needed to collaborate closely with warehouses to develop these new systems in a timely, sustainable manner.

Probably one of the biggest challenges though is related to trust. How can we know that AI agents make the right decisions in order to let them take ownership? The answer comes from a concept called **Explainable AI (XAI)**, which helps users understand how and why certain decisions are made by AI agents, bringing more transparency on how certain decisions were made.

**“Explainable artificial intelligence (XAI) is a set of processes and methods that allows human users to comprehend and trust the results and output created by machine learning algorithms.” [\(source\)](#)**

There are three main methods in the setup of XAI techniques [according to IBM](#):

- **Prediction accuracy**, determined by running simulations and comparing outputs
- **Traceability**, achieved by allowing decisions to be made according certain rules
- **Decision understanding**, which is more related to how much humans are open to learning, understanding and educating themselves or their teams.

This brings trust and also comfort - and eventually to the long list of benefits of the adaptive warehouse.

Not adopting automation and not switching to an adaptive model poses critical risks at a business level. As mentioned before, customer expectations evolve, and speed and accuracy become more important than ever across the supply chain and within warehouses. Companies refusing to automate processes and employ AI will lose on the competitive side.

There are warehouses that are early adopters, eager to test new strategies, while others remain resistant to change. Nonetheless, adoption of AI across the supply chain is expected to rise among supply chain leaders,

**“With 28% reporting that it’s in use today, and another 54% reporting that they plan to have it in use within 5 years, making the 5-year total nearly triple that of today at 82% by 2029” [\(source\)](#).**

With the increasingly impressive results that can be achieved through automations, not changing can mean losing market value.

Furthermore, manual processes are often more prone to human errors, which can lead to waste and increased operational costs.

Last but not least, even though some people will look at this shift with skepticism, automation can help address workforce-related issues and help warehouses better manage labor shortages by automating manual tasks.

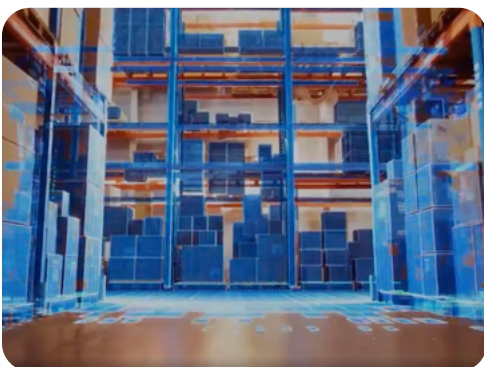
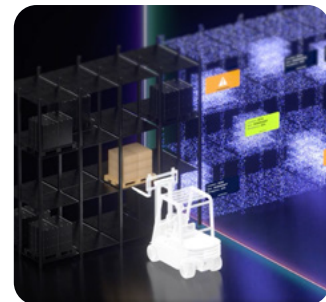
The path forward involves phased integration - moving from human-in-the-loop systems to full autonomy in defined safe zones or for specific processes, workflows or functional areas.

## 6. Looking ahead: The road to fully adaptive supply chains

Adaptive warehouses won't operate as isolated parts of the supply chain. Cooperation will be key, and warehouses will become intelligent nodes in a web of dynamic logistics where all parts will collaborate autonomously to a certain degree.

This kind of integration will enable organizations to dominate in speed, cost, resilience, and sustainability. New, seamless flows of data and goods will open the door to embracing new opportunities and to faster issue solving - for example, making sure stocks are up to date and triggering automatic resupply orders, reducing time spent on manual tasks, and ensuring product availability.

A coordinated, collaborative AI system could mean that decisions are now made holistically for the whole network, leaving humans to focus on strategy, exception management, and innovation instead of manual operations.



## 7. Conclusion

We are currently on a journey to build the warehouse of the future. The change won't happen overnight, but it will happen faster than with other important revolutions in our history.

We are already witnessing a paradigm shift to smarter facilities that employ sensors, RFID, barcodes, robots, AI, and even agents to increase productivity, speed, reduce costs, and stay ahead of the game.

The warehouse automation market is growing, and it's expected to continue growing by more than 10% per year until 2030 [\(source\)](#). Furthermore, companies aim to allocate approximately 25% of their capital spending to automation over the next 5 years [\(source\)](#).

**Those who invest early in Data + AI + Agentic AI will build warehouses that think, learn, and lead, securing a durable competitive advantage for the next decade and beyond.**

Warehouses that understand this will be better equipped for the future. As we've seen, this shift extends beyond the warehouse, as the entire supply chain needs to and will become more resilient and agile.

By adding this layer of intelligent technology to existing processes to optimize and constantly improve the entire warehouse ecosystem, we're stepping into a new phase of logistics. Warehouses add important value in the supply chain, and while there are still challenges to be tackled, the benefits can unlock substantial gains in terms of efficiency, performance, agility, workforce and sustainability.

The switch to the adaptive warehouse is a strategic one that redefines how warehouses operate and deliver value. A warehouse that self-optimizes, learns, is hyper-automated, and combines human skills and knowledge with advanced AI, is bound to dominate the market. It can meet any emerging need or requirement with speed, precision, intelligence and thus becomes a central node of the supply-chain. For warehouses aiming to stay resilient, competitive, and profitable in a rapidly evolving market, becoming adaptive is no longer optional - it is essential.



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