THE RISE OF WAREHOUSE AUTOMATION

Software-Based Automation Ecosystem

Honeywell

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OVERVIEW

Technological innovation and the internet have forever changed how the warehousing business works. Our economy now runs digitally. In a digital world, warehouses thrive by seamlessly adapting to ever-changing market conditions. That means warehouse operational agility now becomes a critical element for remaining competitive.

$1T

e-Commerce in the US is forecasted to reach $1T by 2029

+ 50%

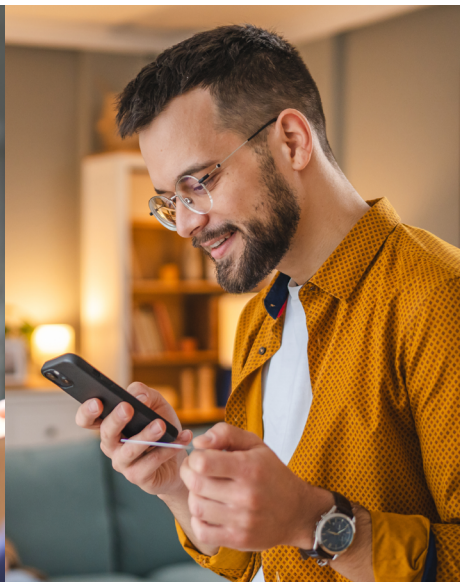
Source: Statisa

This agility challenge became quite evident during the recent global pandemic. As goods and services supply lines were disrupted, demand soared. At that time, organizations recognized that they could no longer postpone much-needed operational advancements in automation. According to a 2022 Ernst and Young (EY) warehousing industry survey, only 2% of respondents said they were fully prepared for the pandemic, with 57% reporting disruptions and 72% reporting a negative effect on their business. Fluctuating marketplace needs are driving the need to evolve automation solutions and augment with digital solutions.

Today, warehouses require high operational speed, accuracy, and efficiency to survive. Major trends such as e-commerce have raised customer expectations to new heights. According to Statista, the e-commerce market in the United States is forecast to grow by 51% over the next four years and is estimated to reach $1.1 trillion by 2029. Especially on the consumer side, the option for next-day delivery of ordered products is becoming more commonplace.



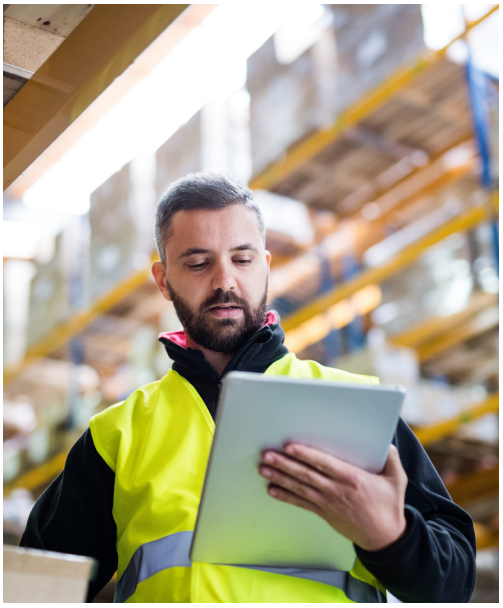




These trends significantly burden the warehouse industry, and the need to process higher volumes of goods at faster rates has been made more difficult due to severe labor shortages. A recent Hanover Research/Berkshire Grey survey reveals that 57% of executives believe labor shortages have hindered their ability to meet demand.

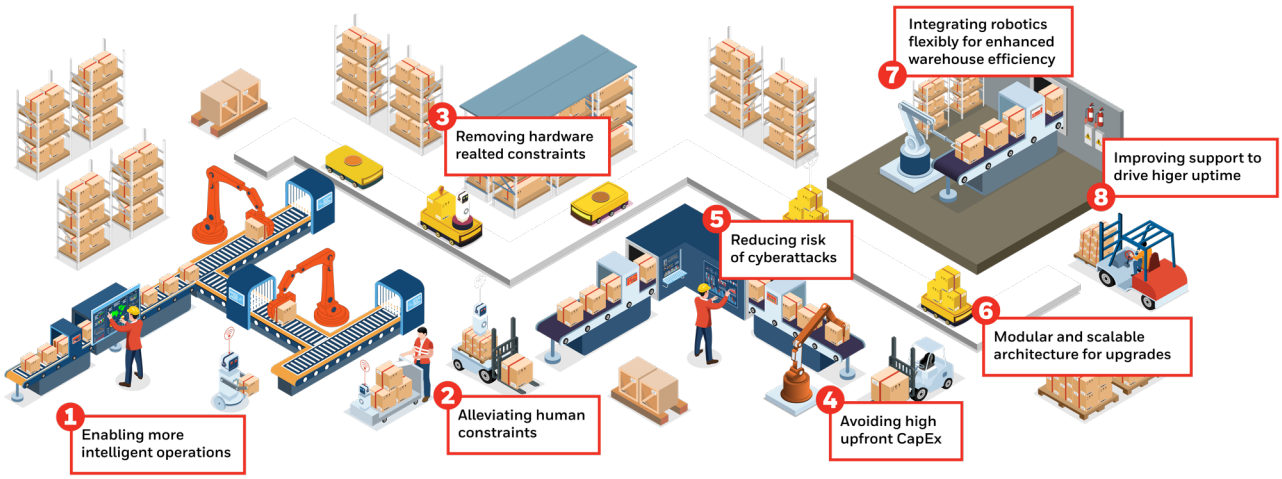
To overcome these challenges, warehouses must continue modernizing to remain competitive. Many are searching for future-proof automation software solutions. However, making the right choice can be complex and fraught with risk.

Fortunately, innovations in automation now offer a lifeline to organizations struggling to keep up.



THE ADVANTAGES OF HARDWARE-AGNOSTIC WAREHOUSE AUTOMATION SOFTWARE SOLUTIONS

From a technology standpoint, much has changed over recent years. One of the most significant new trends is the shift from hardware-dependent automation solutions to more unified,software-driven ecosystem. This represents a positive trend for warehouse owners for multiple reasons.



ENABLING MORE INTELLIGENT OPERATIONS

Honeywell Intelligrated's Momentum WES factors in multiple process-specific data attributes that impact output.

Traditional warehouse management systems (WMS) typically adopt what's referred to as a "push" approach to warehouse operations. For example, the warehouse is expected to process 10,000 orders in one day. The WMS plans for 10,000 pieces to get processed and doesn't concern itself with how the work is done. Issues such as congestion, bottlenecks or labor constraints are not factored in.

New generation software systems, such as the Honeywell Intelligrated's Momentum Warehouse Execution System (Momentum WES), are different because they factor in multiple process-specific data attributes that impact output. These systems can make workflow and labor adjustments on the fly to avoid typical warehouse delays and bottlenecks. Some of those data attributes include loading dock area truck arrival and departure times, the number of containers that can be held in a particular area before total capacity is reached, and the types of issues occurring along the various networks of conveyor belts.

The system is designed to create and maintain a workload balance across the warehouse, avoiding undesirable activity peaks and valleys, and is continuously adjusting to maintain smooth consistent workflow.

Such a system avoids the traditional reactive responses of moving people to new areas to deal with overflow problems until the issue is fixed. Such efficiencies make it easier for warehouses to continuously fulfill stringent customer-related service-level agreements. Additionally, it frees up resources and budget for potential growth and/or savings.

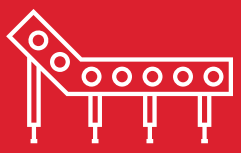
Examples of data attributes factored by **Momentum WES**



Truck arrival & departure times



Container capacity in a certain area



Conveyor belt network issues

ALLEVIATING HUMAN RESOURCE CONSTRAINTS

Most warehouse owners encounter difficulties hiring and keeping adequate warehouse staff, especially in geographical areas with high warehouse density. New-generation warehouse platforms, like Momentum WES, eliminate much of the mundane, rote, repetitive work that staff members typically perform and allow available staff to focus on managing critical end-to-end warehouse processes. The system also allows the warehouse management team to plan and predict where the labor needs will be ahead of time. Much in the same way that commuters use their cell phones to predict emerging traffic patterns (and thereby avoid extended traffic jams), the on-the-fly rerouting and smoother workflow capabilities of Momentum WES help avoid situations where extra personnel have to be brought in on short notice to address emergencies. Instead of responding to a steady stream of workflow bottlenecks, the balanced labor approach enabled through the platform's design fosters uptime, reduces the need for overtime work, and, in most instances, can reduce a typical 8-hour work shift to 7 hours.



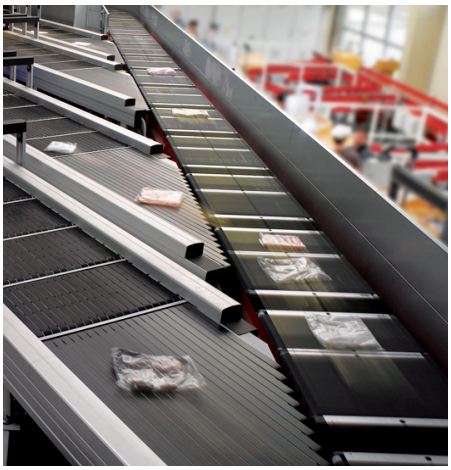
REMOVING HARDWARE-RELATED CONSTRAINTS ON GROWTH

Software-driven warehouse automation solutions like Momentum WES are hardware agnostic.

The software is designed independently of any underlying automation hardware, can be distributed across heterogeneous devices efficiently, and enables those devices to interoperate easily. Users are no longer locked into a particular technology vendor and forced to work within the technology limits of that vendor's hardware device. Such a platform enables warehouses to cherry-pick the best hardware technologies and optimize their execution through the software. Warehouse operators no longer find themselves having to work within a series of independent technology silos. Requirements such as flexibility, adaptability, and resilience, which legacy automation systems do not address optimally, are greatly enhanced.





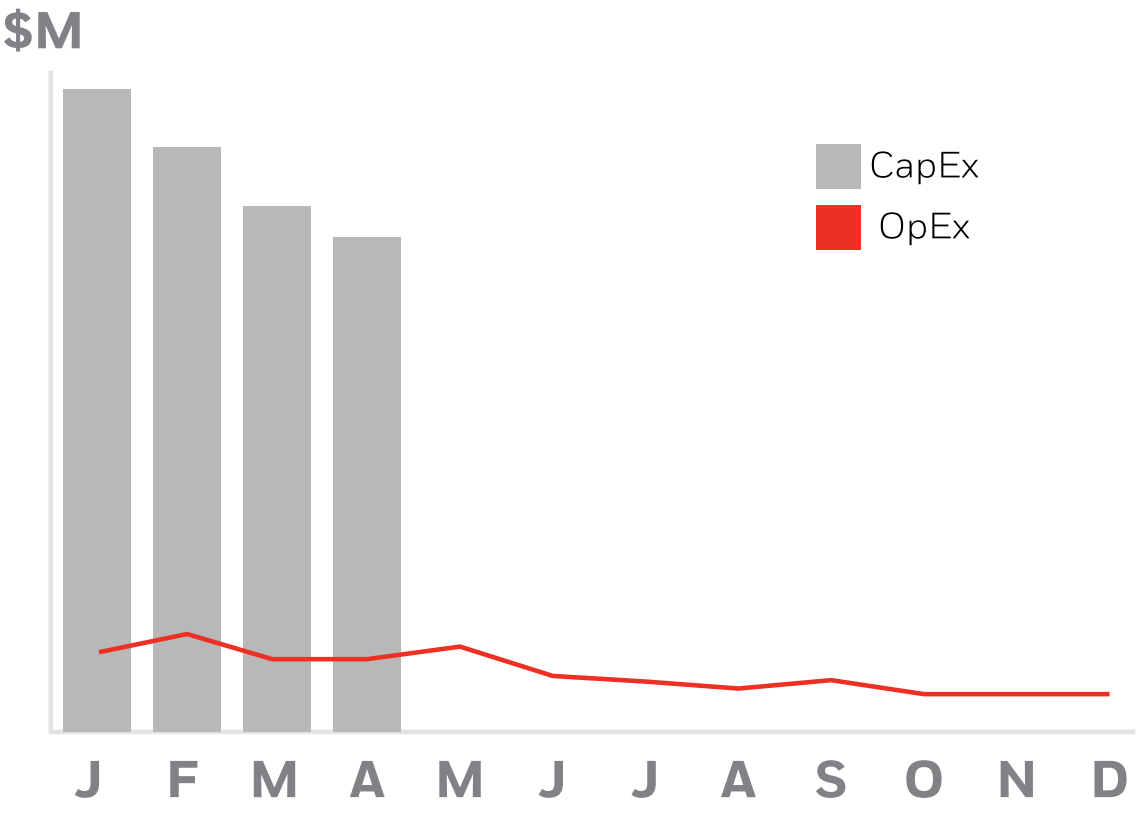




AVOIDING HIGH UPFRONT CAPEX

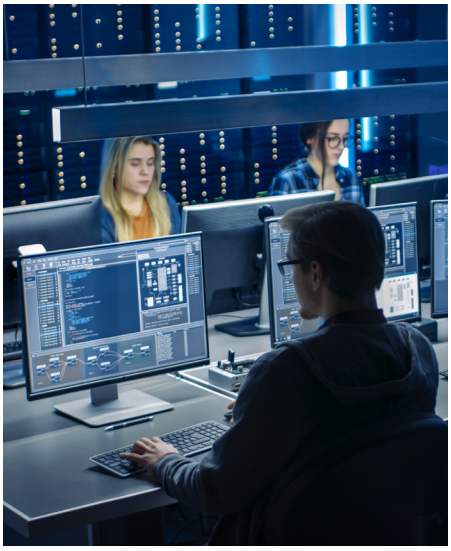
MOMENTUM WES
now available
via the cloud

Many organizations have resisted making warehousing automation modernization investments because of the prospect of hefty up-front costs and limited capital budgets. With the advent of cloud computing and warehousing automation solutions like Momentum WES now available via the cloud, warehouse owners can convert to subscription-based “as-a-service” contractual arrangements and business models that shift CapEx to OpEx. Owners no longer have to bear the financial burden of high upfront costs or buy industrial servers to manage their warehouse platform. By deploying software paid for monthly, quarterly, or yearly, warehouse owners begin to accrue the immediate benefits of a more streamlined, software-driven operation.



REDUCING RISKS OF CYBERATTACKS

Choosing a cloud-based automation solution also enhances the degree of cybersecurity.



Keeping up with cybersecurity upgrades and patches has always been challenging for many warehouse operations. Cloud-based automation software automatically addresses the issue of up-to-date security protection. The latest security levels are applied every time a new software version is released. Honeywell software code, for example, undergoes security scrutiny and testing before it is ever released to the market.

These high standards help warehouse owners operate with peace of mind as they modernize their automated operations.

LIMITING UPGRADE DISRUPTION DUE TO MODULAR AND SCALABLE ARCHITECTURE

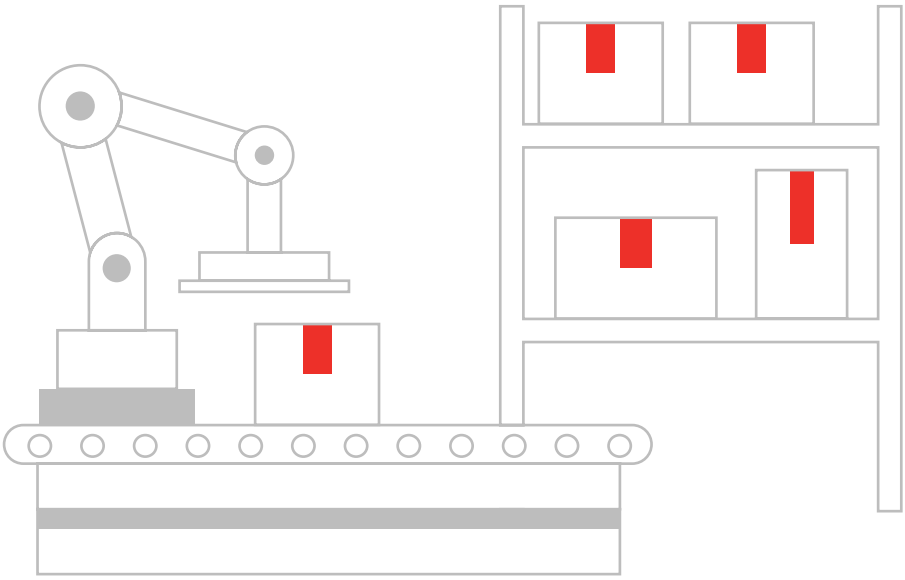
Technology upgrades have proven to be complex, expensive, disruptive, and time-consuming for most warehousing operations. Although this still holds true for many hardware-driven upgrades, working within a software solution like Momentum WES facilitates smooth transitions. For example, a first step might be integrating a solution that enables a more efficient picking process. Momentum WES routing and picking functions are modular and scalable. Multiple levels of functionality can be added as business growth dictates. New modules, whether they involve Autonomous Mobile Robots (AMR) or other new robots, can be up and running and tested while minimally impacting business uptime. As more modules are added, the system can work with more data, further improving overall performance across warehouse operations.



INTEGRATING ROBOTICS FLEXIBLY FOR ENHANCED WAREHOUSE EFFICIENCY

In today‘s business landscape, warehouse owners often face the challenge of integrating new technologies seamlessly.

Software platforms such as Momentum WES software offer a solution by enabling swift integration and scalability of robotics within warehouse operations. Whether it’s integrating new robotic systems or scaling up existing ones, Warehouse Execution Systems simplify the process. Its flexible architecture allows for seamless incorporation of robotics into various warehouse tasks, from inventory management to order fulfillment. With a system like Momentum WES, warehouse owners can efficiently deploy robotics to optimize operations without disruption, ensuring smooth and efficient workflows.



IMPROVING SUPPORT TO DRIVE HIGHER UPTIME

In today's business landscape, warehouse owners often face the challenge of integrating new technologies seamlessly.



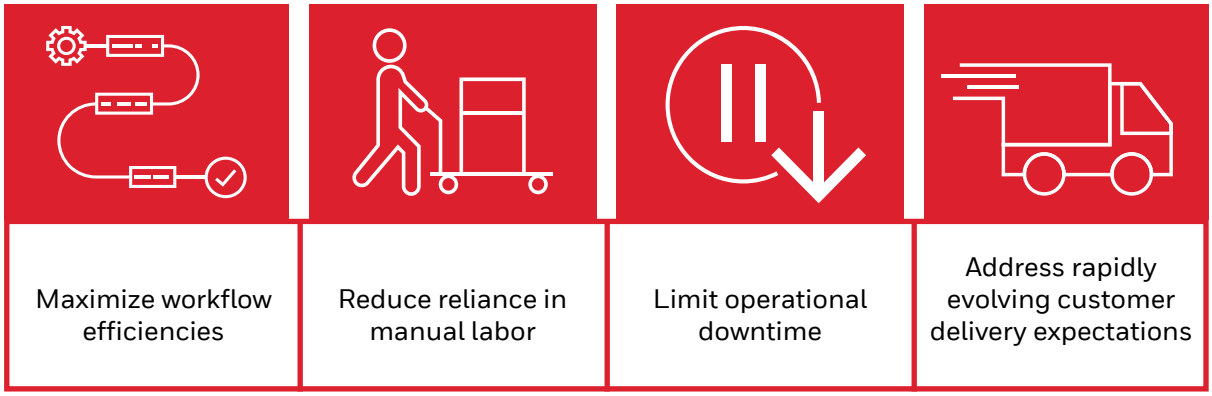
The new software platforms offer a variety of support plans that help to maintain high levels of system uptime. Once warehouse employees are trained to operate the system, a 24-hour hotline is made available. When help desk staff members receive a call, they can log into the system and assess the situation. They quickly involve second-level support if they cannot immediately address the issue. These are individuals who are intimately familiar with the client's automation project. A third level of support is also available, involving software developers, if needed. Such place it on the shoulders of Honeywell, a globally recognized top-tier technical support provider.



SUMMARY

Unleash the power of your warehouse & optimize your operations with Warehouse Automation.

Warehouse organizations invest in automation to:



Achieving such goals enables the organization to remain competitive.

Today's urgent marketplace demands favor organizations with the agility to pivot quickly when customer preferences shift. New process-centric automation platforms, like Momentum WES, are designed to allow users to exercise greater control over their processes and improve business variables that impact profitability.

The vendor-agnostic nature of the software enables better interoperability across warehouse functions. Reusing existing warehouse assets in modern contexts regardless of the supplier who produced them provides an easy and cost-effective method for keeping systems flexible and up-to-date.

For more information
https://automation.honeywell.com/us/en

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