Top Reasons for Digitalization in Warehouse Environments

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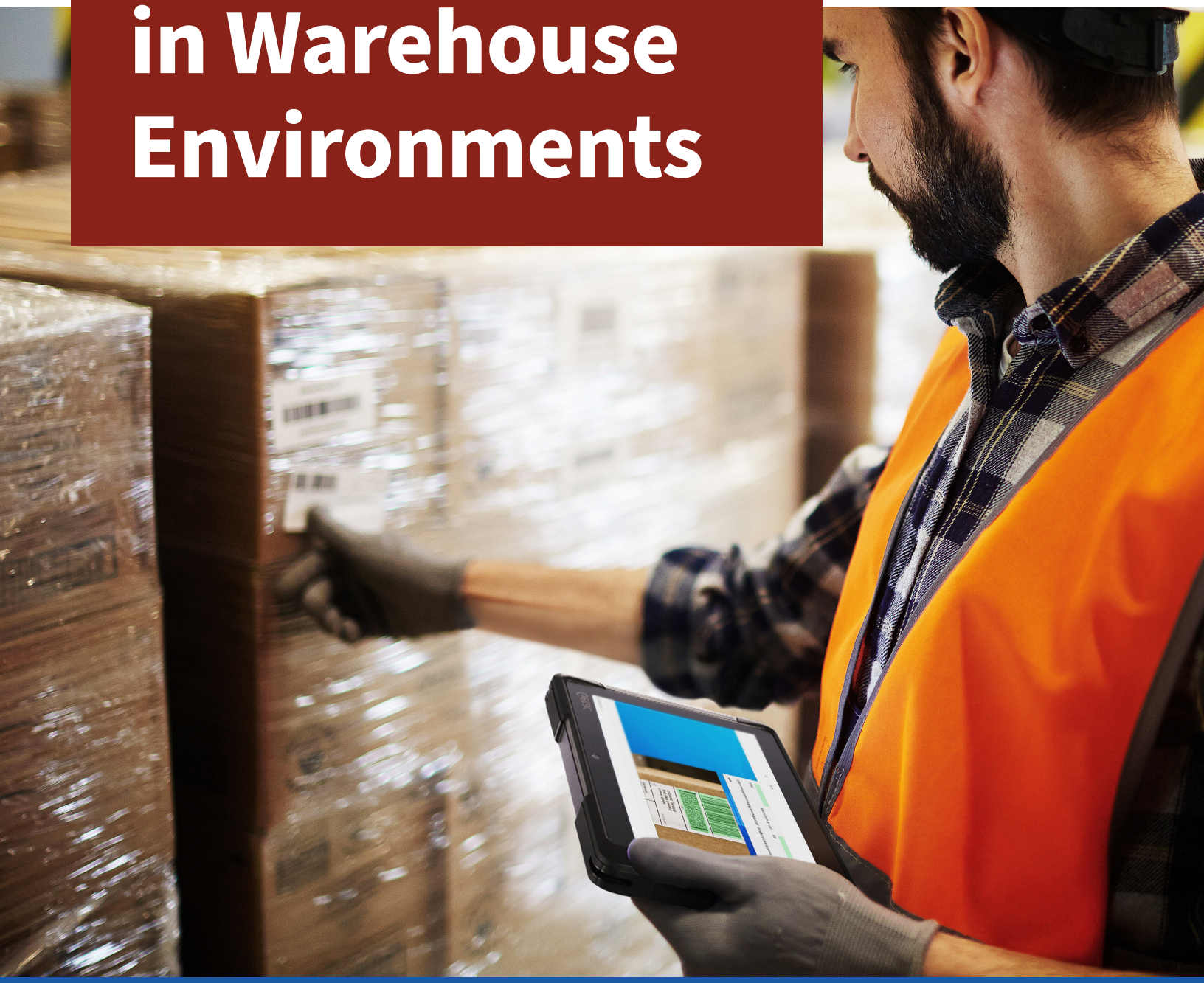

An in-depth look at the top challenges facing today's warehouse operations and the benefits companies gain from digitalizing their forklifts and material handling equipment.

MH&L Material Handling & Logistics

Digitalization is critically needed to accommodate increasing e-commerce sales, support labor shortages in today's market, and match the ever-present need to increase productivity with fewer resources. The digitalization movement requires industry-specific innovative thinking. Warehousing logistics and material handling are two areas where digitalization plays a crucial role in a company's ability to meet changing needs while increasing profits.

Defined[1] as the enabling or improving of processes with digital technologies and digitized data, digitalization enhances productivity and efficiency while also reducing costs. By changing a fully human-driven process into one that's either partially or completely software-driven, digitalization perfects this process without having to alter it completely.

As modern warehouses scale up to meet new market demands, they have become hotbeds for digitalization. In fact, in terms of material handling, logistics and supply chain association MHI reports[2] that 83% of companies believe digital will become the predominant model within the next five years and 22% believe it already exists.

This white paper explores the main challenges facing today's warehouse operations and explains the top benefits that companies get when they digitalize their forklifts and material handling equipment.

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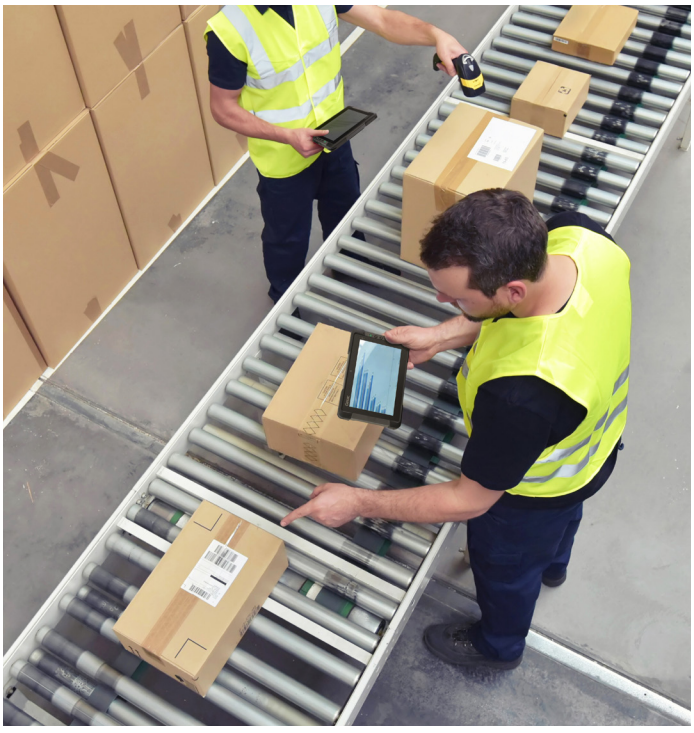
The Drive to Automate

Even before the global pandemic turned the world's supply chains on end, organizations were dealing with shrinking profit margins, high labor costs, a growing labor shortage, and the Amazon Effect (i.e., the e-tailer's impact on traditional brick-and-mortar retail models). As fast B2C delivery expectations spilled over into the B2B space, customers across the board began demanding same-day and next-day delivery. Combined with the rapid uptick in e-commerce sales, warehouses were being asked to manage a higher volume of smaller orders at a much faster pace.

Eager to grab these opportunities and maintain their market positions, organizations looked for ways to do more with less in the fulfillment environment, where labor turnover rates are often high, and automation and digitalization have been steadily gaining ground over the last decade.



1. "What is Digitization, Digitalization, and Digital Transformation," ARC Advisory Group, https://www.arcweb.com/blog/what-digitization-digitalization-digital-transformation.
2. "innovation Driven Resilience," MHI, https://www.mhi.org/publications/report.

"The drive to automate is largely being driven by the difficulties companies are having finding people to work; it's a real challenge happening across the board," says Andy Wing, regional sales manager at Getac, a leading provider of rugged computing solutions. "Companies are automating their conveyance systems, forklifts, pallet jacks, and other material handling equipment and realizing that if they add three sensors to a lift truck, they can get a 25% improvement in safety and increase drive time performance by 10%."

These are compelling arguments in a work environment where forklift drivers used to stop what they were doing to use handheld radios to get directions, update inventory, determine their best routes, and perform various other tasks.

Digitalization Improves Productivity and Efficiency

Digitalizing forklifts and material handling equipment involves more than just driving higher levels of throughput volume in a fulfillment operation. Additionally, improving employee productivity, enhancing order picking efficiency, and minimizing deadheading (i.e., driving around empty forklifts) all result in higher levels of order accuracy.

When equipped with the right technology, forklift drivers can play an essential role in inventory management by forecasting supply and demand and adjusting stock as needed. And when forklift drivers can find the right material at the right time and right location, entire operations run more smoothly, efficiently, and affordably.

Realizing this, a growing number of companies are moving away from manual material handling systems, two-way radios, and spreadsheets and increasingly using automation to add efficiencies to the picking, put-away, and restocking process. This, in turn, helps them meet the demands of the e-commerce customer, reduce accidents and incidents, and work through the persistent labor shortage.

Digitalization is the way of the future.

Eight Reasons to Digitalize Now

Here are eight more reasons why companies are digitalizing warehousing and material handling and expert advice on how to best leverage these advantages at your own company:

1) Equip forklifts with warehouse technology. "When you can extend your enterprise resource planning (ERP) to the forklift via a 'distributed computing' setup, that operator will be exponentially more accurate," says John Geary, co-founder and director of sales at Glacier Computer, LLC, in Boston. The inventory shows up on the device's screen and is updated regularly, thus ensuring faster pick times. This, in turn, provides higher levels of order visibility for customers who demand it. "The company operating on razor-thin margins can't afford to have a forklift operator hop off of a vehicle, enter an order on a desktop, or hand someone a piece of paper," says Geary. "It's just too archaic and inefficient."

2) Eliminate inefficient space planning. Physical space is at a premium in busy warehouses, where there's an inevitable tradeoff between handling and storage efficiency. The empty space associated with storing just one item in a storage area, "honeycombing" happens when pallets or cases are removed from that area, or when not enough product is received to fill a pick position or lane. This can lead to inefficient or poorly planned pallet racking and other problems. Using an ERP and/or warehouse management system (WMS), companies can avoid these problems and leverage approaches like FIFO (first-in/first-out) to ensure the best use of space.

3) Eradicate paper and leverage real-time data. While digital technology has been around for a while, some "slow to change" adopters still run their warehouses with clipboards and paper. This approach falls short in a business environment where inventory needs to be updated in real-time, quickly transmitting data back to logistics personnel and informing customers as orders are picked, packed, and shipped. "The only way a company can provide that information — be it Walmart, Amazon, or an apparel distributor," says Geary, "is by having digitalization that leads back to the individual forklift." By equipping their forklifts with Getac rugged tablets and Gamber-Johnson mounts, companies gain the portability and flexibility they need to meet these demands and effectively digitalize their operations.

4) Reduce fuel costs and deadheading. Digitalization is a critical hub for collecting and exchanging valuable data. Forklifts should never be driven around empty and aimless. Known as deadheading, this practice consumes fuel, wastes time, and takes drivers away from more important projects. Drivers

operating in a 10-million-square-foot warehouse, for example, may have to traverse an entire mile to find out what their next mission is. One onboard computer integrated with an ERP eliminates this problem and ensures optimal fuel usage by telling drivers: "You're here and this is the most efficient thing to do next."

5) **Reduce touches and errors with barcode scanning.** Another way to minimize deadheading is by always picking the correct item the first time. One of the best ways to achieve this is by using barcode scanners in your picking operations. “With barcode scanning, you get real-time access to all of your data (from the ERP, WMS, or other solution), and the ability to easily input data back into the system,” says Charlie Schmidt, senior account executive at AbeTech in Rogers, MN. As barcode technology has improved, it’s become even more ubiquitous in the digitalized warehouse, where clerks use it to scan barcodes through shrink wrap, are alerted when the incorrect location is scanned, and utilize 2D labeling to capture more information about specific stock keeping units (SKUs).

6) **Enhance safety and reduce incidents.** Forklifts can create significant workplace hazards when used improperly by distracted drivers. They were the source[3] of 79 work-related deaths and 8,140 nonfatal injuries involving days away from work in 2019. Digitalization can help reduce these incidents through capabilities like screen blanking. An example would be Getac’s Driving Safety Utility which automatically blanks the screen when internal sensors detect movement or a GPS signal. Onboard computers are also useful for efficiently completing pre-trip inspections. These functionalities help support safe forklift usage and improve driver safety in the warehousing environment.

7) **Improve driver efficiency and ergonomics.** Part of a total digitalized material handling solution, rugged device mounts help ensure driver efficiency, ergonomics, and safety as vehicles move around in and out of the warehouse. “It's as critical a decision as the other components that are going into a company’s complete, intelligent solution,” says Craig Ransavage, material handling and logistics product marketer at Gamber-Johnson, which offers both core products and custom designs that support unique applications. For instance, a company may want to move the "trigger finger" to the left side of a handheld scanner to accommodate order pickers using a joystick in their right hands and leave their left thumbs free for multitasking. “In a warehouse that was 11 million square feet in size and included over 1,100 different pieces of equipment,” says Ransavage, “the company was able to save considerable time by making that one change.”

3. “Safety Topics,” NSC, https://injuryfacts.nsc.org/work/safety-topics/forklifts/.

8) Reduce IT costs and minimize downtime. In the fulfillment environment, success is also about uptime and operational readiness. That means both technical support and downtime must be factored into the total cost of ownership (TCO) for any equipment or technology purchase. Schmidt says the many different device management products on the market help labor-constrained companies keep close tabs on equipment performance and downtime without the need for more human intervention and/or IT support. "We're offsetting companies' technical support teams and adding modules that automatically manage the devices, most of which are cloud-based," Schmidt says. In many cases, equipment downtime can be avoided by simply reapplying an application or changing its configuration settings versus swapping out a computer.

Ready, Set, Go

Companies that are either starting or furthering their warehouse digitalization journeys should keep a few things in mind as they move forward with their plans. For starters, they should explore the operating system (OS) options and determine which will best support their current and future material handling needs. After Microsoft ended its support of Mobile OS in late 2019, the two main choices are Android and Windows 10. In the warehouse environment, usage is about 50/50 for tablets and leans heavily toward Android for smaller devices.

Other key considerations include:

- Connectivity: Because Wi-Fi has limited range, some areas of the warehouse may require cellular activity, or transitioning back and forth between Wi-Fi and cellular.

- Operator usage: If operators work outside, they need rugged devices engineered to withstand extreme environments like rain, sleet, and snow. The operator should also be able to interact with the device while wearing gloves and a sunlight-readable screen for bright outdoor use.
- The elements: For forklifts that move between dry and cold storage, devices must be rugged enough to weather the extreme temperature variations (which can cause condensation).
- Vibration: Because forklifts are rigid, vibration is a concern when mounting electronic devices to a frame. The mounts have to be rigid and the electronic connections strong enough to withstand the shock and vibration.

As someone who represents a wide range of rugged tablet and laptop options for today's warehouse operators, Geary says Getac stands out for its solution architecture support and breadth of products, all of which were designed to meet the needs of the modern fulfillment center. "Getac's breadth of products, support, and communication make its products the easiest to deploy," says Geary. "For resellers like ourselves who have very little patience for mistakes or missteps, the path of least resistance is always our direction of choice."

To companies that are ready to digitalize their warehouses and begin leveraging the advantages outlined in this white paper, the time to make this move is now — not later. "Every day that you're *not* doing it represents a missed opportunity and lost revenues," Schmidt concludes. "The sooner you make that move, the sooner you'll see the value in converting to digital."