

DIGITAL TRANSFORMATION IN THE WAREHOUSE: THE ROLE OF MOBILE SOLUTIONS



INTRODUCTION



With tight labor markets and a retail ecommerce boom, businesses are turning to automation to streamline their warehouse operations. A 2018 survey conducted by Peerless Research on behalf of Logistics Management and Modern Materials Handling reported that 93% of operations are using some type of warehouse management system (WMS), including legacy or best-of-breed systems, enterprise resource planning (ERP) with a WMS module, or warehouse control/execution systems.¹ Companies have clearly embraced technology solutions to relieve increasing demand and complexity.

Technology can help companies overcome labor-intensive warehouse processes, increasing speed and accuracy for tasks like storage and retrieval and order picking and fulfillment. Ubiquitous connectivity means data can be available to workers in real time,

helping to improve inventory and supply chain visibility and for analyzing traffic patterns, available capacity and productivity. Automated systems offer the only practical solution for the increasing complexity in the warehouse that includes a greater number of smaller orders and demand for customized kitting, faster shipping and easy customer returns.

Despite a large percentage of warehouse operations currently benefitting from some form of WMS, there is more progress to be made. WMS combined with advanced mobile solutions, expanding software capabilities and the adoption of emerging technologies such as the Internet of Things (IoT), robotics, augmented reality and artificial intelligence will bring even greater efficiency gains in the future. Mobile solutions are the interface to these technologies, enabling workers to work smarter and faster. This paper focuses on the role of mobile solutions in the warehouse as a key strategy for digitally transforming their business.



MOVING TO ADVANCED MOBILITY IN THE WAREHOUSE



In the warehouse, rows and racks of pallets and boxes contain a mountain of items that need to be managed. Warehouse workers are the muscle behind the scenes. They pick, pack and ship boxes and containers with increasingly faster speed. In an intensely competitive market where data is central to success, pen and paper and even legacy technology solutions are not enough to maintain a competitive edge.

It's all about access to data

Modern mobile solutions expand access to the information that workers and managers need to ensure accuracy, create a more efficient workflow and boost productivity. These solutions typically include a rugged mobile computer running a range of increasingly more sophisticated software applications. With greater productivity and more accurate data, companies can move more inventory, gain visibility into its availability, pick more orders and enhance customer satisfaction without increasing costs.

"This is what it's about," says Jim Dempsey, senior national sales manager for Panasonic Mobility Solutions. "Workers equipped with mobile devices can tell customers where their merchandise is and when it should arrive. It's about accurately servicing and billing customers. It's about loading the trucks and moving goods in the warehouse more efficiently, whether by hand or a forklift."

The widespread use of new mobile devices running warehouse applications offer an enormous opportunity to streamline warehouse operations and ultimately simplify the jobs of pickers, packers, yard jockeys and managers. By transitioning to advanced mobile devices in the warehouse space, deploying next-generation software and training workers, companies can reduce costs and heighten productivity—enabling them to compete in an aggressive market.

Moving beyond barcode scanning

Looking ahead, analysts say "smart warehouses" are the way of the future, where all movements inside the warehouse are tracked by sensors to increase efficiency, even the movements of employees themselves. Yet while greater automation may be the future in the warehouse space, the industry standard for decades has been barcode scanning and printing box labels.

Most warehouses are still largely operated by human labor. The path to automation starts with a connected mobile workforce equipped with rugged mobile computers that can support advanced warehouse applications.

For someone who's worked in a warehouse for 20 years, knows how to operate a forklift and is familiar with pen-and-paper systems or old-generation barcode scanners, handling a modern computing tool can come with a steep learning curve. Today's mobile devices are designed to be easy to use. Younger workers familiar with their personal devices will need almost no training. For both groups, the key is for them to understand the value of the data so they can use it effectively.

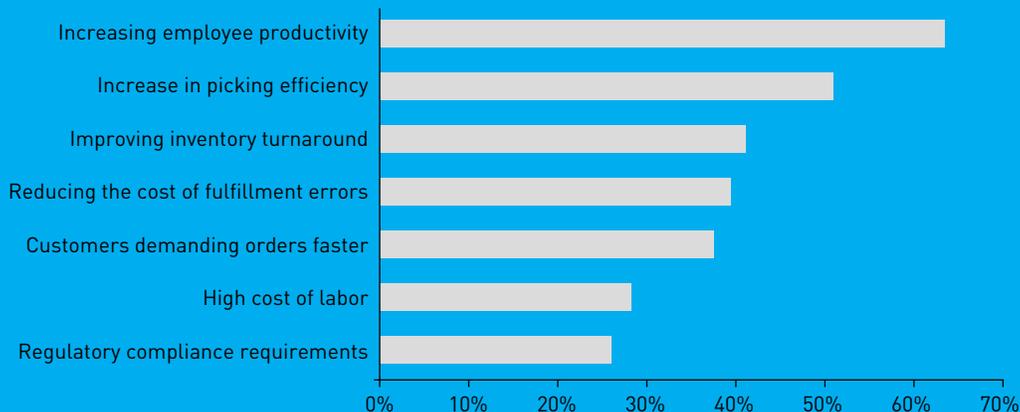
Priorities for investing in mobility

According to a study by VDC Research,² warehouse leaders rank the top three priorities driving investments in mobile warehousing solutions as increasing worker productivity, increasing picking efficiency and improving inventory turn.

THE VALUE OF GOING RUGGED



Top Priorities for Investments in Mobile Warehousing Solutions



Source: VDC Research, "Enterprise Mobile Buyer Behavior Dataset & Forecast Models," 2018

The majority of mobile devices used in warehouses are rugged handhelds, forklift-mounted computers and wearable devices. While some organizations deploy nonrugged devices, they risk greater repair costs and the resulting unplanned downtime. Consumer devices often experience high failure rates when subject to the rough environment of a warehouse. Rugged devices are built to withstand such an unforgiving environment. For example, mobile tablets used as forklift-mounted computers must be able to withstand extreme temperatures, dirt, grime and heavy vibration, along with accidental drops.

Respondents in the VDC Research study identified these features as critical for rugged warehouse mobile devices:



Battery life and management

Enterprise mobile users require an all-shift battery with 8–10 hours of continuous operation and a way to quick-charge devices. In fact, 58.7% consider battery life the most important selection criterion.³



Durability and reliability

Minimizing failure and quickly managing repairs or replacements is critical for operations that may run 24/7. The VDC study reports that 47.1% consider quality and reliability a top selection criterion.⁴



Wireless options

Warehouses are challenging environments for maintaining connectivity, with dead spots and interference causing loss of data and work interruption. Devices with wireless options and high-quality powerful antenna modules are critical in this environment.



High-visibility display

Enterprise users need superior outside-viewable displays with high visibility both indoors and outside in very bright or dark environments.



Security

Rugged devices provide enterprise-level security features that protect the device, its data and access to the corporate network.



Input/output flexibility

Most companies are moving from laser scanners to camera-based barcode scanners for easy automatic data capture. Also, more sophisticated sensing solutions that detect and alert for breakage, spoilage or damage, and theft/fraud can add value, especially for parcel delivery services.

HANDELDS AND TABLETS ON THE RISE



The rugged mobile handheld market for warehouses has matured considerably, with demand for Android® operating system solutions outpacing others. Only a few years ago, the rugged handheld devices used in warehouses were a brick-style form factor with a full keyboard and gun grip. Modern, slim handheld devices using a more robust Android-based solution have been gradually replacing these legacy solutions.

ATCO INDUSTRIES STREAMLINES INVENTORY MANAGEMENT

In Sterling Heights, Michigan, ATCO Industries has grown its business 150%, helped largely by migrating to a mobile tablet-based system. ATCO, which operates nine warehouse facilities in the United States and Mexico, verifies car parts and quality for Detroit automakers GM and FCA Chrysler and has experienced the pitfalls of using consumer devices with high failure rates due to “death by dropping” and poor battery performance.

“We needed a solution that would work long term, and we didn’t want to constantly repair devices or deal with battery life issues,” explains Falco Schiavi, a software developer at ATCO Industries. “Panasonic TOUGHBOOK® computers stood up in the field. Even on our three-shift operations. We swapped batteries in between shifts and the device rolls on.”

TOUGHBOOK rugged tablets changed the game for ATCO by scanning parts, breaking down containers, labeling containers and scanning in quantities. Inside each container, 1,000 pieces of a certain part must be tagged for accounting in order to go into the production cycle. Having the right technology to streamline this critical work is essential.

Voice picking

Handhelds are often part of a voice picking solution that can dramatically increase productivity in the order fulfillment process. Voice picking helps streamline the most expensive component of distribution and warehousing by improving accuracy.

“Traditional order picking is time intensive because employees are required to cross-check every product in the order and then manually record once it’s picked. These older, paper-based processes slow order fulfillment, which can have a direct impact on customer satisfaction levels,” says Brett Whitaker, a manager for Panasonic ProServices.

Evolving forklift solutions

In North America, forklift-mounted terminals are slowly transitioning to more flexible, open, tablet-based touchscreen solutions from the keyboard-based, and often proprietary, closed systems of the past. These systems are much more economical and easier to manage with available off-the-shelf software. An increasing number of removable rugged tablet options and improved price points are helping to drive adoption.

“The forklift is one of the most rugged environments around. The constant starts, stops and jerking can take a serious toll on mobile technology. You need a device designed for the environment and a mounting solution that secures it while still making it accessible,” explains Sonia Arnold, an account manager for Panasonic ProServices.

PANASONIC VOICE PICKING SOLUTION

Our Voice Picking solution combines the TOUGHBOOK N1 rugged handheld computer, a Bluetooth® headset and a customizable software template already built to meet 80% of your picking needs, with the remaining 20% tailored to your specific warehouse or distribution center specs.

It includes:

- Analytics for real-time decision-making
- Robust language and dialect recognition with ongoing learning
- Choice of voice or touchscreen input for the situation at hand

EVOLVING FORKLIFT SOLUTIONS



WELLINGTON INDUSTRIES UPGRADES FORKLIFT SOLUTION

Dustin Braddock is bringing technology to the plant floor of Wellington Industries, a maker of car parts for the Big Three automakers in Belleville, Michigan.

“The old way was to have a worker come with a barcode scanner or pen and paper to support the operator on the forklift. The way we’re doing it today is by using removable TOUGH PAD® FZ-G1 tablets mounted on forklifts. A docking station secures the tablet and drivers can swivel and move it,” explains Braddock, a network administrator at Wellington Industries.

Braddock says if there’s an issue, the web app will tell forklift drivers where to place containers. “What we have now is a solution driven by large, customizable buttons and a touchscreen. It’s very easy to operate.”

“Guys on the forklift are most productive if you keep them on the forklift because they’re doing their job. Too often they have to get off and scan a pallet or remove plastic in order to get info they need. In many cases, we see people manually type in alphanumeric codes up to 20 digits in length. You can only imagine how many errors are caused in a day because of forklift drivers trying to type,” says Panasonic’s Dempsey.

Solutions, not devices

With IT departments under pressure just to keep the business running, companies across the transportation and logistics markets, including warehouse and distribution centers, are turning to vendors who can take the lead in deploying full mobile technology solutions and manage the relationships with other solution vendors (software providers, peripheral manufacturers, wireless partners). Helping to select the right hardware, integrating software into corporate systems, and providing planning, deployment, training and repair services can significantly reduce demands on IT and get solutions in the hands of workers faster.

“Companies come to us and say, ‘We’ve got this software and we know we want to run it on a 7-inch tablet that can be used with gloves and a barcode scanner and connects to our corporate Wi-Fi. It also needs to connect to a mobile printer via Bluetooth®, have full-shift battery life and take the wear and tear of our work environment. Oh, and we need help deploying the device, integrating security features and training our team,’” says Arnold. “They need a partner that has the capability to help them with all the aspects of deploying and managing a solution, but also knows their market. Market expertise is probably the greatest benefit.”

PANASONIC FORKLIFT SOLUTIONS

Panasonic forklift solutions are the perfect way to upgrade your hard-mounted forklift devices and aging systems.

- Flexible with cross-functional benefits including cross-docking, pick and put away, and inventory tracking, as well as office applications like email and spreadsheets
- A range of TOUGHBOOK® devices from rugged handhelds to rugged tablets
- Designed to be used in the warehouse or the yard
- Available with Android® or Windows® 10 for seamless integration across any enterprise platform

PANASONIC MOBILE SOLUTIONS FOR THE WAREHOUSE

For over 20 years, Panasonic has been engineering TOUGHBOOK® mobile devices for unforgiving environments where failure has real consequences. We specialize in the design and execution of enterprise-level mobile technology services and solutions for many of the world's largest companies. We've built scalable solutions tailored to our customers' business needs. This experience has allowed us to perfect our processes and develop technology subject matter experts focused on executing projects and programs with precision.

In addition to our range of TOUGHBOOK mobile computers, our ProServices team offers planning, deployment, management, warranty, security, repair and replacement services that support your IT and field staff.

**Learn more about how Panasonic can help
improve the efficiency of your warehouse operations:**

toughbook.com
toughbook@us.panasonic.com

1-888-245-6344

1. 2018 Warehouse/Distribution Center Survey: Labor crunch driving automation, Logistics Management, November 2018. https://www.logisticsmgmt.com/article/2018_warehouse_distribution_center_survey_labor_crunch_driving_automation

2. Enterprise Mobile Buyer Behavior Dataset & Forecast Models, VDC Research, 2018. <https://www.vdcresearch.com/Coverage/emob/reports/18-Enterprise-Mobile-Buyer-Behavior-Dataset.html>

3. Enterprise Mobile Buyer Behavior Dataset & Forecast Models, VDC Research, 2018. <https://www.vdcresearch.com/Coverage/emob/reports/18-Enterprise-Mobile-Buyer-Behavior-Dataset.html>

4. Enterprise Mobile Buyer Behavior Dataset & Forecast Models, VDC Research, 2018. <https://www.vdcresearch.com/Coverage/emob/reports/18-Enterprise-Mobile-Buyer-Behavior-Dataset.html>

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