White Paper:

How to Increase Warehouse Efficiency Leveraging Mobile Technology

7 Steps to Beating the Challenge of Manual Processes

Introduction

Here's a statistic worth paying attention to: An impressive 79 percent of companies with high-quality supply chains register significantly higher revenues than those without.[1] Given that a warehouse is the beating heart of a supply chain, increasing its efficiency positively impacts the bottom line.

The four walls of a warehouse might make it seem like a standalone entity. But as the Deloitte statistic above shows, today's warehouse is a crucial make-or-break link in dynamic supply chains. Customer mandates for faster shipping are pressuring managers to deliver: 30 percent of supply chain leaders surveyed in a 2018 report said that quicker and more accurate fulfillment will be one of their top business priorities.[2]

Given these high stakes, even incremental gains from greater warehouse efficiency can deliver positive outcomes. This guide shows you how to get there.

Warehouse Processes

A typical warehouse stages a number of concurrent processes, so management needs to orchestrate these smoothly to avoid any broken links in the supply chain. Workers receive incoming freight on pallets and update inventory records accordingly. Goods also need to be shipped out, sometimes through consolidation, for efficiency. Order picking is a crucial component of shipping, as is figuring out fixed and floating slots for stock keeping units (SKUs).

Occasionally, employees might have to cross dock shipments, shipping them out directly instead of putting products away. Warehouse efficiency means tracking the complex threads of hundreds of shipments at a time: noting active stock, actual time of arrival (ATA) and actual time of departure (ATD), and ensuring all goods and processes comply with customs or other laws. Warehouses might also have a quantity of buffer stock on hand to prevent product shortages, or workers might have to record inventory arrived through blind receiving.
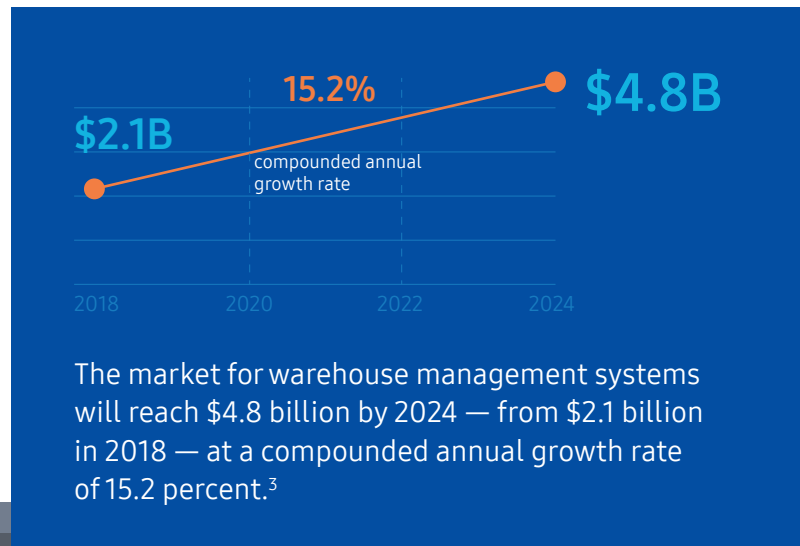
$2.1B   **15.2%**   **$4.8B**

compounded annual growth rate

2018   2020   2022   2024

The market for warehouse management systems will reach $4.8 billion by 2024 — from $2.1 billion in 2018 — at a compounded annual growth rate of 15.2 percent.[3]

NOTING STOCK

RECORDING INVENTORY

CAPTURING ATA AND ADT

TRACKING SHIPMENTS

The Manual Challenge

Today's warehouses might be key to revenue, but they're constrained by outdated processes. Almost half of small businesses don't track their inventory or use a manual method.[4] Employees enter pallet picking, order fulfillment, SKU slotting and a whole host of warehouse processes manually.

Unfortunately, relying on manual methods of pen-and-paper warehouse management increases inefficiencies. The many problems presented by manual inventory management include lost productivity, inaccuracies in inventory and order fulfillment, static information and risk of customer dissatisfaction.

Given the high stakes involved, today's warehouse needs to move away from manual to do its job efficiently.

This guide will help warehouse management and supply chain professionals understand the steep costs of manual processes. It offers solutions to implement digitized mobile processes that will tighten warehouse efficiencies. These in turn will positively impact the rest of the supply chain.

1. Lost productivity

Manually recording every warehouse transaction decreases worker productivity because it takes more time for data entry. In addition, employees have to waste time double-checking inputted numbers to make sure everything adds up correctly. Order reconcilement and physical stock-taking are tedious and become even more unwieldy with manual procedures.

2. Inaccuracies in inventory and order fulfillment

Entering all inventory by hand increases the potential for errors, which spill over into the shipping and handling process. For example, an employee might inadvertently miscategorize received or shipped products, leading to more inaccuracies. Every warehouse error can make a dent of 11 to 13 percent on a company's profitability.[5]

3. Static information

Manual inventory management means that the warehouse management system does not reflect real-time data about stock. A delay in updating the status of shipped and received goods leads to an inaccurate snapshot of inventory. This in turn complicates forecasting and production planning.

4. Risk of customer dissatisfaction

Consumers, whether they're businesses or individuals, place a high premium on fast and accurate order fulfillment. Forty percent of customers say they would not shop for a product that will reach them in longer than two days.[6] Three days is the expected window among at least 63 percent of shoppers. Enterprises that rely on manual warehouse management processes risk hitting delays and speed bumps within the warehouse that can whiplash onto the end customer.

Part 1: Modernization of the Warehouse

Digital transformation and agile principles are starting to mold the enterprise landscape. A whopping 89 percent of companies surveyed by IDG in 2018 indicated plans to embark on a digital-first business strategy.[7] Such an outlook affects warehouse efficiency as well. A switch from manual to automated processes is a necessary step in the digitization of the warehouse.

Equipping warehouse employees with mobile devices such as rugged tablets propels enterprises on the path to digital transformation. Mobile is a critical component of digitization. By automatically populating relevant information, mobile saves precious time and delivers efficiencies throughout the warehouse. In addition, mobile devices work in concert with scanners, barcodes and RFID tags to simplify processes.

The Switch From Manual to Automated

Barcodes and barcode scanners serve an important function in warehouse management because they populate inventory data in software systems automatically. Mobile devices today can function as RFID and barcode scanners, eliminating the need for additional devices. Mobile helps with device consolidation and delivers a more comprehensive suite of automated functionalities.

Mobile devices save time. When order shipments come in, employees can scan more than just the kinds of products received. They also access other important information about receiving dates, routes, inventory quantity, shipping out dates (if any) and damages to merchandise. Information from an entire bill of goods directly transfers to inventory manage-ment software, so workers can save time. They don't need to fill 10 different forms to capture key supply chain parameters.

Automated Data Capture and the Bottom Line

Automating many aspects of the warehouse inventory management process delivers incremental efficiencies, which boost the bottom line. A move away from manual delivers:

1. Time savings

Mobile devices save time. Workers don't have to manually enter complicated order numbers so data entry is more accurate. By scanning and recording shelf location, it's also easier to find inventory when needed, instead of having to waste precious time tracking down misplaced parts. It's faster to reconcile shipping and delivery status and identify problems when every step does not need a physical form lookup.

2. Increased productivity

Employees no longer have to find the correct color-coded form for a specific inventory function, make sure the right data is entered in the right fields and then wait for a later date to transfer all that information to a computer. A complicated five-step procedure now becomes three and so increases productivity. Employees can focus on more immediate tasks such as the shipment and receipt of goods.

3. Improved forecasting

Since automated processes yield a better snapshot at real-time status of inventory, enterprises can plan for long-range production and sales forecasts. While there are understandably many variables in supply chain management beyond an enterprise's direct control, they at least have a better warehouse inventory picture with automated processes. Automatic data population means employees can get a clearer and faster window into shipments.

4. Freed up capital

Because companies now have a clearer picture of their inventory, they no longer need to tie up capital in unused goods. Automating the easier aspects of inventory management has the potential to increase liquidity.

Whether or not enterprises are on the path to digital transformation, moving away from manual inventory management processes is a no-brainer. Enterprises can no longer afford a fractured, static window into their warehouses.

Warehouse executives and managers have a range of technology options available as they eye modernization. Switching from paper to mobile devices fulfills paper's functions effectively. Mobile devices are more than simply one-to-one replacements for paper, however. They deliver

a whole range of additional functions and provide an essential link on the road to digitization.

Mobile devices help to future-proof an enterprise, as the platform can accommodate a number of emerging technologies. The flexibility of a mobile device makes it an ally no matter where a warehouse is on the path to digital maturity. Mobility makes warehouse management more seamless, and irons out any wrinkles that might stem from manual processes.

How Going Mobile Can Help

1. Device consolidation

The form factor of mobile tablets can be made more gun-like for scanning. Such ease of execution makes it easier to consolidate devices. Warehouse employees don't need to rely on separate scanning systems for inventory management or connect the scanner to the enterprise's warehouse management system (WMS). Mobile devices are the warehouse workhorse in that they can accommodate a range of functions at once, completely eliminating the need for paper.

2. Defect documentation

Warehouse employees can use cameras on tablets to capture the extent of the damage on received goods. Employees can attach these photos to documentation along with incoming freight forms. They can also use the mobile device to fill out damage claim forms. Using a digital device to do so not only improves accuracy, it also saves time.

3. Geolocation

Easy scanning along with connectivity to enterprise software enables warehouses to effectively track goods at all times. This enables better forecasting operations for partners up and down the supply chain.

4. Productivity increase

When warehouse employees scan information directly through a mobile device, they spend less time recording information and more time doing actual work of warehouse management. Employees can also attend to other work such as requesting paid time off through the appropriate enterprise resource planning software on the mobile device.

5. Rugged nature

Mobile devices are much more equipped for warehouse conditions than paper. Ruggedized tablets withstand shocks and water damage so workers can use them reliably, even in hazardous environments.

6. Future-proof

Given its importance in the supply chain, the warehouse is already emerging as the nexus of the digital transformation. Expect futuristic technologies such as computer vision and the internet of things (IoT) to play an increasing role in how the warehouse of the future functions. Warehouse IoT technology is expected to reach $19.06 billion by 2025.[8] The mobile tablet can be configured so that it can pull up IoT-related dashboards for immediate analysis. In essence, a mobile device, especially one with an open Android architecture, can serve as the access point for related software.

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Part 2: Laying the Groundwork

Businesses that have decided to use mobile devices as the groundwork for automation have to figure out a well-oiled strategy to make it work and support it. If the move to mobile is part of a company-wide agile transformation, enterprises must visualize the business outcomes they hope to achieve from the use of mobile.

Equally important, companies need to prioritize their processes and objectively map what counts as success in each step. Working backward from the business outcomes will lead to a clearer picture of how mobile devices can accelerate efficiencies throughout the warehouse.

A mobile device offers warehouse management executives an easy and reliable way to improve efficiencies, and Samsung solutions with Stratix Services are reliable tools on the journey to warehouse digitization.
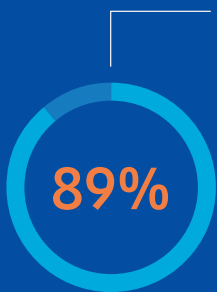
89%

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Warehouse Data Points and Processes

A whole range of factors and processes contribute to daily warehouse operations and optimizing the variables increases warehouse efficiency. Here are a few noteworthy processes and key performance indicators:

- **Active Stock:** Ready for fulfillment, this is stock in active picking locations

- **Consolidation:** Two or more shipments may sometimes be combined to save costs

- **Global Tracking Item Number (GTIN):** Helps locate shipments around the world

- **Cycle Count:** To prevent disruption, warehouse employees might count inventory cyclically to ensure count matches records

- **Proof of Delivery:** Needed to complete orders so sender has proof that goods have been received at the other end

- **Slotting:** To increase efficiency, warehouse employees place items in specific slots for easy retrieval later

- **Picking:** Retrieving items to complete an order/shipment

How to Go Mobile

Companies looking to make the move from manual to mobile devices can follow a specific blueprint to maximize success and decrease speed bumps along the way.

1. Ensure employee buy-in

Top-down mandates for equipment that warehouse workers use every day won't sit well. Companies will have to educate all employees about the need to make the switch. Making the argument more directly relevant to the employee — you won't have to waste time filling out three forms — is likely to win more buy-in from all parties concerned.

2. Envision business outcomes

Chalking up a wishlist for desired business outcomes will help companies figure out what capabilities they are looking for in a mobile device. Do they want device consolidation, a way of integrating the scanner with the mobile device? The Samsung Tab Active2, for example, integrates with SCANDIT's barcode scanning solutions, and so can function as an effective barcode scanner in warehouse and distribution centers.

3. Develop strategic partnerships

Supply chain vendors play a crucial role in warehouse management so any company-wide implementation of mobility will likely positively impact them as well. Warehouse companies should keep vendors informed about rollout updates. It's a good idea to nurture strategic alliances with mobile device manufacturers and mobile managed services providers who can use their experience to devise custom, end-to-end solutions that deliver the business outcomes companies are looking for. Stratix and Samsung's teams, for example, evaluate the end use cases for mobile devices and deliver a comprehensive solution that meets business objectives.

4. Strategize about software

The automated data entry and inventory solutions that mobile devices such as the Samsung Galaxy Tab Active2 deliver need to populate rigorous software programs. Companies need to figure out if these protocols will be developed in-house to talk to other proprietary software or if they will lean on third-party solutions that can be customized for their needs.

5. Resolve security concerns

Given that the mobile device is an essential foundation of smart warehouse operations, it will be the central node for receiving, routing and even processing big data. The sensitive nature of proprietary inventory information necessitates mobile device security.

The Tab Active2 is built on the Samsung Knox security platform, which provides layered security solutions and is part of a comprehensive enterprise-wide mobile device management (MDM) strategy. IT administrators can set up remote management solutions on each Tab Active2 deployed in the warehouse, and containerize sensitive data so it's not affected by malicious viruses targeting the rest of the device.

Under the Knox management system, Knox Platform for Enterprise enables setup of dual personas for each employee. If a worker leaves the company, that work-related persona can be remotely wiped out, leaving the rest of the programs in place. Companies can also choose how employees can use the mobile devices: Personal apps, if any, can be separated from sensitive information, allowing for easy and secure access to both.

6. Test-drive the switch

It's a good idea to have a few workers use the mobile devices for a couple of basic data entry functions at first. This gives IT time to iron out any wrinkles so they are not affecting the warehouse on a larger scale. Introducing new automated functionalities gradually accommodates a worker's learning curve. While most employees might already be familiar with mobile devices, they will still need time to familiarize themselves with the new automated processes.

7. Recalibrate

The switch to mobile is part of a company's ongoing commitment to increasing warehouse efficiency. It's not a "fix-it-and-forget-it" recipe. Instead enterprises need to include a regular periodic check-in to make sure all processes are running as they should. Given the accelerating pace of warehouse-ready technology, companies might find new uses for their devices, ones they can work with their vendor partners to accommodate.

Managed Mobility for Supply Chain

Your warehouses need constant communication, status updates and logistics throughout the supply chain. The right mobile technology provides real-time data connecting you to your suppliers and your employees to your customers. To keep it all running and working, you need a mobile services provider that can manage daily mobility duties, rapidly respond to support needs, and help implement those transformative mobile technologies across the entire warehouse and supply chain process. Stratix offers highly integrated and supported deployments of Samsung Devices and services for the enterprise, from Samsung Knox defense-grade mobile security to Samsung's diverse portfolio of smartphones, tablets and wearables.

Conclusion

In the U.S. alone, warehousing and storage is a $22 billion industry.[9] The challenge is that a good 30 percent of warehouses have deep operating inefficiencies. Stations that rely on paper for warehouse management systems are missing out on productivity gains and other advantages that mobile devices can deliver.

Warehouses are fast embracing the promise of future-forward technologies such as computer vision, IoT, big data analytics and more. The enterprise cannot fully realize the promise of these technologies without a sturdy data-gathering foundation and platform. A rugged mobile device with high computing power, and the ability to function as a scanning device, delivers an important rung on the ladder to seamless warehouse operations.

The market for warehouse management systems will reach $4.8 billion by 2024 — from $2.1 billion in 2018 — at a compounded annual growth rate of 15.2 percent.10 This impressive growth projection necessitates an embrace of digitization. Mobile devices get us there and deliver increased warehouse efficiency.

Stratix SmartMobile Services

SmartMobile services from Stratix help transform warehouse operations by removing paper processes to improve efficiency, reduce loss and errors, provide real time data and analytics and boost retention with a better employee experience.

- **Support:** Best-in-class 24x7x365 support for your personnel, backed by industry-leading customer satisfaction ratings.

- **Custom Accessories and Enclosures:** Innovative mounts and enclosures from our Specialty Engineering group ensures your devices will fit any environment while maximizing safety, security, productivity and endurance.

- **Visibility:** Our itrac360 asset management platform provides end-to-end visibility, full lifecycle management and usage history for all your mobile devices.

- **Spare Pool Management:** Get rapid deployment of replacements and hot swap device depots to ensure your employees have working devices.

- **Accurate Barcode Scanning and Verification:** Enjoy truly-mobile highest-quality laser barcode verification that works in any environment.

About Stratix

As the largest pure-play enterprise mobility specialist in the U.S., Stratix is dedicated to guaranteeing nonstop mobility. The company leverages over 35 years of expertise and experience to deliver end-to-end managed mobile service programs that accelerate and inspire business mobility transformation for some of the world's most iconic brands. Stratix's SmartMobile programs ensure enterprises have exactly the right technology, tools and support to run their business, improve customer service and grow revenue. By investing time to understand the unique business needs of every client, they're able to create customized technology strategies that deliver enterprises the best-in-class mobility they need to stay ahead. For additional information, visit www.stratixcorp.com.

About Samsung

Samsung develops custom mobility solutions for warehouse management enterprises that are looking to modernize their systems. As a leader in enterprise mobility and information technology — and the operator of some of the world's most advanced factories — Samsung draws on its experience and expertise to deliver comprehensive, turnkey solutions.

Warehouse management executives can take an inventory to assess their place on the digital maturity curve, and lean on Samsung to develop custom solutions that will increase efficiencies. Samsung's open solutions are easy to integrate with new software solutions as they arise, making them a reliable partner now — and in the future.

Footnotes

1. https://www2.deloitte.com/us/en/pages/operations/articles/supply-chain-leadership.html
2. https://www.supplychain247.com/article/logility_and_apics_survey_reveals_top_supply_chain_priorities_for_advanced/supply_chain
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