ZEBRA CAPTURE YOUR EDGE

# Modernizing Your Warehouse in Five Simple Steps

How warehouse operators of all sizes can increase efficiency, improve accuracy and maximize return on their technology investments


# The Digital Era in Action

There has never been a better time to modernize your warehouse operations. Ecommerce sales are skyrocketing, already reaching levels not expected until 2022.[1] Ever-connected consumers expect near-instantaneous fulfillment within days or even hours. And competition is heating up, with new warehouses increasingly dotting the world's thoroughfares. How can you keep up? In a word, technology.

## Overcoming Obstacles

Operators of growing warehouses consistently say that finding a technology solution is often as complicated as the solution itself. In other cases, expensive, overly complex systems create more problems than they solve. And even more frequently, the best solutions are out of reach or don't meet their unique business needs.

## The Great Equalizer

Fortunately, technology solutions that improve warehouse operations are now simpler to deploy, more intuitive to use and deliver a faster return on investment (ROI) – making them much more accessible to warehouses of all sizes.

## Keys to Success

There is no sidestepping it; modernization can be complicated. But, by collaborating with a trusted technology advisor, you can skillfully navigate the warehouse modernization process to quickly uncover areas where new technology can deliver ROI – fast.

Success requires a step-by-step approach – one that includes an operational assessment that enables you to quickly uncover areas where technology can deliver a fast ROI through immediate cost savings or boosts in productivity.

## THE BENEFITS OF A MODERN WAREHOUSE

- Lower Labor Costs
- More Effective Picking, Packing, Sorting and Restocking
- Enhanced Communications and Collaboration
- Faster Employee Training
- Faster Order Fulfillment
- Improved Inventory Management
- More Efficient Inbound and Outbound Operations
- Increased Operational and Supply Chain Visibility

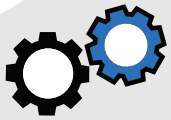

## Solving the Technology Riddle

A Zebra Technologies survey of warehouse IT and operational decision makers shows... **75% plan to deploy new tech to stay competitive**, but **73% don't know where to start.**[2]

# Your Roadmap to Warehouse Modernization

## A Five-Step Operational Plan

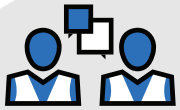
### 1



### Improve Operations

- Increase individual worker productivity
- Upgrade your scanners for faster and more accurate barcode scans
- Outfit employees with rugged, mobile technology that's easy to use
- Place printers strategically, not centrally

### 2



### Connect Workers

- Increase team productivity and workflow conformity
- Enable team communications with the push of a button
- Boost picking efficiencies across multiple orders
- Speed employee training

### 3

### Integrate

- Increase asset visibility and utilization
- Leverage data collection for greater visibility

### 4

### Anticipate and Respond

- Leverage data to guide the best next-move and decision making
- Collect operational data in real-time for immediate insights
- Increase visibility across multiple operations

### 5

### Prescribe and Adapt

- Proactively implement performance improvement
- Uncover and overcome operational bottlenecks
- Achieve better supply chain visibility

# Step 1:
# Improve Operations

**The first rule of successful warehouse modernization is to start simple.** Begin by focusing on easy-to-implement changes that can help you quickly improve individual productivity and gain control of your basic business operations.

## KEY CONSIDERATIONS

**Before deploying new technology, carefully consider these questions:**

- What precisely do I need to accomplish each day, week or month?
- How many stock-keeping units (SKUs) do I need to stock, control and handle?
- How fast do I need to fulfill my orders?
- Which employee processes produce inaccurate results?
- Is manual data entry or hard-to-use technology resulting in errors or productivity losses?
- Could employee processes be modified to increase productivity?
- Does my forklift driver have to get on and off the vehicle to scan or manually enter inventory data?
- Do my scanners read barcode tags on the first try or do they require multiple trigger pulls?




**81% of SMB warehouse leaders agree capacity utilization is their biggest operational challenge now and within the next five years.**[3]

CASE STUDY

### Logistics company increases scanning speed by 70%

With Zebra built-in mobile scanners, Bradford Airport Logistics employees improved scanning productivity by 70%. In the past, scanning 40 boxes took 10 minutes. With Zebra solutions, the same work is done in two to three minutes.

# Keeping Your Workers Happy and Productive

**Your employees are the most critical component of your operations.** Giving them technology that helps them succeed can not only increase overall operational efficiencies up to 10% or more, it also reduces daily frustrations that lead to costly employee turnover. Arming your employees with the right technology will deliver multiple cost-savings and productivity benefits that lead to a quicker return on investment (ROI).

| COMMON CHALLENGES | TECHNOLOGY SOLUTIONS |
|---|---|
| Legacy or faulty barcode readers slow work down due to errors and rescans | Arm employees with rugged mobile scanners that accurately read even poorly printed or damaged barcodes on the first scan<br><br>Keep forklift operators on the truck by giving them scanners that can read items as far away as 70 feet |
| Time is wasted traveling to centrally located printers to retrieve shipping labels | Deploy simple-to-operate thermal printers closer to operations, thus enabling workers to print at the point of work |
| Legacy data entry processes cause delays | Achieve faster data entry with rugged mobile computers that support Android™ OS |
| Malfunctioning applications, dead batteries, software update issues and broken devices halt work and impact productivity | Minimize downtime by using ruggedized devices that contain performance and security monitoring software |

# Step 2:
# Connect Workers

**Next, look at workflows involving multiple employees or tasks.** The key here is pinpointing operational areas where overall workflow improvements could increase speed, accuracy and productivity. Solutions that help workers execute multiple roles at once and increase visibility can help streamline operations well into the future.

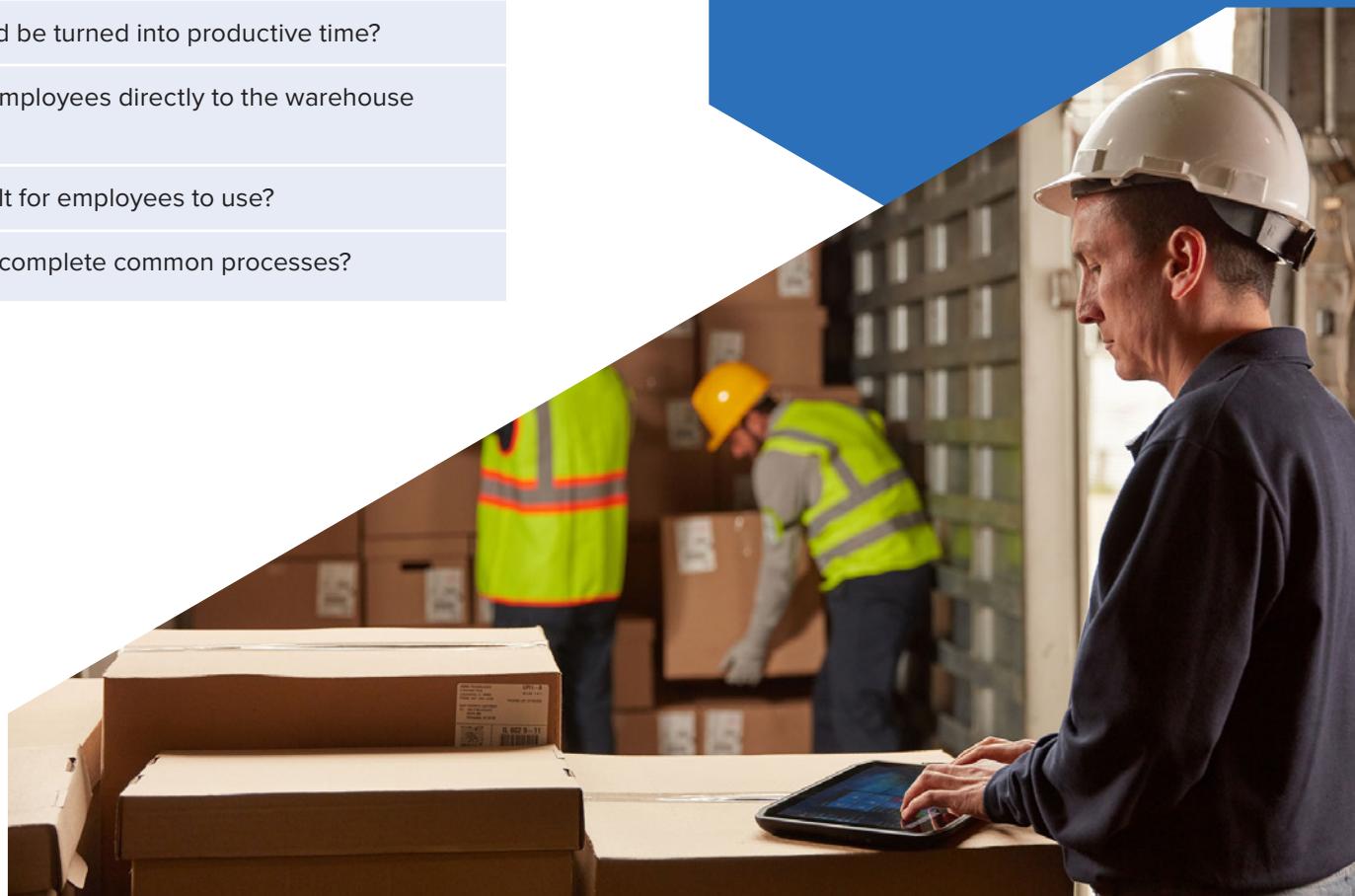
## IDENTIFY DISCONNECTS

**To uncover productivity bottlenecks, start by asking these questions:**

- How can I help my teams communicate better and faster?
- When do my employees have downtime that could be turned into productive time?
- Which workflows could benefit from connecting employees directly to the warehouse management system (WMS) via mobile devices?
- Are existing processes or technologies too difficult for employees to use?
- How long does it take new employees to learn or complete common processes?

**76%** of SMB warehouse leaders agree that augmenting labor with technology and devices first is the best way to introduce automation into a warehouse operation.[4]

**77%** of warehouses have outfitted or plan to outfit workers with mobile computers, scanners and tablets by 2024.[5]



CASE STUDY

**Zebra helps non-profit agency process inventory 83% faster and slash returns**

North Central Sight Services turned to Zebra mobile devices to increase inventory and picking efficiency and accuracy. Inventory counts now take 83% less time. In the first eight months after deployment, customers returned only two orders out of 15,070 due to inaccurate picking.

# Increasing Team Productivity and Safety

**Effective communications are essential in any team environment, increasing efficiencies, reducing errors and adding speed to decision making.** Mobile devices and wearable technology – such as wristband barcode scanners or wearable headsets that visually direct pickers to the right bin – help reduce the complexity of common tasks and allow employees to complete multiple jobs at once. In fact, wearable technology can help SMB warehouses pick up to 24% more orders each day without incurring extra labor costs. Arming workers with technology solutions that interface with the WMS is also essential in increasing team productivity because it allows the WMS to automatically direct workers to the next task.

| COMMON CHALLENGES | TECHNOLOGY SOLUTIONS |
|---|---|
| Employee groups cannot communicate easily, causing delays that reduce productivity | Mobile devices keep workers connected, enabling group communications that allow for faster decision-making |
| Pickers must toggle back and forth between multiple devices and complete extra steps to accurately pick, sort or restock | Head-mounted displays allow workers to pick multiple orders simultaneously<br>Wearable ring scanners save up to 30 minutes per day in a 10-hour shift thanks to faster scans |
| “Single pick” strategies result in slower fulfillment | Wearables that interface with the WMS dynamically assign picking orders for faster order fulfillment |
| Onboarding new employees is difficult and time-consuming | Wearables reduce training time up to 90% by simplifying the picking process |

# Step 3:
# Integrate to Provide Better Visibility

**After boosting productivity and improving overall workforce operations, it's time to take a good, hard look at your assets.** Automatically collecting asset-related data using Internet of Things (IoT) sensors and radio frequency identification (RFID) technology gives you a more complete view of your physical operations.

## CONSIDER THE POWER OF VISIBILITY

**To find out how increasing visibility could improve your operations, consider:**

- What processes could be streamlined using automated data capture instead of employee-driven data capture?
- How much time do workers waste tracking down lost assets or inventory?
- Could I use my assets more effectively if I had more visibility into operations? For instance, could I increase productivity by knowing exactly when my forklifts are not being used?

**75%** of small and growing warehouses are/expect to use RFID and locationing technology now and within the next five years.[6]

**TOP 5 USES** (RANKED)[7]

### RFID

1. Reprocessing
2. Inventory Management
3. Receiving
4. Cross Docking
5. Replenishment

### LOCATIONING

1. Inspection
2. Inventory Management
3. Receiving
4. Replenishment
5. Sortation

CASE STUDY

**Retailer turns to Zebra to improve inventory management, increasing accuracy from 60% to 98%**

Prüne, an Argentinian fashion retailer, implemented a Zebra RFID solution that increased inventory accuracy from 60% to 98% while also supporting new omnichannel purchase and delivery options. It also improved productivity in receiving and dispatching orders by 30%.

# Increasing Visibility for Better Operational Results

**If tasks like human-based scanning are creating bottlenecks, then it's time to take your automation to the next level.** Automated data capture gives you real-time visibility into the state of your business and can increase efficiencies when workers are freed from manual tasks like barcode scanning. RFID systems can automatically count and track inbound items as they pass through dock doors, quickly sorting and assigning them to customer orders. Similarly, outbound items are verified in real-time and tracked through the supply chain.

| COMMON CHALLENGES | TECHNOLOGY SOLUTIONS |
|---|---|
| Inaccurate inventory counts prevent companies from effectively supporting omnichannel operations | RFID technology automatically reads material tags up to 60 feet away to improve inventory management accuracy |
| Poor visibility into asset location or usage leads to bottlenecks and delays | Beacon technology can add location data without complexity for better asset management |
| Forklifts sit idle or workers waste time searching for items/products causing material handling delays | Tagging assets such as forklifts gives more insight into exactly how each asset is used |
| Human-based processes result in fulfillment delays, shipping inefficiencies or processing errors | Smart loading software optimizes trailer load to minimize shipping delays and costs |

# Step 4:
# Anticipate and Respond

**The next step involves expanding sensor-based, real-time data capture across the entire warehouse facility.** Sensors located throughout the warehouse automatically track materials as they move in real-time – and allow the dynamic rerouting of items to support changing fulfillment needs. Managers can reassign assets like forklifts or even autonomous mobile robots (AMRs) to the next task as soon as they drop off materials for shipping, storage or sorting.

## ELEVATE VISIBILITY TO REAL-TIME STATUS

**You can use real-time data from sensors to answer questions such as:**

- Where can I optimize warehouse workflow for cost, speed and efficiency?
- How can I better integrate my warehouse operations with other operations such as shipping?
- What operations could benefit most from increased automation?




**76% of SMB warehouses are currently using or plan to implement RTLS technology by 2024.**[8]

CASE STUDY

### Zebra allows warehouse operator to increase receiving efficiency by 20%

In its 130,000 square foot warehouse facility based in Santa Barbara, Calif., Direct Relief deployed Zebra mobile scanners, printers and computers that exchange data directly with its warehouse WMS. The result? The non-profit increased receiving accuracy and efficiencies by 20%, even with a 40% increase in volume.

# Using Real-Time Data to Support Real-Time Decision Making

**In a warehouse, small mistakes can lead to big problems.** A forklift driver who takes a wrong turn can delay a trailer from leaving on time and potentially cause hundreds of items to miss their shipping deadlines. Real-time visibility and asset tracking can help keep things running smoothly.

An asset tracking system that interfaces with the WMS, for example, can give delivery directions to forklift drivers in real-time via a map on their tablet – no paper delivery instructions involved. If the driver takes a wrong turn, the system immediately redirects the driver back to the correct route.

Real-time visibility and tracking also increase efficient use of assets like pick carts and lift trucks to dynamically assign the next task based on location or other key data. Managers can also remotely monitor all these operations in real-time.

| COMMON CHALLENGES | TECHNOLOGY SOLUTIONS |
|---|---|
| Lack of real-time asset visibility leads to poor utilization and wasted time | A Real-Time Location System (RTLS) provides the precise location of tagged assets to business systems to improve utilization and reduce losses |
| Lack of integration between systems limits the ability to assign “next-best-move” to assets | WMS directs “next-best-move” for assets based on location and other relevant data |
| Humans are doing repetitive tasks that could be automated | Autonomous mobile robots (AMS) enable cooperative picking and materials handling – without changes to WMS |
| Real-time decisions cannot be made without real-time data | Software dynamically reassigns tasks in real-time based on asset availably and fulfillment priorities |

# Step 5:
# Prescribe and Adapt

**The final step is to use prescriptive analytics to track every aspect of warehouse productivity so you can proactively identify how and where to make improvements.** No more reviewing static reports trying to identify bottlenecks and inefficiencies in your supply chain. By leveraging AI and prescriptive analytics, you can boost profitability and increase efficiency. Automatic alerts and actionable recommendations identify and resolve costly and disruptive issues and enhance operational workflows.

## PROACTIVELY IMPROVE PERFORMANCE

**Prescriptive analytics can help you answer key operational questions such as:**

- What's happening and why?
- How much are these events impacting my business?
- What steps could I take to improve my on-time shipping metrics?
- Is the cost of expediting this shipment worth the extra revenue I could gain?
- If I bought headset wearables for 50 of my pickers, how much would that increase efficiency?
- How do I best balance my inventory to support both buy online, pick up in store (BOPIS) orders and in-store purchases?
- How can I optimize inventory and reduce out-of-stocks?
- Can I squeeze 10% more materials onto my outbound trucks?
- Which team member is best suited to solve this operational problem?

### More warehouses are turning to AI technologies to make smarter, more informed decisions

Warehouse leaders plan to add new levels of intelligence to their operations to aid in decision making. Today's warehouses report current usage of predictive analytics and machine learning:

**52%**
**Predictive Analytics** for inbound operational processes[9]

**57%**
**Machine Learning** for outbound operational processes[10]

CASE STUDY

### Growing warehouse operator benefits big from modernization

After working with Zebra to automate its warehouse operations, Adore Beauty:

- Reduced cost per unit by 50%
- Achieved a 99.9% accuracy rate for outbound orders
- Increased data entry speed by 40% and reduced errors by 60%
- Boosted warehouse productivity 30%

# Proactively Improving Operational Performance

**Prescriptive analytics can help you understand and act on operational data in a whole new way to increase sales, optimize inventory, reduce expenses and more.** Use analytics to identify areas of needed improvement or predict changes in consumer habits or supply chain interruptions.

A good analytics software solution creates actionable recommendations designed to help warehouse operators quickly fix operational inefficiencies. It also identifies future problems that could impact business profitability. This is especially important for businesses that do not have staff resources dedicated to managing complex data analysis.

| COMMON CHALLENGES | TECHNOLOGY SOLUTIONS |
|---|---|
| Your warehouse operations are experiencing too much shrink | Data analysis finds that the shrink problem is caused by receiving delays that lead to spoiled perishables<br><br>Shrink is slashed by giving employees headsets that show them where to place pallets as soon as they arrive |
| Out-of-stocks are too high with current inventory management measures | Analytics automatically identifies chronic inventory shortages and readjusts stocking levels to fit demand |
| The cost of fulfilling expedited orders is too high | Data analytics can tap into weather and lead time information to identify orders that require expediting and those that will arrive in time without adding unnecessary costs |

# Harnessing the Power of Technology

## Growing Warehouse Operations Need the Right Tools to Compete

Warehouse operators know that those companies that embrace supply chain modernization will thrive in today's on-demand economy. In fact, in the Zebra Warehousing Vision Study, 68% of warehouse executives say they plan on focusing on increasing data-driven performance, visibility and real-time guidance by 2024.

If you're on the road to modernization, the best place to start automating your warehouse is to determine where technology can quickly deliver greater efficiencies with rapid ROI. Examine where you can increase productivity across teams and tasks and then determine how increasing visibility into both your assets and your operations can improve workflows across your entire business.

Fortunately, you don't have to tackle warehouse modernization all on your own. A good partner will conduct an assessment to help you uncover areas where technology can help you optimize your operations quickly and deliver a solid ROI. For more information on how you can get started with warehouse modernization visit **www.zebra.com/warehouse**

## About Zebra Technologies

Zebra empowers the front line of business to achieve a performance edge. We deliver industry tailored, end-to-end solutions that intelligently connect people, assets and data to help our customers make business-critical decisions.

SOURCES: [1] eMarketer. [2-10] Zebra Technologies Warehousing Vision Study.

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