



The Synchronized Distribution Supply Chain: Best Practices in Warehouse Management



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Every day, companies all over the world count on Motorola mobility solutions to keep their supply chain operations at peak productivity and profitability. When it comes to supply chain optimization, Motorola's end-to-end supply chain mobility solutions offer the expertise gained through successful proven deployments in many of the world's largest enterprises, a comprehensive and proven enterprises class product portfolio — including wireless infrastructure for seamless 'inside outside' mobility, integrated voice and data devices and best-in-class applications through a world-class partner network — and a complete portfolio of services designed to help you get and keep your mobility solution up and running to ensure peak performance and maximum value.

For more information on how Motorola mobility solutions can streamline your supply chain, please visit motorola.com/supplychainmobility or access our global contact directory at motorola.com/enterprise/contactus



Executive summary

The warehouse is at the center of your business, a key area through which nearly everything in your business must pass — from packages in a parcel post environment to raw materials and finished goods in a manufacturing plant to a wealth of products in a distribution center. When mobility is extended throughout your warehouse, a new level of efficiency, accuracy and visibility can be achieved. Paper processes are replaced by real-time computerized forms on mobile computers; bar code scanning enables checks and double checks that the right item is being picked, packed and shipped; and RFID provides automatic tracking of materials without human intervention.

With warehouse mobility also comes the collection of a richer data set in real time, providing a real-time view of inventory in the warehouse, order status, and more. And when availability of this information is extended to other areas of your business, the full value of warehouse mobility is realized. The data collected in this key focal point of your business has the power to enable significant cost and operational efficiencies throughout the enterprise — in the yard and on the production line as well as in dispatch, sales and service.

This white paper will examine how warehouse mobility can serve as the foundation of an enterprise-wide mobility, creating a more collaborative information architecture that not only enables a leaner warehouse operation — but a leaner, more profitable enterprise as well.

The negative business impact of the manual warehouse

Regardless of whether you are a manufacturer or distributor, the warehouse is a critical hub in your business. Through this central depot, everything must pass — from raw materials waiting to be manufactured into finished goods to product waiting for shipment downstream to a distribution center, retailer or end-customer. When the many warehouse processes are paper-based and workers are not connected in real-time to your warehouse management system (WMS), information is manually collected with pen and paper, and entered into the computer at a later date. These manually-driven procedures in the warehouse cause a number of higher level operational issues in the warehouse, including:

- High levels of errors in information due to the double-touch of data (handwritten followed by data entry).

Receiving

When workers at the receiving dock are enabled with real-time access to your purchase order database, along with either bar code scanning or the ability to read RFID labels, incoming shipments can be automatically identified and reconciled.



- Slower movement of information in and out of your business systems, resulting in reduced visibility throughout the warehouse operations.
- Reduced employee productivity due to time wasted completing paperwork and locating information on labels.
- Reduced customer service levels due to the impact on velocity in the warehouse.
- Increased cash-to-cash cycle due to the slow movement of information.
- Increased capital expenditures due to the lack of visibility into real-time inventory, which ripples into the need to maintain higher levels of stock to prevent against out-of-stock conditions.

The positive impact of mobilizing key warehouse processes

Without mobility to enable real-time processing throughout the warehouse, each and every warehouse function is impacted. Following is an in-depth look at each of the critical warehouse process areas — the issues each function faces, how mobility addresses those pain points, and the advantages the enterprise can expect to reap.

Receiving

Process pain points

When shipments arrive at your facility, manual procedures in the receiving function present a number of issues:

Manual reading of labels and reconciliation on a paper form takes time and can translate into a wide variety of inventory errors. Inventory may show in stock when in actuality there is an out-of-stock condition, and vice versa.

Labels on shipments may be damaged or illegible, causing a long delay in processing, and resulting in congestion at the receiving dock.

There is a major lag between when shipments arrive and when they are visible in your inventory system.

Business pain points

The process pain points in the put-away function ripple into significant business disadvantage in the form of:

- Slow processes in receiving that translate into long dock-to-stock cycle times.
- Lower employee productivity.
- Poor inventory visibility and accuracy that translate into erroneous out-of-stock conditions and lost sales.
- Lack of visibility into orders that prevents the ability to further streamline and reduce costs in the receiving process via cross-docking.

Solution: mobility

When workers at the receiving dock are enabled with real-time access to your purchase order database along with either bar code scanning or the ability to read RFID labels, incoming shipments can be automatically identified and reconciled. Proper

processing orders are delivered right to the worker — from where to stage accurate shipments for put-away or cross-docking to how to handle any errors in the shipment. Velocity in the receiving function is increased as the same workforce can process more shipments. Dock-to-stock cycle times are reduced. The increased inventory visibility allows you to intelligently direct put-away or conveyance for items that are low in stock first, reducing the opportunity for costly out-of-stocks to impact the order fulfillment process. And the instant visibility into the order system enables cross docking to effectively reduce handling time and costs for incoming shipments.

Put-away

Process pain points

Manual processes produce a variety of issues in the put-away function:

- Congestion in the aisles due to limited throughput.
- Product sitting on the warehouse dock waiting for processing is not yet visible in your inventory — and that lack of visibility can translate into a false 'out-of-stock' situation that ultimately results in unnecessary lost sales.
- Errors in the put-away process can result in misplaced inventory that can result in: false out-of-stocks; lost sales; and needless additional expense associated with the purchase and storage of additional product to replace 'lost' inventory that is actually sitting on the warehouse shelves.

Business pain points

The process pain points affect warehouse operations in a number of areas:

- Poor utilization of costly warehouse space.
- Low employee productivity and put-away throughput.
- Poor inventory visibility and accuracy
 - Poor utilization of material handling equipment (MHE) such as forklifts.

Solution: mobility

With real-time access to inventory systems in the put-away function, you can automatically deliver the right storage area as well as most efficient

route to that location right to a worker's mobile handheld or hands-free computer. A quick scan of the bar code on the shelf tag (or read of an RFID shelf tag) not only ensures the item is put in the correct place, but also provides a record of the location of that exact shipment. Items reach the shelves in the shortest amount of time, warehouse workers can increase throughput — and you know the exact location of all inventory at a highly detailed level.

As a result:

- The same number of workers can process more put-away orders each day.
- Improved inventory visibility:
 - Reduces out-of-stocks.
 - Reduces stocking inventory levels and related warehouse space requirements.
 - Provides the information required to implement first-in first out (FIFO) or last-in first out (LIFO) inventory management, which can have a significant positive impact on the company's profitability analysis and tax liabilities.
- MHE asset utilization is improved through reduced travel time in the warehouse aisle, which reduces wear and tear and maintenance requirements for the vehicles.

Cross docking

Process pain points

When paper-based processes are utilized in the cross docking function:

- Lack of real-time processing translates into shipments that often wait on the dock for appropriate paperwork to enable shipping.
- Manual reading of labels adds to processing time and increased errors that can result in the delivery of a shipment to the wrong dock.
- Lack of visibility into other shipments on the receiving dock eliminates the ability to coordinate the movement of materials bound for the same dock.
- Lag time between time of shipment and update of order system.

Business pain points

Manual procedures in cross-docking negatively impact warehouse operations in a number of areas:

- Inability to provide updated order status information to customers.
- Low employee productivity that translates into higher labor costs.
- Poor utilization of material handling equipment (MHE) such as forklift.
- Mis-ships and other shipment delays that ultimately impact customer service satisfaction and retention.

Solution: mobility

When real-time information is available in the cross dock function, shipments are handled once instead of multiple times. Instant access to the order database provides the on-the-spot visibility needed to cross dock the incoming material for immediate shipping to fulfill customer orders — eliminating the need for the products to be staged for put-away, placed on the warehouse shelves, picked, packed and re-staged for shipment. Access to real time information ensures that the right shipment is delivered to the right dock and loaded onto the right truck. Visibility into all the shipments slated for cross docking allows for increased efficiencies in movement between docks — instead of moving each shipment individually, shipments bound for the same dock can be aggregated. That aggregation reduces usage times and wear and tear for forklifts and other material handling equipment. And the combined efficiencies allow the same number of workers to process more shipments on any given day, driving labor costs down.

Sorting

Process pain points

Manual sorting processes result in the following issues:

- The need to manually identify materials to determine the proper put-away staging location reduces productivity and throughput.
- Errors can result in improper staging, which can result in the misplacement of materials on the warehouse shelves.

Business pain points

The overall impact on warehouse operations includes:

- Slower dock-to-stock times.
- Reduced employee productivity.
- ‘Lost’ inventory that can affect order fulfillment times and ability to meet customer shipping requirements.

Solution: mobility

Real-time access to the orders database allows instant identification of materials and automatic delivery of the proper staging location for put-away or shipment in package handling applications. And the rapid and accurate staging of shipments and packages helps ensure that orders are shipped in a timely fashion, improving order fill rates and customer satisfaction.

Returns

Process pain points

In the returns function, workers need access to a great deal of information in order to efficiently and properly process returns. Without real-time information in the returns function:

- Major processing delays occur while workers:
 - Validate that the return is valid through the existence of an RMA or other returns document.
 - Identify the returned item — a challenge if the item is no longer in its original packaging.
 - Document the condition of the returned material.
 - Determine how to process the return — return to stock, return to the manufacturer, recondition, scrap, or return to the customer.
 - Process any required customer credits.

Business pain points

The process-related issues can affect not only the efficiency of the returns function, but also customer service levels:

- Productivity is reduced due to time consuming processing.

Returns

With real-time access to inventory, accounting and order systems, a quick scan of an item bar code, RFID tag or RMA label instantly validates and updates the status of the return, along with immediate issue of any customer credit due.



- The resulting backlog of returns and the associated delays translates into:
 - Slower processing of customer credits, reducing customer satisfaction — and retention.
 - Slower return of product to warehouse shelves, impacting the velocity of availability for new order fulfillment.

Solution: mobility

With mobility, workers in the returns area have instant access to inventory, accounting and order systems. Advanced data capture capabilities, such as imaging, can provide proof of condition for returns records, eliminating potential customer disputes. A quick scan of an item bar code or RMA label can instantly validate the return and quickly update business systems with the disposition of the return. Customer credit, if due, can be issued immediately along with instant customer notification. In the event the item is returned to inventory, it is automatically noted in the inventory systems, instantly available for fulfillment of new orders. And as overall processing time is reduced, worker productivity improves, enabling prompt returns processing to protect customer satisfaction levels.

Cycle counts

Process pain points

In order to meet operational and financial requirements, as well as government regulations, companies must keep accurate inventories. To do so, they conduct

regularly inventory counts. When these counts are conducted manually, they are extremely time consuming and often fraught with errors.

Business pain points

Manual cycle counts traditionally translate into:

- High labor costs.
- Lack of real-time data — by the time the cycle count is completed (often days or weeks), picks and put-aways will likely have been completed, affecting the inventory valuation and the company's balance sheet, as well as inventory accuracy to protect against the high cost of out-of-stocks.
- High cost of shutting down the facility if required — a very expensive and disruptive action.

Solution: mobility

When cycle counters are armed with real-time access to the inventory database and advanced mobile data collection capabilities, efficiency and accuracy in this function are dramatically improved. For example, in a warehouse utilizing RFID technology, workers with a mobile RFID mounted on a cart can take a full and error-free cycle count in the time it takes to push a cart through the aisles. Counts that may have taken three or four weeks in the past can be completed in less than half a day. The new level of cost-efficiency in cycle counting activities enables enterprises to take

Picking

With mobility in picking operations, the same number of workers can process more orders per day with fewer errors, improving customer service and reducing the cost of doing business.



cycle counts routinely. And the resulting new level of visibility into inventory data delivers a number of benefits:

- Better trend analysis for improved buying practices.
- Reduced inventory stocking levels.
- Reduced capital expenditures for holding inventory.
- Reduced space requirements for inventory.

Picking

Process pain points

Paper and pen procedures in the picking function are extremely inefficient:

- Pickers must walk the warehouse aisles to locate product.
- Picks cannot be easily aggregated, either within an order (due to the inability to identify that multiple items on a pick list are located in the same area) or across orders (due to the linear nature of manual picking, which is processed one order at a time).
- Product cannot be automatically verified as accurate when picked.

- Inventory systems are not updated to reflect the pick until the picking form has been entered into a computer at a later time.

Business pain points

The business impact of manual picking is great:

- Labor costs are higher.
- Shipment error rates can exceed acceptable levels or company defined metrics.
- Lack of real-time inventory visibility results in costly out-of-stocks, lost orders, lost customers and lost profitability.

Solution: mobility

With mobility farther upstream in the warehouse supply chain in the put-away function, you already know what products are on your warehouse shelves and where specifically they are located. When you add real-time access to your order and inventory business systems, you can automatically deliver electronic picking orders to a mobile device that includes a pick list along with the fastest route to the items. A quick scan of a shelf tag, bar code or RFID tag provides instant verification that the right item has been picked, and the item is instantly deducted from inventory. Now:

- Productivity is increased — the same number of workers can process more orders per day, driving the cost of doing business down.

- Errors are significantly reduced through the automated capture of data and instant double-check for picking accuracy.
- Out-of-stocks are eliminated through the ability to instantly deduct items from your inventory as they are picked.
- The ability to deliver granular picking information enables LIFO/FIFO picking for better inventory management.
- The ability to instantly store serialized product information with customer orders enables enterprises to expeditiously locate any product or parts that have been recalled, reducing liability as well as the high costs associated with tracking products that have already left your facility and have been delivered to your distribution channel or end customer.

In addition, when mobile access to product databases is added, companies can leverage detailed information about the specific items in your warehouse. For example, information on consumer appliances can be leveraged to control clamp trucks, prevent operators from inadvertently applying too much pressure during put-away and picking. This valuable mobility application helps reduce the high cost associated with the delivery of damaged equipment — from the cost of the return and re-shipment to the cost of an unsatisfied customer.

Packing, staging and shipping

Process pain points

Shipping and staging are the equivalent of the 'last mile' in the warehouse, where the orders effectively 'meet the road' en route to the customer. Inefficiencies in these areas include:

- Quality control: time consuming manual cross check that the right items are in the shipment.
- Delays in processing while paperwork is entered to enable the creation of manifests and staging instructions.
- Processing delays in shipping that ripple into carrier detention charges.

- Inability to dynamically modify shipping orders to accommodate emergency orders from customers.
- Excess use of filler materials in packing operations.

Business pain points

Lack of real-time information in these crucial last stops in the order fulfillment process translate into:

- Delays in shipping and increased shipping costs.
- Reduced customer service satisfaction.
- Increased shipping costs.
- Poor truck utilization.

Solution: mobility

Mobility can streamline these final stages of order fulfillment, ensuring that the right order contains the right products, and is shipped to the right customer at the right time via the right method of shipment.

In the packing function, mobility serves as a crucial cross-check to ensure the accuracy of an order prior to packing. In addition, in the event that any items that were backordered have now arrived in the warehouse, the packer can receive notification, enabling completion of the shipment prior to leaving your facility.

Packing material costs can also be controlled. Your business system can automatically determine the right size carton for the shipment, removing guesswork, and eliminating the use of excess amounts of filling materials.

In shipping, mobility provides a final cross-check to ensure that the order is correct, properly addressed and scheduled for the proper shipment method, complete with on-the-spot printing of all necessary paperwork.

And coordination with the dispatch function ensures that the shipment is properly staged for loading on the right truck in the right order.

With mobility in your packing, shipping and staging operations:

- Productivity is increased — the same staff can now ship more orders per day.
- Shipping times are improved — the same staff can now ship more orders per day.
- Delivery times are improved.
- Customer service and satisfaction are improved — customers are more likely to receive orders when promised, promoting higher customer retention levels.
- Vehicle utilization is improved — trucks are fully loaded with the right shipments.
- Driver productivity is increased — staging in the correct order enables drivers to spend less time at each stop.

Asset tracking

Process pain points

In the warehouse, there are often many re-usable assets, such as totes, pallets and carts. Without the ability to automatically track and locate these valuable assets, companies must incur the high cost of labor involved in allocating employees to walk the warehouse and adjacent areas, such as the yard, to find these assets — or reach out to customers to determine if assets are still in their possession. Due to the major effort required, companies either do not track these valuable assets that are so crucial to various warehouse functions — or rely on manual logs that are usually well out of date. And without accurate tracking, assets disappear on a regular basis.

Business pain points

The routine loss of warehouse assets results in:

- Lack of asset availability can impact the ability to ship on time.
- Additional capital expenses due to the need to regularly purchase additional assets to avoid order processing delays.
- Inaccurate asset inventories can affect asset valuations and the company's balance sheet.
- Lack of granular asset inventory information such as asset age can impact budgets due to

difficulties in accurately predicting the end of the asset lifespan — and the need to purchase replacements.

Solution: mobility

Mobility can completely automate the asset tracking process and provide up-to-the-minute information on the whereabouts of totes, pallets and more through advanced data capture. When RFID tags are placed on all assets, assets are automatically tracked as they move through the warehouse and onto the truck, and can easily be associated with a specific customer order.

In addition, the use of permanent hardened RFID tags eliminates any recurring tag costs for either the tags themselves or the labor to place the tags on the assets.

The result is fully automated accurate and cost-effective tracking of your assets with virtually no manpower required. And the assets remain in your inventory for an extended period of time, reducing your total cost of ownership (TCO) and improving your return on investment (ROI).

Mobile warehouse manager

Process pain points

In order to effectively manage the warehouse, managers and supervisors need access to business systems such as purchasing and inventory, and business communications, including voicemail and email. With a lack of mobile access to these tools, managers are forced to spend a large part of their day tethered to the desk instead of out on the floor supervising employees.

Business pain points

When managers are not out on the warehouse floor, they are not available to resolve issues in real time, or to spot productivity issues, such as a backlog in one or more functions. Warehouse efficiency is often reduced, customer service is impacted, and warehouse personnel job satisfaction is often impacted leading to increased employee turnover rates.

Solution: mobility

Mobility can get your warehouse managers out of the office and back on the warehouse floor

by enabling the extension of all the necessary desktop tools right to the palm of their hands. With a rugged integrated voice and data mobile device built to endure the harsh environment of the warehouse, managers can keep their desk phone, email, and access to all business systems in their literal pockets. Now, managers and supervisors can remain on the warehouse floor to protect productivity and throughput, yet maintain the real-time connection to co-workers, vendors, associates and business information needed to achieve maximum on-the-job efficiency and effectiveness.

Beyond the warehouse walls: unlocking the real value of warehouse mobility

The value of mobility in the warehouse function is easily recognized:

- Processes across the warehouse are streamlined, reducing cycle times.
- Worker productivity is increased, reducing the cost of labor in the warehouse.
- Orders are fulfilled more accurately, improving customer service and satisfaction levels.
- The cost of sales attributed to movement through the warehouse is reduced.

While these are significant business benefits, when the data collected through mobility in the warehouse is tightly integrated into the rest of your business systems and functions, the value increases dramatically.

The yard

With warehouse mobility, the exact location of shipments and materials in the yard are noted in your warehouse management system (WMS) upon delivery, expanding inventory visibility beyond the warehouse to include the trailers, containers and other materials in the yard. Even if containers or materials are moved from their original storage spot, they are easily tracked. Armed with this information, shipments in the yard can be prioritized and scheduled for prompt conveyance based on items in the warehouse that are either low or out of stock.

Mobility enables tighter integration between your yard and warehouse workers — yielding greater efficiencies in both functions. Based on the information already in your system, a dynamic, single information-packed schedule can be created and delivered to your workers' mobile devices. Workers in the yard can be directed to the exact location of the next trailer or container scheduled for conveyance, ensuring delivery to the dock on time. Warehouse workers already know which shipment is slated to arrive at which dock, and are ready to promptly unload. Once containers and trailers have been unloaded and returned to the yard, the location of these critical assets remains visible in your system.

And the tighter collaboration between the warehouse and yard functions enables the rapid schedule changes that can prevent an out-of-stock situation in the warehouse. Should a shipment arrive containing items that are currently out-of-stock, that information is visible the moment the truck arrives in the yard. In seconds, a dynamic change in schedule can be implemented that ensures that shipment is delivered immediately to the dock, effectively reducing the impact on either the production line or your order fulfillment process.

Shipping and delivery

When real-time information in the warehouse packing function is integrated tightly into your delivery function, major benefits are realized in your shipping and delivery operations.

Dispatch

When the dispatch function can see shipments in progress in the warehouse in real-time, load plans can be prepared that take into account all shipments that will be ready to load in the morning — not just shipments completed at a specific point in time. The creation of real-time load plans allows the best utilization of your delivery vehicles and your drivers. Load aggregation is easily optimized, and trucks are more fully loaded with shipments that have been aggregated to enable the most efficient delivery route possible. Tight integration with your shipping function in the warehouse makes this possible — based on the real-time load plans, staging information is sent to your shipping function, ensuring that shipments are loaded on the right truck and in the right order.

Route accounting and proof-of-delivery

The collaboration of data between shipping and dispatch enables major efficiencies in your delivery function. At this point, you have effectively tracked materials from the time they were received; for manufacturers, through the manufacturing process; to the warehouse shelves; through the order fulfillment process to shipping. Shipments have been aggregated into loads that enable delivery of the shipments in the least amount of miles traveled, reducing fuel costs. And the ability to load the shipments in the order of delivery further improves driver productivity.

When your pool of business data is extended in real time to your drivers, significant additional benefits are again realized — regardless of whether your drivers simply need proof-of-delivery for parcel post operations, or sophisticated route accounting and direct store delivery functions. With mobility extended to your drivers in the field, electronic signatures can be easily captured. Instant proof-of-delivery noted in your business systems, enabling expedited billing — and payment.

And in route accounting and direct store delivery functions, when you enable your drivers with real-time mobile computing, they have the information they need to verify shipments against the original customer order, as well as deduct any damaged items and reflect customer additions or changes made at the time of delivery. The result is an accurate on-the-spot invoice. The typical time associated with processing standard paperwork on deliveries at the end of the day as well as exceptions is eliminated. And the benefits can be significant:

- Significant reduction in days sales outstanding (DSO) — which in turn improves your cash-to-cash cycle — and your overall profitability.
- Increased driver productivity — The elimination of paperwork enables more stops per day per driver.
- Increased sales — Since drivers can now make more stops, they have more opportunity to sell more product throughout the day.
- Increased accounting staff productivity — The real-time automated interaction between the drivers and your business system eliminates the need for your accounting and administrative staff to process paper and enter information into the computer.

- Cost effective regulatory compliance — Your mobility solution enables the collection of granular information on the products that were delivered to a specific customer — from bar codes and lot numbers to serialized information. And this information can help enable rapid yet cost-efficient product traceability in the event of a product recall.

Manufacturing — the production line

With mobility, granular information about the parts and/or ingredients stored in your warehouse that are slated for later manufacturing into finished products or consumer packaged goods can be collected and compiled automatically, with little or no human intervention. When it comes to your inventory, you already know the supplier, when a specific item was delivered to your warehouse, and even the batch number. Now, as materials are delivered to and move through your production line, you have a very detailed history that begins with the arrival at your facility. The ability to track and trace for consumer safety and to meet regulatory compliance is simpler and less cost-intensive.

Sales

When real-time inventory information from your warehouse is tightly integrated into your outbound sales function, mobility can enable your salesforce to check inventory, obtain pricing and place orders — right from a customer's location. This real-time window into the warehouse from the field delivers major benefits in the sales function:

- Improved productivity — Electronic computer-based forms replace paper-based forms that often also require later data entry into the computer.
- Increased sales — Time previously spent on paperwork can now be spent on sales, enabling salespeople to make more calls per day.
- Improved customer service — Orders, pricing and delivery times can be confirmed on the spot. And if a customer calls requesting the status of a present order, the information is never more than seconds away from the salesperson's fingertips.

Field service

When your warehouse and field service functions are integrated via real-time mobility solutions, the efficiency and customer service levels in field

service operations are improved. Based on the day's schedule and the equipment slated for repair or service, a list of required parts and supplies are identified and sent to the warehouse for fulfillment and loaded onto the truck. Since service personnel have what is required to do the job on hand, repairs can often be completed in a single visit, improving customer service.

Other benefits of mobility in this function include the ability to enable service personnel to access your business systems in real-time from the field including repair history records and product manuals — information that increases the ability to accurately diagnose and correct problems on the first visit. The ability to access real-time warranty information and to simply scan parts as they are utilized on site reduces paperwork and ensures all costs are accurately captured and passed on to the customer, protecting profitability. And information on warranty and service contract expiration can be used to prompt field service personnel to up-sell or cross-sell appropriate services and other after-market products, turning a traditional cost-center into a potential revenue center as well.

Lastly, real-time repair information from all field service personnel can be automatically analyzed on an ongoing basis — and the trends may uncover issues related to specific parts or a specific product lot. The timeliness of this information enables you to take proactive action to control and reduce the business ramifications of the situation — from preventing future stock from being manufactured with possibly defective parts to preventing existing stock that was already manufactured with a defective part from being shipped to customers, again protecting the customer experience.

Summary: warehouse mobility — a foundation for a leaner warehouse and a leaner, more collaborative and profitable supply chain

The warehouse is at the very heart of your business operations. The poorly managed warehouse can actually become cost prohibitive, significantly impacting the cost of doing business — and general profitability. Through mobility, real-time warehouse information can be leveraged to enable a new

level of information collaboration throughout the enterprise. The right set of data is available in the right place at the right time to enable the most efficient next action — and the most effective business decisions.

Not only does efficiency in the yard, manufacturing, dispatch, delivery, sales and service functions improve, but the collaboration between functions provides a real-time enterprise wide view of business information that enables key strategic business objectives to be achieved. For example, real-time inventory visibility can lead to tighter inventory management — including a reduction in stocking inventory levels and an increase in inventory turns. And reduced stocking levels can free valuable space for re-allocation to other areas that will better serve business profitability — for example, enabling an expansion of the assembly line to increase capacity, or extend shipping and staging areas to enable more orders to be fulfilled per day.

Leveraging warehouse mobility in the warehouse and beyond can yield highly beneficial results, including reduced costs, improved quality, better customer service, higher margins and greater profitability — delivering real business advantage.

Complete enterprise mobility solutions from Motorola

When it comes to enterprise mobility, Motorola delivers. Our complete array of rugged industrial mobile devices is designed for the rigors of everyday warehouse use, including bar code scanners in addition to handheld, vehicle mount and wearable mobile computers that are capable of voice-directed and text-based applications. Our award-winning next generation wireless LANS are built to manage the unique challenges of mobility, delivering outstanding dependable wireless connectivity as well as high-quality voice — and can meet the needs of the largest enterprise to the small and midsize business. Our solutions also offer cost-efficient manageability by providing a centralized command center that significantly reduces the time and effort required to provision, monitor, troubleshoot and update your mobile devices and infrastructure — regardless of where in the world they may be. Support for all the latest security protocols and an end-to-end layered strategy enables you to deploy the right level of security for various applications throughout your

enterprise. And if you are looking to enable next generation technologies, such as RFID and mesh networking, Motorola is uniquely positioned to transform your enterprise with the broad spectrum of mobile products and technologies to further automate your entire supply chain — and take efficiency and cost-reduction to the next level.

Motorola also offers the right experience, the right partners and the right services. As a manufacturer of wireless infrastructure, bar code scanners, RFID tags and readers and mobile devices, we offer a depth of product knowledge. Through countless enterprise mobility deployments in some of the world's largest enterprises, including our own warehouse and manufacturing operations, we offer a wealth of understanding of the needs in the warehouse — and beyond. And robust global partner channel brings the development and integration services you need right to your door, as well as leading applications and complementary products. For example, together with Zebra, Motorola is able to offer mobile solutions that incorporate industry label printers that deliver reliable on the spot printing of a wide variety of bar code and RFID labels.

And Motorola enterprise mobility solutions make smart business sense. Robust benefits offer a rapid return on investment, and the combination of superior manageability, proven rugged high-performance products and industry leading support services ensures a low total cost of ownership.

For more information

For more information on how Motorola mobility solutions can help you reap the benefits of mobility in the warehouse and beyond, please visit us on the web at:

motorola.com/supplychainmobility

or access our global contact directory at:

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