

EXTEND THE VALUE OF YOUR ORACLE WAREHOUSE MANAGEMENT SYSTEM (WMS) WITH MOBILITY

WHITE PAPER

EXECUTIVE SUMMARY

The warehouse is at the core of your business operations – all day long, materials are moving in, through and out of this central business area. Efficiency of your warehouse processes is key to many business metrics — affecting the number of orders shipped to order accuracy, inventory availability and customer service levels. Many enterprises have implemented Oracle’s industry-leading Warehouse Management System (WMS), and are enjoying the many benefits of this leading supply chain execution solution, from improvement of facility utilization to an increase in order accuracy and improved customer service.

But today’s business world is increasingly complex and competitive, with profits pressured by rising labor and fuel costs, offshore manufacturing and the difficulties associated with managing global supply chains. To address this pressure, enterprises are tasked with ensuring that each area of the business is running as efficiently as possible to offset shrinking margins and improve and protect profitability.

In this white paper, we take a look at the impact of extending your Oracle Warehouse Management system via mobility. We will examine how mobility can enable you to fully leverage the data already captured in the Oracle Warehouse Management system to significantly enhance the efficiency of your warehouse operations — and why Motorola is the right choice as your mobility provider.

THE BENEFITS OF MOBILIZING YOUR ORACLE WMS

With mobility, workers on the shop and warehouse floor can execute Oracle WMS transactions in real time, unlocking the full value of the data contained in your business systems. All of your core warehouse functions are positively impacted — from receiving and put-away to replenishment, picking, packing and shipping.

When you extend your Oracle WMS transactions to the point-of-work in the warehouse, you are able to more fully leverage this major business system by:

- Further reducing the total cost of ownership for this technology investment
- Incrementally improving efficiency and reducing errors, further reducing costs in the warehouse
- Improving customer satisfaction and retention levels through the increased accuracy and speed of order fulfillment

When you mobilize your Oracle WMS, you will enjoy:

Improved worker productivity

- Mobility enables a new level of automation of warehouse process by replacing paper-based manual systems with a mobile device, eliminating manual reconciliation of shipments against purchase orders, paper-based pick tickets and more.

- The system provides the flexibility to fit the business process flows in place today, and can easily adapt to a change that might be required in the future to cost-effectively meet regulatory and customer compliance requirements — or generally improve employee efficiency.
- In addition to the typical warehouse functions such as order fulfillment and inbound logistics, Oracle WMS enables support for manufacturing and maintenance business flows. The result is the extension of materials management best practices into other areas of the enterprise, expanding productivity improvements and other benefits well beyond the warehouse.
- The instant availability of data reduces worker travel time:
 - workers no longer need to travel to a workstation or printer to pick up orders
 - picking is no longer restricted to a linear process, enabling employees to fulfill more orders per day
 - workers can receive directions for the most optimal route for put-away, replenishment, let-down and picking tasks

Improved resource utilization

- Real-time inventory visibility enables the further reduction of stocking inventory levels, which not only improves inventory turns — but also enables optimal use of valuable warehouse space.

- Asset utilization is maximized through more efficient use of warehouse equipment, as forklift and pallet jack operators minimize travel time while maximizing the number of tasks performed in a day.

Improved inventory management

Real-time inventory visibility enables:

- A reduction in carrying inventory, significantly impacting capital expenditures
- A significant reduction in out-of-stocks
- Rapid replenishment of production lines and forward pick locations, reducing costly delays in order processing and production line shut downs

THE STEPS TO MOBILITY

Once you have decided to mobilize your Oracle application, what are the steps that are involved, and how can you be sure you are choosing the right mobility provider? The following sections provide a high level look at the steps involved, and help you determine criteria for a mobile solutions provider.

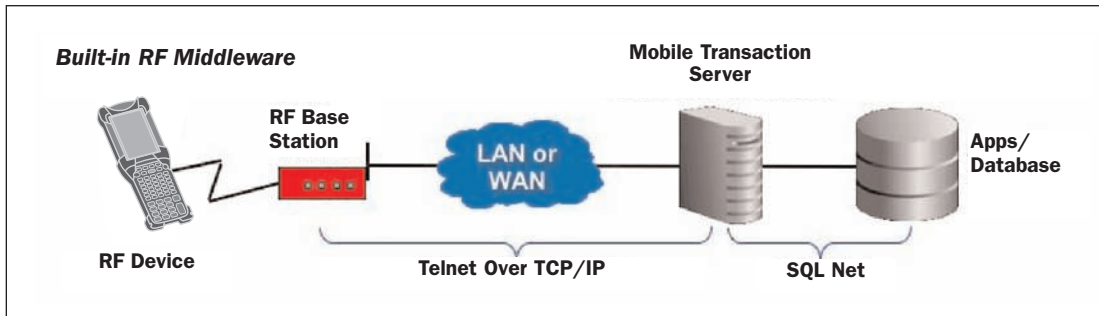
Step 1: Mobilizing your Oracle warehouse applications

Regardless of whether you are using Oracle WMS or Oracle Mobile Supply Chain Applications (MSCA), going mobile is easy. For smaller sites that do not require the full functionality of a comprehensive warehouse management system, Oracle MSCA provides basic warehousing and manufacturing execution functionality that is already mobile-enabled.

In large warehouse environments, Oracle WMS provides the capabilities to deliver a high level of automation, task management and robust material flow management for more complex processes.

Whether you are using Oracle MSCA as a complete system for basic materials management functionality and mobility, or the full warehouse management capabilities of Oracle WMS, the Oracle architecture offers true elegance and simplicity. The ‘built-in not bolt on’ approach to architecture enables mobility in a matter of a handful of days — whereas mobilizing other ERP solutions that require heavy programming is often measured in months. Oracle warehouse systems are ‘mobile ready’, designed at the platform level to leverage the capabilities of handheld, wearable and vehicle mount mobile computers. The system is ready to integrate bar code data without the need for third party middleware. And a rich set of

Oracle WMS MSCA Mobile Infrastructure



How it Works:

The Mobile Transaction Server acts as a Forms Server for mobile devices, rendering your application screens appropriately for the different mobile devices you may have deployed in the warehouse — from hands-free wearable computers for workers involved in picking small items to rugged handheld devices designed to endure the harshest environments, gun style devices for all-day scanning comfort and intrinsically safe devices for flammable environments to vehicle mount mobile computers on forklifts. The properly rendered screens are then pushed out over TCP/IP via your LAN or WAN to an access port or access point, which broadcasts the data wirelessly to your mobile devices — and enables the return of collected information to your databases in real time. The only requirement on the device side is the availability of either the TelNet or Java Virtual Machine (JVM) client.

RFID capabilities are built into the product and technology stack, dramatically reducing the complexity and cost of integrating RFID data into your Oracle WMS transactions.

The level of simplicity on the Oracle side enables you maximize the business benefits of your Oracle MSCA or WMS system through the extension of mobility — without requiring a significant incremental technology investment, without requiring significant IT time to manage the project, and without requiring the heavy participation of others throughout the enterprise. With minimal investment, you simply realize a significant increase in benefits in the warehouse — and a greater return on investment for your Oracle system.

Step 2: Choosing the right mobile devices

Throughout your warehouse, different users performing different tasks may require different devices to maximize comfort, usability and productivity. For example, at the dock door, workers will need rugged devices that can withstand the wide temperature swings as workers move from outside to indoors, as well as rain, dust and even drops to your concrete floor. Workers picking smaller items or handling packages could benefit from wearable scanners that provide hands-free comfort and convenience — and even voice-directed picking. And workers on forklifts, pallet jacks and other material handling equipment need mobile devices that can be mounted on the vehicle and are designed to handle all-day pounding and vibration, as well as wash downs. Workers involved in simple scanning operations need bar code scanners that are designed for the rigors of the warehouse environment.

To maximize productivity, you need to match the device that is best designed for a specific warehouse task to the various types of workers in your warehouse. Motorola offers a full complement of proven devices that are designed for the unique challenges of the warehouse. The wide range of form factors enables you to select the right device and right feature set for each function in your warehouse, from handheld and wearable mobile computers to vehicle mount mobile computers designed for easy input with gloved hands to bar code scanners, RFID mobile read points and handheld readers. The broad product line enables you to select and purchase the right feature set for each of your workgroups, helping control capital expenditures associated with device purchase.

Motorola's line of products designed for the warehouse offer an exceptionally low total cost of ownership through a combination of rugged design and outstanding support services. Motorola's rugged devices that were designed for warehouse use offer:

- Operation across a very wide temperature range
- Environmental sealing required to ensure reliable operation in the harsh warehouse environment, and the ability to ensure dust, wash downs, rain, and more
- Intrinsically safe devices designed for use in flammable environments, such as paint and petrochemical manufacturing
- Industry-leading drop testing:
 - Where competitive devices typically perform drop tests only at ambient temperature, Motorola drop tests on rugged devices are performed across the entire operating temperature range. This thorough testing ensures that, regardless of where the device is dropped — outside in below freezing temperatures to inside in the warehouse aisles — you can count on dependable operation.
 - Only Motorola goes beyond the traditional drop test to subject the most rugged devices to a second impact test, the tumble test, where devices are placed in a rotating drum and exposed to thousands of drops.
- Cooler and freezer use: The freezer presents a specific challenge for mobile devices — the management of condensation when devices move between coolers and freezers and the warmer room temperature warehouse environment. Motorola's freezer-compliant devices are engineered to provide reliable operation, regardless of the dramatic temperature swings to which the device is subjected, offering features such as integrated heaters and field replaceable desiccant packs.
- A wide variety of vertically oriented accessories that enable the devices to be customized for the needs of your industry, from holsters and trigger handles for user comfort, to headsets to magnetic stripe readers for added functionality.

Industry leading high-performance scanning technology

Regardless of the bar code symbologies deployed in your enterprise, you need accurate and reliable scanning to ensure maximum productivity in your business processes. As the innovator in mobile bar code scanning and the long-time leader in advanced data capture, Motorola offers high-performance data capture solutions that are at the industry's leading edge. Features in Motorola's bar code scanners can include:

- The ability to scan all existing bar code symbologies, including the emerging Reduced Space Symbology (RSS)

- Fuzzy logic, which enables the reconstruction of damaged and poorly printed bar codes for first time reading, as well as the ability to read through shrink wrap
- Omni-directional scanning, which enables bar reading of bar codes regardless of scanner orientation
- An extended scanning range, from inches to over 40 feet on a single device, providing the functionality for short range scanning for receiving, and long range scanning of product or shelf tags high up on the warehouse shelves for put-away and let down
- High resolution imaging, allowing the capture of a wide variety of images — for example, to document a damaged shipment at the receiving dock, or to capture an 8.5 x 11 document at full size to meet regulatory requirements

Step 3: Choosing the right wireless LAN
High-performance wireless networking keeps users connected and productive

When you deploy mobility in your warehouse, you need a highly dependable and predictable wireless connection to your wired network to ensure that workers experience continuity in application performance to enable maximum productivity. There is no room for devices that routinely lose wireless connectivity as users roam throughout the warehouse. There is no room for the time required to re-boot and re-establish the transaction that was in process when the device lost connection. And there is no time for users to troubleshoot error messages, such as ‘page not found’.

Motorola’s wireless LAN (WLAN) infrastructure is designed for mobility, packed with unique patented features that can only be found in a Motorola wireless LAN. The developer of first and second-generation wireless LAN architecture, Motorola holds 80 WLAN-related patents today, with approximately 90 patents currently in process.

With a Motorola WLAN, you can count on a desktop-like dependable wireless connection that will keep your employees connected to your business systems and productive. Just a few of the features

that are designed to meet the unique challenges associated with maintaining a wireless connection for on-the-move workers include:

- Load balancing and pre-emptive roaming work hand-in-hand to ensure devices roam before connection erodes.
- Power saving features save battery power on client devices, ensuring adequate power for a full shift.
- Virtual AP that works hand in hand with Proxy ARP to ensure that broadcast messages are sent only to recipients for whom the messages are truly intended. The receipt of system and other messages are dramatically reduced, effectively reducing wasted processing and battery power — and improving overall device and application performance.

Motorola’s robust line of wireless LAN infrastructure is designed for any size enterprise. Regardless of whether you have global operations with offices around the world, a large number of smaller branch offices or a mid-size business, you’ll enjoy all the latest features and functionality — from security to voice-over-IP for cost-effective voice services, centralized management and more.

A powerful RF-agnostic mobility platform

Motorola’s Wireless Switches equipped with Motorola’s Wireless Next Generation (Wi-NG) architecture are the perfect complement for your Oracle warehouse system. Just as your Oracle system offers built-in support for bar code scanning and RFID technology, Motorola’s Wi-NG enabled RF-agnostic Wireless Switches provide the same, including support for any and all RF technologies — from Wi-Fi and RFID to Mesh networking, WiMAX and fixed mobile convergence (FMC). This level of built in support in both your applications (in the Oracle system) and your wireless LAN (via Motorola’s Wireless Switch) enables you to incorporate whatever wireless technologies will best benefit your business. Today that may mean extending 802.11a/b/g wireless connectivity to literally put your Oracle warehouse applications in the hands of your warehouse workers; tomorrow that may mean the integration of RFID information, or the extension of your WLAN to the yard via mesh networking.

Simplified and centralized management

One of the most challenging tasks associated with mobilizing your Oracle warehouse systems is post-deployment — the need to manage and support the wireless network and all your mobile devices. This single aspect of mobility solutions can be so time consuming and expensive that it can easily begin to outweigh the associated benefits of mobility.

But Motorola understands the specific challenges associated with managing devices that are always on the move, and has available unique management systems that enable you to remotely provision, deploy, update, maintain and troubleshoot your mobile devices and infrastructure from a centralized command center — Motorola and non-Motorola — regardless of where in the world devices may be located.

With centralized management, your IT staff can remotely and easily:

- Update device operating systems and applications for hundreds or thousands of devices, all at the press of a single button.
- Load and configure new devices — automatically.
- Monitor a wide variety of device statistics for mobile devices as well as wireless infrastructure, providing unparalleled visibility and enabling the proactive identification of device issues and elimination of problems — before they occur.

With Motorola's mobility management solutions, you have the control to slash the time and costs typically associated with managing mobility solutions, protecting the benefits and value of mobilizing your Oracle warehouse solution.

SUMMARY

Oracle solutions help you maximize the efficiency in your warehouse. Every day, your Oracle warehouse management system streamlines your warehouse operations.

When it comes to maximizing the value of your Oracle warehouse solution, mobility delivers. With minimal investment on the Oracle side, you can extend your Oracle warehouse transactions to wherever work is performed — in the warehouse aisles, on the loading dock, at the receiving desk and more — achieving higher levels of automation, efficiency and throughput throughout the warehouse.

And when it comes to selecting a mobility provider, Motorola delivers. Motorola offers a complete solution, built from the ground up to simplify and minimize the cost of mobility, with Motorola-only features that deliver real value — superior manageability and ease of use, a robust wireless connection your workers can count on, in a solution that easily expands to accommodate new features, standards and functionality as well as capacity.

Together Oracle and Motorola can provide you with the simplicity and rapid deployment you need to achieve a rapid realization of benefits and return on investment for your mobility solution — for real business value and real business advantage.

WHY MOTOROLA

In addition to offering complete portfolio of products designed for mobility, Motorola also offers the right experience, the right partners and the right services. As a manufacturer of wireless infrastructure 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, the yard — and beyond. Our robust global partner channel brings the development and integration services you need right to your door. And proven rugged high-performance products combine with outstanding support services and superior manageability to deliver a low total cost of ownership for your mobility solution.

FOR MORE INFORMATION

For more information on how Motorola can help you extend the benefits of your Oracle system in your warehouse, contact us at +1.800.722.6234 or +1.631.738.2400 or visit www.symbol.com

About Motorola

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by our vision of Seamless Mobility, the people of Motorola are committed to helping you get and stay connected simply and seamlessly to the people, information, and entertainment that you want and need. We do this by designing and delivering "must have" products, "must do" experiences and powerful networks — along with a full complement of support services. A Fortune 100 company with global presence and impact, Motorola had sales of US \$35.3 billion in 2005. For more information about our company, our people and our innovations, please visit <http://www.Motorola.com>



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