

# Warehouse Management

Drive distribution center and fulfillment agility and efficiency for maximum return on investment.



Part of JDA's Intelligent Fulfillment™ solution, JDA® Warehouse Management is a comprehensive, real-time warehouse and distribution center management system that skillfully handles real-world disruptions to help drive improved performance and competitive edge. JDA Warehouse Management helps manufacturers, retailers and distributors thrive in an ever-changing, hyper-connected omni-channel world by providing the power to quickly adapt to changes, and optimize and execute the right inventory, at the right location, at the right time. Users are empowered with more flexibility, real-time responsiveness and the ability to easily manage complex warehouse operations.

## Why does JDA Warehouse Management enable customers to achieve the best results?

### Industry Leadership

JDA has been enabling companies to optimize their distribution networks for more than 35 years. JDA provides the most comprehensive task optimization technology, including the industry's only embedded 3D mapping — out-of-the-box. Our vision and capabilities integrate and synchronize operations from the retail store shelf back through extended supply networks.

JDA's Warehouse Management technology and services provide a comprehensive, RFID-enabled solution for distribution and inventory management covering:

- Labor management
- Inbound operations
- Inventory management
- Work order processing
- Outbound operations
- Asset management

### Optimizing Supply Chain ROI

By optimizing every move in the distribution center (DC), operations run more smoothly, accurately and efficiently. Nothing is left to chance or to the whims of individual workers. Workflow and throughput operate as a well-oiled machine. This maximizes the value of the DC and produces the greatest return on your supply chain investment.

### The User Experience: Revised

In keeping with JDA's customer-centered vision, the JDA Warehouse Management user experience is an ongoing strategy for solving key industry problems and interacting with technology in a new way, focused on user empowerment and efficiency. It provides a "control tower" for each role, allowing users to handle the most pressing issues in real time while keeping an eye on their day-to-day business — resulting in maximum user productivity.

### Role-Based Mobility: Extending User Advantage

Thoughtfully created and prioritized based on extensive customer feedback, JDA Warehouse Management extends the solution's use through mobile roles. Now users can flexibly respond to business demands both in and outside the facility without being locked down to a workstation or RF device.



## The Flexibility to Bolster Omni-Channel Fulfillment Strategies

As an integral part of our Intelligent Fulfillment solution, JDA Warehouse Management is focused on meeting the demands of omni-channel fulfillment. The solution thoroughly handles fast-paced processing of small, direct-to-consumer orders. It also provides enhanced support for more flexible store distribution capabilities.

## Complex Operations Supported More Easily With Smart Configuration

Experience faster time to value with quicker implementations, increased agility, simplified process changes and better onboarding. User-friendly, prescriptive workflows allow users to manage complexity without losing any richness, making them more self-sufficient. Your company's specific business needs are met without the customizations that make upgrades painful and costly.

## Labor Management

Labor represents 50-75 percent of non-inventory costs in most distribution centers, so optimizing each and every task is critical to achieving agile, efficient and lean operations. This requires

consistency and control over what tasks are assigned and how they are carried out.

JDA is a long-time leader in labor and workforce management, transforming your workplace into a self-accountable, performance-focused culture. This transformation is accomplished through a proven, step-by-step methodology that incorporates culture-altering change management and strategic project management programs.

## The transformed business is enabled by technology for:

### Workforce Planning and Scheduling

To ensure just the right number of workers with the right skills are available exactly when needed to fulfill order demand.

### Schedule Optimization

The ability to quickly assign and reassign workers to priority work areas and functions based on order flows, deadlines, skills and cost considerations.

### Task Optimization

Making sure all tasks are assigned and executed in the proper sequence while balancing workflows and order priorities to maximize efficiency and quality of service.

### Learning Management

A blended learning capability with classroom and online courses ensures that workers receive proper training and certifications for their jobs. Job performance can be compared to training received to evaluate the effectiveness of training programs.

## JDA WAREHOUSE MANAGEMENT CUSTOMERS HAVE ACHIEVED SUBSTANTIAL ROI:

- Fulfillment cost reductions of 10-50%
- Inventory storage and handling cost reductions of 10-35%
- Throughput increases of 10-40%
- Inventory visibility and accuracy near 100%
- Inventory reductions of 5-25%
- Credit reductions of 75-95%
- Dock-to-stock time reductions of 25-50%
- Receiving dwell-time reductions of 25-50%





### **Compliance and Measurement**

Measuring performance and ensuring compliance with regulations and work rules is central to workforce management. This includes tracking indirect time, attendance, quality and safety, as well as calculating incentive rewards.

### **Visibility and Analytics**

Real-time visibility into performance across the enterprise enables immediate reaction to events, analysis of trends, and the ability to quickly discover the root cause of problems.

Only JDA has this broad spectrum of workforce management capabilities and services to optimize every move within the DC and across the enterprise.

## **Warehouse Management**

### **Inbound Operations**

Efficient inbound operations start with knowing what is being shipped from suppliers and when it will arrive. JDA offers supplier collaboration technology to provide visibility into supplier production and shipments through a Web portal and EDI ASN information. Inbound shipments can also be synchronized and controlled through JDA transportation solutions.

### **Inbound Transportation Management — Real-time optimization of:**

- Inbound shipment planning and scheduling
- Load consolidation and routing
- Carrier selection, tendering and management
- Round-trip coordination with outbound shipments

### **Optimized Operations**

Once you have visibility into inbound shipments, there are many tasks that should be optimized to streamline inbound operations. JDA's Warehouse Management solution provides optimization capabilities.

### **Appointment Scheduling**

Integrates Web-based communications with a graphical dock calendar for:

- Inbound and outbound appointment scheduling
- Standing appointment management
- Exception management
- Vendor and carrier compliance
- ASN, PO and pack list management
- Receiving documentation, including global trade management

### **Yard and Dock Management**

Check-in to check-out management of yard equipment, inventory movements, dock doors and personnel, including:

- Gate check-in and check-out
- Yard and dock location assignments
- Inventory and asset tracking
- System-directed movements via wireless devices

### **Cross-Docking**

Hot receipt functionality to prioritize inbound inventory with outbound orders, reducing handling, storage and costs while improving service.

- Real-time demand assessment and prioritization
- Put-to-store synchronization
- Integration with dock scheduling

### **Receiving and Putaway**

Optimized receipt and stowage, including:

- Receipt check-in by paper, RF or RFID
- Detailed SKU attribute capture and verification
- Cart/container optimization
- System-directed putaway based on cube, weight, dimensions, nesting and stacking, commonality, location availability, zoning and product demand
- Operator-managed overrides and exceptions
- Optimized task interleaving

### **Retail Store Processing**

Inbound processing for retail distribution, including:

- Store distribution flow-through processing
- Put-to-store
- Merge-in-transit

### **Inbound Services**

System-directed work assignments for:

- Vendor/carrier compliance statistical sampling
- QA workflow control

### **Duty Management**

A complete solution for managing bonded warehouses, including:

- Compliance with excise and customs legislation
- Detailed audit trails for customs controls and audit

### **Reverse Logistics/Returns Processing**

System-directed work assignments for:

- Evaluation and breakdown
- Disassembly/de-kitting
- Clean/rework/repackage
- Putaway or return to vendor
- Dispose or destroy



**“In just five months, operator productivity has grown by 25 percent while increased employee motivation has reduced staff turnover. In addition, new starters are trained faster and with best-practice operating methods that enable them to be productive from day one.”**

**Diane Smith**

Supply Chain Manager  
The Works

## Inventory Management

Effective inventory management requires visibility and control from suppliers' production all the way through to the end user. JDA provides this real-time visibility and control to optimize the tracking, movement, handling, storage, and if necessary, recall of all types of raw materials, work-in-process and finished goods inventory. Key functions include:

### Supplier Collaboration

Visibility into supplier production, packaging, QA processing and shipments, with exception management.

### Slotting

Improves productivity by synchronizing product placement to order demand. Key features include:

- Balances pick velocity with travel distances, ergonomics and equipment constraints for optimal workload efficiency and safety
- Compares the cost of re-slotting to the economic benefits achieved to compute the true ROI of the slotting plan
- Integrates with replenishment activities to dynamically re-slot, minimizing disruption and cost

### Replenishment

Supports multiple strategies to tailor replenishment to product, location, environment and slotting needs. Replenishment can be triggered by:

- Quantity or top-off
- On-demand/emergency
- Slotting or other fulfillment plans

### Inventory Control

Tracks inventory based on many SKU attributes, including:

- Lot number/expiration dates, with variable aging
- Catch-weights and volumes
- Nested serial numbers
- Country of origin
- Temperature-controlled requirements
- Nesting and stacking limitations

### Special Handling

Enforces rules for handling, storage and tracking of SKUs that require environmental or HAZMAT segregation, procedures and certifications.

### QA/Recall

Provides ancestry and destination tracking by lot, SKU and item/serial number for inventory at rest or in motion across the supply network. It enables:

- Lot and item-level visibility and control across the network
- Real-time, multi-level QA holds
- Redirect shipments and ASNs
- Centralized recall

### Cycle Counting

System-directed work provides 99+ percent accuracy, virtually eliminating the need for traditional cycle counting. However, multiple cycle counting procedures are supported, interleaved with daily activities.

### Enterprise Visibility

Real-time visibility into inventory across the enterprise and extended supply networks through dashboards with detailed drill-down analysis capabilities and user-configurable reporting enables improved decision making, reduced inventory levels and better support for demand-driven fulfillment strategies.





## Work Order Processing

A lot more goes on in distribution centers today than simple pick, pack and ship. Through postponement strategies, customer service requirements and store-ready processing, DCs are becoming limited production centers, requiring skills, equipment, work orders and management practices not seen in traditional warehouses. Work Order Processing in these DCs can be more akin to manufacturing processes than traditional distribution functions.

JDA's Work Order Processing solution assigns, sequences and directs tasks to ensure timely, consistent and accurate completion of work order production. In many ways it can be thought of as a manufacturing execution system for the DC.

Work Order Processing is highly configurable, providing the flexibility you need to tailor processing to your initial needs, as well as to ever-changing future requirements. System-directed work ensures efficiency and throughput even within the chaos of multiple, changing customer requirements — putting you in control.

## WORK ORDER PROCESSING FUNCTIONALITY INCLUDES:

- Work order assignment, sequencing and execution
- Raw material control, including backflushing
- Multi-level bills of material
- Postponement strategies
- Value-added services
- Work cell planning and scheduling
- Light manufacturing/assembly
- Kitting/de-kitting
- Store-ready containers/pallets

## Outbound Operations

From pre-pack to proof of delivery, JDA optimizes every step of outbound operations to ensure accuracy, timeliness, efficiency, compliance and optimal customer service. The breadth of capabilities include:

### Task Management and Interleaving

JDA's unique 3D mapping of facilities enables the most efficient task assignments for all work, with integrated voice or RF-directed interleaving of tasks. Tasks are assigned and interleaved based on proximity, priority and permissions to maximize efficiency and service while ensuring safety and adherence to work rules and certification requirements.

### Multiple Pick Methods

A virtually unlimited number of pick methods can be deployed simultaneously. Methods supported out-of-the-box include multiple versions of: batch, wave, zone, and cluster picking supporting LIFO, FIFO, LEFO and FEFO inventory turn strategies.

### Retail In-Store and Dark-Store Picking and Processing of E-Commerce Orders

Includes in-store picking and dark-store capabilities for effectively managing retail e-commerce fulfillment operations, helping to enhance shoppers' omni-channel experience and facilitate the buy anywhere, fulfill anywhere and return anywhere model that retail customers expect.

### Packing and Shipping

System-directed packing, cartonization, QA verification, staging, and pack-and-hold management enables accurate, timely, damage-free shipments.

### Parcel Manifesting

In-line parcel labeling and manifesting capabilities for UPS, FedEx and USPS.

### Pallet and Load Building

3D graphical screens show optimized pallet build plans and trailer loading diagrams to maximize space utilization; comply with weight, balance and axle-loading regulations; and comply with customer shipment requirements.

### Shipment Documentation

The system produces all outbound shipment labeling and documentation, including:

- Customer, retail and carrier compliant labeling
- Domestic and international parcel e-manifesting
- Bonded warehouse and international trade logistics documentation
- BOL, manifests and HAZMAT documentation

“The potential for an integrated workforce management solution that supports end-to-end task management in a single application — is a powerful proposition”.

**David Ockleshaw**

CEO

Border Foods





### **Logistics Billing**

Accurately tracks all logistics activities and calculates charges or costs, including freight tariffs, for invoicing and analysis. This is an important component of any cost-to-serve analysis.

### **Appointment Scheduling and Dock Door Management**

Provides a Web portal and graphical dock calendar for shippers and carriers to schedule outbound loading, balance dock workload, and match equipment and labor constraints to shipment needs.

### **Transportation Management**

JDA provides a sophisticated transportation planning and execution solution, with the industry's only real-time optimization engine, to reduce the cost and complexity of shipments while improving visibility and customer service.

### **Fleet Management**

For companies that manage their own or dedicated fleet assets for local or short-haul pick-ups and deliveries, JDA provides complete fleet management capabilities. This constraint-based loading and scheduling module maximizes utilization, reduces drive times and fuel consumption while meeting customer service commitments.

### **TRANSPORTATION MANAGEMENT KEY FUNCTIONS INCLUDE:**

- Load consolidation and tendering
- Routing and scheduling
- Carrier management
- Domestic and international parcel
- Global trade management
- Automated freight payment
- Shipper, carrier and customer portals





## Asset Management

JDA provides an automated solution for mobile asset visibility and security to improve asset utilization and capital deployment, reduce loss and ensure regulatory compliance. The solution tracks all kinds of mobile resources, such as returnable containers, equipment, racks, parts and people. These assets can be within a facility, across a campus or around the globe.

The asset management system can use a variety of technologies for tracking, including barcodes, active and passive RFID, cell, GPS and other AIDC technologies.

The benefits of deploying this solution include:

- Increased asset utilization
- Improved capital deployment
- Reduced asset and content loss
- Reduced asset maintenance and repair costs
- Improved regulatory compliance

JDA Asset Management is the perfect solution for manufacturing, distribution and service industry companies that need to better leverage and control their physical assets throughout production and across extended supply and distribution networks.

## Integration

To meet the challenge of compatibility with virtually any system, using any transport method in any format, JDA built its own supply chain-focused Enterprise Application Integration (EAI) toolset. It provides the data connectivity and workflow transport between JDA applications and external customer systems using the transport methods and formats customers prefer. By building our own EAI toolset, we ensured that it could meet all of the requirements of the supply chain and retail operations environment without adding the cost and complexity of third-party middlewares. And the toolset has advanced data flow monitoring and debugging tools that have often been used to debug external systems, such as SAP ERP systems. JDA's EAI toolset reduces the time and cost of implementation, ensures upgrade compatibility in both directions — your systems and ours, and provides the secure information and workflow you need to better run your business.

## Business Intelligence

With the volume of critical, real-time data generated through everyday business operations across today's global supply networks, it is more important than ever to have the right tools to assimilate and convert this data into actionable information. JDA's powerful Business Intelligence tool gathers, filters, analyzes and graphically displays performance information to enable informed, timely business decisions. It can receive and retrieve data and KPIs from JDA and external systems to portray one version of the truth across the enterprise. Personalized views display real-time situational information and alerts as well as trends and variance analysis. It improves supply chain ROI by identifying the hidden inefficiencies, helping to create lean supply chains.

## Track and Trace

For companies selling in consumer industries subject to product spoilage/taint-related concerns, litigation risks and heavy government regulation, staying current and compliant while protecting brand reputation and integrity requires the right capabilities to navigate ongoing legislative, supply chain and market changes. JDA's powerful Track & Trace solution is a network-wide quality assurance (QA) management solution featuring robust reporting, holds execution, recall execution and reconciliation capabilities. The solution addresses error-prone, manual QA processes and product holds that were not previously integrated with logistics systems.

These critical processes are centralized and automated in a single solution for complete electronic traceability across the extended supply chain. It provides a chain of custody for any item manufactured, stored or shipped within the supply chain, enabling regulatory compliance and effective execution of product holds and recalls. Improved visibility drives enhanced sales and operations planning processes and enables better adaptability to disruptive events.

## Deploy JDA Warehouse Management via JDA Cloud Services

Protect your JDA software investment and increase business agility by having JDA experts manage, monitor and maintain your JDA solutions. JDA Cloud Services reduces your implementation time and risk while enabling you to quickly and easily deploy new functionality to keep pace with your changing business needs. With your software running in the cloud and upgrades included in your service, you will benefit from solutions that are optimized for your specific business requirements to help ensure that you achieve and sustain a long-term return on your investment.



## About JDA Software Group, Inc.

At JDA, we're fearless leaders. We're the leading provider of end-to-end, integrated retail and supply chain planning and execution solutions for more than 4,000 customers worldwide. Our unique solutions empower our clients to achieve more by optimizing costs, increasing revenue and reducing time to value so they can always deliver on their customer promises.

Using JDA, you can plan to deliver.

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