

INTELLIGENT FULFILLMENT™

Transportation & Logistics Management

Industry-leading global transportation planning and execution for enhanced agility and performance.



Effectively manage and optimize the strategic, tactical and operational aspects of a complex, multi-modal transportation network.

Why have companies worldwide relied on JDA's Transportation & Logistics Management solutions for more than 25 years?

Real Results. Fast.

JDA Software helps the world's leading retailers, manufacturers and wholesaler-distributors to achieve tangible benefits by enabling visibility, collaboration and synchronization across their networks. Here are some real results that our customers have achieved with JDA's Transportation Management solutions:

- Achieved 8 percent annual reduction in transportation cost
- Realized 10 percent improvement in load consolidation
- Improved planner productivity by 67 percent
- Achieved 100 percent return on investment within one year
- Increased capacity utilization to save more than \$200 million annually
- Improved time to value through the development of a global template
- Effected regional deployments with localized execution
- Managed 15,000 orders daily per site; two-minute machine time
- Created a true shared service structure leveraging synergies across all product divisions
- Expanded strategic use to the creation of a revenue-generating third-party logistics entity
- Achieved \$8 million in freight savings in first year of implementation, and continued realizing incremental savings of \$12 million to \$14 million each year through innovation and a holistic approach
- Increased efficiency in warehouses and carrier operations
- Improved service levels including on-time delivery by 20-40 percent
- Decreased carrier turn-down rate by as much as 40 percent
- Improved customer fill rates by 20-30 percent
- Improved in-stock position by 5-35 percent
- Reduced lead and cycle time by 25-75 percent

*Represents actual results realized by JDA customers.

Challenge: Enhancing profitability in today's complex global marketplace

Fundamentally, the role of transportation and logistics management is simple: optimally balance capacity, service and other drivers to get the right product to the right place at the right time and lowest cost. But the realities of today's complex global marketplace make fulfilling that objective anything but simple as companies navigate challenges including:

- Increased pressure to meet the order fulfillment demands of omni-channel consumerism
- Inefficient asset utilization from sub-optimized load building and order consolidation
- Increased complexity of international transportation and logistics
- The need to optimize cost-to-serve models with cross-channel retailing

In order to address these and other issues in the ever-evolving landscape, companies must find ways to infuse flexibility into their networks. The traditional tried-and-true methods of manufacturing, distributing, selling and consuming products are changing with monumental supply chain impacts, and organizations need agile solutions that can keep pace with and adapt as those changes occur. Today's companies — regardless of where they sit in the supply chain — must not only achieve efficiencies and operational control but also develop the agility necessary to competitively serve today's end consumer.

“By using JDA solutions instead of our legacy TMS, we are saving an incremental \$12 million to \$14 million a year in freight charges, including \$8 million in the first year of implementation. We realized a full payback on our JDA investment within one year.”

Tony Poole

ITS Business Partner, Corporate Transportation
Kimberly-Clark Corporation

Solution: Driving agility and optimization with end-to-end transportation and logistics management

For more than 25 years, JDA Software has led hundreds of deployments of our world-class, integrated Transportation & Logistics Management solutions at some of the biggest names in retail, manufacturing and wholesale distribution. Our proven solutions optimize the most complex global logistics networks for the world's leading companies, driving reduced costs, increased agility and improved performance for these organizations.

Featuring a broad footprint, rich functionality and unparalleled scalability to accommodate even the largest global transportation practices, JDA's comprehensive solution suite effectively manages the entire closed-loop transportation process — from long-range strategies and operational planning to day-to-day execution.

From granular street-level fleet movements and routing to dynamic multi-modal global planning and execution, JDA's integrated yet modular solution set is easily configurable to meet your current and future needs. Providing dynamic, iterative optimization, global template deployment and demand-driven supply chain agility on a unified platform, JDA empowers you with the capabilities you need to solve today's intricate transportation challenges, including:

- Transportation network design and optimization
- Strategic logistics procurement and contract management
- Actionable and integrated analytics and reporting
- Dock scheduling optimization and execution
- Fleet routing and management
- Containerization and load building
- Load tendering and shipment/load confirmation
- Operational event management and visibility
- Freight audit and payment
- Real-time insights to predict future disruptions
- Correlation and rationalization of big data





Transportation Mobile User (TMU)

With TMU, you can get two-way, real-time communication in and out of your TMS. The mobile app provides usage for three different personas: planners, carriers and drivers. Each persona can leverage the mobile app to query loads for analysis and operational decision support, as well as review loads and provide real-time updates within your JDA TMS instance. Further, TMU allows carriers to respond to tenders on their mobile devices, facilitating faster response on-the-go to capacity requests from shippers. Other key business benefits include:

- Enhance operational efficiency by tracking and tracing freight anywhere at any time: Planners can monitor freight execution in real-time from their mobile devices without having to wait for desktop access. The mobile app results in faster response times to tender requests and freight movement acceptances, as carriers and drivers get real-time visibility to load requests.
- Reduce operating costs and dispute resolution time: Decrease labor and administrative costs related to freight delivery by supporting digital ways to communicate pick and delivery operations, including signature-on-glass for proof of deliveries and actual pallet quantity updates from your mobile device.
- Improve adoption with a simple, yet powerful, user experience: Each persona in JDA's TMU has been designed with the day-in-the-life activities for planners, carriers and drivers in mind. The mobile app provides color coded persona centric views to help visualize load and stop activities. Additionally, the look and feel of the mobile app can be customized, adhering to your branding strategy, which gives you the power to maintain consistency internally and externally.

Providing a holistic, closed-loop approach to transportation processes

An integrated, closed-loop approach is critical to an effective transportation practice and represents a core tenet of the JDA Transportation & Logistics Management methodology. Each process provides input into the next, until the loop is closed. This paradigm represents a merging of technology, organization and processes that provides global visibility and leverages the scale and efficiency of consolidated network planning, procurement and unified metrics with the agility of localized execution. A centralized view of all business activities enables companies to think holistically about their transportation needs across all functions and locations – and to plan accordingly. It also allows the business to go beyond traditional transportation planning activities to include value-add services such as network modeling, centralized procurement and a wide range of analytics. This helps companies to better utilize all transportation assets, become more agile in adapting to changing requirements, become more resilient in responding to disruptions, and improve contract and governmental compliance.

Strategic and tactical modeling analysis as a competency

In a closed-loop transportation process, the design phase can produce substantial savings and unlock new revenue-generating opportunities for greater transportation, and ultimately, supply chain results. JDA's solutions deliver the tools that enable you to consider dynamic freight volume; hub, cross-dock and distribution center location; merge in-transit and continuous moves; and carrier, mode and service selection.

- **Engage in business case analysis** and utilize real data to conduct what-if analysis, quantify cost savings opportunities and model original freight costs down to the penny.
- **Build real-time resilience into your supply chain** with the ability to run simulations to consider and plan for the potential effects of network disruptions such as natural disasters, economic downturn/upturn, port strike and elimination of a carrier or mode.
- **Leverage ongoing transportation analysis** to quantify proposed network changes, assess distribution center additions/removal, reflect new customer changes, and test new carriers, rates and delivery options.

With a solid strategic and tactical modeling analysis competency, JDA enables you to transform the challenges of growing business volumes and complexity into enhanced performance.

Closed-loop transportation procurement and vendor communication

In transportation, everything is driven by the cost structure that each of the modes deliver, as well as the service-level commitments and constraints which ultimately drive your network. Transportation procurement is the creation point for these cost structures and can have significant impact on your overall network efficiency, performance, and impact to revenue. By rethinking the importance of procurement and investigating areas that can be improved through process automation, you can enable significant business results. JDA's procurement capabilities enable key steps in the closed-loop process by laying the foundation for execution and help you secure more favorable freight rates, improve service levels and capacity availability, reduce total freight expense, and enable carrier collaboration and synergies to refine constraints that must be honored as execution proceeds.

“JDA’s advanced TMS is the only solution today that has the ability to deliver best-in-class supply chain management functionality along with the adaptability to customize workflows and scale across our complex and distributed supply chain network. This combination of world-class domain expertise, rich solution functionality and innovative delivery methodology works to extend the value of JDA transportation management solutions both inside and outside of our enterprise and enables highly customizable and configurable user interfaces in an effective and cost-efficient manner.”

Lee Geun An

Chief Officer, Management Innovation Team
Hi-Logistics, LG Electronics' Logistics Subsidiary



Integrated, optimized planning and execution

Most retailers, manufacturers and other shippers lack the broad, holistic perspective to consider the long-term cost-effectiveness of their overall transportation networks. By having fixed strategies and siloed structures, shippers might be delivering goods on time and simplifying decision processes — but they are missing larger opportunities to drive additional savings and efficiencies while still meeting their service goals.

Today's transportation strategies need to be flexible and continuously updated to reflect demand fluctuations, changing shipping rates, growing fuel costs and other factors. JDA Transportation & Logistics Management enables you to adopt holistic transportation practices and remove planning and execution silos to create revenue opportunities and cost savings. This approach allows you to gather facts about current and future orders, and then make the best possible judgment that combines low price with high service. As business conditions change, this process is iterated to ensure that you are always making the right choice for the current environment.

At the global level: End-to-end intercontinental transportation planning from initial point of origin to final destination

JDA Transportation & Logistics Management can help large-scale retailers and manufacturers infuse value into their transportation and logistics networks by facilitating an end-to-end intercontinental planning process to replace their current siloed organizational and execution practices in managing transportation lanes for intercontinental moves. Enhancing both upstream and overall visibility, this process blends the optimization of planning with execution and delivers end-to-end transportation lane control extending

from true initial global point of origin to ultimate final destination. While outsourcing certain execution segments such as trade compliance or freight forwarding might still make business sense, end-to-end planning ownership provides the critical ability to adjust execution across networks based on changes in the supply chain.

With JDA's solutions, consolidation and port routing decisions can be made on a network-wide basis instead of a single transaction at a time. And with visibility into ultimate freight destinations, you can dynamically take into account factors such as the bookings process, port congestion and capacity balancing — and then enact routing changes as needed. Rather than the common practice of setting a predefined itinerary or fixed path each and every time between origin and destination, you can re-plan as dynamics change in the network. Enhance global planning and execution with:

- Dynamic routing from true origin including capacity balancing and multi-modal scheduling
- Ability to replan remaining legs to create network agility
- Ability to optimize and manually generate bookings of multiple containers and tender to ocean carriers: Bookings can be rated and rate shopped and support full ability to adjust sailings, equipment types and carriers alongside adding and removing containers on the booking
- Support rating and scheduling of both direct-to-door and port-to-port rates, with all contract types represented in a single, dynamic global optimization and execution flow
- Enable dynamic equipment selection while maximizing ocean carrier capacity commitments and minimizing total cost

At the local level: Localized routing and execution to derive the most value from available assets

At the local level, JDA Transportation & Logistics Management delivers embedded street-level routing and scheduling capabilities enabled within a single optimization engine. Removing the silos of disparate inbound and outbound solvers creates the ability to share assets between local delivery and inbound routing to derive the most value from available assets for both inbound and outbound moves.

Private and dedicated fleet execution can represent loads and continuous moves that evaluate improved distance considerations, resulting in improved stop sequencing. And since these types of loads can be executed alongside long-haul fleet movements and contract carrier movements in a single workflow, you benefit from improved cost savings and utilization of fleet equipment.





JDA's solutions also enable drivers to be more efficient with driver mobility. With this feature, drivers can be more productive through the use of mobility, which offers real-time POD, signatures and image capture. This is applicable to customers with fleet and driver assets across all industries, including grocery, retail, consumer goods and wholesale distribution.

Additionally, JDA's re-driving feature enables your system self-awareness for more prescriptive, efficient and profitable auto-recalculation of routes and repositioning of equipment and global movements. The solution provides a full view of planned versus actual movements, scheduling and rating details and the ability to reschedule the remainder of the movement given the current location.

Tap into big data to enable actionable real-time visibility

JDA's solutions increase next-generation visibility to enable planning and re-planning capabilities with multiple stream, cross-mode, real-time visibility. With JDA, you can uniquely enable carrier connectivity, efficient onboarding, real-time visibility and predictive analytics within JDA Transportation Management (TMS). Real-time visibility benefits include the ability to:

- Integrate out-of-the-box with live tracking of shipments across ocean and air
- Avoid risks and capitalize on cost saving opportunities by knowing what's happening with freight in real-time and what's predicted to happen
- Act on predictive insights by re-planning transportation schedules
- Increase ROI by integrating TMS with a real-time truck tracking platform
- Leverage the carrier ecosystem for greater transparency and efficiency in transportation operations
- Re-plan based on actuals

Integrated and actionable data and business analytics

The JDA Transportation & Logistics Management suite enables users to quickly arrive at the right answers for your business without requiring a team of specialized analytical or IT resources within your four walls to make sense of overwhelming data volumes. A robust "smartbench" interface cuts across organizational siloes so all appropriate parties can leverage it, presenting users with a more intelligent, interactive way to transform complex data into intuitive, digestible information. Users are empowered with increased control of how they

receive critical information with the ability to configure different groupings, views, filters and alerts in ways that are meaningful to them. Enabled with a more direct and informed path to resolution, users can make better decisions faster when solving intricate logistics problems and managing exceptions.

Additionally, JDA Transportation & Logistics Management delivers integrated and actionable analytics that provide more than a decade of built-in intellectual property and transportation expertise – including the data structures, data integration, reports, dashboards, exception management and user interfaces that can get you started right out of the gate. With a true supply chain transportation knowledge base and valuable out-of-the-box analytics that you can use and/or customize immediately, you won't need to start from scratch in building an integrated analytics paradigm. This prepackaged business intelligence enables you to reduce your time to implementation, offering more than 60 key, on-point metrics and reports – such as analytics that identify a load plan's optimized cost versus actual execution and that enable a shipment-centric cost perspective by determining how specific shipment costs are derived out of loads. Users can

access these analytics capabilities without leaving their current transportation workflows and can select a report or dashboard in the context of their workflows without disruption – enabling them to quickly identify and understand the underlying factors driving critical transportation-specific key performance indicators.

Complete supply chain integration for optimized supply and demand planning

JDA's Transportation & Logistics Management solutions run on JDA® Platform, an industry-unique framework that unifies supply chain planning, optimization and business analytics on a single platform with task-based, cross-functional workflows configurable by role. Seamless built-in integration to JDA's robust supply chain planning and optimization solutions combined with sophisticated optimization algorithms, in-line analytics and efficient in-memory processing enhance your transportation practice with a powerful, comprehensive foundation to address challenges impacting key business processes across the extended supply chain.



Modeling

JDA Capabilities

- Provides market-leading differentiators, including a powerful solving engine, flexible data sourcing, versatile solution output and the ability to model fixed routes and address location-based throughput constraints
- Provides both tactical and strategic planning capabilities
- Uses sophisticated optimization tools and real-world data to define scenarios and analyze the effects of new business, historical performance, peak flows and other variables
- Facilitates global logistics as well as street-level routing optimization
- Manages the parcel mode as a core service directly within the transportation management system to leverage advanced consolidation and modal shift opportunities without having to rely on third-party software

Benefits

- Reduced overall transportation costs
- Time-to-value savings achieved in weeks
- Reliable distribution network driven by an operationally feasible plan
- On-time delivery of mission-critical supplies for manufacturers
- Increased profitability and improved pricing and scoping of new business opportunities for logistics providers
- Simultaneous profitability analysis of the holistic impact of new business opportunities
- Fulfilled replenishment requirements and reduced stock-out

Procurement

JDA Capabilities

- Features collaborative workflow that integrates Transportation Manager load history and tariff creation for closed loop execution and procurement practices
- Features partial bid and partial award modeling
- Offers flexible carrier multi-modal bidding and optimized mode allocations by lane with multi-mode engagement modeling
- Improves ability to fully satisfy network demand with enhanced diagnostics to help quickly identify and resolve any network infeasibilities
- Provides visibility into the most cost-effective bid combination while still meeting shipper service requirements
- Provides the ability to assure carriers of a reliable network definition and bid awarding process driven by an operationally feasible plan – leading to more reliable bid responses and pricing accuracy
- Delivers powerful analysis and performance monitoring

Benefits

- Reduced overall administration and transportation costs for shippers and for carriers
- Rapid execution with seamless rate exporting of bid optimization results back into JDA's transportation management system
- Cost savings on a specific portion of the overall network with easier workflow and algorithms to run smaller, more frequent bid engagements in an e-auction engagement modeling process
- Improved cost optimization results while allocating freight and carriers within constraint tolerances
- Rapid time to value in weeks per engagement depending on the number of carriers and rounds
- Contracted savings and carrier compliance

Freight Order Management

JDA Capabilities

- Provides real-time, centralized tracking of the entire inbound delivery process
- Enables supplier collaboration
- Captures requests for dynamic routing and shipment confirmation
- Issues electronic routing instructions and advanced shipping notifications
- Manages key vendor compliance milestones
- Generates VICS- and UCC-compliant shipping documentation

Benefits

- Increased inbound order visibility
- Improved lead time and performance
- Faster order cycle times
- Improved service/in-stock levels
- Advanced optimization opportunities
- Decreased expediting costs
- Detection and resolution of business process exceptions

Transportation Planning

JDA Capabilities

- Features powerful solving engine that transforms order fulfillment, procurement and replenishment plans into cost-optimized transportation plans that adhere to facility, inventory and transportation network constraints
- Provides integrated containerization and inventory-constrained load building
- Facilitates global logistics with the ability to support all contract types in a single, dynamic global optimization
- Features interactive optimization and plan editing
- Automatically selects the most efficient combination of modes, carriers, shipment schedules and routes
- Consolidates shipments into cost-effective loads
- Evaluates load consolidation, modal tradeoffs and opportunities for continuous moves

Benefits

- Reduced overall freight costs
- Quick time to value with payback in months rather than years
- Improved utilization of private fleets and shipping containers alongside driver assignment, dispatch and asset tracking
- Reliable distribution network driven by an operationally feasible plan that meets real-world conditions
- Increased customer satisfaction and repeat orders stemming from highly competitive lead times and shipping costs
- Ability to optimize fleet routing movements at the granular street level alongside long-haul fleet movements and contract carrier movements in a single solution

Transportation Management

JDA Capabilities

- Manages the entire transportation execution lifecycle
- Supports global logistics and street-level routing
- Settles freight financial transactions
- Provides unmatched customization and extensibility
- Manages both the customer and carrier side of any move
- Automates carrier selection based on a combination of cost and performance factors
- Supports automated tendering of loads to carriers
- Rates and routes shipments with mode and carrier assignments
- Conducts automated carrier selection against contracted rates
- Provides real-time execution details into optimization decision-making and metric-based exception management through a Transportation Smartbench

Benefits

- Improved service levels
- Least-cost shipment plans and loads that maximize capacity utilization
- Reliable distribution network driven by an operationally feasible plan
- Reduced direct warehouse labor costs
- Decreased damage-in-transit losses
- Enhanced operational efficiencies and customer satisfaction
- Proactive real-time monitoring and intelligent exception management across orders, inventory and shipments
- Enhanced visibility, productivity and usability with interactive smartbench that transforms data into digestible information

Business Analysis

JDA Capabilities

- Offers actionable and integrated analytics and reporting
- Provides seamless business intelligence including the data structures, data integration, reports, dashboards, exception management and user interfaces that match your transportation operational workflows
- Features native JDA transportation management system integration for strategic decision support
- Synchronizes information from disparate sources and provides merged analysis
- Features predefined, transportation KPI-driven dashboards

Benefits

- Delivers more than 10 years of intellectual property, transportation expertise and more than 60 integrated key out-of-the-box analytics — saving time and reducing implementation costs
- Enables collaboration and data-sharing with key stakeholders
- Improves visibility and fosters timely solutions to business challenges

Now you can be among the JDA Transportation & Logistics Management customers reporting outstanding results and an unsurpassed customer experience with the following components:

- Transportation Modeler
- Logistics Procurement
- Freight Order Management
- Transportation Planner
- Transportation Manager
- Business Analysis for Transportation
- Transportation Mobile User



Using JDA, you can plan to deliver.
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