

# Managing Yard Work

By growing driver productivity, weeding out inefficiencies, trimming detention costs, and seeding visibility, yard management systems can fertilize your supply chain.

By Karen Kroll





If you think of the supply chain as a giant digital jigsaw puzzle, most organizations are missing a piece: a yard management system (YMS) that connects warehouse systems with transportation systems. This “operational blindness” can cost organizations both time and money, says Jeff Papadelis, senior partner with Yard Management Solutions, a YMS provider based in Suwanee, Ga.

While many companies have invested heavily in warehouse management systems in an effort to squeeze every ounce of efficiency from those operations, that’s often not the case when it comes to truck and rail trailers and containers. In the yard, manual processes are still the norm, notes Michael Maris, senior director of transportation logistics with Zebra, a tracking technology and solutions provider based in Lincolnshire, Ill.

A yard management system can act as the link between a company’s warehouse management system and transportation management system. It manages shipments and their containers from the yard gate to the dock. A YMS can provide real-time visibility to trailer location and contents. By doing so, a YMS can drive efficiencies, reduce detention fees, and improve decision-making.

That is the experience of Curtis Walker, the project leader of applications for Fresh Express, which produces and delivers fresh, packaged salads. The company implemented a YardView YMS solution “to improve communications between dispatchers and yard drivers,” Walker says. This boosts efficiency, in part by eliminating the need for drivers to walk from the lot to the dispatch window for each assignment.

In addition, the report provides data such as trailer inventory and availability, “which is extremely useful for managing and ensuring that trailers are ready and on time,” he adds.

Several components are key to a yard management system, says Eric Lamphier, senior director, product management for Atlanta-based Manhattan Associates, a provider of supply chain management software. These are:

- **Appointment scheduling.** The YMS should systematically track and organize inbound and outbound appointments to align labor capacity and minimize congestion.
- **Guard check-in and check-out.** The system should enable guards to check each trailer in or out, so it’s clear who’s in the yard, how long they’ve been there, and if they have permission to be there.
- **Yard management.** It should direct trailers to a specific location in the yard and track their movements to enable efficient retrieval and accountability.
- **Dock door management.** The YMS should direct assets to specific dock doors for unloading and loading, taking into account constraints such as loading/unloading sequences, and/or temperature requirements. For instance, if the contents need refrigeration, the truck should move to a door near that equipment.







**YMS solutions provide carrier accountability by recording complete driver histories. A carrier tracking function offers immediate access to carrier arrival and departure performance history.**

In 2011, a leading UK parcel delivery firm began using a YMS from Montreal-based C3 Solutions. “Before we implemented the YMS, we handled all of our yard management by sharing spreadsheets and maintaining whiteboards in the traffic office,” recalls Jay Alexander, project manager, sort and transport, with the firm.

The manual process worked, but wasn’t as efficient as it could have been. The firm maintains 1,200-plus trailers across three sites, and each site must manage about 500 movements each day into and out of the yard. That’s in addition to several hundred daily moves within each yard.

The company began looking at YMS solutions that contained several attributes. To drive efficiency, the solution needed to provide visibility across all sites, and identify the location of each asset and its capacity to move within the site network.

The system also needed to apply business rules so that once a trailer hit the gate, the system would know what to do with it—for instance, direct trailers with palletized loads to doors with space to unload them, or direct trailers with loose loads to doors near cranes that could unload the products.

The company also wanted to eliminate the need for a worker to physically walk each yard to account for assets. This would enhance both productivity and safety.

Finally, the company wanted a solution to introduce a consistent process for checking and monitoring trailers entering and leaving the yard. “The YMS now provides conformity,” Alexander says. “It enables us to drive standardization across the operation.”

The system also has reduced detention costs—the charges levied when a trailer or container isn’t unloaded within the agreed-upon time frame. In addition, employees no longer make phone calls to get a trailer moved. “The system makes those decisions,” Alexander notes, and that has streamlined the process.

### Why a YMS?

While yard management systems aren’t as prevalent as warehouse management systems, they’re becoming more mainstream. Companies recognize the savings these solutions can generate, allowing them to quickly recoup their initial investment. Users typically see a return on investment within six to nine months, according to several YMS providers.

How do YMS solutions allow companies to achieve ROI so quickly?

To start, switchers—the individuals who move trailers from the yard to dock doors—can spend nearly one-third of their time searching for trailers, Papadelis says. That wastes both time and money.

By tracking a company’s assets, a

YMS can cut the detention charges incurred when a shipper fails to unload the trailer within the time window agreed upon with the carrier. These charges can hit \$1,000 per day, says Aaron Lamkin, director of sales and marketing with Centennial, Colo.-based TrackX, which provides asset visibility and tracking software.

AAGEX Freight Group, based in Jacksonville, Fla., offers turnkey yard management solutions. Some customers have hundreds of trailers in their yard, but lack real-time visibility to them or their contents, says James Bagwell, senior vice president. AAGEX partners with Exotrac, a provider of real-time logistics management software, to provide that visibility. Once the companies have a better handle on the location of their assets, they know which ones to move to avoid fees.

Just as important as reducing fees, a YMS can keep a yard from becoming so disorganized that drivers can’t get out on time. “Carriers don’t want their drivers to be delayed,” notes Greg Braun, senior vice president of sales and marketing with C3 Solutions.

Braun also notes the importance of the “chain of responsibility” when drivers are involved in accidents. While it would be a stretch to pin every delay, let alone any accident, on yard operations, it’s a consideration. “It comes down to respecting drivers’ time,” he says.

A robust yard management system also can boost compliance with safety regulations. For instance, it can monitor pharmaceuticals as they travel from gate to warehouse, helping to ensure they remain within a sanitary, temperature-controlled environment.

A YMS also can help companies cut inventory levels, says Matt Yearling, chief executive officer with PINC, a provider of yard management systems based in Alameda, Calif. Some companies use trailers as extensions of their warehouses. Without a YMS, “it’s an area that has no visibility,” he says. That can lead companies to purchase more inventory than necessary, just to ensure a buffer.

In some cases, a YMS can trim labor costs. Lamkin provides one example: A company has four full-time drivers who



**Exotrac's yard management system monitors inbound and outbound asset movement at multiple yards, ensuring key management personnel receive timely trailer condition and preventive maintenance exception reports.**

work from 7 a.m. to 5 p.m., five days per week. However, from 7 a.m. to 9 a.m., the workload is light enough that two of the four drivers don't have much to do. The YMS can highlight the volume of work, and report that the yard only needs two workers during these hours. The other two can start work at 9 a.m.

The gate check-in and check-out processes incorporated within many YMS solutions allow organizations to harvest some C-TPAT (Customs-Trade Partnership Against Terrorism) information, says Jon Kuerschner, vice president of product management and consulting with Bloomington, Minn.-based HighJump, a supply chain management software provider. This information includes the driver's name, driver's license number, and the state of issuance. "You need this data to clear customs," he says.

A secured yard, in which all vehicles are checked in and out, also can provide key information if a security issue arises. "You have the data to show that Driver X arrived at noon and stayed six hours," Kuerschner adds.

## Evolving Systems

Historically, much of the value yard management solutions provided had been improving the productivity of the drivers charged with moving trailers around the yard. Previously, drivers received instructions and messages over two-way radio. "Drivers could get mixed

up in so many ways," Braun says. By using a YMS to communicate electronically, and applying algorithms to direct the sequence of tasks each driver should perform, their productivity could jump by 20 to 30 percent, he adds.

Today's yard management systems still handle these functions, and also are smarter and easier to install. Their algorithms can determine where and when each trailer should move, based on its contents.

Kuerschner previously worked with a furniture company that implemented HighJump's YMS. Originally, employees handled trailer moves across a large campus based on zoning and priority, without considering the trailer's physical proximity to the dock door. When the YMS provided the ability to make work queue decisions based on both priority and proximity, trailer moves across the network nearly doubled, from about four to eight per hour. "Once we cracked that code, the company experienced huge productivity gains," Kuerschner says.

The shift to cloud solutions that truck drivers can access via mobile devices has made yard management systems more affordable, and the interfaces between yard management solutions and other software systems more streamlined. "The cloud is making yard management easier," Maris says.

Some providers, such as Scottsdale, Ariz.-based JDA Software, offer YMS as a module within their warehouse

management systems, says Matt Butler, director, solutions strategy for supply chain execution at JDA. The solutions share a database and common data schema, he adds.

An emerging area in YMS technology advances is the use of drones, which can eliminate the need for an individual to drive through the yard to take inventory. Drones tend to make the most sense in large, congested yards, or when the inventory or assets are of high value and the company needs an accurate, real-time understanding of that inventory. Some PINC customers are in pilot tests with drones, Yearling says.

Companies often use RFID technology to handle these tasks. HighJump, for instance, affixes an RFID tag to each truck. An antenna on the shunt truck reads each tag and triangulates its position to within several feet. "The system updates specific trailer location without human intervention," Kuerschner says.

## Who Should Consider a YMS?

Given that yard management solutions have dropped in price and become easier to install, does that mean more companies should consider them?

Braun's rule of thumb is that organizations with two or more dedicated yard drivers should consider a YMS, rather than trying to manage assets with "two-way radios and clipboards," he says.

Nathan Harris, president of Yardview, offers another test: A supply chain

professional should be able to state the number of inbound trailers that entered the yard that day, week, and month, and identify the number of empty and loaded trailers in the yard at any given moment. “If managers can’t answer key operational questions, it impacts the yard’s efficiency,” he says.

Several attributes are key to an effective YMS. Ease of use is one, says Conway Amar, vice president of Southern Freight, a truckload carrier serving the Southeast, Midwest, and West Coast. Even employees without technical training should be able to understand how to use the system. The system also should be easy to install and maintain.

### Can You See Me Now?

Visibility is key. The system should identify what trailers arrived and at what time, and when they were loaded or unloaded, says Sean Romine, an Exotrac consultant. These metrics should tie to the facility’s goals. For instance, if the goal is to unload inbound trailers within 24 hours, the system should indicate whether this is happening.

The YMS’s business rules should allow it to prioritize assets, and determine which to move to a door first. For example, it typically would move the ones facing detention charges before those that aren’t.

It also should offer “constituent-based appointment scheduling,” Kuerschner says. That is, a carrier should be able to request dock time, either through EDI or a system portal. And, the check-in and check-out processes should be automated, so they don’t create bottlenecks at the gate.

Real-world exception handling is another must-have. Say a driver tries to move a truck but finds the space occupied. The YMS should allow them to alert the system and find another space.

Over the next five years, yard management systems will become standard fare. Amar estimates that while 10 to 20 percent of organizations use a YMS today, “it will be 80 to 90 percent of companies in five years,” he says. “YMS is not a new idea, but it’s an idea whose time has come.” ■

## 5 YMS Must-Have Features

Shopping for a yard management system? Greg Braun, senior vice president, sales and marketing for C3 Solutions, recommends selecting best-of-breed systems that offer the following functionality:

- 1. Real-time visibility to yard assets.** Visibility means a lot more than simply knowing where the trailers are parked. Sites also want to know the status of empty trailers, trailer types, visibility on when they arrived and left, and whether you’re behind schedule on task execution.
- 2. Yard driver task optimization.** Managing dedicated yard drivers is the most costly aspect of a yard operation and the most important in terms of the capacity to deliver service to the operations. A good yard management system should focus on eliminating trailer move/tasks through combining move requests and optimizing each move to use the least amount of resources.
- 3. Dock scheduling.** Unless your yard only manages drop loads (100 percent), optimizing throughput and overall yard capacity requires a dock scheduling system for the live inbound and outbound loads.
- 4. Gatehouse management.** You can greatly improve gate efficiency by replacing the typical spreadsheets, manual logs, and phone calls with a simplified and streamlined process involving pre-arrival visibility, gate pass printing, and intelligent trailer putaway functions.
- 5. Integration to external systems.** Integration to other information systems (TMS, WMS, and MRP) eliminates duplicate data entry, increases productivity, and maintains continuity between systems. It could also speed up some YMS processes, such as gate arrival check-in, and enhance visibility across your network.

### Nice-to-Have Features

**Dock management.** A best-of-breed YMS should offer multiple options to efficiently manage dock doors. Intuitive monitoring screens to release trailers and door-turn reports allow your staff to be more productive and improve the flow of trailers.

**Mobile applications.** Mobile applications have the potential to enhance yard efficiencies and overall visibility. They allow warehouse and yard personnel to easily capture timestamps related to arrival, on dock and departure times, and yard drivers to receive clear instructions on a mobile touch-screen device.

**Exception alerts.** Having the ability to configure exception alerts to highlight time-sensitive events requiring your attention (e.g. idle shunter drivers, late arrivals/departures, refused shunter tasks, trailers sitting at door for too long) will contribute to achieving higher service levels at the site.

**Operational reports.** Report on key performance indicators such as driver productivity, gate activity, trailer status, time in yard, dock door usage, etc.

**Trailer workshop management.** Often neglected, a YMS should manage this aspect. Prioritize trailer repairs, automate trailer moves to and from the garage area, keep track of trailer inspection dates or user-reported defects to ensure that out-of-service trailers are handled properly.



# YMS GUIDE

Ready to implement a YMS solution? These leading providers can help.

		PLATFORM	DESCRIPTION	MAIN FEATURES					ADDITIONAL FEATURES					
VENDOR, URL	SOLUTION	LICENSED TO USE (INSTALLED LOCALLY)	HOSTED ON VENDOR WEBSITE	CLOUD BASED	REAL-TIME VISIBILITY TO YARD ASSETS	YARD DRIVER TASK OPTIMIZATION	DOCK SCHEDULING	GATEHOUSE MANAGEMENT	INTEGRATION WITH EXTERNAL SYSTEMS	DOCK MANAGEMENT	MOBILE APPLICATIONS	EXCEPTION ALERTS	OPERATIONAL REPORTS	TRAILER WORKSHOP MANAGEMENT
<b>4SIGHT Logistics Solution</b> www.4sightsolution.com	4SIGHT	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>C3 Solutions</b> www.c3solutions.com	C3 Yard			●	●	●	●	●	●	●	●	●	●	●
<b>Cypress Inland</b> www.yardview.com	YardView			●	●	●	●	●	●	●	●	●	●	●
<b>Descartes Systems Group</b> www.descartes.com	Descartes Yard Management	●		●	●		●		●	●	●	●	●	●
<b>DXC Technology</b> www.dxc.com	DXC Technology YMS	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Exotrac</b> www.exotrac.com	YardTrac			●	●	●	●	●	●	●	●	●	●	●
<b>HighJump</b> www.highjump.com	HighJump Yard Advantage	●		●	●	●	●	●	●	●	●	●	●	●
<b>Inconso AG</b> www.inconso.com	inconsoYMS	●			●	●	●	●	●	●	●	●	●	●
<b>JDA Software</b> www.jda.com	JDA Yard Management Solution	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Kuebix</b> www.kuebix.com	Kuebix YMS			●	●	●	●	●	●	●	●	●	●	●
<b>Made4net</b> www.made4net.com	YardExpert	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Manhattan Associates</b> www.manh.com	Yard Management	●		●	●	●	●	●	●	●	●	●	●	●
<b>One Network</b> www.onenetwork.com	Yard Management	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>PINC</b> www.pinc.com	Advanced Yard Management System	●	●	●	●		●	●	●	●	●	●	●	●
<b>Sentier Systems Inc.</b> www.yardcommander.com	Yard Commander			●	●	●		●	●	●	●	●	●	●
<b>TrackX</b> www.trackx.com	TrackX Yard			●	●	●	●	●	●	●	●	●	●	●
<b>Transwide</b> www.transwide.com	twSlot			●			●	●	●	●	●	●	●	●
<b>UltraShipTMS</b> www.ultrashiptms.com	UltraYMS			●	●	●	●	●	●	●	●	●	●	●
<b>Yard Management Solutions</b> yardmanagementsolutions.com	Eagle Eye	●		●	●	●	●	●	●	●	●	●	●	●
<b>Zebra Technologies</b> www.zebra.com	Yard Management	●	●	●	●	●	●	●	●	●	●	●	●	●