

## Market Guide for Yard Management

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Rising operational costs, detention charges and ongoing disruptions provide opportunities for yard management to improve operations via increased visibility and process optimization. Supply chain technology leaders can use this guide to understand the market and key yard management system vendors.

### Overview

#### Key Findings

- Multiple disruptions, such as impacts from, and responses to, the global COVID-19 crisis and Russia's invasion of Ukraine, have exacerbated labor scarcity, fuel and transportation costs, and increased bottlenecks.
- These factors have driven greater focus on yard and site efficiency and improved turnaround and automation of activities for visiting drivers.
- Shippers and third-party logistics (3PLs) providers want to extend transportation visibility to the yard and dock doors as well as rethink the flexibility of scheduling offerings.
- New players and existing yard management system (YMS) vendors are expanding their offerings and usability capabilities relating to kiosk, yard and dock scheduling needs.

#### Recommendations

Supply chain technology leaders responsible for logistics, manufacturing and yard operations should:

- Address current challenges in the gap between warehouse and transportation operations by investigating how a YMS can increase your company's yard visibility, optimize asset utilization, enhance transit flows for supplier and customers, and decrease costs.

- Determine if the yard requirements can be met with existing technology by reviewing the built-in capabilities for the yard that your warehouse management system (WMS) and/or transportation solution vendor offers. If your requirements exceed those capabilities, look into YMS suite vendors with highly specialized solutions.
- Identify the capabilities of a dynamic appointment scheduling solution and/or emerging visiting driver applications by assessing if a full-blown yard management system is not an option.

## Market Definition

A yard management system (YMS) supports the efficient flow of work, equipment and materials through the normally enclosed area outside of a warehouse, distribution center or manufacturing facility (the yard). It provides an overview of yard operations and supports the planning, direction and control of scheduling, movement, parking, inspection and reassignment of trucks, trailers and containers in the yard. YMSs typically oversee the gate/kiosk, the yard itself, and the inbound and outbound dock door scheduling activities. YMSs are typically sold as extended modules of a WMS or as an independent suite and sometimes as part of a TMS. The gate, yard and dock components may be sold independently or as a combined solution.

## Market Description

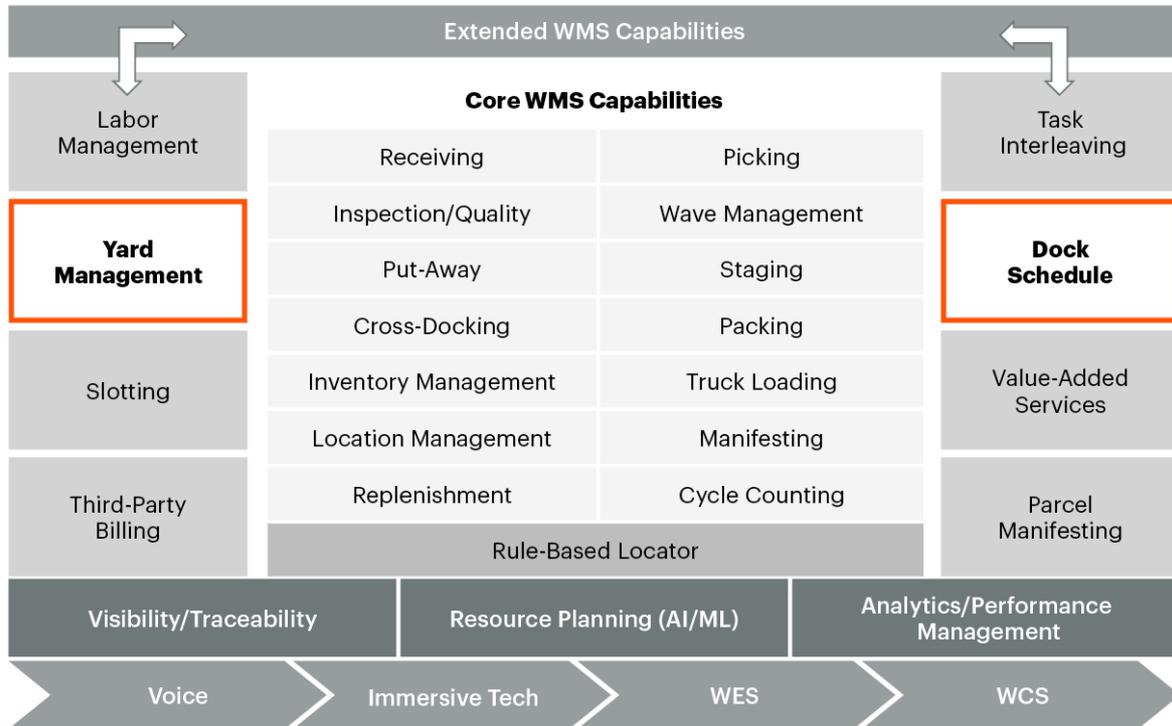
In modern, large, high-volume logistics operations, the yard has become an extension of the warehouse in terms of synchronizing with dock doors for shipping and receiving. In many cases, companies are now using the yard as supplementary storage (see Figure 1). Coordinating and managing the flow and movement of vehicles and trailers throughout the yard (including the alignment of cross-docking activities) have become important activities for logistics operations.

Yard management can be fairly rudimentary, where the application might simply note manual entries of asset movements entering and exiting the yard. Or yard management can be increasingly sophisticated, starting with managing the movements in and out of parking spaces and expanding to the advanced use of real-time, asset-tracking technologies, such as trailer telematics, radio frequency identification (RFID) and related technologies (see [Magic Quadrant for Real-Time Transportation Visibility Platforms](#)).

YMSs are most often found as part of the extended capabilities of a WMS (see the components boxed in red within Figure 1), but can also be part of a TMS's or real-time transportation visibility platform's (RTTVP's) extended offering. Advanced YMS capabilities are also offered as a stand-alone solution by a number of vendors.

Figure 1: Warehouse Management Capabilities Ecosystem

**Warehouse Management Capabilities Ecosystem**



Source: Gartner  
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**Market Direction**

Companies have put considerable effort into optimizing their processes in the warehouse and transportation. However, operations in the yard that connect transportation and, specifically, the truck to the warehouse, for both inbound and outbound operations, have not had the same level of focus. Yard operations continue to operate in a very manual and non-technology-driven way. The disruptions and bottlenecks that have occurred over the past two and a half years have highlighted the gaps that exist in many yard operations. These disruptions have also accelerated interest by users in and adoption of greater automation and digitization by YMS vendors and point solution providers. This was initially driven by focus to adhere to social distancing needs, but has evolved into greater focus on improved efficiencies for visiting drivers.

Historically, Gartner has observed much less focus on yard management versus adopting a WMS to manage the movement of people and materials within the building itself. While focus on yard improvements has stalled for some WMS vendors in the last two years, Gartner has observed a continually growing number of client inquiries relating to the topic. There has also been continued innovation and application modernization by specialist YMS vendors, the entry of two RTTVP vendors into the market through acquisitions. Additionally, there has been the entry of some point solution providers covering individual aspects of yard management without offering the full solution. In an increasingly competitive WMS market, demonstrating stronger extended WMS capabilities, such as a robust, easy-to-use YMS, can be a differentiator for some. Users with large fleets, a high volume of supplier and customer shipments, or those that suffer yard and dock door congestion, should review a YMS regardless of their WMS and transportation solutions landscape.

Companies are looking into YMS solutions to help close the supply chain gaps that exist in their own backyards, such as long trailer wait times, unproductive personnel numbers, poorly synchronized movement of goods and ineffective dock planning. There are many benefits to having a YMS, especially when it communicates to a TMS and WMS.

The YMS market is a much smaller market compared to the WMS and TMS markets, and historically has been a market that grows very slowly, although this is starting to change. A large percentage of basic YMS implementations are part of WMS engagements, but there are a few but growing number of, smaller, independent software vendors that provide stand-alone and robust YMS offerings. We are also starting to see a greater number of WMS vendors offer yard management and dock scheduling solutions as stand-alone offerings.

North America is still the largest market for YMS (also the region with the largest number of specialist YMS vendors), followed by Europe. Asia/Pacific is the market with the most opportunity for growth in YMS in tandem with WMS.

The type and size of the yard, or the number of yards that a company needs to control, often dictates the value that a YMS brings to the table. In some cases, security is the main driver behind the implementation of such a system. YMS solutions are still used mostly by large corporations with extensive yards that have many in and out movements. Additionally, organizations may wish to make their yards more efficient for visiting drivers so they are not deprioritized or charged higher fees compared to others. This way, carriers can schedule more cost-effective trips and drivers can make better use of their hours of service. This is increasingly important at a time of driver and resource constraints.

**Innovation continues in and around yard operations:** This is primarily driven by YMS vendors themselves, increased focus by megavendors, continued improvements by WMS vendors, and optimization of appointment and dock scheduling by TMS vendors. This trend is also being supported by involvement of real-time transportation visibility vendors in the yard and alternative niche vendors that focus on specific activities to optimize, such as kiosks, unloading or gate control. The range of use of sensor technology and process-driven activities also varies significantly by vendor. Users should consider which particular yard processes and activities they are seeking to resolve before finalizing their preferences in this area.

There have been a few partnerships and acquisitions emerging in the yard space in the last few years:

- In December 2021 RTTVP vendor project44 acquired YMS vendor MindLogic.
- In November 2021, FourKites formed a partnership with Zebra for hardware and software for the yard. This followed the March 2020 FourKites acquisition of the yard management solutions portfolio from TrackX.
- In January 2021, YMS vendor Peripass formed a partnership with transportation solution provider Transporeon.
- In June 2020, PINC secured a significant growth equity investment from private equity firm Accel-KKR, which backs Kaleris. In April 2021, Kaleris merged numerous acquisitions (including PINC, RailcarRx and Wabtec's TMS) together and rebranded all solutions as Kaleris. In July 2021, Kaleris acquired terminal/container management vendor Navis.
- Following Harvest Partners' December 2019 acquisition of a majority stake in Lazer Spot, a provider of spotting services and YMS implementations in North America, in March 2020, Lazer Spot acquired PHB Transport, also a trailer-spotting and short-shuttle service provider in the U.S.

## Market Analysis

Shorter transportation lead times, increasing transportation costs (accelerated by increased fuel costs) push companies to increase their efficiencies in the yard, as time spent on a yard can be unproductive and costly. More regulated hours of service and an increasing driver shortage have a negative impact on the total number of hours trucks are on the road at any given point. Consequently, it becomes even more critical for shippers to find time savings elsewhere in their supply chains. Boosting throughput by using a YMS means trucks spend more minutes with their wheels turning.

Shippers working with “yard of yards” scenarios. For example, a manufacturer has one yard at its plant and other, multiple yards at its distribution centers. Shippers also look more closely at YMS as a way to manage their complex distribution operations even when not deploying a WMS at all sites. YMS allows for more visibility over multiple locations versus just a single viewpoint of one yard.

Vendors are increasingly turning toward technology to build capabilities and augment their YMS offering with attractive features to support their customers’ use cases (see Table 1). Vendors demonstrate significant reductions in operational costs, charges from carriers and process improvements when users adopt system-driven and system-suggested activities, and accurate reporting where these had previously been manual and inaccurate. Additionally, vendors use technologies, such as the Internet of Things (IoT) and sensor-based frameworks, to have a real-time view of logistics operations. Some vendors even use drones to track assets in the yard. YMS vendors also create partnerships and integrations with other technologies to link sensor-based data collection devices to the YMS applications.

**Table 1: Key Use Cases for YMS**

(Enlarged table in Appendix)

Use Case	Benefits
Process Improvement	<ul style="list-style-type: none"> <li>■ Automation of yard processes and increased accuracy.</li> <li>■ Improvement of check-in and check-out processes.</li> <li>■ Improvement of the flow and direction of materials through a facility, to best support the utilization of yard and warehouse labor.</li> </ul>
Visibility	<ul style="list-style-type: none"> <li>■ Visibility to the yard operations and assets.</li> <li>■ Elimination of “lost” trailers.</li> <li>■ Visibility to product inventory in the yard.</li> </ul>
Cost Reduction	<ul style="list-style-type: none"> <li>■ Reduction of detention and demurrage expenses.</li> <li>■ Reduction of idle rental.</li> <li>■ Reduction of idle dock labor.</li> </ul>
Carrier Analysis	<ul style="list-style-type: none"> <li>■ Assessment of carrier commitments and on-time performance.</li> <li>■ Tracking of carrier wait time and unload time.</li> </ul>

Source: Gartner (December 2022)

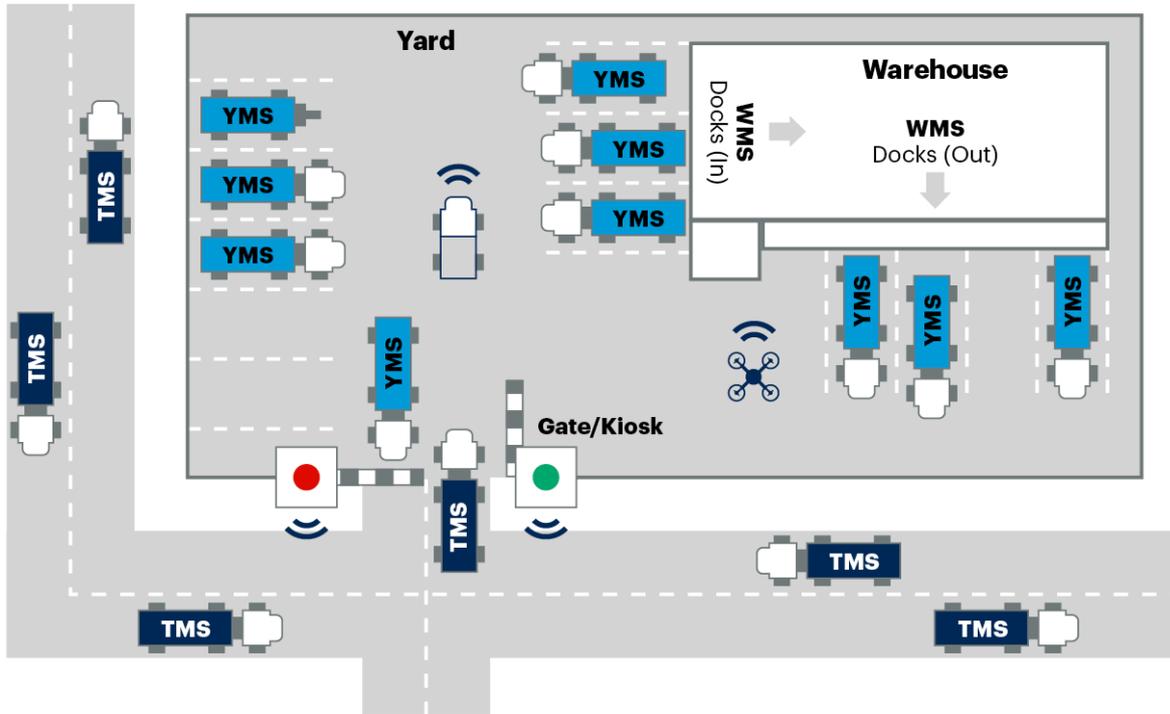
The value of the YMS often varies by industry vertical. For e-commerce retailers, velocity is everything, while a manufacturer values knowing where its inventory is in the yard to feed the production line. Retail distribution values on-time deliveries that drive customer satisfaction (see Table 1). Additionally, when delivery schedules are disrupted, causing increased waiting times, specific industries, such as food service distribution, may heavily value support for niche capabilities, such as refrigerated container temperature and fuel monitoring to reduce spoilage costs.

## Capabilities

Figure 2 illustrates the typical interplay between TMS, YMS and WMS solutions. YMS can operate as a stand-alone solution or it can be integrated with either or both WMS and TMS. Or, in some cases, it can operate as a solution or separate module provided by WMS and TMS vendors. We have also seen yard management solutions used in complex yards to serve manufacturing operations, even where a WMS or TMS is not present. In some cases, materials flow directly from a yard to a manufacturing production shop floor; an effective yard solution and dynamic appointment scheduling tools can be critical in these environments.

Figure 2: Interplay Between a TMS, YMS and WMS

**Interplay Between a TMS, YMS and WMS**



Source: Gartner  
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As Figure 2 shows, there are three key areas of functionality specifically related to yard management:

- The gate/kiosk
- The yard
- The loading docks/bays (inbound and outbound dock doors)

**Gate/Kiosk**

This functionality relates to managing the access of vehicles entering and leaving the yard and alerts the system of the specific arrival of vehicles to trigger the next action. Depending on the environment, the gates can be manned or unmanned, and, in some cases, fully automated with kiosks. Gartner has identified increased interest from end users in automating this process to speed up the check-in process and to keep drivers safe through “social distancing.” Some systems support both manned and unmanned environments, and can act as the communication point with the driver, provide on-site instructions and register the load as on-campus or within the yard. Gartner has also observed the emergence of a few point solutions specifically in this area without offering full yard management capabilities.

## **Yard**

This functionality relates to determining the location of vehicles and trailers that need to be parked prior to unloading or loading. It also involves auditing the equipment and inventory. In addition to deciding the location of vehicles and trailers, a YMS determines where the equipment moves and may also determine the best locations and dwell times.

Yard capabilities are used to view, manage and amend the entire yard operation or “yard of yards.” This includes planning and directing the work of yard jockeys, yard dogs, mules, hostlers or shunters, who move trailers to and from the dock doors and trailer parking spots. The yard jockeys also move trailers around in the yard or across multiple yards in a campus. In some cases, a carrier can deliver directly to, or pick up from, a dock door. However, in many cases, trailers have to be parked, and yard jockeys are then responsible for finding and moving the trailers as needed. Without a system, they often waste time trying to find lost trailers in the yard and moving from task to task in an unstructured manner, directed by radio. The YMS, however, communicates with the yard jockey using mobile technology.

## **Loading Docks/Bays**

This functionality relates to scheduling and directing specific vehicles to specific dock/bay doors. This depends on the availability of bays, the availability of labor (sometimes) and the best positioning of deliveries, given the proximity of put-away locations within that warehouse operation. It also can work in conjunction with the yard-focused elements to manage the dwell time and incorporate the urgency of the shipment. Sometimes, this can also be provided by appointment scheduling solutions that enable the efficient scheduling of appointments between the loading location and the carrier.

Some YMS vendors offer separate modules for each of the three areas. Others offer two combined or all three. Some WMS and TMS vendors may offer one or more as part of their package, or as an additional module.

Some niche providers offer solutions or services specific for yard-related scenarios but do not meet all of our criteria.

For more detailed insight into capabilities, technology trends and selection considerations, please see [Yard Management Technology Trends and Selection Considerations](#).

## Representative Vendors

*The vendors listed in this Market Guide do not imply an exhaustive list. This section is intended to provide more understanding of the market and its offerings.*

### Market Introduction

The detailed vendor write-ups, and overview graphics in Note 2 provide information on the YMS vendors that are perceived as relevant in the market based on revenue, number of clients, and end-user interest and feedback. These vendors also provided information to Gartner via detailed surveys and vendor briefings that are the basis for the details in this section (see Note 1).

The providers offering yard management capabilities can be divided into four categories (see Table 2):

- Application megavendors
- Real-time visibility platform vendors
- Supply chain management (SCM) suite vendors
- Specialized YMS suite vendors

**Table 2: Representative Vendors in Yard Management Systems**

(Enlarged table in Appendix)

Vendor	Product, Service or Solution Name	Type/Category
C3 Solutions	C3 Yard, C3 Reservations, C3 Hive	Specialized YMS Suite Vendor
Consafe Logistics	Astro WMS Yard Management	Supply Chain Management (SCM) Suite Vendor
Exotrac	YardTrac Pro, YardTrac Lite	Specialized YMS Suite Vendor
FourKites	Dynamic Yard	Real-Time Visibility Platform Vendor
Kaleris	Kaleris YMS	Specialized YMS Suite Vendor
Körber	Körber ( <a href="#">HighJump</a> ) Yard Advantage Körber ( <a href="#">Inconso</a> ) YMS/DSM	Supply Chain Management (SCM) Suite Vendor
Manhattan Associates	Yard Management Solution	Supply Chain Management (SCM) Suite Vendor
NCR	Power Yard, Power Dock	Supply Chain Management (SCM) Suite Vendor
Oracle	Oracle Warehouse Management Cloud	Application Mega Vendor
Peripass	Essential Yard, Advanced Yard, Premium Yard, Compliance Bundle	Specialized YMS Suite Vendor
ProAct International	Yard Management for Finished Vehicles, Yard Management for Transload and Yard Management for Cross Dock	Supply Chain Management (SCM) Suite Vendor
project44	Slot Booking, Yard Visibility, Yard Management	Real-Time Visibility Platform Vendor
Reply	LEA Reply Yard Management (YMS), LEA Reply Dock Scheduling	Supply Chain Management (SCM) Suite Vendor
Royal 4 Systems	R4 Yard Management system (YMS)	Supply Chain Management (SCM) Suite Vendor
SAP	SAP Yard Logistics	Application Mega Vendor
Transporeon	Transporeon Dock Scheduling and Real Time Yard Management	Supply Chain Management (SCM) Suite Vendor
vTradEx	vTradEx YMS	Supply Chain Management (SCM) Suite Vendor
Yard Management Solutions	Yard Management Solutions	Specialized YMS Suite Vendor
YardView	YardView	Specialized YMS Suite Vendor

Source: Gartner (December 2022)

## Vendor Profiles

### C3 Solutions

C3 Solutions is a focused logistics software company offering yard management (C3 Yard), dock scheduling (C3 Reservations) and last-mile visibility through check-in/estimated time of arrival (ETA)/information exchange (C3 Hive). C3 Yard and C3 Reservations can be used independently or combined and are part of the same platform (C3 Hub). C3 Hive is dependent on C3 Yard or C3 Reservations being present. C3 Yard is a web-based YMS that provides control, optimization and visibility to gates, yards, assets and jockey drivers. It also offers integration capability with other supply chain systems via standard web APIs. C3 offers a progressive web application (PWA); compatible with iOS and Android platforms, there is no need to download it from an app store. All functions of the application are available on both mobile and desktop. The vendor's new module, C3 Hive, offers functionality to check in and communicate with drivers both over the road and on-site, easily within their browser. The solutions are widely deployed in the grocery, retail, manufacturing, logistics and parcel post industries, among other industries with high-volume yards. C3 Solutions provides a single-tenant cloud platform that is fully scalable for yards of all sizes via a subscription. The vendor has a solid customer base with highly complex and multisite yard operations. It has also partnered with multiple telematics providers to exploit geofences to give real-time insight into ETAs for vehicles on-site so the systems can be altered dynamically and site information sent to visiting drivers before arrival.

## Consafe Logistics

Consafe Logistics, which is part of the JCE Group, provides two solutions, Astro WMS and Astro WCS, in addition to the yard solution addressed in this research. It has deployed its yard solution across 14 customer sites in Europe, the Middle East and in North America. Basic dock scheduling is included within Astro WMS. More advanced capabilities are provided by Consafe's yard management solution, Astro WMS Yard Management. It is offered on-premises and in a dedicated cloud environment. Consafe's YMS features include dock planning, gatehouse check-in and check-out, live loads and shunting, and pool management for empty load units. It has an optional queuing system so visiting drivers can wait outside the yard and be alerted when they can pull in with site-issued pagers. It has a 2D map of the yard built in with drag-and-drop features on its graphical grid to enable planning and reorganization with the ability to filter by shipment type. It has a common database with Astro WMS, deploys yard task interleaving logic recently optimized for campus operations based on similar code, and communicates through an interface with external TMSs and ERPs. The majority of its YMS customers are Consafe's WMS customers, with which it is tightly integrated. This integration allows operators within the WMS to release, block and replace loading units without manual actions in the YMS and to automatically check out outbound consignments from the yard through the WMS. But some customers are stand-alone and interface only with an external manufacturing execution system (MES).

## Exotrac

Exotrac provides YardTrac, a cloud-based YMS. This is offered in its advanced form as YardTrac Pro and is typically highly customized dependent on clients' needs. Exotrac also offers three versions (differentiated by complexity) of its off-the-shelf version called YardTrac Lite. The YardTrac Pro solution provides real-time trailer pool data, asset visibility and process management tools. It is deployed in environments using bar code labels, sensors or RFID tags, dependent on suitability. For mobile, it has native applications in Android and iOS, and responsive web apps. Exotrac remains device-agnostic, but when required can support clients by providing devices such as smartphones, tablets, tags and scanners. Recent enhancements include dock inspection with pictures, customized mobile checklists and support for optical character recognition (OCR) and rail car inventory management. YardTrac Pro utilizes 4G and Wi-Fi technology for connectivity and can be integrated with legacy systems, ERP, WMSs, TMSs and MESs through APIs, secure FTP or RESTful web services. Exotrac's pricing is subscription-based dependent on the number of sites and input users. There is no charge for casual users, such as visiting drivers. This usage is incorporated within the site license. Exotrac supports a wide range of key performance indicator (KPI) reporting, arrival/departure tracking, yard checks, yard jockey, and specialized reports and alerts dependent on customer needs. Its solution is implemented by 3PL partners and/or Exotrac personnel as needed.

## FourKites

FourKites is a provider of cloud-based real-time visibility solutions. It offers a real-time, predictive visibility and exception management platform for shippers, carriers, 3PLs and freight brokers. In 2020, FourKites acquired the yard management solutions portfolio from TrackX, and in November 2021, it formed a partnership with Zebra for hardware and software dedicated to addressing challenges in the yard. As a result, FourKites has built a fully integrated, cloud-based yard management solution – called Dynamic Yard – that expands upon the underlying technology of Zebra's MotionWorks Yard and TrackX with real-time visibility. With these changes, and with Zebra partnering as a reseller for the new offering, FourKites has acquired a number of customers and yard experts.

Dynamic Yard is natively integrated with FourKites real-time visibility ecosystem and is deployed across 33 customers at 133 sites. It leverages RFID, GPS and sensor technologies to automate workflow and events across yard operations and connect them with data from outside the yard. Integration of real-time tracking data and predictive ETA capabilities is intended to help companies dynamically sequence gate operations, hostler work assignments, and dock and appointment scheduling based on predictive truck arrival. The integration allows for automation of key functions, including check-in/check-out, by using geofencing capabilities to automatically register when a tracked asset has arrived.

The solution comes with an optional appointment scheduling portal (Appointment Manager), which is deployed across 33 customers at 242 sites. Through Appointment Manager, carriers are able to select the time slots, while the ETA engine independently tracks the expected accuracy of an inbound asset, saving dock crews time and reducing truck queues on-site.

Dynamic Yard is multitenant SaaS by default and can be deployed on Amazon Web Services (AWS) and Microsoft Azure. It supports rapid deployments with a Lite version and an Enterprise version, and it is supported by a number of system integration partners.

## Kaleris

Kaleris (formerly PINC) provides a cloud-based Real Time Location System (RTLS) and IoT-focused YMS, offering both SaaS and hardware as a service (HaaS). In 2020, PINC secured a significant growth equity investment from private equity firm Accel-KKR, which backs Kaleris. In April 2021, Kaleris merged numerous acquisitions together and rebranded all the solutions to the Kaleris name. Kaleris other solutions include rail transportation management, maintenance and repair operations management, and port and terminal management. Its Supply Chain Execution & Visibility platform exploits the data from these systems to help optimize the flow of goods through the supply chain. The YMS optimizes trailer movements, dock scheduling, yard operations and functions performed by yard workers and administrators. It combines an IoT sensor network, real-time GPS, RFID, and optical and cellular technology, making it a system for providing real-time visibility and orchestration of assets, including tractors, trailers, finished vehicles, pallets and other high-value inventory items. It optimizes yard operations with real-time tracking of dock doors, trailers and parking slots, and reduces detention and demurrage through its accessorial management functionality. It is suitable for small, medium and large enterprises, configurable to facility size and use-case requirements. Enterprise visibility enables management of location, state and status of assets across multiple yards, and provides a single bird's-eye view of all the yards across an organization's network. It offers Carrier Collaboration, enabling carriers to see their owned assets in customers' yards and schedule appointments online. The vendor continues to focus on improvements in features, such as its gate automation/kiosk capabilities, automation, driver communication, accessorial charge management, analytics, slot booking/appointments, dock management and tighter integrations with WMS and TMS providers.

## Körber

Körber's supply chain software business brings together a number of supply chain technology providers, including its most recent acquisition of enVista's Enspire Commerce platform and its Freight Audit and Payment (FAP) service. Its portfolio includes four WMSs, warehouse control system (WCS), voice, simulation and robotics capabilities and it offers a stand-alone yard solution, Yard Advantage. Many of Körber's WMS customers use the yard capabilities built into the WMS, but approximately 25 customers (across multiple sites) require more advanced capabilities and use its Yard Advantage solution. Yard Advantage provides enhanced functionality, such as driver licensing checks, equipment owner information, carrier data, and functionality covering detention, gate passes, trailer management (location/movement/status), appointments, work tasks and cycle counts. Yard Advantage provides real-time information, work direction and visibility of trucks, trailers, drivers, personnel, goods and materials in the yard, and a number of complementary yard and dock scheduling capabilities. Yard Advantage has an integrated document imaging and sign-on glass capability, which automates the collection of digital information and signatures on over-the-road documents. Yard Advantage supports integrated appointing as well as management of drop trailer pools and equipment prioritization and inspections, and it supports RFID and voice capabilities within yard operations. Körber also supports its legacy inconso YMS, which primarily serves the Germany, Austria and Switzerland (DACH) region of Europe and the Middle East, while Yard Advantage is primarily deployed in North America and Northern Europe. Yard Advantage typically serves high-volume/high-cube retailers/distributors and manufacturers, but does not target any specific industry. The inconso YMS typically serves high-volume 3PLs and e-commerce retailers, and has specific niche capabilities in the chemical and polymer industries.

## Manhattan Associates

Manhattan Associates' yard management software (Manhattan Yard Management) is a component of its supply chain suite. It can be used in combination with either Manhattan Active Warehouse Management or Manhattan Active Transportation Management, both of which are cloud-native/microservices-based and multitenant cloud. However, despite being built in a microservices architecture, it is not offered as a stand-alone product and can only be deployed with Manhattan's WMS or TMS or with both. The YMS does not require integration with Manhattan's TMS or WMS as it is built on the same platform, as a component shared by either solution, allowing customers ease of implementation, zero latency and cross-supply-chain visibility. The Yard Management solution enables task-based control of yard operations. It manages the flow of inbound and outbound goods to optimize warehouse and yard efficiency. The solution helps to audit and track loads (with graphical visibility to all assets in the yard based on the last known location and status). It uses attributes such as type of shipment, warehouse and dock capacity, labor required and load configuration. The Yard Management solution provides visibility of shipments along with goods-location tracking. It also provides load organization, guard check-in and check-out functionality, and mobile capabilities through RF- and Android-based mobile scanning at dock door and yard locations. Manhattan also offers yard management capabilities as a part of its Manhattan SCALE (WMS) solution.

## NCR

NCR's YMS, NCR Power Yard, is a part of NCR's transportation management portfolio, which also includes dock scheduling (NCR Power Dock), route optimization, carrier collaboration and delivery management. It is also offered as a stand-alone product. Power Yard enables clients to analyze operations in real time by tracking the trailers (through GPS) and scheduling their movement within the yard. It effectively provides slotting logic for trailers combined with dock door utilization and yard and labor performance monitoring. Automated dock scheduling, including carrier portal web access, automated appointment creation and capacity controls, is present in Power Dock. Power Yard can be integrated with NCR's Power Dock, Power Warehouse and other third-party WMS solutions. When combined, NCR Power Yard and NCR Power Dock support dynamic inbound management. The gate check-in process is supported by both RFID and geofence capabilities. Power Yard also enables monitoring and performance through generating KPI-based customer reports, and has specific capabilities for positioning and conditioning of refrigeration trailers through integration with the iBright telemetry system. The YMS is built around a to-scale, computer-aided design (CAD) rendering of the site. Accurate travel distances are garnered from this site map with discrete labor standards and reporting built into the application. The YMS offers self-rollout capabilities to the clients in a multisite environment post the pilot deployment.

## Oracle

Oracle's yard management solution is part of Oracle Fusion Cloud Warehouse Management (Oracle Cloud WMS) and is not sold as a stand-alone yard application. Oracle's yard management solution enables clients to define yard locations, manage trailers, manage inbound and outbound appointments, locate vehicles to the yard, and check vehicles and trailers in and out of docks. Since the end of 2019, it is now fully integrated with Oracle Fusion Cloud Transportation Management (OTM Cloud) and Oracle Fusion Cloud Internet of Things Intelligent Applications (Oracle IoT Cloud). This allows it to intelligently direct trailers to dock doors or available yard locations. It also enables users with mobile transaction access to execute yard management activities by using mobile devices. Customers using Oracle Cloud WMS and its YMS capabilities can integrate with Oracle's broader SCM cloud solution, including Oracle Fusion Cloud Inventory Management, Oracle Fusion Cloud Order Management, Oracle Fusion Cloud Procurement and Oracle Fusion Cloud Transportation Management. Oracle IoT Cloud allows the real-time monitoring of trailers in the yard. Recent solution enhancements in Oracle's warehouse management module allows for better wave planning based on the actual location of the trailer so that the needed orders are ready to load when the trailer arrives at the dock. The solution runs on Oracle's Gen 2 cloud infrastructure offering better performance, enhanced security and is scalable to manage seasonality. Oracle's YMS is suitable for companies using Oracle Warehouse Management, and it enhances greater supply chain execution convergence between Oracle WMS Cloud, OTM Cloud and IoT Cloud.

## Peripass

Peripass, is a specialist yard management suite vendor. Its YMS is built in a modern cloud-native microservices architecture and is deployed as a multitenant cloud solution in Microsoft Azure. The vendor has about 60 employees and has grown rapidly to approximately 80 customers deployed across 200 sites, with most of its growth from manufacturing operations gaining benefits from yard optimization. Most customers are based in Europe, but it has a few in the U.S. and Latin America. It has robust yard management capabilities from automated/self-service gate check-in/kiosks for visiting drivers, site access and communication, yard task management, and yard asset management through to document handling and hardware implementation and support. Peripass provides a modern UI for shunter drivers and administrators managing all yard activities. It also provides enhanced safety and compliance, including ID verification supporting Transported Asset Protection Association (TAPA), Authorised Economic Operator (AEO) and International Ship and Port Facility Security (ISPS) standards. While Peripass does not offer appointment or dock scheduling, it has a strategic partnership with Transporeon for these capabilities and can integrate to other solutions, WMSs, TMSs, ERPs and manufacturing systems. Peripass offers its YMS as a subscription in three bundles: Essential Yard, Advanced Yard and Premium Yard. It also offers a basic Compliance Bundle, ideally suited for smaller, lower complexity sites across a network, ensuring consistency of activities, such as self-service kiosks, safety certification, driver communication, system integrations and management overviews. In addition to its software offering, Peripass also has standardized hardware offerings with trusted installation partners for equipment, such as indoor and outdoor kiosks, security barriers and yard location sensors. Peripass centralizes the SLAs and billing of services.

## ProAct International

ProAct International is a supply chain software company offering enterprise supply chain management technology, supply chain orchestration, supply chain execution, finished vehicle logistics and yard management solutions. Its YMS is part of its Enterprise Supply Chain Digitalization Suite (ESD) that offers three distinct options: Yard Management for Finished Vehicles, Yard Management for global Multi-Modal/Multi-Site and Yard Management for Cross Dock. Each YMS is offered as a stand-alone product. It provides mobile capabilities for Android devices to support activities such as job assignment and trailer/vehicle moves. It provides visibility through mobile device positioning or vehicle GPS data and offers flexibility to integrate with other technology partners, such as visibility platforms and telematics vendors, and ease of solution configuration. The YMS is offered on-premises or in a cloud environment, primarily through use of AWS. The vendor focuses primarily on automotive/finished vehicle yard management and multimodal transportation, but it also has a presence in other sectors. ProAct also provides solutions for other industries, such as oil and gas, steel and petrochemicals. It provides visual aids to trailer-specific data and contents, and a map-based proximity view for operatives. ProAct provides specific support for various yard types, including port yards, rail yards, truck yards and multimodal transship yards. Due to the demands of its primary industry, it supports new and used vehicle processing and also supports maintenance/damage management, electric car charging prompts, and automotive telematics data, activity and storage.

## project44

Project44 is a real-time transportation visibility platform vendor that offers a real-time, predictive visibility and exception management platform for shippers, carriers, 3PLs and freight brokers. In December 2021, it acquired MindLogic, a small YMS vendor founded in January 2020. MindLogic's YMS was built by specialists with experience in building and implementing other yard management systems. Despite having a modest number of YMS customers to date (15 deployed across approximately 90 sites), the solution currently and in its near- to midterm roadmap has broad and deep yard functionalities. The vendor has a significant pipeline from existing project44 visibility customers, but the YMS can be deployed independently. The YMS was built on a microservices architecture, offering Slot Booking, Yard Visibility incorporating asset management and Yard Management. These can be offered as stand-alone products, individually or in combination, and can be an entry point for new customers looking to work with the vendor. Its yard management solution incorporates some functionality for visiting drivers and its configurable "smart-task" orchestrator aims to increase dock utilization, spotter driver efficiency, and reduce deadheading and fuel consumption. Project44 also collaborates with implementation partners for customers choosing to deploy its hardware solutions, such as its Gate and Hostler RFID kits, and its dock control and sensor interface equipment, such as for autodetection of hooking and unhooking of trailers. It also offers capabilities to track returnable items, such as plastic pallets, racks and totes. While the YMS is deployed as a multitenant cloud solution, currently on Google Cloud Platform (GCP), the vendor advises the services were designed to run on other cloud providers, such as AWS and Azure.

## Reply

Reply provides a wide array of IT services, with a primary focus on consulting, system integration and digital services. Pertinent to this research, it also offers warehouse management and yard management applications and services. Reply's initial yard management offering was introduced in 2013 as part of its traditional Click Reply Suite (solution for SCE). In the last couple of years, Reply has successfully migrated its YMS and other supply chain execution (SCE) solutions to its new microservices-based platform, LEA Reply. Its yard management solutions are now branded as LEA Reply Yard Management (LEA YMS) and LEA Reply Dock Scheduling (LEA DS). Its YMS and dock scheduling capabilities can be used independently, combined or integrated with Reply's WMSs and all modules of the LEA Reply platform, including LEA Reply Supplier Portal. Reply can also integrate its yard solution with Brick Reply, its MES. Reply has also completed development of a yard district management solution that links a single yard to more than one WMS. The YMS contains gate flow, dock scheduling, dock management and yard management capabilities. The solution incorporates a 2D or GPS-based map with real-time monitoring, "control tower" and staging task capabilities. It also includes a mobile application, SMS/email communications to drivers, mobile bay area devices for truck recalls, reprioritization, mobile shunter devices, self-service kiosks, automatic number plate recognition (ANPR) and integration with scanners, digicodes, RFID and scales. Reply's YMS leverages microservices-based architecture to inject modularity in its product offering and can be scaled to fit as per-the-customer use cases. It has been designed for simplicity and rapid deployment. The LEA Reply platform exposes APIs, enabling technological flexibility and quick and easy integration with any third-party software solution or hardware/field devices.

## Royal 4 Systems

Royal 4 Systems is a WMS vendor, founded in 1984, based in Long Beach, California, U.S., but with additional locations in other U.S. cities, the Netherlands, Spain, Mexico, Colombia and Australia. In addition to its warehouse management solutions – WISE WMS – Royal 4 offers an ERP solution called WISE R4 ERP that includes financials, distribution and manufacturing. Royal 4 finished development for its YMS – Royal 4 Yard Management System (YMS) in early 2021 and it is offered as a stand-alone product or integrated with Royal 4's WMS or other third-party WMSs. The number of customers using this product are modest to date, but Royal 4 expects to grow and deploy to almost 150 sites by the end of 2022. Its mobile solution runs in both Apple and Android environments. Pricing for the solution is based on volume of truck movements per month. The solution manages gate check-in/check-out, dock scheduling, loading and unloading and yard task management activities that can be triggered by drag-and-drop moves, plus a basic yard map viewer and reporting/dashboards to track warehouse and carrier performance.

## SAP

SAP offers SAP Yard Logistics as its stand-alone YMS solution (although it is best deployed within the SAP ecosystem). The system utilizes graphical layouts for monitoring and visualization of yards. It offers visibility into inbound and outbound transports, shows alerts and exceptions, and supports planned and unplanned yard movements. It also supports activities like cleaning or repair with integration to SAP's Plant Maintenance module as well as dangerous goods checks. SAP has had significant customer growth over the last two years, with more than 130 customers now using Yard Logistics at more than 200 sites. Much of this growth has come from the automotive sector but also from retail, consumer and agricultural products companies. Over the last two years, SAP has added and enhanced a number of features. These include enabling dock appointment scheduling through integration with SAP Logistics Business Network, inspection capabilities, more advanced yard task processing, support for multilevel loading and driving hours checks. SAP Yard Logistics can be deployed on-premises or as a single-tenant cloud offering on SAP S4/HANA. SAP has also improved SAP Yard Logistics integration with SAP Extended Warehouse Management (SAP EWM), SAP Transportation Management (SAP TM), SAP Plant Maintenance, SAP Business Network for Logistics and SAP Business Technology Platform (BTP). SAP EWM also has some yard management capabilities, such as check-in and check-out, load and unload, dock door scheduling, yard movements, sealing and unsealing, and weighing and registration of drivers and equipment.

## Transporeon

Transporeon provides logistics capabilities, such as transport sourcing, load tendering, transport booking, dock scheduling, track and trace/visibility, electronic proof of delivery, freight settlement and analytics. Transporeon's Dock Scheduling and yard management solution is focused more on dock scheduling, collaboration and real-time and predictive ETA management than on offering full-blown YMS functionality. Transporeon did offer some yard functions, such as Live Yardview on a graphical display and trailer management but it has entered into a strategic partnership with YMS vendor Peripass to offer more robust YMS capabilities. In this offering, all physical yard activities are executed by Peripass's solution. The vendors also collaborate on their go-to-market approach. More than 50% of Transporeon's customers use some yard management capability, especially with retail customers, where it is present in more than 550 retail warehouses. Transporeon's solution offers online dock scheduling/slot booking to carriers. It is integrated with Transporeon's TMS to provide real-time visibility and ETAs that allow dock scheduling to be altered as required. It may also be used separately from a TMS. The solution also provides automated gate check-in using license plate or bar codes/QR codes from booking printouts, and resource and equipment management, such as the availability of a forklift truck (FLT) and driver. Transporeon also offers specific solutions for the chemical, fast-moving consumer goods (FMCG) and paper/timber industries. Other than installation costs, active user and fixed module subscription costs, only successfully booked time slots are chargeable on a transaction basis for Transporeon's solution.

## vTradEx

vTradEx is a WMS and TMS provider headquartered in Shanghai, China. vTradEx's eLOG suite provides a set of cloud-based, web and mobile logistics management applications, and it offers both multitenant and dedicated cloud options. vTradEx YMS is built on the same platform as its WMS and TMS, but is also offered as a stand-alone. Approximately seven customers currently use the solution across 130 sites. The focus in China and for vTradEx at present is on technology to automate check-in and check-out, sophisticated queuing systems and dock scheduling. Visiting drivers are sent instructions through text messages, a browser or more typically through an application embedded in WeChat. It has a slot plan engine that takes all transportation orders and considers constraints, such as operation hours and load size (by weight, pallets, or volume) for the loading and unloading time. YMS then recommends the available slots to the carriers for booking, but can also support manual booking. Carriers can also book and view the reservation on their mobile phone through vTradEx's portal. The vendor relies on partners for implementations in North America. It partners with hardware providers, such as HikVision for gate control systems and various weighing scales and refrigerated container sensor providers. It collaborates with project44 for real-time transportation visibility but also integrates with its own visibility platform. Upcoming enhancements for 2023 include visual yard representations, container yard management capabilities, yard vehicle queueing integration with WMS wave management and yard driving navigation.

## Yard Management Solutions

Yard Management Solutions offers its yard management software as a dedicated or multitenant cloud deployment. Its YMS is web-based and scalable to any size screen on any device. It offers rapid implementation where projects can go live in six weeks, and the application is focused on being simple to learn and easy to use. Its new YMS Version 2 brings a modern UI with functionality to reduce clicks and improve reporting capabilities. In the last year, YMS has also introduced dock scheduling and a smart gate entry system. Its Eagle View feature provides a graphical depiction of a yard with live process-driven statuses for each piece of equipment and employee action, incorporating drag-and-drop capabilities to initiate yard moves. Its Multi-Facility View provides a grid of Eagle Views for the network of yards, with the ability to initiate transfers between yards with the same drag-and-drop capabilities. Smart Yard “X-Ray Vision” displays the contents (such as product locations, item numbers and quantities) of every trailer on Eagle View. Implementations are carried out by the vendor’s team, but they rely on partners for automatic gate entry systems hardware and OCR capabilities. While a process-driven system, it has the capability to integrate with software systems, such as TMS and WMS, as well as hardware sensors and GPS to track trucks between and approaching facilities. Its modules include gate, jockey, dock door, yard check, asset tracking, yard optimization, reports and appointment schedule functionality.

## YardView

YardView offers YardView YMS, a functionally rich and highly customizable cloud-based YMS, which is accessible via browser and mobile applications, and operates on a monthly site subscription basis with unlimited users and transactions. The solution is heavily focused on ease of use and the needs of the end-user drivers, operators and supervisors, and offers rapid implementation where projects can go live within four weeks. YardView orchestrates the inbound and outbound traffic of trailers, containers and other assets, and is deployed across a large number of customers and over 1,000 sites. Its features include enhanced dock and appointment scheduling based on load types, space, weight and available products for orders (configured for many scheduling process types). It also features email alerts, built-in and customizable reports, signature capture, in-cab move requests, next-best-move requests based on geography, priority or hot items, scheduled lot checks, yard optimization and driver self-check-in via kiosk or app on device (allowing fully contactless visits). It includes a load planning and load details module, and the ability to manage (and systematically start and stop) refrigerated units. The solution enables customers to handle multiple facilities and multiple parking locations, including interplant activity, and has been built to ease processes for the end-user operatives who can quickly adopt the system, often within an hour. It offers yard visualization through either aerial rendering or the ability to quickly build or adjust a simplified map within the application.

## Market Recommendations

Companies have put a great deal of effort into optimizing their transportation and warehousing processes, including implementing technologies such as a WMS and/or TMS. The transportation and warehouse functions meet in the yard, and the yard is often a “black hole,” where companies lack visibility to activities, inventory and equipment.

Many kinds of yard management solutions are available, either as part of the existing WMS or TMS, as stand-alone YMS applications or point solutions for individual elements of yard management, or as provided by some RTTVP vendors.

Companies already using a WMS or TMS or RTTVP should look to their existing technology vendors to understand what YMS capabilities can be used as an add-on to the WMS or TMS. They should also understand the value these capabilities could bring to their organization. Companies with WMS, TMS or RTTVP vendors that currently don't provide yard management capabilities should look into best-of-breed solutions.

Companies with large yard operations or companies with many yards should look into these solutions as they provide clear benefits toward increased visibility, automation of activities, better asset utilization and reduced costs. Even companies with smaller yards have access to yard management solutions that can provide core yard management capabilities and take advantage of cost-efficiencies and cost savings.

Companies that cannot implement a full yard management solution should look into capabilities offered by functionalities such as appointment scheduling or emerging solutions purely focused on visiting drivers to improve, at least partially, the current issues in their yards.

Users should review YMS proposals in detail. Pricing can vary widely, ranging from perpetual and subscription licenses based on sites and/or users/device users, upfront hardware costs or hardware usage fees to transactional fees based on actual or average transport unit movements. And some vendors offer more than one option. Some solutions may be priced by module or even included as part of overall WMS, TMS or RTTVP deals.

Some organizations suffer yard and dock door congestion and their activities are impacted by ongoing disruptions. They should also investigate the opportunities for improvement that YMS vendors are achieving through partnerships with real-time visibility solutions to support dynamic rescheduling of appointments and dock activities.

Even users with smaller operations can benefit from the improved organization and work direction that rapid deployment of a simple real-time view of the yard and directed work activities can bring.

Users should also investigate options provided by some vendors to further automate gate check-in, verification, messaging and digitization of documentation and approval. This will reduce the need for drivers to queue in warehouse offices and exchange physical paperwork when their time could be deployed more effectively and exchange physical paperwork when their time could be deployed more efficiently.

## Note 1: Representative Vendor Selection

This research provides information on 19 YMS vendors perceived as relevant in the market, based on revenue, number of clients and end-user interest and feedback. Client interest and market presence also factored into the selection of the vendors featured in this guide.

## Note 2: YMS Vendor Tables – Geography, Industry, Functionality, Integration Capability, Technologies and Deployment Model

The following graphics provide an overview of YMS vendors with regard to:

- Geographies covered (see Figure 3)
- Industry coverage (see Figures 4 and 5)
- Functionality offered (see Figure 6)
- Integration capability to other enterprise applications (see Figure 7)
- Technologies used (radio frequency [RF], RFID, other sensors, machine vision, drones and autonomous yard vehicles; see Figure 8)
- Deployment model (on-premises, hosted, cloud; see Figure 9)

Figure 3: Geographies Covered

### Geographies Covered

■ Has more than 25% of their customer base in this region
 ■ Has customers in this region
 ■ Has capabilities in this region
 ■ Has no current capabilities/customers in this region

Vendor Category/Name:	C3Solutions	Consafe Logistics	Exotrac	FourKites	Kaleris	Körber	Manhattan Associates	NCR	Oracle	Peripass	ProAct International	project44	Reply	Royal 4 Systems	SAP	Transporeon	vTradEx	Yard Management Solutions	YardView
North America	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Europe	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Asia	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Pacific	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Africa/Middle East	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Latin America	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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Figure 4: Industry Coverage – Part 1

## Industry Coverage – Part 1

■ Has YMS presence In Industry    □ Does not have YMS presence In Industry

Vendor Category/Name:	C3 Solutions	Consafe Logistics	Exotrac	Four Kites	Kaleris	Körber	Manhattan Associates	NCR	Oracle	Peripass	ProAct International	project44	Reply	Royal4 Systems	SAP	Transporeon	vTradEx	Yard Management Solutions	YardView
Aerospace and Defense	■	□	■	□	□	□	■	□	□	□	□	□	□	■	■	□	□	■	■
Automotive/Vehicle Transformation	■	■	■	■	■	■	■	□	■	■	■	■	■	■	■	■	■	■	■
Consumer Products	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Food Service	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Furniture/Office Equipment	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
High Tech /Consumer Electronics/ Medical Devices	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Industrial & Construction Machinery	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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Figure 5: Industry Coverage -- Part 2

## Industry Coverage — Part 2

■ Has YMS presence in industry    □ Does not have YMS presence in industry

Vendor Category/Name:	C3 Solutions	Consafe Logistics	Exotrac	FourKites	Kaleris	Körber	Manhattan Associates	NCR	Oracle	Peripass	ProAct International	project44	Reply	Royal4 Systems	SAP	Transporeon	vTradEx	Yard Management Solutions	YardView
Life Sciences/Pharmaceuticals	■	□	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Logistics Service Provider/Carrier/3PL	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Mill Products (Metals, Paper, Plastics)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Oil & Gas	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Petrochemicals - Bulk Commodity	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Postal/Courier	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Retail	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Wholesale Distribution	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Other (Media, Insurance, Banking, Public Sector)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Other	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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Figure 6: Functionality Offered

## Functionality Offered

■ Has capability 
 ■ Has capability via other application or partnership 
 ■ Does not have capability

Vendor Category/Name:	C3 Solutions	Consafe Logistics	Exotrac	FourKites	Kaleris	Körber	Manhattan Associates	NCR	Oracle	Peripass	ProAct International	project44	Reply	Royal 4 Systems	SAP	Transporeon	vTradEx	Yard Management Solutions	YardView
Automated Gate Check-In/Check-Out	■	■							■		■								
Yard Optimization (System Direct Trailer Moves)									■									■	
Dock Scheduling										■									
Yard Inventory																			
Hostler Work Assignment									■							■		■	
Asset Tracking									■								■		■
Real-Time Vehicle Location/ Yard Visibility									■										■
Graphic Display of Entire Facility Including Trailer Location/Status						■			■										■
Analytics/Business Intelligence							■								■				
Web Portal for Carriers/ Customers to View Trailer Pools		■				■			■				■						■
Seal Verification, Damage Inspection/ Reporting									■										
Other								■	■				■						

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Figure 7: Integration/Own Suite Capability

## Integration/Own Suite Capability

■ Own solution/capability within portfolio/suite
 ■ Integration capability
 ■ No capability

Vendor Category/Name:	C3 Solutions	Consafe Logistics	Exotrac	FourKites	Kaleris	Körber	Manhattan Associates	NCR	Oracle	Peripass	ProAct International	project44	Reply	Royal 4 Systems	SAP	Transporeon	VTradEx	Yard Management Solutions	YardView
Standard Integrations to ERP	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Standard Integrations to WMS	Integration capability	Own solution/capability within portfolio/suite	Integration capability	Integration capability															
Standard Integrations to TMS	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Standard Integrations to MES	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Integration to Telematics Solutions	Integration capability	No capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Integration to Trailer Tracking Solutions	Integration capability	No capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Integration to Truck Maintenance Systems	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Integration to Visibility Platforms	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Integration to Labor/Workforce Management	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability
Other	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability	Integration capability

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Figure 8: Technologies Used

## Technologies Used

■ Technology used
 ■ Capability/proof of concept/partial
 ■ Does not offer this technology/service

Vendor Category/Name:	C3 Solutions	Consafe Logistics	Exotrac	FourKites	Kaleris	Körber	Manhattan Associates	NCR	Oracle	Peripass	ProAct International	project44	Reply	Royal 4 Systems	SAP	Transporeon	vTradEx	Yard Management Solutions	YardView
Radio Frequency	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
RFID	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Other Sensors	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Machine Vision	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Support for Autonomous Yard Vehicles	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Drones	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Other	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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Figure 9: Deployment Model

## Deployment Model

■ Offered
 ■ Not offered

Vendor Category/Name:	C3 Solutions	Consafe Logistics	Exotrac	FourKites	Kaleris	Körber	Manhattan Associates	NCR	Oracle	Peripass	ProAct International	project44	Reply	Royal 4 Systems	SAP	Transporeon	vTradEx	Yard Management Solutions	YardView
On-Premises	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Hosted	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Dedicated Cloud	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Multitenant Cloud	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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## Document Revision History

[Market Guide for Yard Management - 25 June 2020](#)

[Market Guide for Yard Management - 30 January 2019](#)

[Market Guide for Yard Management - 8 June 2017](#)

[Market Guide for Yard Management - 28 January 2016](#)

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**Table 1: Key Use Cases for YMS**

Use Case	Benefits
Process Improvement	<ul style="list-style-type: none"> <li>■ Automation of yard processes and increased accuracy.</li> <li>■ Improvement of check-in and check-out processes.</li> <li>■ Improvement of the flow and direction of materials through a facility, to best support the utilization of yard and warehouse labor.</li> </ul>
Visibility	<ul style="list-style-type: none"> <li>■ Visibility to the yard operations and assets.</li> <li>■ Elimination of “lost” trailers.</li> <li>■ Visibility to product inventory in the yard.</li> </ul>
Cost Reduction	<ul style="list-style-type: none"> <li>■ Reduction of detention and demurrage expenses.</li> <li>■ Reduction of idle rental.</li> <li>■ Reduction of idle dock labor.</li> </ul>
Carrier Analysis	<ul style="list-style-type: none"> <li>■ Assessment of carrier commitments and on-time performance.</li> <li>■ Tracking of carrier wait time and unload time.</li> </ul>

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Source: Gartner (December 2022)

**Table 2: Representative Vendors in Yard Management Systems**

<i>Vendor</i> ↓	<i>Product, Service or Solution Name</i> ↓	<i>Type/Category</i> ↓
<a href="#">C3 Solutions</a>	C3 Yard, C3 Reservations, C3 Hive	Specialized YMS Suite Vendor
<a href="#">Consafe Logistics</a>	Astro WMS Yard Management	Supply Chain Management (SCM) Suite Vendor
<a href="#">Exotrac</a>	YardTrac Pro, YardTrac Lite	Specialized YMS Suite Vendor
<a href="#">FourKites</a>	Dynamic Yard	Real-Time Visibility Platform Vendor
<a href="#">Kaleris</a>	Kaleris YMS	Specialized YMS Suite Vendor
<a href="#">Körber</a>	Körber ( <a href="#">HighJump</a> ) Yard Advantage Körber ( <a href="#">inconso</a> ) YMS/DSM	Supply Chain Management (SCM) Suite Vendor
<a href="#">Manhattan Associates</a>	Yard Management Solution	Supply Chain Management (SCM) Suite Vendor
<a href="#">NCR</a>	Power Yard, Power Dock	Supply Chain Management (SCM) Suite Vendor
<a href="#">Oracle</a>	Oracle Warehouse Management Cloud	Application Mega Vendor
<a href="#">Peripass</a>	Essential Yard, Advanced Yard, Premium Yard, Compliance Bundle	Specialized YMS Suite Vendor
<a href="#">ProAct International</a>	Yard Management for Finished Vehicles, Yard Management for Transload and Yard Management for Cross Dock	Supply Chain Management (SCM) Suite Vendor
<a href="#">project44</a>	Slot Booking, Yard Visibility, Yard Management	Real-Time Visibility Platform Vendor

<i>Vendor</i> ↓	<i>Product, Service or Solution Name</i> ↓	<i>Type/Category</i> ↓
<a href="#">Reply</a>	LEA Reply Yard Management (YMS), LEA Reply Dock Scheduling	Supply Chain Management (SCM) Suite Vendor
<a href="#">Royal 4 Systems</a>	R4 Yard Management system (YMS)	Supply Chain Management (SCM) Suite Vendor
<a href="#">SAP</a>	SAP Yard Logistics	Application Mega Vendor
<a href="#">Transporeon</a>	Transporeon Dock Scheduling and Real Time Yard Management	Supply Chain Management (SCM) Suite Vendor
<a href="#">vTradEx</a>	vTradEx YMS	Supply Chain Management (SCM) Suite Vendor
<a href="#">Yard Management Solutions</a>	Yard Management Solutions	Specialized YMS Suite Vendor
<a href="#">YardView</a>	YardView	Specialized YMS Suite Vendor

Source: Gartner (December 2022)