International Context: Magic Quadrant for Transportation Management Systems

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Initiatives: Supply Chain Technology Strategy and Selection

Some TMS vendors have specialized and unique capabilities for international freight management, focusing on multileg and multimodal shipping sourcing, planning and execution. Supply chain technology leaders can use this research to gain insight into the international TMS market.

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This content is part of a larger body of research on this topic.

Magic Quadrant for Transportation Management Systems

Market Differentiators

Gartner defines transportation management systems (TMSs) as software that supports multimodal sourcing, planning and execution of the physical movement of goods across the supply chain. A TMS allows a company to manage increasing levels of transportation complexity across multiple transport modes and geographic regions. These solutions are utilized by companies of varying sizes, operational complexity, industries and geographic locations. TMS solutions are primarily delivered as a cloud-based subscription service (see Magic Quadrant for Transportation Management Systems). This research highlights the international subsegment of the TMS market and those vendors that are relevant in this segment but did not meet the inclusion criteria for the Magic Quadrant.

TMS for international shipping focuses on the transportation sourcing, planning and execution aspects of international shipping, leaving other aspects (mostly related to compliance and finance) to broader solutions such as global trade management applications (see Market Guide for Global Trade Management).

Shippers and third-party logistics (3PL) providers that ship internationally require a different set of capabilities than those shipping domestically. Shipments are commonly managed physically by a third-party company, such as freight forwarders, as shippers are not the owners of the vehicles or even the equipment (e.g., ocean containers) that carry the cargo.

Additionally, international transportation involves a much larger number of parties than domestic transportation, depending on the operational complexity. These parties may include multiple customers and suppliers, freight forwarders, custom brokers, and, on many occasions, government agencies, banks, insurance companies and consultants, at different stages of the shipment life cycle. These shipment characteristics put more emphasis on capabilities that allow the end user to manage each part of the shipment individually, considering different multileg, multicurrency and workflow scenarios.

TMS vendors focused on international shipping continue to enhance their carrier sourcing and collaboration networks, as well as improve their visibility capabilities. In addition, newcomers are offering easy-to-use solutions that are more focused on a single mode of transportation (ocean freight) and capabilities, such as communication and interconnectivity between stakeholders.

There are other trends impacting international shipping transportation that drive the decisions of shippers to adopt these solutions, including:

- The frequency and scale of global disruptions is increasing, requiring TMS solutions that are more agile and versatile when it comes to transportation sourcing or planning and managing different types of modes of transportation.
- Visibility capabilities remain at the top of the end-user requirement list as organizations seek to have better control over their inbound and outbound processes, involving not only system-to-system integration, but also device-to-system (sensors, Internet of Things [IoT], etc.).
- The current economic situation is putting increased pressure on supply chain costs, coupled with labor challenges for resources to support transportation activities. This is driving a stronger end-user demand for cost optimization features, as well as forecasting and benchmarking capabilities.
- The speed at which rate fluctuations happen is causing increased volatility and complexity due to network interdependencies and ambiguity of conditions.

- There is increasing demand for, and importance and relevance given to, sustainability capabilities to support requirements across organizations in all regions and industries. End-user initiatives, as well as new sustainability regulations, are driving the demand for calculation, visualization, reporting and planning for carbon emissions.
- The further adoption of artificial intelligence (AI) and machine learning (ML) will provide faster intelligence and predictive insights.
- Supply chain convergence will lead to better decision making and more efficient transportation.
- Networked ecosystems are of Increasing importance, as is integration to other platforms and applications.
- There is an increasing demand for advanced automation capabilities, and the digitization of communication and processes in international operations.

Considerations for Technology and Service Selection

International shipping TMSs are characterized by their ability to coordinate and execute the movement of cargo between different countries and regions while involving many different stakeholders in the process. This includes capturing the different activities that will occur during the shipment life cycle while providing visibility on the workflow and the progress of the shipment. The key components and differentiators of TMS for international shipping are:

- The granularity of the solution to support multileg shipments for cross-border operations, and consideration of multiple modes of transportation, languages, currencies, date formats, postal codes, equipment types and documents across one single shipment record
- The extent of their carrier network and ability to connect to other stakeholders
- The sourcing capabilities to allow the tendering, evaluation and management of rates, and the selection of carriers or freight forwarders
- The planning and optimization capabilities to consolidate shipments; estimate, reserve and optimize capacity; get carrier schedules; and determine route choices
- The booking, communication and interfacing capabilities to digitize and automate shipment workflows

- The visibility and exception management capabilities to control inbound movements and coordinate outbound shipments in each of the individual legs of the international transportation process
- The collaboration capabilities to manage and share documents and information
- The advanced analytics they are able to provide

Notable Vendors

Vendors included in this Magic Quadrant Perspective have customers that are successfully using their products and services. Selections are based on analyst opinion and references that validate IT provider claims; however, this is not an exhaustive list or analysis of vendors in this market. Use this perspective as a resource for evaluations, but explore the market further to gauge the ability of each vendor to address your unique business problems and technical concerns. Consider this research as part of your due diligence and in conjunction with discussions with Gartner analysts and other resources.

4flow

4flow is a supply chain management (SCM) suite and TMS service vendor headquartered in Berlin, Germany that also offers supply chain management and consulting. Its multimodal TMS, 4flow iTMS, is a modular solution focusing on the planning and optimization of complex transportation networks, providing capabilities related to planning, execution and data management. The solution is composed of 13 modules, including network design, sourcing, transportation management, container management, exception management, freight cost management and analytics, among others. 4flow iTMS is offered as a stand-alone product, a managed TMS service or even embedded into 4flow's fourth-party logistics (4PL) service. 4flow iTMS has an extensive array of partners and integration capabilities, including real-time transportation visibility providers (FourKites, project44 and Shippeo), carrier networks (123cargo, Teleroute and Wtransnet) and other technology providers. About half of 4flow's customers are located in Europe, and it also has customers in other regions, such as North America, the Asia/Pacific and South America. Its customers range from midsize to very large organizations. 4flow serves customers in many industries, including automotive, manufacturing and consumer packaged goods, among others.

AEB

AEB is a global trade and logistics software and service provider headquartered in Stuttgart, Germany. Its TMS solution, AEB Transportation Management System, is a modular SaaS solution that consists of several different modules. These modules include a cloud platform, Carrier Connect, Logistics Cost Management, Document Services, Carrier Select, and Monitoring and Alerting. AEB TMS can integrate with other AEB logistics solutions, such as its global trade solutions, enabling end users to automate collaboration with customs brokers, manage export controls and leverage other compliance capabilities, like denied party screening, license management and risk assessments. AEB invested and secured a new partnership with GRYN, a vendor that provides carbon footprint calculations. AEB customers are mainly located in Europe, although the vendor has customers in other regions, such as North America, South America and Asia. Its customers range from midsize to very large organizations. AEB TMS focuses on shippers and 4PL organizations, with a presence in specific industries, including industrial and construction machinery, high-tech consumer electronics, aerospace and defense, and others.

Freightgate

Freightgate is a logistics software provider based in Fountain Valley, California, U.S. Its TMS solution, Logistics Cloud, provides operational capabilities such as shipment planning and execution, multileg and multimodal routing combining up to five different transportation legs, contract rate and tender management, ocean sailing schedules, direct booking, analytics, and carbon emission reports during shipment execution. Logistics Cloud supports BPMN 2.0 industry standards, enabling the creation of workflow diagrams to customize and automate processes. The solution also offers compliance capabilities such as verified gross mass (VGM) interfacing, product classification and trade content, landed cost calculation, importer security filing (ISF), and denied-party screening via web services. Freightgate partners with Tive to provide real-time visibility through use of IoT devices, automatic identification system (AIS) satellites and other data sources, It also partners with other technology providers, such as e2open and CargoSmart, to provide access to ocean carrier networks. Freightgate customers range from small to large organizations with the majority of its customers based in North America. Logistics Cloud is used by transportation companies and shipper organizations with a presence in different industries, including logistics service providers, freight forwarding, food and beverage, chemical, high electronics, and consumer goods, among others.

Infor

Infor is a global application provider based in New York, U.S. Its TMS, Infor Nexus Global Transportation Management, provides capabilities for international logistics through the following modules: sourcing and procurement, rating, planning, execution, visibility, and freight pay and audit. Infor Nexus Global Transportation Management includes a shipment optimizer that can generate multiple transportation plans based on the different service requirements of a particular transportation order to manage the planning and execution process, considering preshipment activities and multiple stakeholders. The solution also offers purchase order capabilities, a vast carrier network, and connectivity to suppliers, forwarders and customs brokers, facilitating the exchange of information and generation of documents for ISF filings, VGM details and customs clearance processes. Infor Nexus now provides further visibility and alerts into chokepoints such as the Suez and Panama Canals through the use of new geofence and analytics capabilities targeting these high risk areas. Infor Nexus Transportation Management customers range from midsize to very large organizations. Its customers are mostly based in North America, but also other regions such as Europe or Asia. The vendor focuses on industries such as retail, fashion, wholesale distribution, manufacturing and logistics service providers, among others.

Pando

Pando is a supply chain software provider based in Chicago, U.S. The vendor offers multimodal TMS as part of its Pando Fulfillment Cloud solution. Pando's multimodal TMS is a modular SaaS solution that includes capabilities in transportation planning and optimization, export and import freight procurement, visibility, and collaborative execution. The solution includes a wide range of capabilities that support global trade operations, including automated shipment workflows based on Incoterms selection, multileg and multimodal planning optimization, shipping document generation, real-time visibility, control-tower-like dashboards and compliance capabilities. Pando's TMS also provides a carrier and partner network that includes carrier aggregators across different modes of transportation, and the possibility to generate and use fully electronic bills of lading and airway bills, offering an electronic alternative to documents supporting international trade. The solution also offers capabilities to electronically transmit the ISF message to customs authorities. Pando customers span all sizes, from small and midsize to large organizations, and while the majority of its customers are based in Asia, the vendor also has customers in other regions such as North America and Europe. Pando supports customers across industries such as consumer products, automotive, high-tech, life sciences, retail and chemicals.