

Buyer's Guide

Selecting the Right
Transportation Management
System (TMS)



Table of Contents



Why Do You Need This Guide?

There's no question your organization needs a TMS solution. The real question is, how will you choose the one that maximizes your return on investment?

From the strategic to the practical, the benefits of a Transportation Management System (TMS) are obvious. But that's led to a crowded TMS marketplace. How can your organization compare all the competitive offerings and choose the right TMS solution? This buyer's guide was created to help you. It highlights the key capabilities you should look for — as well as the questions you should ask any TMS provider.



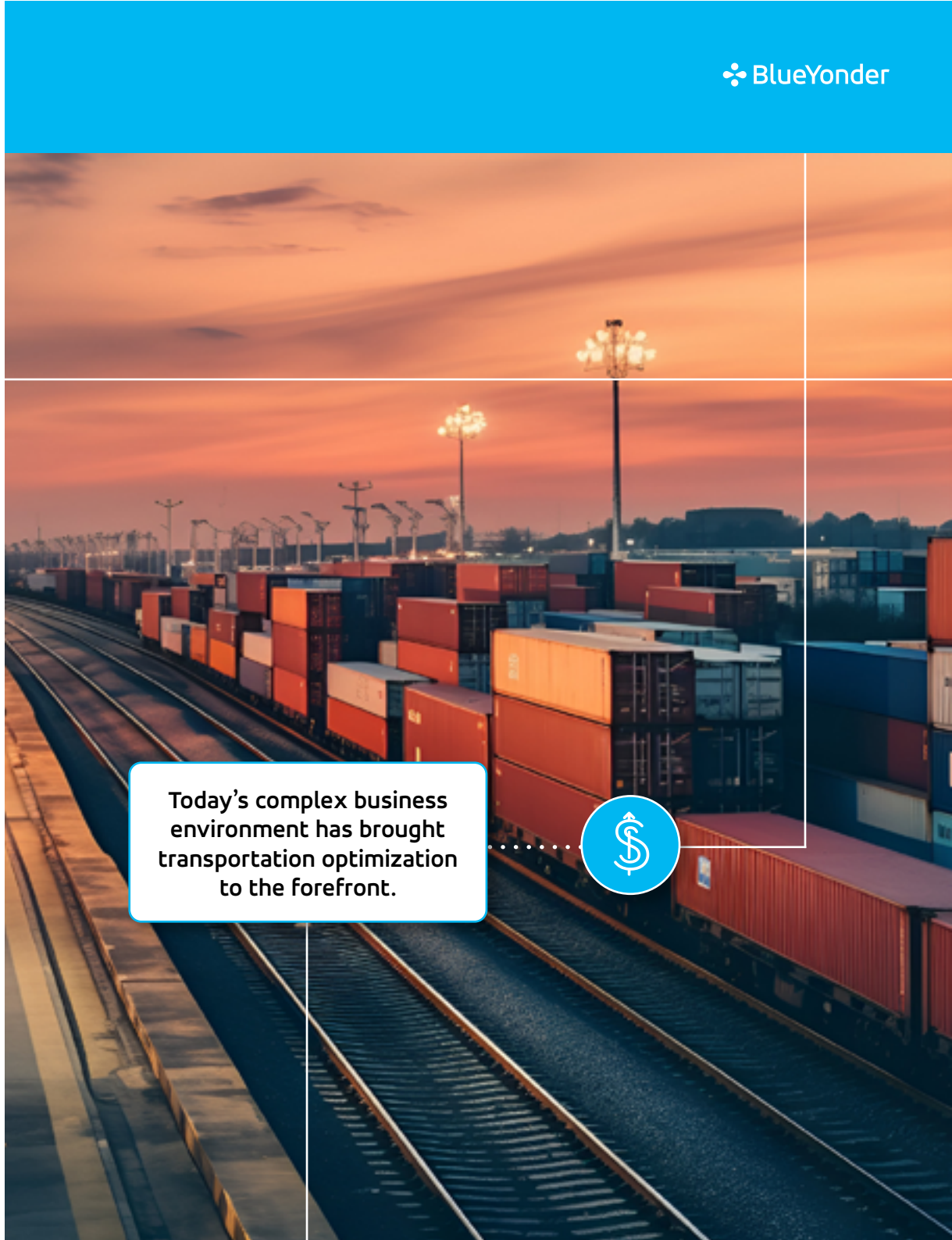
An advanced transportation management system provides a competitive edge by maximizing your profitability, service and sustainability outcomes. This buyer's guide will help you choose the right one.

Transportation Management: A Challenge and an Opportunity

Have the world's transportation management teams ever faced greater challenges? It's certainly hard to imagine.

Customers expect rapid, low-cost shipping, no matter where they're located, or where products are located despite the rising costs of fuel, labor and other resources threatening profit margins. Disruptions have become commonplace, from sudden demand shifts to blocked shipping routes. And sustainability pressures are increasing, driven by both government regulators and environmentally conscious consumers.

From the first mile to the last, threats and risks abound — but so do opportunities. Transportation might be the single greatest cost center in the supply chain, but it can also be the single greatest competitive differentiator.



Today's complex business environment has brought transportation optimization to the forefront.



Enter Advanced Transportation Management Systems

Given the complexity of today's challenges, and the complexity of modern transportation networks, it's impossible to optimize transportation using manual processes and legacy systems.

Powered by artificial intelligence (AI), machine learning (ML), optimization engines, automation, and predictive analytics, today's TMS solutions help companies make smart, profitable decisions amid the chaos. They monitor conditions across the end-to-end transportation network, ingest real-time data, perform analysis, weigh trade-offs, and determine an optimal course of action — one that balances cost, service, sustainability and other factors.

By leveraging robotics, camera systems and other innovations, TMS solutions streamline and automate everyday processes — driving higher service levels while minimizing costs, labor requirements and environmental impacts. Best of all? They work 24-7 to identify and resolve issues in microseconds, often without human intervention.



The worldwide TMS market is growing at **14.8%** annually and is expected to reach **\$31.18 billion** by 2030.

Source: Grand View Research

What Exactly Is a Transportation Management System?

**Everyone uses the term TMS.
But what exactly does a TMS do?**

Simply put, a TMS is software that manages and often automates many processes associated with moving goods. A TMS allows logistics teams to see and manage, in real time, what's happening at every node.

By gathering and analyzing data, a TMS identifies problems, as well as continuously improves service and cost outcomes.

The most advanced TMS solutions today are designed to:

- » Enable real-time visibility, a unified data model and a single, shared perspective on all transportation activities
- » Merge transportation planning and execution by detecting anomalies, performing analysis and immediately resolving them
- » Capitalize on leading-edge AI, ML, optimization engines, and decision automation to plan and replan continuously

Use This Checklist To Ensure Your TMS Has the Right Capabilities

In choosing the right TMS, it's important to look for a vendor with hundreds of customer implementations, a track record of success, industry recognition, and aggressive R&D investments.

In terms of software functionality, here are four “**must have**” capabilities that every TMS should include:

- » **Advanced transportation planning**
- » **Integrated transportation execution**
- » **Optimized transportation procurement**
- » **Intelligent load building**

And here are two “**would be nice to have**” capabilities that increase your return on investment:

- » **Transportation modeling**
- » **Digital carrier network management**

Think of it this way: Your success depends on optimizing your entire transportation management function, from the first mile to the last. The more ground your TMS covers, the easier it is to achieve that, at a minimal investment of time, money and other resources.



The Right Capabilities

Advanced Transportation Planning

Top-tier TMS solutions plan based on key factors such as cost, sustainability and service requirements by gathering and analyzing real-time information from suppliers, factories, distributors, retailers, and customers — as well as third-party data such as news, events and weather.

This analysis, enabled by AI and ML, supports dynamic pre-planning and equally important re-planning when the unexpected occurs. In most cases, the advanced transportation planning engine should deliver an autonomous response that optimally balances cost, service, sustainability, and other priorities. For more complex scenarios, key stakeholders should collaborate on a resolution.

Interoperability is a key consideration. The transportation planning engine should work seamlessly in real time with the transportation execution capability, the warehouse management system, specialized tools, and third-party systems. This tight integration and interoperability create end-to-end exception visualization and prioritization, enabling seamless orchestration of the entire transportation network in driving a resolution.

Advanced transportation planning is an end-to-end, highly scalable solution that covers regional and global processes, both inbound and outbound, integrated fleet and common carrier planning, and dynamic intercontinental planning.



The Right Capabilities

Integrated Transportation Execution

A TMS should be designed to deliver significant cost, service and sustainability improvements by optimizing routing, mode selection, container capacities, and asset utilization based not only on the original plan, but on evolving conditions.

By streamlining and automating daily processes and workflows based on real-time visibility, execution engines take the entire transportation function to a new level of automation, efficiency and productivity.

As they digitalize transportation execution, companies gain critical awareness of the status of all orders and shipments. Via predictive analytics, the TMS not only reveals problems in advance — before important customer relationships are impacted — but also recommends the best possible outcome that balances multiple objectives.

A best-in-class TMS ensures that daily execution is tightly linked to dynamic replanning capabilities as conditions change. By integrating planning and execution, logistics teams minimize risk and maximize agility.



The Right Capabilities

Optimized Transportation Procurement

An advanced TMS provides a unified, intelligent system that companies can leverage to manage every aspect of their carrier engagements.

Enabled by AI and ML, the transportation procurement engine of the TMS should automatically consider carrier performance constraints, costs, service impacts, and other decision factors. The TMS should also support what-if procurement scenarios that enable planners to visualize the results of different execution options.

Via real-time bidding events, procurement teams can identify actual cost savings in minutes, increase real-time carrier engagement, and create a competitive bidding environment that drives down costs. By leveraging advanced TMS technology to manage the complicated process of transportation procurement, it's easy to automatically achieve the right balance of service and cost for every job.

A TMS represents a single, digital platform for collaborating in real time with a global network of carriers, to arrive at the best possible service level combined with the best possible cost.



The Right Capabilities

Intelligent Load Building

To drive down costs while increasing service levels, an advanced TMS integrates fulfillment planning with transportation planning via an intelligent load-building capability. Companies can minimize the risk of underutilized capacity on the one hand, and missed order shipments on the other.

In microseconds, TMS software considers huge volumes of data about orders and deadlines, available inventory, container sizes and types, shipment routes and destinations, and other factors — far more information than human planners can consider. Because constraints like product availability and three-dimensional trailer space are considered during the planning phase, surprises are minimized during execution.

An optimal TMS provides visibility of load-building plans to the extended network, so carriers have a full understanding of cost and service priorities. This prevents lower-priority orders from being shipped while a critical, high-priority order is overlooked.

A TMS load-building engine, enabled by AI and ML, creates inventory-aware full truckloads and optimizes load and route building. It groups shipments based on both cost and service, considering inventory, equipment, product and packaging constraints.



The Right Capabilities

Transportation Modeling

Today's complex transportation networks are sprawling collections of distribution centers, micro-fulfillment centers, operations yards, truck fleets, and external, multimodal carrier networks that may extend halfway around the world.

To truly optimize cost and service outcomes, the TMS should be able to continuously identify in granular detail the most efficient, lowest-cost network model that will satisfy service, profitability and sustainability targets.

What-if scenario modeling capabilities are a must as organizations navigate disruptions and make real-time, fact-based decisions that keep the entire network on track.

The TMS should provide the ability to quantify savings and opportunities, continuously measure and improve performance, and prioritize the rollout of network modifications. This always-on analytic capability is essential to truly optimizing cost, service and sustainability outcomes in today's fast-moving, ever-changing logistics environment.

An AI- and ML-driven modeling engine in the TMS ingests real-time data, performs complex analysis, defines new policies and otherwise adjusts the network to reflect dynamic market conditions.



The Right Capabilities

Digital Carrier Network Management

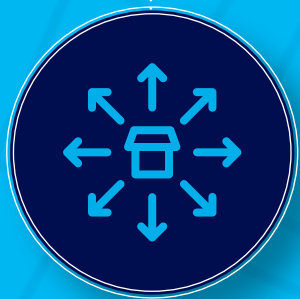
Most companies rely on external carriers to manage their global transportation activities. While these carriers are external to the supply chain, they play a central role in keeping customer promises.

Digital carrier network management ensures that all partners receive critical supply chain information in a timely, transparent manner, enabling supply chain resiliency.

One key capability for the TMS is dynamic price discovery. The TMS should provide integrated, seamless access to dynamic pricing and capacity for contract carriers. By enabling shippers and logistics service providers (LSPs) to get real-time price quotes based on market dynamics, the TMS can secure freight capacity in advance, as part of upfront planning and execution.

By optimizing the worldwide carrier network via real-time connectivity, visibility and collaboration, companies can dramatically drive down costs, increase service and minimize environmental impacts.

Digital carrier network management creates a seamless ecosystem of partners across the supply chain. Via flexible, multi-channel connectivity, the TMS supports both one-on-one and network-level communication, data sharing and workflows.



Six Steps To Help You Find the Perfect TMS for Your Needs

While the journey to finding the perfect TMS might seem overwhelming, it comes down to six simple steps.



1

Identify Your Primary Pain Points

What's led you to search for a transportation management solution? Is it:

- » Reducing excessive expediting
- » Improving on-time, in-full delivery performance?
- » Increasing profit margins?
- » Managing labor shortages via increased automation?
- » Improving sustainability?



2

Begin Your Research

To identify the leaders in the crowded TMS arena, ask these questions:

- » Why vendors are included in the Gartner Magic Quadrant for Transportation Management?
- » What companies are featured in industry news?
- » Who's hosting or speaking at conferences, webinars and other events?
- » Which software companies are investing in innovation?
- » Who is introducing new features, functionality and service models?

Historic leadership is great, but also find a partner who's also looking to the future.

3

Narrow the Field

Separate the TMS leaders from the followers by posing these questions:

- » Is the provider an active presence in the industry?
- » Have they created value for companies like yours?
- » Have they solved challenges that mirror your own?
- » Do they have customer case studies and references?

Schedule an in-person meeting. If you're still undecided, send out an RFP to a few vendors and ask pointed questions about their solutions, delivery model and interoperability with other systems.

Tip: If you are using an RFP, use one that truly meets your needs and in which the number of questions can be managed by the vendor and results managed by your team.

4

Ask For a Site Visit — and a Demo

Now that the field is narrowed, it's time to:

- » Invite your top vendor (or two) for a site visit
- » Introduce them to your team
- » Ask them for a “deep dive” demo
- » Request customer references and talk to them, making sure they understand your needs, and you understand how they'll fulfill those needs

5

Plan for the Future

Make sure the vendor will be there for you when issues inevitably arise. Transportation optimization is not an easy journey — but the rewards are well worth it.

- » Is the solution scalable?
- » Will it easily interoperate with your other systems?
- » What is a reasonable launch timeframe?
- » How will upgrades happen?
- » What services does the vendor offer?

6

Seal the Deal

**Ready to sign a contract? Congratulations!
Just make sure you fully understand:**

- » The software pricing structure
- » The implementation timeline
- » The support plan, including pricing for services

Trust the Leader in Transportation Optimization: Blue Yonder

Blue Yonder is backed by decades of experience, hundreds of successful TMS implementations and the industry's leading software portfolio. From its proven Transportation Management and Warehouse Management solutions to exciting new microservices like Load Building and Yard Management, Blue Yonder understands the challenges associated with modern logistics — and has the purpose-built solutions to answer evolving challenges.

The world of transportation management doesn't stand still. So Blue Yonder doesn't stand still. Blue Yonder is investing more than \$1 billion in R&D to ensure its solutions continue to represent the industry's most advanced, comprehensive and interoperable platform for end-to-end transportation optimization.

[Discover the difference](#)



Gartner

Blue Yonder was named a Leader in the 2024 Gartner Magic Quadrant™ for Transportation Management Systems for the 13th time in a row.^{1, 2}

Blue Yonder is one of only two evaluated companies recognized as a Leader in three Gartner Magic Quadrant reports covering Warehouse Management Systems, Transportation Management Systems, and Supply Chain Planning.³

¹Magic Quadrant for Transportation Management Systems, Brock Johns, Oscar Sanchez Duran, Carly West, Manav Jain, 27 March 2024.

²Blue Yonder was previously listed as JDA because the company rebranded in early 2020. Recognized as Red Prairie in 2010 and 2012.

³Gartner, Magic Quadrant for Warehouse Management Systems, Simon Tunstall, Dwight Klappich, Rishabh Narang, Federica Stufano, 2 May 2024; Magic Quadrant for Transportation Management Systems, Brock Johns, Oscar Sanchez Duran, Carly West, Manav Jain, 27 March 2024; Magic Quadrant for Supply Chain Planning Solutions, Pia Orup Lund, Tim Payne, Joe Graham, Caleb Thomson, Jan Snoeckx, 23 April 2024.

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