SPOTLIGHT

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Dynamic supply chains demand flexible transportation solutions that are capable of delivering cost-effective, resilient, and increasingly sustainable services.

A Composable Supply Chain Enabled by Better Transportation Management

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Introduction

Supply chains are becoming more dynamic, changing at shorter intervals, and forcing shippers to become more capable of identifying and mitigating risk while continuing to pursue efficiencies that can generate savings. This is particularly relevant for manufacturers that face a myriad of challenges as they attempt to effectively respond to shifting trade alliances, global conflicts, geopolitical unrest, uncertain macroeconomic conditions, and the prospect of climate change affecting global transportation networks.

AT A GLANCE

KEY STATS

According to IDC's research:

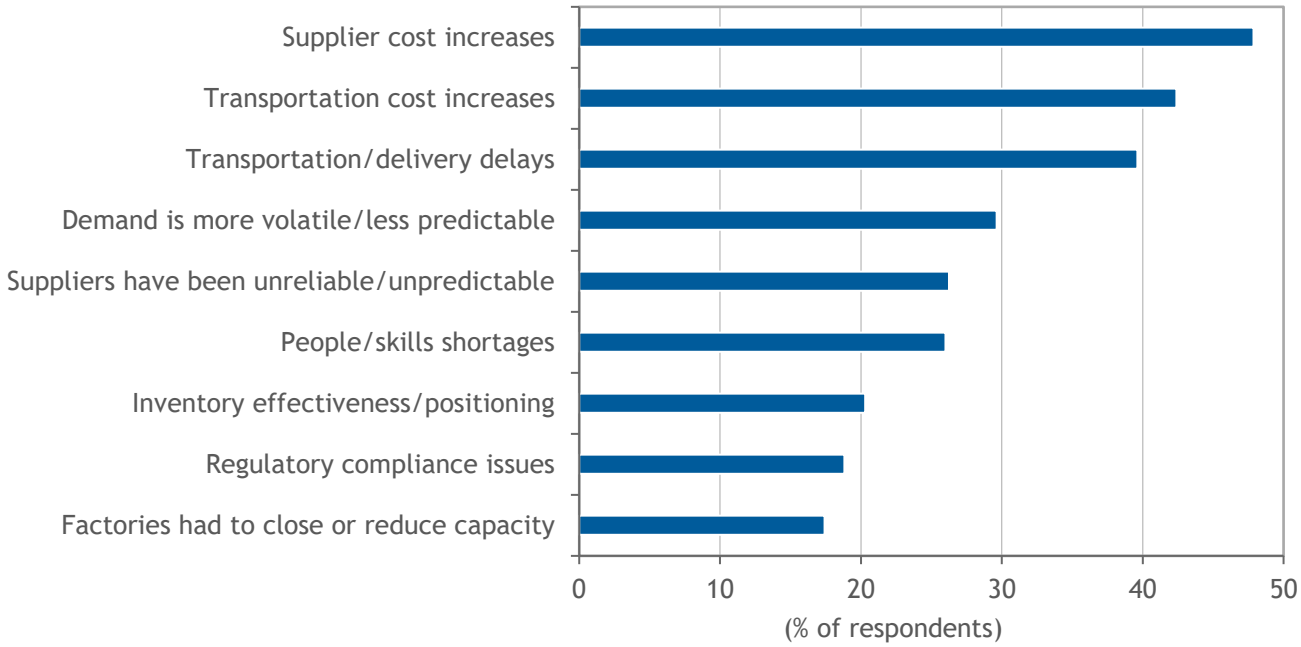
- 84% of supply chain planning still occurs in spreadsheets exchanged between teams.
- 57% of organizations currently outsource their inbound and/or outbound logistics functions or plan to do so in the next two years.

Transportation leaders face the task of reining in cost overruns that have wrecked budgets in recent years while simultaneously helping their business become more resilient to potential disruptions. Manufacturers continue to list end-to-end, real-time visibility and better management of transportation resources as the top priorities for the supply chain and understand that the most effective approach is to center these efforts around the generation and utilization of data as they pursue these initiatives.

Customer service levels suffer when comprehensive visibility is lacking and efforts to improve resilience to disruptive events are also hindered. This remains a challenge for manufacturers operating in an environment where those that act quickly have a distinct competitive advantage. The ability to take swift action improves a manufacturer's ability to secure the appropriate resources that support business continuity. When these capabilities lag, a manufacturer incurs increased transportation costs and delivery delays due to its inability to effectively mitigate supply chain challenges. The business strains as the organization's efforts fall short of expectations (see Figure 1).

FIGURE 1: ***The Impact of Disruption***

Q *How have global or regional disruptions impacted your supply chain in the past 12 months?*



n = 672

Source: IDC's Global Supply Chain Survey, 2024

Manufacturers confront additional challenges as their supply chains — which evolved to their current state over decades — become less static. With changes coming at shorter intervals and with greater magnitude, efforts to deliver predictable and cost-effective transportation services face further complications. Striving to become nimble in the face of these factors requires flexible and adaptable transportation solutions, supporting efforts to react swiftly in increasingly dynamic environments by effectively addressing challenges as they arise. Finally, supply chain shifts are also the result of manufacturers that continue to diversify their material procurement footprints while exploring opportunities for nearshoring or reshoring production to get products closer to their customers and the point of consumption.

As these new dynamic supply chains materialize, logistics teams need the appropriate digital tools to help them adapt and support these evolutions by cultivating and dispensing supply chain intelligence. Generating a single source of truth from which teams can operate enables collaboration with logistics partners. Teams can understand and address challenges transparently as they work together to effectively balance the push for improved resilience with efforts to generate efficiencies that help to control or reduce costs.

Despite the need to make fully informed decisions faster, manual processes continue to plague supply chain teams, inhibiting their ability to effectively manage the dynamics of transportation operations. According to IDC's 2024 *Global Supply Chain Survey,* 84% of supply chain planning still occurs in spreadsheets exchanged between teams. This lack of digital maturity is rampant across the transportation and logistics industry. Manual processes that are slow, tedious, and prone to human error absorb the time and energies of supply chain practitioners. This exacerbates a persistent shortage of talent across supply chain teams, most notably among planners and schedulers. Instead of focusing on tasks to deliver increased value from within the supply chain, they are forced to use their expertise to facilitate routine daily operational decisions and firefight problems when the unanticipated occurs.

Advanced transportation management systems can facilitate efforts to improve management of well-defined processes such as multimodal transportation planning, fleet management, transportation sourcing and procurement functions, contract review, generation, maintenance, and freight, audit, and pay functions. Utilizing technology to streamline these efforts makes teams more effective by improving operational decisions, more consistently aligning them with broader supply chain strategies, and enabling collaboration between supply chain partners to enhance the impact that transportation and logistics activities can deliver for manufacturers.

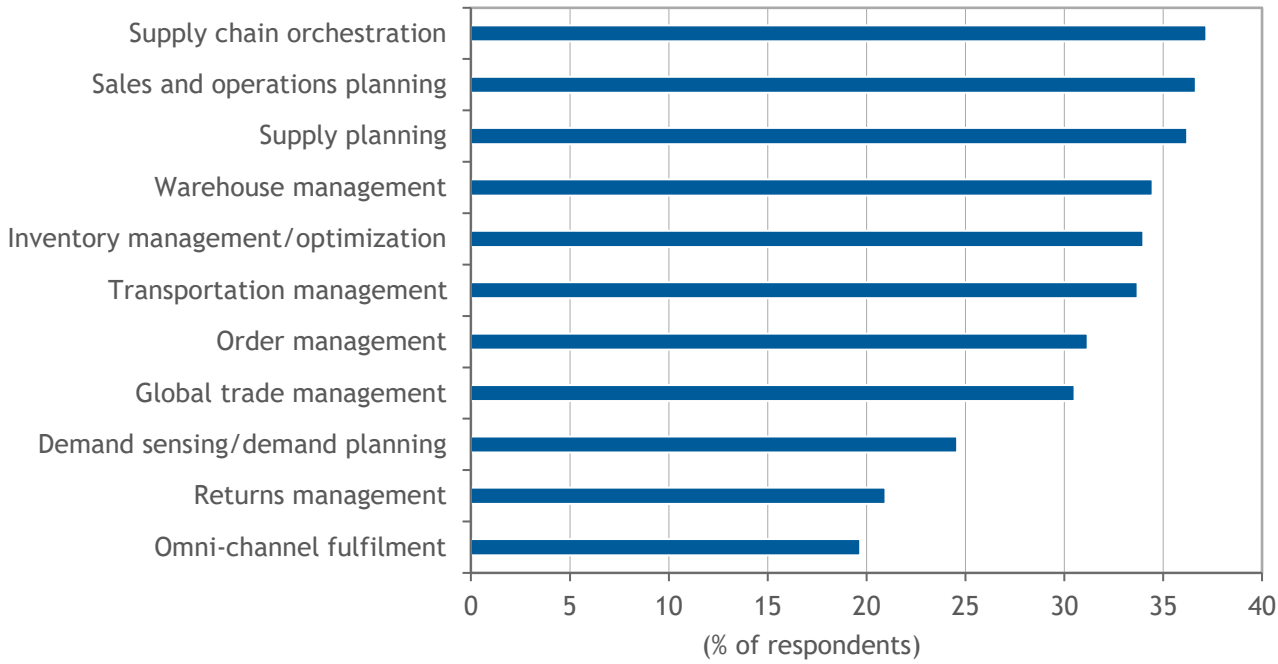
Supply Chain Composability/Holistic Transportation Management

As more organizations turn to outsourcing transportation and logistics, the importance of interorganizational collaboration is increasing. According to IDC's 2024 *Global Supply Chain Survey,* 57% of organizations currently outsource their inbound and/or outbound logistics functions or plan to do so in the next two years. As these types of strategies proliferate, bringing organizations together around a common set of facts fosters success in an environment reliant on transparency across business functions and between organizations.

When IDC polled business leaders about which areas can benefit the most from a composable approach, the top response was supply chain orchestration (see Figure 2). Transportation operations need to become more tightly integrated into the supply chain and to the business as a whole. This means operating from a common, shared set of data that allows teams to improve the deployment of owned and operated assets alongside transportation and logistics services procured from third-party providers.

FIGURE 2: ***The Benefits of Supply Chain Composability***

Q ***Which supply chain areas/processes do you think can most benefit from a composable approach?***



n = 672

Source: IDC's Global Supply Chain Survey, 2024

Accurate, low-latency data from assets dispersed across multiple geographies allows teams to pursue their cost and resilience initiatives in tandem, helping organizations on their journey toward predictable, low-cost transportation solutions. Once achieved, the supply chain becomes more customer centric by synchronizing efforts and supporting business continuity, improving the value proposition of transportation teams. They become a trusted partner from within the organization and a key element toward solidifying the supply chain by allowing goods to flow seamlessly between manufacturers, their suppliers, and their end customers.

Benefits

Customizable functionality across a transportation management system allows manufacturers to integrate transportation planning and execution holistically into the supply chain to effectively address today's challenges and accommodate future needs. Aligning supply chain partners through a single source of truth provides an objective stance against which interorganizational teams can establish baselines and metrics for the evaluation of improvements. Achieving composability across the supply chain delivers a range of benefits including the following:

- **Supply chain insights:** You can't improve what you can't measure, and you can't measure what you can't see. Working from a foundation of clean, relevant, and timely data, AI/machine learning (ML) capabilities allow for fast, accurate, and consistent decision-making that can drive maximum impact into the operational setting. Interconnected systems across business functions and between organizations allow supply chain partners to see and evaluate operations through the same lens, aligning teams to the realities on the ground by establishing a common view from which baselines can be established and improvements can be measured.

  As teams begin to understand trade-offs in a real-time environment, transportation and logistics become increasingly nimble in the face of constantly changing conditions. Teams become more effective under pressure and possess the knowledge that can help them swiftly sidestep or avoid problematic situations with predictive and prescriptive analytical capabilities. Speeding insights into the hands of operational personnel delivers value into an environment where the windows to impact operations can be quite small. Those capable of acting quickly are more likely to capitalize on opportunities that they might otherwise miss when data latency or manual processes slow down the decision-making process.

- **Productivity gains:** Attracting and retaining the right talent in the supply chain — particularly the planners and schedulers who are at the heart of transportation operations — continue to be significant challenges for manufacturers. Automating well-documented processes — such as shipment planning and monitoring, documentation generation, and financial planning and analysis, as well as freight audit and pay functions — enhances the user experience by removing cumbersome, error-prone tasks while improving the speed and accuracy of these processes.

  This frees supply chain practitioners to focus their time and energies on value-added tasks where their experience, intuition, and skill sets can drive value into the supply chain. As nagging repetitive tasks decline, job satisfaction typically improves and helps organizations to significantly reduce workforce attrition, which is a drag on productivity.

- **Stronger collaborative partnerships:** Effectively executing the supply chain is a team effort that requires extensive coordination to synchronize efforts to the greatest extent possible. Digital tools bring teams closer, providing increased transparency that allows partners to work toward common goals. Closing information gaps allows teams to understand the implications for other parts of the supply chain as they make decisions. With clearly defined goals in place, improved communication and understanding of these trade-offs strengthens partnerships, creating an environment where win-win scenarios become the rule rather than the exception.

- **Business impact:** More accurate, timely, and comprehensive decisions allow teams to work with speed and the confidence that their efforts are effective and aligned with the efforts of various stakeholders in the supply chain. Results-driven, value-oriented work helps teams eliminate waste and generate efficiencies that align with the organizational strategy to effectively balance efficiency, resilience, and sustainability. Augmenting supply chain practitioners' capabilities creates an empowered workforce, capable of driving maximum impact as a fully integrated, cohesive unit.

Enabled with digital tools that bring cohesiveness across the logistics landscape, the supply chain begins to think and act as one. Teams become capable of making decisions with full consideration of their impact and practitioners become empowered with the tools and intelligence that drive a competitive edge from within the supply chain, delivering immense value for manufacturers.

Augmenting thinly stretched resources helps organizations to unlock the potential that exists within their teams by relieving them of tedious and cumbersome tasks that are a drain on productivity. Operational teams begin to work cohesively to manage transportation and logistics activities through a data-driven approach, driving maximum impact through customized insight generation while helping teams to become more productive and engaged along the way.

Manufacturers continue to list end-to-end, real-time visibility and better management of transportation resources as the top priorities for the supply chain.

Considering Oracle/TCS

Oracle Fusion Cloud Transportation Management provides a single platform for companies to manage all transportation activity throughout their supply chains. The solution allows companies to minimize cost, optimize service levels, and create flexible business process automation within their global transportation and logistics networks. It provides robust operational planning, fleet management, and logistics network modeling features. It is equipped with digital assistants to receive and respond to inquiries instantly and resolve issues faster to provide better customer service. Embedded machine learning helps to predict transit times accurately, eliminate excess inventory, and allocate resources efficiently.

Tata Consulting Services (TCS) has been one of Oracle's strategic partners for more than three decades. TCS offers solutions tailored to both industry and business processes, including consulting, implementation, and managed services, helping businesses to modernize and drive value.

TCS Crystallus for Manufacturing brings together the firm's industry domain expertise with the best-in-class Oracle Cloud platform to help organizations chart a path toward business process transformation, technology integration, and business value realization. TCS' Crystallus Logistics Transformation offering based on Oracle Fusion Cloud Transportation Management in TCS Crystallus Lab is configured for industry-specific proof-of-concept demonstration and business process models for end-to-end freight management processes. TCS provides consulting, implementation, and support services for operations management, rate/contract management, freight settlement, fleet management, and transportation intelligence for both on-premises and cloud versions of Oracle Transportation Management. TCS Oracle Transportation Management experts help organizations integrate Oracle Transportation Management with different ERP business applications like Oracle EBS, SAP, QAD, and JDE and migrate from on premises to cloud.

The TCS Crystallus OTM rate tool is a cloud-hosted accelerator for rate upload integrated with Oracle Fusion Cloud Transportation Management through web services and REST API. It provides a quick, efficient, and user-friendly solution for managing rate data that contains the logistic service provider's inbound and outbound rates for all the lanes of different transport modes.

In addition, TCS Crystallus for Manufacturing offers a set of preconfigured models tailored to meet specific industry needs. The offering combines TCS' domain expertise, contextual knowledge, and industry best practices with ready-to-use Oracle Cloud applications for faster Oracle Fusion Cloud Transportation Management implementations.

TCS brings the right combination of domain experts, solution architects, and technical subject matter experts to help ensure Oracle Fusion Cloud Transportation Management engagement success. The TCS-provided case studies claim the following benefits:

- Working with a nature-based ingredient solutions company that engages with food, beverage, consumer, and industrial product manufacturers worldwide, TCS implemented Oracle Fusion Cloud Transportation Management to provide visibility into the company's day-to-day logistics and transportation operations and ensure timely delivery of freight and goods including freight payment. The TCS Oracle Transportation Management Rate Upload Tool was leveraged during this implementation for faster rate data upload in Oracle Fusion Cloud Transportation Management.
- TCS has been engaged as a Global Oracle Fusion Cloud Transportation Management implementation and support partner for a Danish multinational engineering company. Business benefits delivered include transparent shipment visibility, enabling the sales, procurement, and logistics teams with a holistic overview of sales orders and corresponding purchase orders.
- A United States–based diversified industrial manufacturing company engaged TCS as its implementation and support partner for Oracle Transportation Management. TCS implemented the inbound logistics offering on Oracle Transportation Management for the company's North America operations, providing the organization with increased planning control and visibility into inbound shipments as well as improving the customer experience and user productivity.

Challenges

A key deliverable that manufacturers look for in providers of software for transportation management systems such as Oracle is the ability to quickly and easily expand their exposure to market offerings. Optimizing fleet performance remains critically important; understanding how to most effectively deploy owned and operated resources in conjunction with services available through third parties is equally important. Transportation management system providers must provide access to a robust partner network that enhances manufacturers' efforts in this regard by enabling seamless vendor discovery, evaluation, and contracting, allowing transportation and logistics teams to uncover opportunities or potential partnerships that they would otherwise miss.

Any systems implemented to accomplish these tasks must be capable of synchronizing a variety of data flows between logistics partners. Data forms the foundation from which teams establish baselines for service improvement projects and from which supply chain intelligence can be generated. Aggregating, processing, and cultivating insights from disparate sources in real time between multiple organizations and across global dispersed assets is a significant challenge. Transportation management systems must be fully capable of synchronizing data through seamless integrations or commonly available APIs to holistically integrate logistics operations with the supply chain in a dynamic, real-world environment.

Last, manufacturers look to transportation management for actionable intelligence that delivers business value from within the supply chain. Pragmatically addressing the challenges that exist by allowing teams to act with speed,

consistency, and accuracy makes transportation more nimble, capable of swiftly reacting when the unforeseen occurs — or ideally becoming capable of proactively addressing risks by developing predictive and prescriptive capabilities. In either case, generating and activating insights in this fast-moving, global environment requires low-latency, high-quality data.

Conclusion

Enabled by the proliferation of IoT devices, the reliability of high-speed data transmission networks, and the extensibility of the cloud, transportation management is more readily transformed into a strategic competitive advantage rather than the support function it is traditionally viewed as. The costs have become too high and the implications too significant to continue operating with disconnected systems and antiquated technologies that delay response time and lead to missed opportunities.

Customized configurations to meet an organization's business needs can be derived by working with the right integration partner. Quick, simplified, and focused integrations that help to address specific business needs lead to successful digital partnerships. Transportation teams must remain pragmatically focused on solving particular business problems, most of which require increased visibility paired with improved planning and agility to achieve the intended results. The right intelligence pipeline can help teams optimize and balance the inherent risks across global transportation networks.

Prioritizing digital transformation across this environment allows teams to break out of siloed decision-making by creating a better understanding of the trade-offs that exist between execution and planning — and the implications on other areas of the business. Integrating transportation management holistically into the supply chain enables supply chain composability. Teams become more inclusive of the considerations, motivations, and outcomes of the business partners that they rely on for continued success. Everyone can now operate from the same playbook and begin pulling in the same direction, leading to better outcomes and fewer missed opportunities.

About the Analyst

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Travis Eide is the research director of the IDC Worldwide Supply Chain Strategies Program, responsible for providing research, analysis, and guidance on key business and IT issues pertaining to manufacturing, retail, and healthcare supply chains. He currently leads the Worldwide Supply Chain Strategies: Transportation, Logistics, and Global Trade Management practice, providing fact-based research, analysis, and insight on best practices and the use of information technology to assist clients in improving their capabilities in these critical supply chain fulfillment areas.

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TCS is an IT services, consulting, and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for over 56 years. TCS has over 601,000 of the world's best-trained consultants in 55 countries and generated revenues of US $29 billion (FY 2024).

TCS' Manufacturing Oracle Practice offers deep domain expertise in the Transportation Management value chain coupled with strong proficiency on Oracle Transportation Management platform On Prem and Cloud, providing customers with end-to-end capabilities across advisory, consulting, implementation, migration, support, and managed services. The TCS Crystallus for Manufacturing logistics solution framework includes business process models for complete freight management processes mapped to Oracle Fusion Cloud Transportation Management, along with industry-specific proof of concepts and preconfigured demos. TCS helps manufacturers with comprehensive Transportation Management solutions that optimize freight costs, enhance service level and load utilization, and enable rapid Cloud adoption.

IDC Custom Solutions

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