



From Start to Finish: Harnessing the Power of End-to-End Visibility in Logistics



As consumers, we often take the journey of our purchases for granted, rarely pausing to think about the intricate process that ensures our morning coffee beans arrive fresh or how our online orders miraculously show up in a matter of days—and sometimes hours. Behind that efficiency lies a story of technology, innovation, and a relentless quest for transparency in logistics. Vast networks connect us, moving essential goods from remote corners of the globe straight to our doorsteps. The secret weapon keeping these global supply chains humming?

A concept called end-to-end visibility.

End-to-end visibility is a transformative approach that allows businesses to monitor every phase of a product's journey. It boosts efficiency, proactively addresses potential issues, and ensures timely, accurate order fulfillment. Yet, implementing it comes with challenges; if it were easy, everyone would do it, especially in this age where even the slightest delay can send ripples throughout your supply chain.

Let's unpack this further.

The Current Logistics & Supply Chain Landscape

In an era of technological innovation and shifting consumer behaviors, the logistics and supply chain sectors stand at a crossroads. Today's supply chains are sophisticated networks—a testament to centuries of development, influenced heavily by technological advancements, e-commerce dynamics, and a growing environmental consciousness.



Evolution & Modernization of Logistics & Supply Chains

From the rudimentary local supply chains of the pre-1900s to the global interconnections we see today, **logistics has always been pivotal**. The 20th century saw leaps with the advent of trucks and the introduction of intermodal shipping containers. Yet, the recent decades, marked by relentless technological advancements, have truly redefined the terrain. Modern supply chains aren't just functional systems anymore; they're agile, reliable digital networks. Spearheaded by innovations including API integrations and AI, these networks provide end-to-end visibility—ensuring seamless operations in an interconnected global marketplace.





The E-Commerce Surge & Its Influence on Logistics

E-commerce has witnessed a **significant spike in recent years**. With 20.8% of retail sales expected to occur online this year and 24% by 2026, this surge profoundly reshapes logistics in various ways.



Changing Customer Expectations

One to two-day deliveries have become the norm, **pushing logistics companies to adapt rapidly**.



Focus on Last-Mile Delivery

Independent freight forwarders are enhancing their last-mile delivery services to remain competitive.



Air Freight Dominance

The e-commerce boom has increased reliance on air freight.



Reverse Logistics Emphasis

The nature of online shopping has necessitated more efficient return and exchange processes.



Logistics Outsourcing

Many ecommerce companies now outsource logistics to ensure **timely and effective order fulfillment**.





Sustainability: The Green Wave in Logistics

The logistics and supply chain sectors are major contributors to global emissions, accounting for a third of energy consumption and **greenhouse gas outputs**. However, as awareness grows, there's a definitive shift towards greener operations. A recent study from IBM indicated that 93% of global respondents felt the pandemic influenced their **sustainability views**. Moreover, 67% of consumers now prefer recyclable packaging. An impressive 34% are willing to pay more for sustainable products. Yet it's not just ethical—it saves money too. For instance, since adopting eco-friendly practices, Staples has **saved roughly \$3 million** annually on fuel.

What is End-to-End Visibility?

In a world valuing precision, speed, and reliability, a **McKinsey & Company report** from August 2022 found that 67% of survey respondents use digital dashboards for end-to-end supply chain visibility. Looking into its components and importance may explain why. What exactly is it in the first place?



Definition & Significance

End-to-end visibility refers to the ability of all supply chain stakeholders to access and view real-time data and insights about the status and location of their products—from source to final destination. This transparent view becomes vital in modern supply chains for various reasons. Firstly, it provides businesses with timely and accurate information, allowing them to make informed decisions, optimize operations, and forecast demand more effectively. Additionally, such a holistic perspective aids in identifying potential disruptions or inefficiencies, thereby reducing vulnerabilities. When every player in the supply chain can see the entire picture, it minimizes surprises and enables stakeholders to deploy proactive solutions to minimize excursions.





Components of End-to-End Visibility

At the heart of visibility are three main components:

1



Shipping Modes

These include all forms of transportation used to move products, be it via ocean, rail, road, or air. Awareness of each mode's current status and performance metrics is essential to understanding potential delays or inefficiencies.

2



Nodes in the Supply Chain

Nodes are the tangible and intangible touchpoints where goods transition—such as warehouses, distribution centers, retail outlets, or digital platforms. Visibility into these nodes ensures optimal inventory management, as well as the efficient storage and movement of goods.

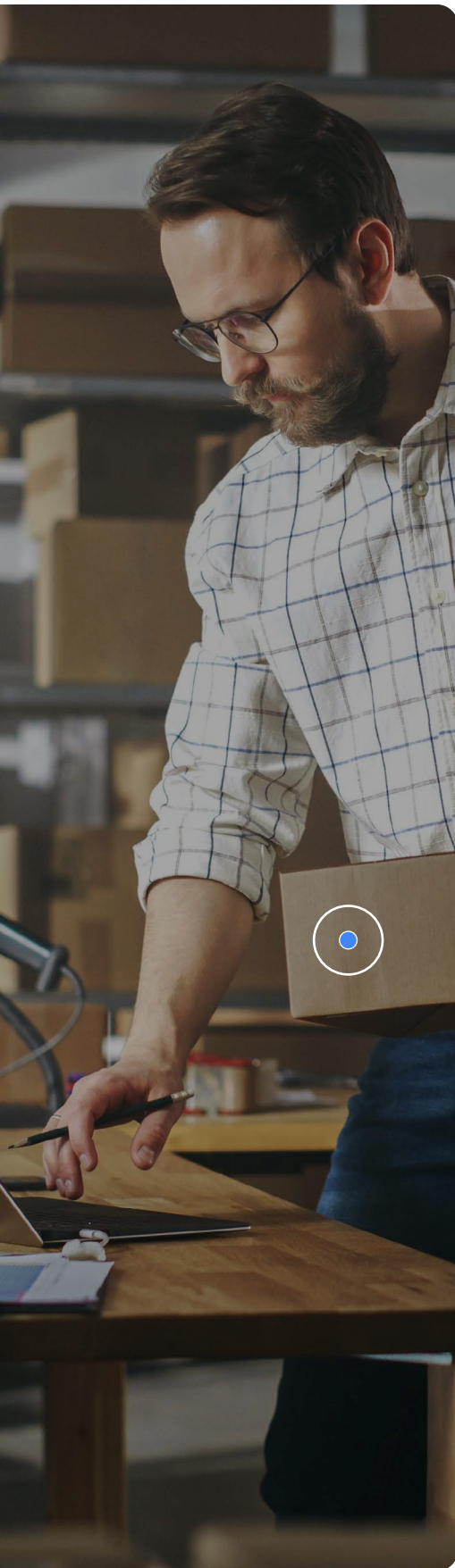
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The Transitional Phases

The stages in between are just as vital as the nodes themselves. These phases can involve processes such as customs clearances, quality checks, or inventory restocking. Monitoring these transitional elements ensures no unexpected hiccups or hold-ups that might disrupt the flow of goods.





Challenges to Achieving End-to-End Visibility

Achieving end-to-end supply chain visibility is like finding the Holy Grail. Yet, it's startling how elusive this goal remains despite this era's technological advancements. Diving deeper into the intricacies faced by various stakeholders paints a clearer picture of the roadblocks.



Challenges Faced by Logistics Technology Providers

The world of logistics technology is changing at a dizzying pace, posing formidable challenges for technology providers. What's the biggest challenge? Integrating various modes and nodes into a unified system. An increasing number of businesses recognize the benefits of end-to-end visibility. However, incorporating these platforms is no small feat amidst an ever-shifting tech environment. This challenge becomes more pronounced when considering that only **6% of businesses** report having end-to-end supply chain visibility. Furthermore, cybersecurity hampers the quest for this visibility, as data has become a prized target for cybercriminals.



Challenges Faced by Shippers

For shippers, cargo security tops the list of concerns of achieving end-to-end visibility to navigate the vulnerabilities in the supply chain—especially as **Peak Season 2023** approaches. The FBI's data on cargo theft, which reportedly costs companies a staggering **\$15-\$30 billion** annually in the U.S., is hard to ignore. Further emphasizing this concern is the recent **41% surge in cargo theft** and related fraud in the first 20 weeks of 2023. Then there's the "strategic theft:" a sophisticated form of crime that saw a jaw-dropping **600% increase YoY** at the start of 2023. However, the consequences of cargo theft reverberate far beyond monetary loss; it's the erosion of trust, the tarnishing of brand reputation, and the disruption of business continuity that concerns shippers just as much.





Challenges Faced by Carriers

Carriers, too, have their share of battles. The well-being and status of freight, coordinating among different transport modes, and ubiquitous supply chain disruptions—like the ones that impacted **94% of Fortune 1000** companies during the pandemic—remain front and center.

Carriers are also facing the impacts of a **freight recession** in 2023: a sharp decrease in the movement of goods has driven down demand for freight, creating excess capacity. This decrease in demand has put an operational and economic strain on carriers and created the need to minimize costs and protect razor-thin margins. Increasing transportation costs, primarily influenced by geopolitical events and difficult-to-navigate fluctuations in capacity, further add to their woes. The ongoing quest for improving agility, diversifying routes, and strengthening resilience against disruptions keeps carriers on their toes.

Benefits of End-to-End Visibility in the Supply Chain

The promise of end-to-end supply chain visibility isn't just a buzzword; it's a game-changer. In a world where real-time data drives decisions and security concerns loom large, gaining a comprehensive view of the supply chain offers unparalleled advantages.



Operational Efficiency

Embracing end-to-end visibility elevates operational efficiency. By implementing real-time monitoring, businesses can make swift, informed decisions—dynamically adjusting to changing situations. This benefit simultaneously streamlines routes for timely deliveries and supercharges intermodal shipping operations. Moreover, seamlessly integrating multiple transport modes under one visibility umbrella ensures the appropriate allocation of resources, reducing lags and promoting smoother logistics operations.





Security & Safety

Real-time visibility serves as a **primary defense** against the widespread issue of cargo theft. Utilizing tools like geofencing—illustrated by an incident where a vigilant electronics **shipper employed it** on a Mexican freeway—businesses can anticipate and prevent theft. These tools include unique **sensors**, location **tracking**, and light exposure alerts which signal unauthorized container openings. Such advanced monitoring not only deters theft but also identifies internal inconsistencies, such as when carriers take unscheduled detours. By adopting these real-time monitoring tools, supply chains can protect against immediate threats and bolster their resilience against unexpected disruptions—ensuring long-term integrity and trust.

End-to-End Visibility Related to Freight Condition

Beyond simply knowing **where** a shipment is, businesses now prioritize **how** a shipment is—its state, temperature, possible damages, and more. End-to-end supply chain visibility offers this comprehensive lens, shining a light on the health and status of freight in transit.



The Importance of Real-Time Visibility

The integrity of a shipment's contents can make or break customer trust and brand reputation. Real-time visibility ensures that businesses can function without being blindfolded. With advancements in technology, monitoring freight conditions goes beyond periodic checks. Trackers equipped with **advanced sensors** provide instantaneous updates. Whether it's ensuring that a **batch of pharmaceuticals** maintains its required cold chain temperature or that delicate electronics aren't subjected to **harmful conditions**, real-time visibility is a guardian.





Applications in Cross-Border Freight Operations

Cross-border shipping demands meticulous monitoring of the freight's condition due to its myriad challenges. Diverse climates, terrains, and regulatory environments only scratch the surface. However, end-to-end visibility ensures that as freight traverses multiple borders, its condition remains consistent and pristine. **Real-time tracking** serves as a crucial protective layer to facilitate this consistency.



Applications for Carrier Diversification & Resilience Building

In today's interconnected world, there are risks when businesses rely too heavily on a single route or carrier. Yet, while **diversifying carriers** and routes can buffer against unexpected disruptions, it also introduces complexity. That's where end-to-end supply chain visibility comes into play. It ties these routes and carriers together, offering a unified view. By merging insights from different carriers and pathways, businesses can pinpoint potential challenges early on, strengthening the entire logistics network—and ensuring it remains resilient and adaptable.

The Status of Supply Chain, Logistics, & Transportation Management with End-to-End Visibility in Place

End-to-end supply chain visibility has emerged as a transformative tool, revolutionizing logistics and transportation management. Its capability to unveil layers of efficiency and optimization—once shrouded in obscurity—has completely changed how we operate.





Impact on Logistics

The logistics sector, often likened to a massive puzzle with countless moving parts, reaps profound benefits from end-to-end visibility. Continuously overseeing the entire supply chain simplifies operations, helps minimize bottlenecks, and promotes real-time response. Simultaneously, this overarching perspective helps companies detect inefficiencies that lead to excess emissions or waste. By addressing these, organizations don't just save money; they contribute to a greener, more sustainable world.



Transportation Management

End-to-end visibility provides a game-changing coordination level in transportation management. Seamlessly integrating different modes of transport—from air and ocean to rail and road—becomes a tangible reality. Furthermore, the unpredictability of transportation, riddled with unforeseen challenges, necessitates adaptability. With real-time insights from end-to-end visibility, it's possible to adjust transportation strategies on the fly. Whether a storm threatens a shipping route or road closures disrupt deliveries, quick decisions—backed by accurate data—make all the difference and keep the wheels of commerce turning.

A Narrative: The Journey of Cargo & the Role of End-to-End Visibility & Trackers

Shipping cargo with little else besides intuition and hope was once the norm. Thanks to end-to-end supply chain visibility, what was once a game of chance has evolved into a precision-guided journey. Let's take a hypothetical case of a **produce shipment** and explore the role of end-to-end visibility and trackers.





Before the Journey

Amidst the fragrance of ripe apples and freshly turned soil, Jacob, a seasoned supply chain manager, strategizes for the seasonal rush. He forecasts market demand using real-time data insights, aligning his strategy to meet quality and quantity requirements. This process isn't rooted in guesswork; **it's precision planning** aided by end-to-end visibility. With this wealth of information, Jacob can select the most reliable carriers and transportation modes, ensuring the produce starts its voyage under the best conditions possible.



During the Journey

Now in transit, the responsibility doesn't diminish—it simply shifts. Real-time monitoring becomes Jacob's eyes and ears, allowing him to virtually "ride along" with each crate. The system is designed to both send and receive real-time alerts. If any deviations or potential risks are detected, an alert is immediately sent to Jacob, allowing him to respond or adjust as needed. Every temperature change in the cargo—and every hint of potential harm—is instantly captured and communicated via these real-time alerts.

Trackers, crucial at this stage, serve a dual purpose:

- Ensure the cargo remains in optimal conditions
- Protect against delays, spoilage, and mishaps

They are the silent guardians ensuring not only the safety but also the freshness of the produce.



After the Journey

Jacob shifts from monitoring to reflection once the produce arrives intact at its final destination. He unpacks the granular details, analyzing data from the recent shipment. Were there delays? Were cargo conditions consistent? These post-journey insights become the bedrock for future strategy development. Each dataset, coupled with the broader insights from end-to-end visibility, empowers Jacob to refine, adapt, and innovate for the next cycle.





Charting the Future of Supply Chain Visibility

The evolution of logistics, driven by technology and changing consumer behaviors, grapples with achieving comprehensive end-to-end supply chain visibility. As we observe a shift towards sustainable operations and confront challenges such as cargo theft, clear end-to-end visibility becomes vital for timely decisions, heightened security, and a more resilient supply chain. However, achieving this is easier said than done—the future of logistics promises both opportunities and complexities. Don't enter this new era of logistics unprepared.



Discover the tools that can make your supply chain more efficient, secure, sustainable, and, above all, transparent.

Try a demo of Tive today and see how its cutting-edge solutions can offer you the end-to-end visibility you've long desired.

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