

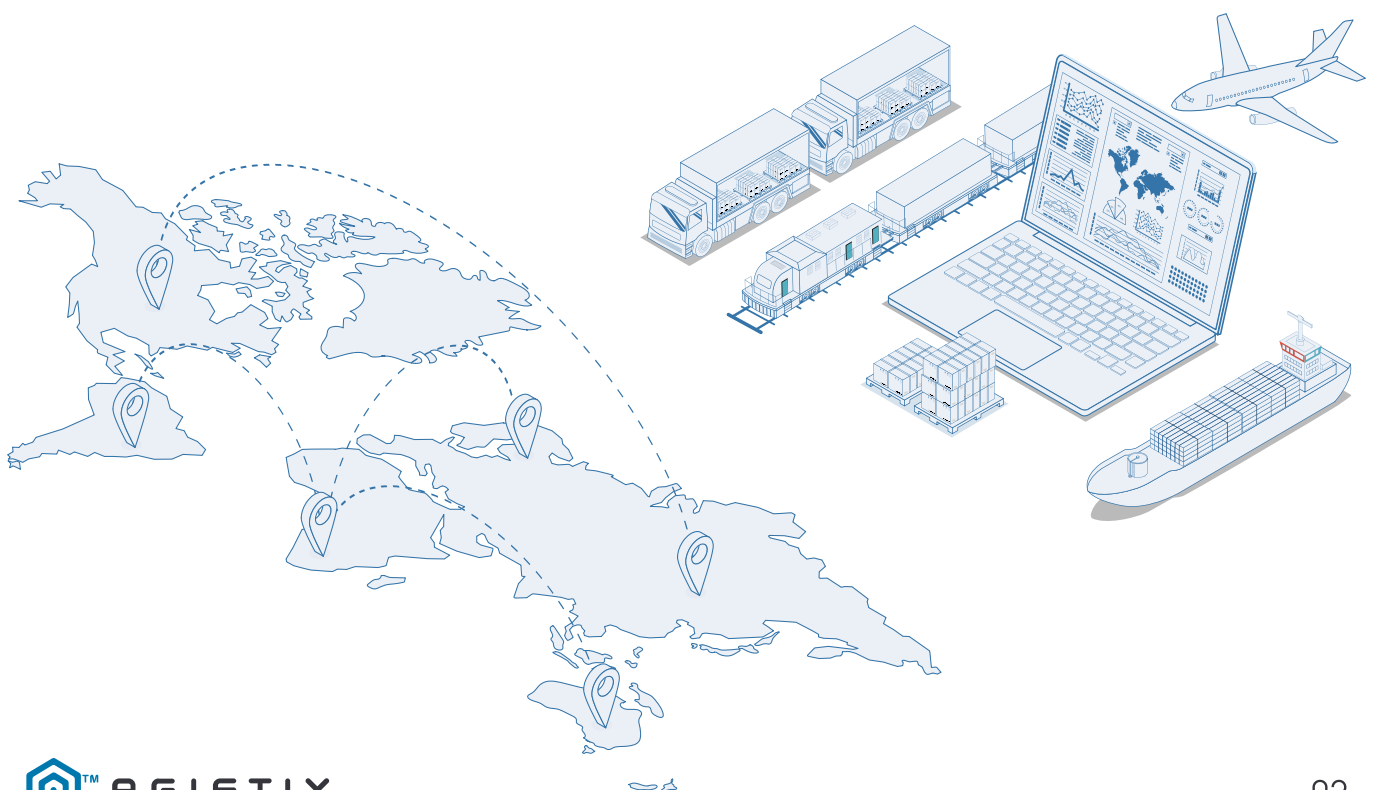


The Ultimate Buyer's Guide for Supply Chain Visibility Solutions



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Introduction

In a 2025 survey, Parabola found that over 53% of executive respondents named supply chain visibility as the top technology priority for the year ahead.

One of the industry's leading news outlets, SupplyChainBrain, reinforces this sentiment, reporting that visibility is projected to deliver substantially higher value than any other capability in 2025.

In times of ongoing disruption and economic uncertainty, gaining granular insight into supply chain transactions is critical. Supply chain visibility enables organizations to monitor and manage the flow of goods, information, and finances from procurement to delivery, thereby ensuring efficiency, resilience, and customer satisfaction.

Achieving true visibility, however, comes with its own set of challenges, including navigating data silos, disparate systems, and the complexity of global supply networks. Fortunately, numerous software solutions address these challenges, empowering businesses with real-time insights into their supply chains.

In this guide, we'll explore the components of supply chain visibility, its inherent value, common implementation challenges, and the software solutions available in the market. We'll also present the features to consider when selecting a visibility solution and provide a comprehensive checklist to utilize throughout the selection process.

Understanding Supply Chain Visibility

Full supply chain visibility comprises four key pillars:

Data Ownership

Addresses the critical issue of who owns and accesses the data generated across the supply chain ecosystem, ensuring accountability, transparency, and data security

Financial Visibility

Provides insights into the economic health of supply chain operations and encompasses procurement, production, transportation, and inventory management costs.

Transactional Visibility

Involves monitoring and analyzing transactions within the supply chain network, including purchase orders, invoices, shipments, and payments.

In-Transit Visibility

Focuses on real-time tracking of goods as they move through the supply chain, utilizing technologies like GPS tracking and RFID tags to provide information on location, condition, and ETA.

Supply Chain Visibility in Action: Practical Use Cases

Understanding the core pillars of supply chain visibility is only the first step. The real measure of value comes from how these capabilities solve business challenges in practice. By connecting in-transit, transactional, and financial data, companies gain the context needed to address inefficiencies, improve performance, and reduce risk. Below are a few common scenarios where visibility delivers meaningful results.



Production Cost Control

Challenge: Rising procurement, labor, and transport costs make it difficult for manufacturers to pinpoint inefficiencies.

Approach: Real-time financial and transactional visibility consolidates cost data across procurement, production, transportation, and inventory.

Result: Manufacturers uncover waste, streamline operations, and reduce overall spend through more informed decisions.



Freight Spend Forecasting

Challenge: Companies relying on multiple carriers struggle to anticipate costs and plan for seasonal spikes.

Approach: Historical shipping data, demand patterns, and market trends are analyzed to project future spend with greater accuracy.

Result: Shippers negotiate better carrier rates, prepare for peak seasons, and maintain strong delivery performance while controlling costs.



Global Trade Compliance

Challenge: Complex tariff structures and extensive documentation increase the risk of errors and customs delays.

Approach: Centralized, digitized documentation—including invoices, bills of lading, and export declarations—reduces gaps left by manual processes.

Result: Stakeholders can access accurate paperwork on demand, ensuring smoother customs clearance and fewer compliance issues.

The Value of Supply Chain Visibility

The potential value organizations can capture from end-to-end supply chain visibility cannot be overestimated. Visibility begins with the seamless integration of critical data elements upstream into Enterprise Resource Planning (ERP) systems and downstream to Freight Audit and Payment (FAP), ensuring the consistency and integrity of information across the supply chain.

This integration enables them to track and measure key metrics, like delivery events, actual charges, on-time performance, and exceptions, which drive informed decision-making and continuous improvement.

→ Faster Time-to-Market

Real-time visibility into inventory, production, and transit schedules accelerates product launches and enables rapid response to shifting demand.

→ Improved Resource Allocation

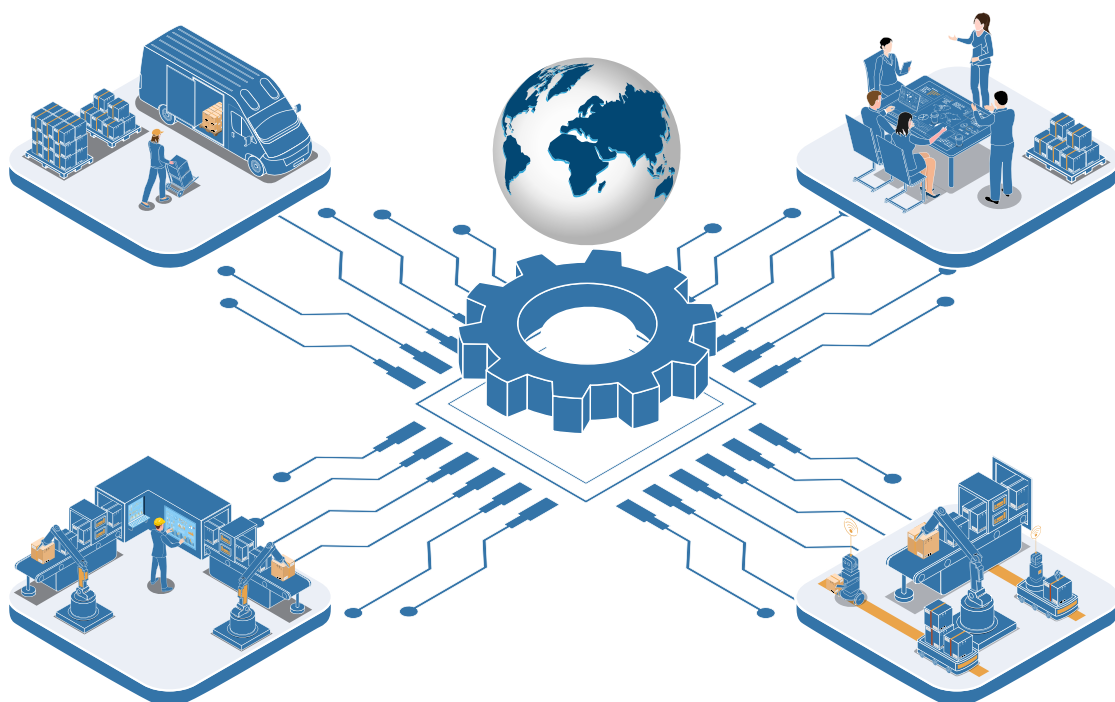
Analyzing granular supply chain data reveals cost-saving opportunities, guiding smarter decisions on suppliers, transport modes, and inventory management.

→ Facilitated Collaboration

Shared access to accurate data strengthens communication between internal teams and external stakeholders, driving stronger relationships and better performance.

→ Proactive Risk Management

Monitoring KPIs and predictive analytics help anticipate disruptions and take preventive actions to reduce delays and minimize downtime.



Challenges in Achieving Supply Chain Visibility

While the value of visibility is clear, achieving it comes with a few obstacles, including:



Global network complexity

Multi-tier suppliers, diverse transportation partners, multiple modes, and numerous systems create fragmented data flows and limited visibility across the network.



High investment costs

According to S&P Global Market Intelligence, limited budgets often force companies to prioritize other capital projects over visibility initiatives.



Disparate data systems

Non-standardized data structures and communication protocols complicate integration and analysis across different systems.



Data management

Many companies lack the tools and processes to effectively store, control, and retrieve the large volumes of supply chain data generated.



Evolving technology

Rapid technological change creates challenges for integrating new solutions with legacy infrastructure.



Skillset shortages

Limited expertise in managing complex visibility technology makes in-house solutions difficult to implement and maintain.

While these challenges are significant, advanced tools and solutions can help simplify the search for supply chain visibility.



Key Features of a Supply Chain Visibility Solution

While technology solutions often make broad statements about their capabilities, it is important to understand what they actually provide. Here are the features to look for in a comprehensive supply chain visibility solution.



Real-Time Tracking

Real-time tracking is the foundation of visibility. Effective visibility software should provide a centralized view of inbound, outbound, and third-party shipments across carriers and modes, keeping operations on schedule and customer expectations consistently met.



Integration with Existing Systems

Strong visibility solutions integrate with a wide range of systems via API, EDI, or simple flat files. This adaptability ensures comprehensive connectivity across ERP, WMS, and TMS platforms and supports partners with mixed technical capabilities, maintaining uninterrupted data flow and interoperability.



Data Reporting and Monitoring

Reporting aggregates and analyzes data for historical performance, helping organizations measure KPIs, track progress, and identify areas for improvement. Customized reporting delivers insights to specific audiences, supporting informed decisions and long-term strategy.

Data monitoring complements reporting with real-time oversight, providing continuous tracking of key indicators to detect deviations early. This agility allows teams to respond quickly, anticipate trends, and implement timely interventions. Together, reporting and monitoring balance strategic planning with operational responsiveness, ensuring supply chains remain efficient in dynamic environments.



Customer Support and System Maintenance

Straightforward onboarding and training help teams adopt new visibility solutions with minimal disruption. Dedicated customer support should be available to address questions and implementation challenges, ensuring users get the most value from the system.

Beyond go-live, ongoing vendor support and maintenance are critical. Clear Service Level Agreements (SLAs) define expected response times, prioritization, and technical resolution. Strong support safeguards long-term performance, prevents disruption, and ensures the software continues to meet evolving business requirements.



Ease of Use

Ease of use drives adoption across the network. A clean interface, logical layout, and cross-platform accessibility enable employees and partners to engage easily, thereby minimizing training requirements. By simplifying interactions, visibility data becomes more accessible and actionable.

Customer-centric design is also key. Customizable features and user feedback ensure the platform supports different roles across the organization. When tools are intuitive and tailored to user needs, collaboration improves, and supply chain visibility becomes more effective.



Data Security and Compliance

Strong data security is non-negotiable. Visibility software should use encryption for data in transit and at rest, protecting sensitive information from unauthorized access. Role-Based Access Control (RBAC) provides granular permissions, ensuring only authorized users can view or amend data.

Compliance measures such as anonymization, masking, and detailed logging further protect privacy. Vendors should also provide tools to demonstrate compliance through reporting and audit-ready documentation. Together, these safeguards help organizations meet regulatory requirements, prevent breaches, and maintain confidence in their visibility platform.



Collaborative Capabilities

Collaboration tools connect internal teams with suppliers, carriers, and customers. Features like microsites and desktop shipping allow partners to book shipments, generate labels, and track status in real time without additional software.

Additional features like batch scanning, exception management, and document sharing, streamline communication and improve accuracy. By enabling stakeholders to work from the same real-time data, visibility platforms strengthen collaboration, improve efficiency, and enhance the overall customer experience.



Data Science

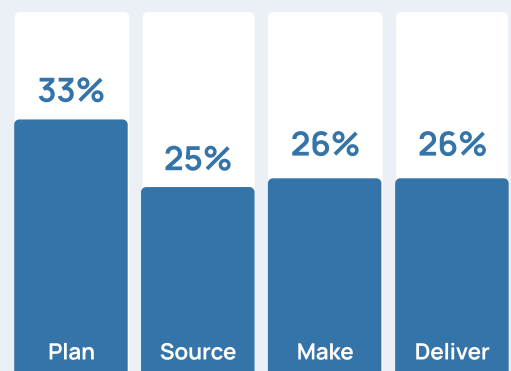
Advanced analytics elevate visibility from descriptive to predictive. Predictive models use historical data to forecast demand, identify risks, and anticipate issues before they occur. Machine learning and AI continuously refines insights, uncovering patterns and improving accuracy over time. These capabilities enable proactive decision-making, reduce costs, and improve operational efficiency across the supply chain.

Reinventing the Supply Chain: AI & Machine Learning Adoption



Are you using or planning to use AI & Machine Learning to automate and enhance execution of these supply chain areas over the next 24 months?

Source: PwC's 2025 Digital Trends in Operations Survey
Audience: 610 operations and supply chain leaders



Supply Chain Software: Comparing Visibility Capabilities

It's common for supply chain systems to deliver some level of visibility, but only within their specific scope. Companies are then left trying to connect these fragments manually, a process that often leads to blind spots and data inconsistencies. Let's take a look at these solutions and the types of supply chain visibility they do (and don't) provide.

Transportation Management Systems (TMS)

Transportation Management Systems (TMS) primarily optimize transportation operations within supply chains, focusing on shipment booking, carrier selection, and transportation management. While TMS enhances efficiency across various transport modes and supports rate negotiation, document management, and financial transactions, its scope in providing supply chain visibility is inherently limited.

TMS is designed for operational efficiency in transportation, thus its visibility capabilities are confined to this realm. This distinction is crucial: transportation visibility is not synonymous with full supply chain visibility. Issues arise when attempting to integrate visibility for inbound orders, third-party managed shipments, or anything booked outside of the TMS. Without additional software, extensive IT integration, or manual input, visibility remains significantly limited.

TMSs often support only a limited range of transportation modes, which can complicate visibility for global supply chains that rely on multiple modes of transport. Essential details for international logistics, like denied party list screenings and commodity list support, likely are not supported. Lastly, many TMS solutions, especially those that are not cloud-based, struggle to provide visibility across multiple organizational locations or divisions. This limitation becomes more pronounced in enterprises undergoing growth or restructuring, where visibility across an extended supply chain network is critical for operational success.

Warehouse Management Systems (WMS)

Warehouse Management Systems (WMS) are essential for optimizing warehouse operations, managing inventory, and facilitating order fulfillment and micro-warehousing strategies. By providing real-time insights into inventory levels and movements, WMS enhances stock monitoring and control through advanced tools like barcode scanning and RFID tagging. While they may integrate with TMSs, this connection typically focuses on coordinating shipments out of the warehouse rather than providing broader visibility across the supply chain.

As the name implies, a WMS primarily supports operations like monitoring inbound freight and managing inventory. It lacks real-time tracking for shipments, insights into transportation costs, and visibility into broader supply chain components. Data from WMS is useful for warehouse and logistics teams, but does not provide the comprehensive insights other stakeholders in the supply chain need.

Enterprise Resource Planning (ERP) Systems

Enterprise Resource Planning (ERP) systems integrate and manage core business processes, offering a centralized data repository for finance, HR, procurement, and inventory management functions. While ERPs provide visibility across business operations, they were not designed to facilitate comprehensive supply chain visibility, especially concerning inbound and outbound logistics.

ERPs are often limited in their ability to incorporate external data, making it challenging to track inbound shipments of raw materials or manage third-party logistics without additional modules or IT integration. This limitation extends to outbound visibility and transportation management, where ERPs often fail to match the detailed tracking and cost analysis capabilities TMSs.

Sharing transactional data with external stakeholders—a necessity in today's supply chain environment—is problematic in ERPs. This is because the inherent design of ERP systems does not support easy collaboration or real-time updates, impeding transparency across the supply chain.

Add-on modules, intended to extend ERP functionality and address these issues, often require costly integrations and fail to seamlessly link transactions across the supply chain, leading to data silos and operational inefficiencies. So while ERPs are pivotal for business process integration, they usually fall short in providing the supply chain visibility modern businesses require.

Advanced Analytics and Business Intelligence Tools

Analytics and Business Intelligence (BI) tools play a critical role in supply chains by transforming complex datasets into clear, actionable insights. They connect to multiple data sources, convert raw information into usable formats, and present findings through interactive dashboards and visualizations. With capabilities like predictive modeling, AI-driven insights, and natural language querying, these tools help teams move from static reports to forward-looking decision-making.

However, despite their robust analytical capabilities, these tools have limitations in providing complete supply chain visibility. They simply do not provide real-time transactional visibility to support immediate response to supply chain exceptions and disruptions. While integrating external BI tools can enrich analytics, many organizations prefer to amalgamate this data with internal BI systems for a more comprehensive analysis.



Other Sources of Visibility



Carrier Systems

Provide real-time tracking and status updates for shipments they handle. This visibility allows shippers and other stakeholders to monitor the progress of their shipments, including their current location, estimated time of arrival, and any potential delays or issues encountered during transit. Unfortunately, these systems may rely heavily on manual data inputs from the carrier and fail to recognize real-time issues or delays, limiting their usefulness in comprehensive supply chain visibility.



Freight Audit & Payment (FAP)

Systems provide insights into transportation costs, billing accuracy, and payment status across the supply chain. By analyzing freight invoices and payment data, organizations gain visibility into their transportation spend, identify cost-saving opportunities, and ensure contractual and regulatory compliance. However, these systems generally only provide a retroactive view of supply chain and transportation transactions rather than real-time insights into performance, leaving companies to untangle discrepancies and exceptions long after they occurred.

Supply Chain Visibility Platforms

Dedicated supply chain visibility platforms address the limitations inherent in traditional supply chain management software design by offering a holistic, real-time overview of the supply chain. These platforms utilize advanced tracking technologies like GPS, RFID, IoT sensors, and mobile applications to ensure accurate and up-to-date insights into shipments across all transportation modes.

Central to these platforms is their ability to integrate with existing systems like TMS, ERP, and WMS through EDI or APIs, creating a unified view of data from otherwise disparate systems. This integration facilitates information consolidation across the supply chain, including carriers, suppliers, warehouses, and distribution centers, into a single, accessible repository. With this consolidated data, users gain access to in-depth analytics on delivery performance, transit times, and other critical metrics, allowing for the identification and resolution of issues as they occur.

A key feature of visibility platforms is the provision of automatic alerts for exceptions, configured to user-defined criteria such as delays, deviations, or inventory issues. This proactive approach empowers users to address potential disruptions promptly, ensuring smoother operations. By centralizing data and offering comprehensive analytics and real-time tracking, Supply chain visibility platforms provide the solution to visibility gaps and limitations presented by other supply chain management tools, ultimately enabling more efficient, responsive, and informed decision-making across the supply chain.

Considerations

This section will examine the considerations that guide organizations through the process of choosing a supply chain visibility solution, laying the groundwork for informed decision-making.

Build vs. Buy

Many organizations may first consider whether to build a visibility tool themselves or buy an existing solution. This decision should take into account in-house expertise, available IT resources, evolving technologies, and automation capabilities. While building a custom solution offers the potential for greater customization and control, it also requires a significant investment of time and money in both R&D and ongoing maintenance.

Purchasing an existing solution from a vendor can provide quicker time-to-market and access to advanced features and functionalities, but may not offer the same level of customization and flexibility. Ultimately, the decision should align with the organization's strategic goals, budgetary constraints, and long-term goals for visibility and supply chain management.

Implementation and Integration Challenges Across Different Scales

Implementing visibility solutions can present unique challenges for organizations at different growth stages. Here are some common challenges faced by each scale:

Small Businesses

Small businesses need visibility solutions that can scale with their growing operations. However, they may face challenges in finding scalable and cost-effective solutions, particularly if they only consider off-the-shelf software with limited customization options.

Mid-Sized Enterprises

Mid-sized enterprises may struggle to integrate visibility solutions with existing legacy systems, like ERP, TMS, or WMS platforms. Legacy systems often lack compatibility with modern APIs and data formats, resulting in data silos and integration issues.

Large Corporations

Large corporations operate globally with diverse supply chain networks, making visibility implementation highly complex. They may face challenges in aggregating and analyzing data from multiple sources, locations, and business units. They may also require extensive customization to adapt the solution to their specific industry, regulatory requirements, and operational processes.

A solution to these issues is a platform that provides extensive integrations out of the box, minimizing or eliminating the need for IT department intervention. Agistix, with its 4,000-plus integrations, exemplifies this approach.

Extensibility

In software engineering, extensibility is defined as the system's capacity to incorporate new functionalities or features with minimal effort or disruption to existing functions. This design principle is crucial for industries and technologies that rely on rapid advancements.

Extensible platforms provide easy configuration and customization to meet evolving market demands and customer expectations. Extensibility also facilitates robust API integrations for seamless data exchange and system interoperability across the supply chain's complex technological ecosystem.

Platforms that provide advanced extensibility can more quickly connect external systems to promote effective collaboration with stakeholders and ensure seamless communication throughout supply chain transactions. By prioritizing extensibility, enterprises can achieve high operational flexibility and scalability without excessive costs and downtime.

Time and Budgetary Constraints

Organizations facing competitive, regulatory, or strategic pressures often have tight timelines and limited budgets for deploying visibility solutions. Rushed implementations can lead to inadequate testing and an increased risk of error or failure. This urgency highlights the importance of thoughtful planning to ensure fast and effective implementation.

Budget constraints further narrow vendor options, customization possibilities, and investment in essential infrastructure. Beyond the up-front costs, like licensing and startup fees, organizations must account for hidden maintenance, training, and ongoing support expenses. Further complicating things is the availability of skilled personnel and resources, which can hinder success if limited staffing or competing priorities delay projects. Careful planning and budgeting are crucial to overcoming these challenges.

Compliance and Security

Ensuring compliance with industry regulations, export controls, and data protection laws is essential when deploying new visibility solutions. Failure to comply can result in significant legal repercussions, reputational damage, and lost business opportunities. Adhering to these regulations becomes more complex when solutions manage sensitive data, such as personal information, proprietary business details, and intellectual property. Enforcing rigorous data privacy measures is critical to upholding regulated privacy rights.

The risk of security breaches can also pose a threat to organizations. It is essential for visibility solutions to incorporate advanced security features—encryption, access controls, and authentication procedures—to mitigate these risks and prevent unauthorized data access. For international businesses, navigating the complexities of cross-border data transfers, especially in regions with stringent data protection regulations like the GDPR, becomes critical. Ensuring visibility solutions comply with global data transfer and localization laws is crucial for maintaining compliance and securing organizational data.

Selecting a Supply Chain Visibility Solution

Supply Chain Visibility Features Checklist

8 Essential Capabilities Your Visibility Solution Must Have



Real-Time Tracking

- ✓ Multi-mode support
- ✓ Live location updates
- ✓ Third-party shipments
- ✓ ETA monitoring



Reporting & Monitoring

- ✓ Custom dashboards
- ✓ KPI tracking
- ✓ Real-time alerts
- ✓ Historical analysis



System Integration

- ✓ ERP, WMS, TMS integration
- ✓ API & EDI support
- ✓ Carrier system sync
- ✓ 4,000+ integrations



Customer Service

- ✓ Onboarding & training
- ✓ Dedicated support team
- ✓ Clear SLAs
- ✓ Exception management
- ✓ Real-time updates



User Experience

- ✓ Intuitive interface
- ✓ Cross-platform access
- ✓ Minimal training needed



Data Security

- ✓ End-to-end encryption
- ✓ Role-based access
- ✓ Compliance reporting
- ✓ Audit trails



Data Science

- ✓ Predictive modeling
- ✓ Machine learning
- ✓ AI-driven insights
- ✓ Demand forecasting



Collaboration

- ✓ Stakeholder portals
- ✓ Document sharing

To aid you in selecting the right supply chain visibility solution, we've compiled a concise checklist. This tool offers critical questions to ask when evaluating the capabilities and fit of potential software, ensuring it aligns with your specific needs. Use it to systematically assess each option and make informed decisions.

Visibility

☐ What shipment types can the system support?

- ☐ Inbound shipments ☐ Outbound shipments ☐ Third-party shipments
-

☐ What modes of transportation are supported?

- ☐ Parcel ☐ Ocean ☐ Air ☐ Rail
☐ LTL ☐ Truckload
-

☐ Does the system support your unique operational needs?

- ☐ Capital equipment and internal shipments ☐ Hazmat and dangerous goods shipments
☐ Domestic and international shipments
☐ Multi-leg and multi-mode shipments ☐ Temperature-controlled shipments
-

☐ What data types can be captured by the system?

- ☐ Orders ☐ Shipments ☐ Documents ☐ Tracking
☐ Invoices ☐ Rates
-

☐ What data sources can be integrated?

- ☐ ERP ☐ TMS ☐ Third-party systems (GPS, GTM)
☐ WMS ☐ Carrier tracking
-

☐ What integration protocols are supported?

- ☐ SOAP Web Services ☐ EDI (sFTP) ☐ AS2 ☐ REST API
-

Data Accessibility & Extensibility

☐ Data Accessibility & Extensibility

- ☐ Are there reports and analytics available within the platform?
☐ Is system data accessible and available via APIs?
☐ Can data be made accessible to stakeholders outside of the organization without logging into the system?
☐ Can stakeholders add and amend data records?
☐ Can the system dynamically generate QR codes to embed on shipping documents?

Add-On Capabilities

☐ Does the platform include TMS capabilities?

☐ Optional native TMS

☐ Third-party TMS integration

☐ Does the platform include order management capabilities?

☐ Optional native order management

☐ Third-party WMS integration

☐ Does the system provide match file integration for freight audit and payment?

☐ Does the system support integrated GTM capabilities for denied party list screening and commodity classification?



If you're interested in a solution that answers all of the questions above with a 'yes,' try Agistix.

About Us

Agistix is the premier supply chain data management platform that integrates visibility and TMS functions to monitor, measure, and optimize every transaction and shipment for complex multi-modal supply chains.

Established in 2004, Agistix leads in providing end-to-end visibility, with a network boasting over 4,000 integrations across ERPs, TMSs, 3PLs, and other third-party data sources. Our platform offers unparalleled real-time insights into order-to-cash processes and supports seamless global collaboration, earning the trust of Fortune 500 companies in aerospace, biopharma, tech manufacturing, and more.

Explore the platform's core solutions

Agistix Visibility

Centralizes real-time cost estimates and tracking updates across all carriers and modes. Functions as a single hub for managing all inbound, outbound, and third-party shipments, ensuring comprehensive visibility into supply chain performance.

Agistix TMS

Either enhances existing TMS systems or operates as a standalone solution. It accommodates various shipment types and transportation modes, featuring advanced rating, bidding, auto-tendering, routing compliance, and document automation for efficient multi-modal shipment management.

Agistix Microsites

Offers customized applications designed for specific user groups within the supply chain. These microsites enable stakeholders to self-serve critical data throughout a shipment's lifecycle, significantly lightening the load on supply chain teams and improving data accessibility.



To explore how Agistix can transform your supply chain operations and for a personalized consultation and demo, contact us today. Let us show you the difference that real-time, integrated visibility can make.

[Book a demo](#)