



SAP White Paper



TRANSPORTATION MANAGEMENT IN BUSINESS NETWORK TRANSFORMATION

KEEPING PACE WITH INNOVATION AND GLOBALIZATION

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EXECUTIVE SUMMARY



Supply chain management has come to the forefront of every company's business agenda. To keep pace with the demands of today's highly competitive marketplace, traditional linear supply chains with their sequential processes are evolving into complex, global business networks that are highly responsive to customer needs and ever-changing business environments.

In turn, fulfillment processes have become supply chain components critical to achieving this business network transformation. Fulfillment is where professionals in sales, customer service, accounting, global trade management, warehousing, and transportation collaborate in supporting a dynamic web of shippers, carriers, and logistics service providers (LSPs). The goal is to manage the movement of materials, products, information, and finances in the most cost-efficient manner possible while profitably meeting the requirements of their customers. That's simple in concept, yet complex to plan and execute.

It is widely believed that a strategy to achieve efficiency in transportation can yield high rewards. However, when this is part of a larger fulfillment strategy, the yield is even greater. "Globalization, outsourcing, and shrinking cycle times are adding risk, cost, and complexity to transportation operations," says Adrian Gonzalez, director of the Logistic Executive Council, ARC Advisory Group. "Companies that take an end-to-end, process-centric

perspective will achieve greater financial and operational success. Companies must recognize that transportation management does not exist in a vacuum; it is a process that interfaces with a variety of other business functions, including order management, purchasing, warehouse management, customer service, and financials."

Transportation management at a global level must support adaptable business processes that are easy to manage. Adaptable processes can also connect with the information chain (for example, supply chain event management, freight costing, and scorecards of compliance with service level agreements) for improved, automated collaboration with partners, suppliers, and customers. Adaptable processes can enable global capabilities via multimode planning of activities for air, ocean, rail, road, parcel, and postal transport.

Many companies deal constantly with challenges of cross-enterprise transparency and communication within their fulfillment environment. They usually have multiple systems that do not necessarily talk to each other across the entire business process. Enterprise service-oriented architecture (enterprise SOA) enables the necessary cross-enterprise collaboration with customers, suppliers, and business partners via enterprise services that are based on broad industry standards and global data types. Enterprise SOA is a benefit to the transportation environment from both a technology and a business process perspective. Enterprise SOA simplifies connections and facilitates industry-specific interoperability based on technology standards, enabling companies to more easily adapt their processes to ever-changing business needs.

Transportation is a key part of the holistic supply chain and logistics strategy that is, in many ways, part of larger processes such as order to cash and procure to pay. In choosing a software solution, companies must now consider not just functionality and features, but also how well the solution interacts within the larger business network.

The role that a company plays within the transportation value chain is a key factor; it may be a shipper, an LSP, or a combination of both. To fulfill their role in this broad business network, organizations need systems that can support a broad and changeable set of processes. The disparate technology system landscapes prevalent in this market have made it difficult for organizations to fulfill their mandates effectively.

Many LSPs are burdened with large IT departments that are required to support the complex integration of aging proprietary systems and best-of-breed applications to address the company's business process needs. These high-cost IT environments evolved through necessity because the unique and complex requirements of the transportation market were not previously satisfied by commercial software vendors. As a result, LSPs are now, in many ways, at the same point shippers were 10 or 15 years ago.

On the other hand, in the manufacturing, distribution, and retail shipper markets, the driving forces are simplification of system landscapes and interoperability. This is becoming more necessary as companies recognize the business process complexities they need to support. Enterprise resource planning (ERP) applications have been adding a lot of value to these efforts, and, for the first time, companies implementing these tools have complete online and real-time visibility across multiple divisions and departments, even on a global basis. To participate profitably in this business network, LSPs will need to upgrade their applications environment to match that of the shipper community.

In today's world, LSPs' and shippers' fulfillment networks are going beyond simple data dependency. In the future, business shippers, carriers, and LSPs will transform their businesses into lean and efficient networks that span the supply chain ecosystem. It will not be how you operate as a stand-alone company that will determine success or failure, but how you operate as part of the network.

KEEPING PACE WITH TODAY'S TRANSPORTATION ENVIRONMENT



Commercial transportation has become a very complex process. Raw materials, parts, and finished goods must move from point to point along a supply chain of shippers and logistics service providers. Companies within the transportation industry must have fast, streamlined, and profit-enabling business processes to satisfy the logistics needs of their demanding customers. These processes, based on new transportation and distribution strategies, must feature integrated business and logistical activities, adaptable business processes, real-time visibility of transportation events, and a sustainable cost structure.

Products flow in many directions and in multiple modes, and the lines between trading partners are blurring. Whether you buy or sell transportation services, having adaptable, integrated technology-based solutions determines how effective you will be in the global market.

Many trends are driving the need for strong transportation solutions, including the following.

- **Globalization** – As market competition increases across industries and organizations, companies are looking for new ways to drive growth and profit. They are expanding the reach of their manufacturing, distribution, and sales functions to capitalize on new opportunities. Brazil, Russia, India, and China are all major geographies growing as consumers, suppliers, or both.
- **Increased risk** – Driven by increased in-transit variability, customs regulations, and compliancy rules, the need for visibility and information about the goods and their status has magnified. Companies need to report, relocate, reroute, or even replace goods and shipments during the execution process.

- **Greater supply chain velocity** – Faster movement in supply chains has resulted in smaller but more frequent shipments.
- **Partner collaboration** – Economic and security concerns have resulted in the need for greater collaboration among trading partners such as shippers and carriers, but also among customs and port authorities.
- **Logistics outsourcing** – Outsourcing has become more prevalent, specialized, and complex. As the transportation and logistics specialists, LSPs are looking to capitalize on this opportunity by becoming more sophisticated in their service delivery.
- **Cost and profitability awareness** – Understanding cost and profitability helps organizations make decisions that best support their business objectives. Companies now need to understand total landed costs, the cost of individual assets, and order profitability when making transportation decisions.
- **System integration** – The complexity of overlapping business processes has increased to involve many areas, such as order management, warehouse operations, transportation operations, global trade, financial analysis, and production. Studies are showing that the ROI for companies is more dependent on system integration than on application features and functions.

These trends have raised the profile of transportation management in the boardroom as companies strive to maximize capacity and minimize costs while still meeting customer and shareholder demands for service excellence.

Companies are looking to aggressively expand their ability to reach their customers profitably and efficiently beyond their existing business networks. Shippers are exploring expansion to other geographic areas, either using third- or fourth-party LSPs or becoming LSPs themselves – better using their own fleet and sharing traffic with other companies. The LSPs that not only buy transportation services but sell them as well are managing slim profit margins while trying to increase customer service. They must update their antiquated system landscapes to remain competitive. In both cases, these challenges require a true enterprise-wide business process platform.

This enterprise-wide business process platform approach enables companies to sense and respond to real-time transportation events and disruptions. Companies can better connect to their business network for improved collaboration with partners, suppliers, and customers than would be possible with a traditional reactive, message-based system. For example, companies gain the foresight and ability to automatically adjust a cross-docking shipping schedule to accommodate last-minute shipment or equipment delays.

With a standard business process platform, you have a platform for innovation. Innovation in business processes that takes into account ever-changing customer service expectations (such as book to bill, order to cash, procure to pay, and export/import multimodal scenarios) can yield a profitable and responsive logistics operation.

Transportation involves two parties: the buyer and the seller of transportation services. Shippers that purchase transportation services recognize the importance of these services in determining corporate profit and loss. Transportation services are the essential link between the extraction of natural resources; the fabrication of industrial, commercial, and consumer products; and the final distribution of goods to wholesalers, retailers, and end customers. The ultimate goal is to deliver the right product, at the right price and quality, to the right place at the right time while protecting corporate profitability.

In response to the growing demand for transportation services, an increasing percentage of companies' total transportation spend is going to LSPs. As buyers **and** sellers of transportation services, LSPs are the key enablers to meeting the increasing demand through the new, more complex transportation services required in the market. However, their antiquated information technology systems often limit their ability to execute. They are now feeling the squeeze as the critical link within the global transportation value chain.

Historically, in a linear supply chain, commercial transportation was a fairly simple activity: goods and materials were taken directly from the manufacturer to the customer. But today, transportation is a complex process performed in a widespread, often global, network of shippers and LSPs. In addition to its complexity, transportation is a big business that involves a plethora of services to meet customer demands – including door-to-door delivery, intermodal networks, appointment scheduling, local assortment, returns, green initiatives, paperless processing, global trade, and distributed order fulfillment. Companies need a set of transportation organizations or partners that have fast, streamlined business processes; work efficiently with other network partners; and are able to make timely decisions that support their profitability and growth targets. In short, they need a business network that enables them to meet their ambitious goals.

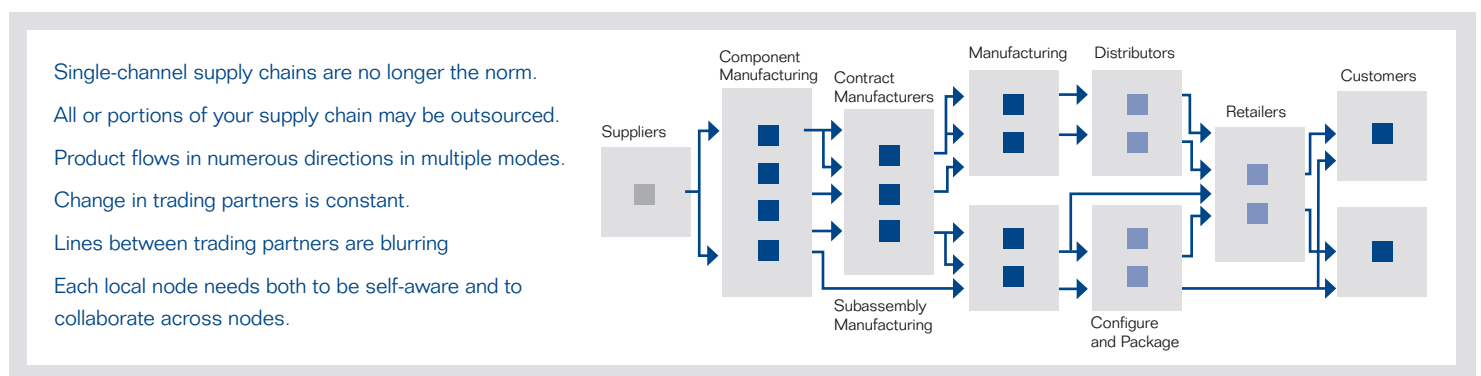


Figure 1: Transportation in the Adaptive Supply Chain

TRANSPORTATION BUSINESS PROCESSES: ACHIEVING INDUSTRY-LEADING CAPABILITIES

A company seeking to achieve a more efficient supply chain and greater profitability must take a strategic view of the way it performs every phase of the transportation process. This likely involves implementing new transportation and distribution processes both internally and externally.

A business network transformation strategy for transportation relies on a tightly integrated and transparent process to handle many elements. These might include managing freight procurement of LSP services, forecasting shipment volumes, planning and dispatching shipments, and having visibility to all activities through key performance indicators (KPIs) and other important analytical tools. These analytical tools can provide process metrics, such as profitability and monitoring of transportation spend, and include performance scorecards to measure both your own abilities and those of your partners. LSPs must be able to understand both the demand and supply side of the equation as an important piece of the transportation value chain.

Transportation management systems can be broken into several primary yet integrated areas:

- Transportation order management
- Transportation planning and dispatching
- Transportation execution
- Transportation charge management
- Transportation procurement, tracking and analysis, and reporting

Transportation Order Management

In a demand-driven environment, the ultimate source of demand is the customer. Companies must anticipate their customers' requirements and improve responsiveness to their demands by bringing high-quality, value-added products to market faster than the competition.

Everything starts with the order, whether it is a customer order, purchase order, or transportation service request. Orders are the means by which companies communicate to one another –

either electronically, paper based, or verbally. To effectively manage orders and collaborate with trading partners, you need data quality, synchronization, and consistency across the many different sources of order information.

Order management requires the ability to manage and monitor quotations, requests, changes, status, and confirmations. To be competitive, a company cannot afford to manage its transportation function in a vacuum; it must be able to communicate order information with uncompromised accuracy. This often requires data synchronization, data cleansing, and communication among the various parties. Organizations must have standards and systems in place to help manage this communication flow, whether these are electronic data interchange (EDI) standards like ANSI or the United Nations global trade standard (EDIFACT). Even with standards for improved data synchronization, data is often inconsistent or incomplete and so must be actively cleansed.

In addition, the technology deployed must enable connectivity between organizations in different industries. For example, when chemical companies sell goods to the automotive industry, there are two standards working against each other. With a common business process platform, the integration of processes is made easier and more effective. In other words, you gain higher interoperability at a lower cost. For LSPs, this becomes even more critical as they operate as the orchestrator across industries.

The complex and changing nature of business forces companies to make very swift adjustments. Without real-time visibility into the various departments involved in serving customers or managing orders, it is very difficult to maximize cost savings or optimize revenue. An integrated business process platform can deliver the immediate, total visibility required to adapt to a customer's last-minute request on the next shipment, for example, or a change in service requirements, or to take advantage of more efficient, lower-cost transportation opportunities.

Transportation Planning and Dispatching

Products and materials can move into and out of companies at all hours, every day, anywhere in the world. Companies need the visibility to know when goods are being produced, stored, and shipped.

For years, transportation was managed facility by facility, and each shipment was planned independently. This method can hamper a company's efficiency. Leading-edge companies have moved from this model to a service-centric approach of coordinated route planning across the enterprise that leverages resources as they move products and materials along the supply chain. This approach also entails a high level of visibility that lets companies support cost-saving transport methods such as continuous moves and parcel-zone skipping. At the same time, these movements have to be managed across the enterprise, by different departments, and sometimes in different regions. For example, as the world becomes "flatter," companies must be able to manage the import and export operations of international, multimodal shipments across their own organizational boundaries and business units.

Routing Decisions and the Cost of Doing Business

Transportation costs come off the bottom line, but they are a necessary requirement of getting products to market. These days, labor, energy, equipment costs, and customer demands are mounting; at the same time, equipment capacity is decreasing, variability in the supply chain is more difficult to predict, and margins are slim. More effective asset utilization is mandatory, and speed of delivery is more important than ever. You need to take advantage of every opportunity to lower costs while getting the product to its destination on time. This requires having access to every possible routing option, which can be enabled only by a sophisticated planning tool that can create viable shipment plans by consolidating orders to optimal shipment sizes, using the advantages of various transportation modes, taking into account potential multistop and hub location options, and staying within the constraints of the real world.

Managing Your Workload

One of the most important aspects of system-wide planning and dispatching is the ability to automate as many of the requisite activities as possible while manually dealing with the exceptions. Customers place many constraints on shippers and LSPs that must be considered when developing a final routing plan. Constraints can include delivery appointments, equipment requirements, variable order size, special equipment such as multicompartment trucks, special handling requirements, and ship-with orders. Companies must employ technology applications that have visibility to this ever-changing information when making real-time fulfillment decisions. For example, a transportation planner must have complete visibility of fulfillment (for example, shipping options, costs, and routing possibilities) in a single system to make the best decisions.

Resource and Product Availability

Understanding when and where the product will be available in an inventory-strained environment is one of the most important elements for profitably meeting a customer's request on time and at the lowest total landed cost. Companies must have solutions that coordinate fulfillment activities seamlessly across their network. Solutions that provide total visibility into warehouses and manufacturing operations enable companies to take advantage of efficiencies such as cross-docking and direct trailer loading.

Making shipments from point A to point B can be simple or complex; it all depends upon real-world contingencies. Equipment and personnel availability constraints are becoming more prevalent as companies strive to squeeze more out of every resource. Having a good relationship with transportation partners can help solve this problem through managed contract commitments, automated forecasting and planning, smooth shipment-tender processes, and optimized use of equipment. With sophisticated route planning and dispatching solutions, companies and partners can find the most suitable answers to these situations.

Multimodal Planning – Split Organizational Responsibilities

As goods move from point A to B in a global network, they often travel across air, land, and sea. This complicates the transportation planning process by involving multiple modes of transport that have different constraints, capacities, and characteristics. At the same time, your organization may divide the responsibility for the entire movement among multiple departments and partners in a trading network. For example, the international shipping department may handle the export ocean portion while the domestic distribution group may be responsible for the import and getting the goods from port to customer. This requires a flexible, decentralized application and technology infrastructure that supports split organizational responsibilities. Also, sophisticated planning across hub and pool points, which require specific last-mile planning, is equally challenging across a complex transportation network where multiple individuals are handling different modal portions.

International Transportation

Shipping across borders adds another level of complexity with respect to managing the disparate customs and legal regulations. Shipments leaving and entering the country are checked and monitored in many ways. To address the time-sensitive requirements of customers, shippers and LSPs must expedite the importing and exporting of goods through customs by leveraging systems that enable improved transparency throughout the supply chain to share cross-border trade information with partners such as freight forwarders, brokers, insurance agencies, banks, and regulatory entities. Comprehensive letter-of-credit management, preferential product treatment using trade agreements, and comprehensive analytics based on daily business data can mitigate financial risk and maximize profit, while making best use of international trade agreements. In addition, this comprehensive approach can help minimize supply chain bottlenecks, production downtime, and errors that can result in costly penalties.

Transportation Execution

In the transportation services value chain, planning, dispatching, and execution go hand in hand. Throughout the day, quotes are requested, confirmations given, and orders received that often must be shipped with very short lead times. Companies need to get accurate shipments out on time with proper documentation while communicating with the LSP and the end customer. At the same time, automatic processing of inventory status, order and transportation costs, accounting, and important order events are monitored and updated. To operate effectively in this demanding environment, shippers and LSPs must have the tools to control all these events from planning to execution. A full-featured and well-integrated transportation management solution can act as the core component to managing high volumes of diverse transportation services.

Managing the Shipment Process

Companies need a variety of information to get shipments out of the dock doors and to their destinations. Shipment processing should support the following business activities:

- Create shipments to customers, clients, and transfer locations such as cross-docks and ports
- Quickly adjust the transportation plan based on last-minute orders or a change in the carrier, and modify routes during transit if necessary
- Define the packaging of goods and how they are loaded into vehicles
- Manage hazardous-materials requirements
- Specify, update, and track planned transportation deadlines
- Print and transmit critical documents required for transportation, such as bills of lading, material safety data sheets, and certificates of origin
- Show shipment-specific text messages, such as delivery instructions and contact information
- Manage both inbound and outbound shipment documentation

Collaborating and Communicating

Collaborative transportation planning between shippers and their LSPs allows both partners to streamline work processes and benefit from reduced handling costs and greater transparency and efficiency. Shippers and LSPs can share information about their shipment plans and resource availability. By operating in this manner, LSPs allow shippers to develop plans based on delivering a lowest-total-cost solution and can play a more integral role in the overall transportation process chain. At the time of tendering, further collaboration is possible to meet real-world constraints such as delivery appointments and last-minute changes to an LSP's resource availability. A transportation management solution must support communication through standard communication methods such as EDI, e-mail, or XML. Web services technology has moved to the next level with the introduction of enterprise SOA. Specifically designed and modeled enterprise services based on industry standards like EDIFACT enable customers to extend existing functionality both from a process perspective (business-to-business integration) and from an interface perspective (extending or developing user-interface applications and application-to-application interfaces).

Using Automation and Control – Reducing Workload

The execution process can be very task-intensive. Workers pick products, stage deliveries, load trucks, print documentation, bill the shipment, and remove inventory. Often, all of these tasks are performed manually, but they can be controlled and automated based on a company's business process needs. Incorporating standardized, system-supported best practices reduces errors, limits handoffs, provides a single view to the customer, and helps organizations do it right the first time.

Companies need the ability to automatically carry out activities such as posting goods issue, creating billing documents, and printing key documents and lists for deliveries in the shipment. Users must have access to information, such as the name of the driver at check-in and seal and container numbers, and must be able to validate data.

Organizations must use IT applications to create a close connection between transportation execution, warehouse management, and foreign trade so that goods issues or receipts, international documentation, and controls can all be coordinated within the transportation plan. Further, these applications should perform everything from checks on dangerous goods to printing of shipment documents. All of these complicated processes are made easier with automated, Web-enabled collaborative functionalities.

Transporting Dangerous Goods

The transportation of substances and products that may be a risk to public safety has special requirements. To fulfill the statutory requirements for shipment of dangerous goods, it is necessary to check whether such shipments are permitted in agreements made with the countries in which the shipments take place. Therefore, dangerous-goods checks should be centrally defined in a shipper's or LSP's transportation management software to address these environmental, health, and safety needs. Dangerous-goods master data should be complete and accurate, the selected mode of transport should be suitable, and the dangerous goods should be marked correctly. And, of course, there should be clear system transparency to ensure that all parties have visibility into how the dangerous goods have been handled throughout the transportation chain.

Transportation Charge Management

Financial operations include more than the execution tasks of "freight, audit, and pay." Executives need decision support tools that enable them to sense real-world disruptions, as well as financial and logistical tools to make informed, timely, and profitable decisions. To achieve this, companies must have the ability to integrate the financial chain into transportation activities via accurate, real-time, activity-based costing, billing, and freight auditing. In addition, the Sarbanes-Oxley Act has raised the profile on how companies report and control financial transactions. Companies are looking for their IT applications to support a closed-loop charge management process for automating freight

invoicing, payment, settlement, and reconciliation. Those firms that have attempted to do this in a best-of-breed or legacy-centric environment now recognize the complexity of this task and the limitations of this approach. Consequently, they are looking for their software vendors to supply cross-functional integration in their transportation management suite and in their technology tool set.

Impact on Profitability

Transportation and its costs have both a direct and indirect impact on profitability. It is critical that the shipper or LSP optimize the handling of numerous activities, such as responding to requests for quotations, costing different fulfillment and transportation activities, and evaluating direct costs, as well as flexibly adding any additional charges such as overhead and profit. Freight rate calculations can get quite complex. At the same time, freight cost must be determined for all types of shipments while considering many different types of charges, such as taxes, fuel, cross-docking, detention, and special handling fees.

A vast array of carriers and third-party logistics companies are in the business of making profit by providing the best service at a reasonable cost. At the end of the day, these companies must understand their profitability at the operational level – even on a shipment-by-shipment basis. In today's low-margin environment, knowing when you are making the correct business decisions is critical; you need the ability to review the margin to ensure the profitability of each shipment.

At the same time, the ability to minimize the cost of business process execution is paramount. If you are paying for freight, the freight payment process can be streamlined with self-billing (or electronic receivable services) functionality, which allows companies to pay the LSP without receiving an invoice. In this situation, invoice verification is carried out by the LSP. Best-in-class companies never see the thousands of freight bills that ordinarily would have been generated and manually processed. For the selling side of transportation services, the billing process could span

inventory handling, storage, and transportation activities. Obviously, handling this breadth and depth of processes while providing good transparency to business operations requires that the transportation management solution seamlessly reaches and connects the various parties both inside the shipper or LSP organization, as well as outside to its business network partners.

Freight Settlement

Efficient freight settlement is one of the most important parts of an end-to-end process where logistics data must be integrated to the financial operations of the business. Settling freight costs is a complex assignment of transportation expenses or revenues across financial accounting areas. Optimizing billing accuracy, customer service, and profitability is critical, whether buying or selling transportation services. Charges should be tracked and assigned based on transportation events to ensure a clear understanding of transportation cost drivers. Again, seamless integration between the financial and operational processes of a transportation management solution is crucial to effective freight settlement.

Freight Contract Management

To fully support the freight procurement process, companies must meet requirements for contract management, bid preparation, bid proposals, bid responses, contract award, and contract creation. These capabilities structure the relationship between shipper and LSP by streamlining the contract negotiation process.

The greatest benefit a freight procurement solution can provide is the ability to set expectations by channel and lane for the expected transportation spend. LSPs are constantly competing for freight, and their customers should work with them to set expectations and volumes in order to realize the best service levels at the lowest cost. A freight procurement solution can provide a centralized tool to manage this proactively.

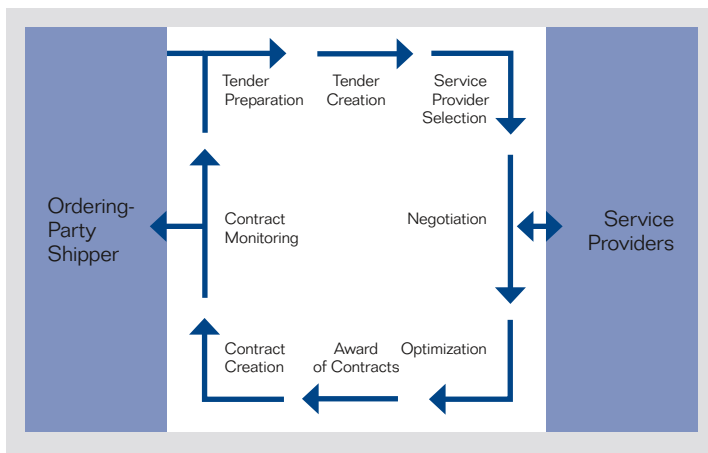


Figure 2: Strategic Freight Management

As a company’s supply chain evolves, so do relationships with partners such as LSPs. An enterprise may want to renegotiate existing contracts to include new business while changing the way shipment volumes are divided among LSPs. The contract contains rates, terms of agreement, and other freight-related charges such as accessorials, detention, and minimum charges. These charges provide information for the optimizer to make logistics decisions based on costs, including decisions about equipment allocations.

Today, successful companies are actively managing the freight procurement process by looking at the large expenditure on an annual or semiannual basis. Companies must control their freight spend beginning with a freight procurement process.

Once they do, how to stop leakages in freight spend becomes more readily apparent. For example, inbound transportation costs are buried in the cost of goods when freight is prepaid. By moving to an inbound collect model, companies can actively see and manage transportation costs as a portion of the supply chain; costs are no longer invisible and uncontrollable. Savings as high as 25% have been achieved by moving from a prepaid freight to an inbound collect model for inbound transportation.

Performance Visibility

Analytics play an essential role in helping a company sense and respond to important changes in the market. To make the right decisions promptly based upon a complete, accurate view of their business, companies must align execution with business strategy.

Throughout a company, employees must be able to find answers to problems quickly when KPIs fall outside acceptable ranges or objectives are not met. Managers must have the tools to track business activities to ensure that they are in line with overall strategies. Clear metrics are required to achieve these goals.

Having centralized control and easy, role-based access to essential data is critically important in supply chain management. Pre-defined analytical applications delivered through a user-friendly Web interface can give users at all levels secure, filtered access to key information on supply chain activities and processes. When this occurs, business intelligence is combined with operational data that relates to business processes, producing a “one-stop-shopping” synergy of analysis and action. Again, this requires integration; but this time integration is not only across the departments involved but also from the lowest levels of a transaction through to the KPI dashboard that supports the needs of managers and decision makers. For example, LSP performance metrics help identify the causes of service failures and cost overruns by using scorecards and analytics of internal and business partner processes. With such analytical applications, shippers and LSPs can work together to monitor activity and ensure the highest levels of service that meet both partners’ anticipated financial and operational objectives.

Real-World Asset and Event Visibility

With the fast pace of business today, companies must be able to prepare for the unpredictable. Disruptive events caused by natural crises can have a widespread effect on capabilities across an extended supply chain. For example, during Hurricane Katrina, one of the major concerns was the potential risk to the environment should shipments in the area become lost at sea.

One global chemical manufacturer was able to locate its shipments that were scheduled to dock in the Gulf of Mexico and provide alternate deliveries through unaffected ports. This illustrates the importance of visibility – in particular, visibility into order status and disposition.

Companies need fast, accurate information about orders; the visibility to plan their resource needs; and the foresight to revise those plans to better support their business objectives. Further, they must reduce their time to action when responding to an unplanned event or crisis – which is enabled by having real-time visibility throughout the supply chain.

In many cases, this means companies must move from managing expected outcomes of business processes to managing by exception where they focus resources on the areas that need the most attention. To have an overview of supply chain events, companies need a technology platform that enables them to do the following:

- **Monitor** supply chain activities and compare plans and forecasts with actual results
- **Notify** the proper employees about process deviations in real time
- **Simulate** the consequences of an event, which provides guidance for decision making
- **Control** the process throughout the adjustment of various parameters such as process time and mode of transport
- **Measure** performance based on user-specific performance criteria

SAP DELIVERS THE GOODS

Both through its leadership role in the industry and through comprehensive software offerings, SAP can help your transportation organization transform and integrate its IT systems to support flexible, streamlined business processes.

Business Network Transformation

Transforming the business network includes extending existing business processes as well as developing new processes that facilitate interaction between partners. SAP provides the building blocks for a business process platform with comprehensive functionality, which is service enabled and available on a robust IT infrastructure. By deploying the SAP NetWeaver® technology platform, businesses can readily realize their profit and growth objectives via an integrated technology environment that gives them the tools to flexibly meet the changing demands of their customer base. And by establishing commonality with major shippers and LSPs through affiliation with SAP, organizations can readily connect to more business opportunities. Further, SAP is taking a leadership role in driving industry efficiency by sponsoring industry value networks (IVNs) that bring together shippers, LSPs, system integrators, industry experts, and partner solution providers. IVNs focus on industry efficiencies using the power of the network itself in solving advanced business challenges – which requires a collaborative effort across multiple disparate parties.

The SAP® Supply Chain Management (SAP SCM) and SAP Transportation Management applications contain functions that are designed to enable transportation companies to be part of the overall business network. Powered by SAP NetWeaver, SAP SCM leverages emerging technologies and “real-world-aware” practices to transform traditional supply chains from linear, sequential steps into adaptive supply chain networks that are crucial in business network transformation.

Global Trade

The SAP GRC Global Trade Services application automates core export tasks, helping companies streamline customs management, take advantage of international trade agreements, and mitigate financial risks. This helps ensure regulatory and trade compliance and improve cash flow, since faster customs clearance means faster payment. SAP GRC Global Trade Services helps your business classify products easily and manage documents, including those required by Export Administration Regulations from the U.S. Bureau of Industry and Security, for example, as well as those required by other government agencies. And you can reduce the risk of noncompliance through screening for sanctioned-party lists and embargoes.

TRANSPORTATION MANAGEMENT

Understanding the need for an innovative approach to transportation management, and that transportation management is central to business network transformation, SAP undertook one of its largest software projects of recent years to develop a new, holistic transportation management offering. The SAP Transportation Management application is built from the ground up to address the needs of the LSP market as well improve its support for the shipper community.

To create this application, SAP reached out to its existing customer base, which represents the largest group of shippers in the world that are all on the same business applications platform. These shippers told us what they need and expect in areas such as transportation execution, transportation planning, global trade management, and centralized transportation management services. To achieve full business-wide and supply chain-wide visibility, they need their transportation management solution to deliver end-to-end business processes that are integrated within their own four walls while being open to readily integrating their business network partners and their applications and processes.

Designed from the outside in and based on significant input from domain experts and customers, the SAP solution includes comprehensive functionality that covers the full transportation process. This next-generation software solution includes transportation-specific business objects, adapters, and services. It integrates customer-centric logistics processes including freight management, transportation dispatching and execution, and transportation charge management.

The SAP offering scales to support small or midsize organizations as well as the large enterprises many of these companies aspire to be. Based on enterprise services, the solution can be deployed as a stand-alone application or integrated with other SAP or non-SAP software, and enables companies to develop customer-centric service solutions rapidly and efficiently. The flexibility of the solution allows it to be set up in a centralized or distributed mode,

thereby supporting both your local and global operations. Message-based communication adheres to international standards such as EDIFACT.

SAP Transportation Management supports all means and modes of transportation – air, land, sea, and rail – and increases transparency for both the buying and selling side of transportation services. This helps drive profitable growth for shippers and LSPs alike.

By implementing SAP Transportation Management, organizations can create a holistic environment that addresses the challenges of change that come with business network transformation. This application integrates support for your transportation management processes with SAP Business Suite applications and the SAP Extended Warehouse Management application. Further, support for sales order management, manufacturing, supply chain management, global trade services, human resources, plant maintenance, and environmental health and safety processes is part of the overall software suite.

Business network transformation enables co-innovation of solutions that transcend company, industry, and geography boundaries, and paves the way to profitable growth. A core enabler to this is a new process-focused approach to IT based on SAP Transportation Management.

To Learn More

For more information about how SAP software can help your transportation organization transform and integrate its IT systems to support flexible, streamlined business processes, call your SAP representative today or visit us on the Web at www.sap.com/industries/travelandlogisticsservices.