
Best Practices in Transportation Management: Taming the Global Supply Chain Profitably

A PRECISION LEADERSHIP WHITE PAPER FOR THE
GLOBAL MANUFACTURING INDUSTRY



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Executive Summary

Globalization, rising costs, high customer expectations and increasing risk create serious challenges for supply chain management in a world struggling to face new and unknown financial constraints.

Given these forces, transportation management has become a strategic tool that affects every aspect of a company's value. Visionary enterprises are implementing transportation management best practices, enabled by technology, to manage their global supply chains more profitably and responsibly.

- According to the annual "State of Logistics Report" (2008) transportation costs have now exceeded ten percent of GNP.
- New requirements are being set in place for advanced notification on cross-border shipments
- Local and national governments are putting more stringent environmental requirements on transportation operations
- Companies need to be ready to react to changes in global trade as regional economies seek to protect their local interests

Also on the rise, fostered by cultural and economic globalization are outsourced manufacturing, global sourcing and the export of finished goods to emerging markets.

In response, supply chains are increasingly extensive and complex, creating unique challenges and opportunities within

transportation and logistics. Add to this, climbing energy prices, capacity issues and increasing security requirements which all contribute to spiraling transportation costs. The mounting complexity of today's transportation landscape also increases the possibility and cost of delays.

Today, on-time delivery at the lowest cost is not enough to satisfy customers: consumer e-business has created levels of expectation previously undreamed of, and people now expect the same level of service in their corporate roles.

These challenges set the stage for increased risk and costly errors.

For example, if orders are delayed or otherwise imperfect, manufacturers face losing business. If documentation and compliance requirements are not met 100% of the time, delays are just a start: substantial fines and loss of export privileges could follow.

In this environment, it takes sophisticated business processes, coupled with the ability to manage mountains of details quickly and accurately, to effectively manage a global supply chain. Manual processes aren't adequate to the task. Global enterprises need integrated technology solutions to make the most of market opportunities.

Leading companies are turning to automated systems to streamline logistics, control transportation costs and add value to a global supply network. In the process, they are uncovering new ways to use transportation to gain a competitive edge, increase customer satisfaction and create new revenue streams.

When transportation and global trade capabilities are fully integrated, a business can leverage technology to create cost savings and revenue opportunities across the organization.

- Significant reduction in transportation costs and
- Avoidance of costly delays at trans-border crossings.
- Prevention of expensive non-compliance audits and fines
- Improvement of carrier performance and rate management
- Enhancement of warehouse productivity
- Better control inventory costs across the extended supply chain

Precision Software redefines the traditional Transportation Management System (TMS) with integrated capabilities for Global Trade Management (GTM). Not only can organizations increase visibility and logistics control, moving goods quickly and predictably through the global supply chain, with the PRECISION solution they gain international capabilities that support enterprise-wide trade and transportation strategies. The PRECISION solution from Precision Software is built on an open architecture that allows it to be 'system neutral' and integrate easily with leading Enterprise Applications and Warehouse Management Systems.

Introduction: The new global supply chain

Welcome to the new global marketplace: Increasingly complex, demanding, and going green.

Increasing competition from all corners of the planet, customers with astronomical expectations and exacting demands as well as a complex web of international trade requirements: It is no surprise that transportation management and global trade management combine as one of the top issues in supply chain management.

Outsourced manufacturing, global sourcing and export of finished goods to emerging markets have become the norm. The resulting phenomenal growth of cross-border trade and more complexity in supply chains is the net effect. Even small manufacturers with local plants are most likely connected into extended global supply networks through their sourcing partners or their distributors.

Today's global supply networks are pressured by globalization, rising costs, high customer expectations and increased risk. Given these forces, transportation now plays a key strategic role in driving supply chain excellence.

Enterprises that apply transportation best practices, enabled by technology, are able to find new revenue streams and create sustainable competitive advantage in the global marketplace.

Transportation Management: On a global scale.

As globalization marches onward, more companies find that they are in the strange new world of international commerce. Aberdeen research shows that companies, large and small and in all industries and levels of the supply chain, are being forced to deal with international logistics in ways they may not have had to in years past.

The International Transportation Management Benchmark Report, Aberdeen 2007

Critical Issues In Transportation Management: Globalization, escalating costs, customer expectations, risk and the environment

Globalization is not just a buzzword.

The biggest challenges facing our modern world are the result of globalization: The increasing interconnectedness of people and places fueled by technology to support easy movement and participation. More than a buzzword or sociological trend, globalization is a business reality.

Outsourced manufacturing and global sourcing have become such common business practices that now all supply chains are global and are necessarily more extensive and complex. The rapid growth in outsourced manufacturing and global sourcing has triggered a significant increase in cross-border trade.

For example, on packaging for an inexpensive children's toy distributed by a U.S.-based company, the supply chain looks like this: parts are made in China, the toy is assembled in Mexico and the packaging is done in the U.S.

These extended global supply chains present new and unexpected challenges. The chance of a shipment being delayed is ever-present due to the sheer distances that goods must travel, combined with the number of conveyances they need to travel on. This new trading environment presents exacting regulatory requirements, international financial implications (duties, taxes, letters of credit, etc.), and complicated global logistics.

Global trade management (GTM) — also known as international trade logistics (ITL) — is an increasingly significant factor in every supply chain. Technology has become an important enabler of accuracy, accountability, and efficiency in managing these challenging business processes. New initiatives such as the

Automated Export System (AES) in the US and ATLAS in Germany are just two examples of what is to come.

Global in a Down Economy

In tough economic times, global procurement leaders and trade compliance managers are once again under the spotlight to reduce supply chain costs. The Challenge? Most companies are already running an ultra-lean business as a result of years of automation efforts. The good news: For those companies involved in import and export, a huge opportunity still exists to streamline the process, reduce costs and realize quick savings.

Modern Global Trade in Tough Economic Times Requires Next Generation Software Solutions — Forrester Research, November 2008

Rising transportation costs jeopardize profits.

Transportation is a major component in the calculation of cost of goods sold, sometimes exceeding the cost of the labor and materials that go into a finished product. Rising fuel costs, capacity issues and increasing security requirements all contribute to rising transportation costs. The intricacies of today's transportation landscape increase the possibility — and cost — of delays. And these costs add up quickly: expediting, falling back on more expensive options, lead time uncertainties, on-time delivery challenges and the chance of losing business.

Escalating customer expectations.

Consumer service has reached levels never dreamed possible just a few years ago. Amazon.com and companies like it have created a whole new level of expectation. People now routinely expect the same level of service in their corporate roles. Now, two weeks is too long to wait; two days is the expectation.

In response, business has taken up the quest for “The Perfect Order” — right material; right place; right time; right invoice; right documents. On-time delivery at the lowest cost is not enough: manufacturers must also fulfill orders correctly to the last detail, enable order tracking, invoice without error and prevent headaches with customs and compliance.

Figure 1: Examples of penalties associated with common infractions of U.S. export requirements

Source: *US Customs and Border Patrol (CBP)*

Errors	\$10K per negligent violation, \$100K per willful violation
Negligence	Twice the government’s revenue loss, or 20% of the dutiable value if no revenue loss occurs
Gross Negligence	Four time the government’s revenue loss, or 40% of the value if no revenue loss occurs
Fraud	Market or resale value of the goods or the forfeiture of the goods themselves
Criminal Behavior	Goods seized and forfeited, a \$500K fine, and five years in prison

Risk or Reward?

Extensive, complex supply chains breed increased risk factors. If orders are not ‘perfect’, manufacturers face losing the good will of their customers — who feel they can easily go to another provider that will give them the perfection they demand. The costs of errors add up fast, whether the result is one delayed order or loss of export privileges.

Today’s Governments demand proof from companies that steps were taken to avoid a violation. As shown in Figure 1, the difference in the penalties the U.S. government assesses for “negligent” versus “willful” violations can be as much as a factor of ten. Standardized processes, with a clear audit trail that proves they were followed, improve the chances of having a violation viewed only as “negligent.”

Proving due diligence is one of the primary factors driving growth in the market for automated systems to support ITL and GTM. Implementing systems that enable employees to consistently follow procedures while capturing the time, date, and owner of each step go a long way toward proving a company’s sincerity in following the rules. Given today’s stringent compliance requirements, errors can be deadly for an organization. Technology provides ease, speed and accuracy that can mean the difference between competitive advantage and going out of business.

Government mandates are spilling over into other areas of corporate compliance. While formal programs have yet to be defined, concerns over the environment are creating demands to better define emission requirements and many expect programs that will facilitate “carbon credits” to be put in place. This will create whole new demands on transportation management technology to record, report, and possibly trade operational data.

Transportation Best Practices: Finessing the 21st century supply chain

A paradigm shift for distribution and delivery on a global scale.

'Best-in-class' enterprises have made the paradigm shift to an understanding of the nature of the global supply network. In these businesses, transportation is no longer seen as an isolated budget line item to be monitored, but as a critical component of overall supply chain performance. They consistently strive for operational excellence, seeking to maintain transportation best practices across a global enterprise, regardless of where an item originates.

Leading companies are implementing best practices to save money; increase transportation velocity and help businesses successfully navigate the complexities of international shipping. By applying the best practices that follow, businesses can address globalization, rising costs, customer service and risk.

Leading companies ask themselves:

- How can we leverage transportation to gain a competitive edge?
- How can we improve our transportation logistics to increase customer satisfaction?
- How can we use technology to streamline logistics and control transportation costs?
- How can we manage the flows and velocities within our supply chain to better leverage our production capabilities?
- How can we improve our green strategy?

Transportation Best Practices:

Best Practice 1 - Master globalization

Shipping to or from a market outside your home country raises a particular set of issues that can affect the cost and velocity of a shipment. The following guidelines will support your company to achieve best practice for domestic and international shipping and master globalization effectively.

- Ensure that your shipment of a specific product to a specific customer will meet all applicable compliance laws before the shipment is packed
- Know what documentation is required, prepare it correctly, and deliver it automatically to the right parties in hard copy, fax, or email, as required
- Make sure you have access to bills of materials at the item level, so you can take advantage of Preferential Trade Agreements and Export Refunds
- Manage letters of credit to avoid overruns, delays and additional charges due to clerical errors
- Use rules-based processes for documentation and compliance so that the appropriate level of attention is focused where most needed
- Maintain a complete, detailed audit trail to document the circumstances around every exception

Executing international shipments correctly carries an impact well beyond mere cost. Failing to manage all details correctly can have adverse effects on customers, result in substantial fines, incur loss of export privileges or even lead to prison sentences

Best Practice 2 - Control your shipping costs

Spend only as much as you have to in order to meet your customer's needs and expected services levels.

- Automatically shop for the best rate that will support the level of service your customer expects
- Look for opportunities to balance cost, expected arrival time, and the methods of shipment available, i.e., surface vs. air
- Look for less-than-load (LTL) shipments that can be consolidated into TL.
- Determine whether individual parcel shipments can be consolidated into one shipment (zone skipping)
- Look for opportunities to reduce deadheading by combining outbound with inbound shipments
- Turn your shipping department into a profit center by maintaining separate "Actual" vs. "Charged" freight tables

Automated processes not only ensure effective cost management, but also support the ability to generate revenue from transportation operations.

Saving over 7 Million Euro in a 2.5 year period -

By consolidating individual parcel shipments into container loads and pre-labeling each package for local delivery, the UK operations of Emerson Process Management were able to consolidate groups of shipments into one container load for international transport. On arrival in-country, the smaller shipments were simply taken out of the container and put directly into the carrier's process for local delivery.

Source: Emerson Process Management

Best Practice 3 - Deliver to Customer Expectations

Accurate information about the status of a shipment has to be readily available to customers and partners up and down the supply chain. “Real Time” data gives you information to support smart decision making and proactively respond to changes in your supply chain.

- Always ship the way that your customer has requested, whether based on lowest cost, best performance or named carrier
- Ensure that both you and your customers are able to access shipment status based on the PO number, Sales Order number, Invoice number or Carrier Tracking number
- Have access to the carrier’s website from within your transportation management system
- Provide your customers, suppliers and employees with the appropriate level of access to your system to get the information they need.

With advanced information, your suppliers, your customers and even your internal stakeholders will be able to schedule their operations more efficiently.

Cautionary tales

A T-shirt marketing firm had been buying from a supplier in the Caribbean for several years. Before every shipment, the company asked its supplier if the cotton in the shirts was produced locally. They were consistently assured that it was. But in the case of one shipment, the U.S. government claimed that the cotton had actually been made in China. When the company could not produce the required Certificate of Origin; the shirts were seized and the company was fined.

Source: Customs and Border Patrol (CBP)

Thiodiglycol is a common, high volume product (over one million pounds are shipped annually) used as an antioxidant. Because it can also be used in the preparation of mustard gas, its export is controlled by the Department of Commerce. Morton International (Morton Salt) was recently fined \$647,500 for exporting Thiodiglycol to Mexico.

Source: CBP

Best Practice 4 - Mitigate risk and avoid delays

Small details gone astray can cause large problems that create delays, which lead to added expense and dissatisfied customers.

- Automate the transfer of order pick information directly from the Sales Order Management system within the ERP
- Schedule pick/pack operations to coincide with carrier availability
- Make sure that the goods are packed right the first time, with the correct inners, outers and containers
- Consistently create documentation that is both complete and in the format required by the customer

Once an order is accepted, any delay in getting it out the door can only be made up by choosing a more expensive mode of transportation.

Penalties for trading with denied persons

U.S. manufacturers and distributors don't have to ship outside the country to run afoul of federal agencies.

Any U.S. company or individual that loses export privileges is placed on the Denied Persons List making it a violation to ship to them.

Currently, there are many such parties listed by the Bureau of Industry and Security (BIS) that have domestic U.S. shipping addresses.

Source: BIS

Best Practice 5 - Protect the environment

At first blush, it would seem that anything that reduces cost would also be beneficial to the environment. For transportation management, this translates into the reduction of carbon emissions.

- Plan and consolidate shipments based on customer regional proximity or distribution center availability
- Analyze your logistics network to better foster fulfillment based on origin-destination needs
- Consider sourcing and logistics costs at the design phase in order reduce the need for importing/exporting of raw materials or sub-assemblies.

The caveat here is getting accurate data from a comprehensive TMS to make sure that these initiatives are realistic and achievable, and where they are not, to be able to rationally balance the tradeoffs.

Leveraging Technology: Why the 'best-in-class' are the best

Leadership in a changing landscape:

With a complete Transportation Management Solution that covers shipment planning and optimization, carrier management, cost management and freight payment, compliance and global trade management, companies can:

- Significantly reduce transportation costs
- Avoid the costs of delays
- Prevent costly non-compliance audits and fines
- Improve carrier and rate management
- Improve warehouse productivity
- Increase visibility into inventory costs across the extended supply chain
- Protect the environment

Automating transportation management processes keeps costs in line, improves information accuracy and helps avert the delays and government involvement that can arise from human error. For example, automating document preparation provides significant savings and ensures quality; paper forms are eliminated, along with the cost of the forms, the time needed to manually complete and process them, the potential for human error and the resources needed to keep forms on file.

Multi-national manufacturers need the ability to manage dispersed operations to local requirements, while maintaining a global standard of demand fulfillment and operational efficiency.

Companies that use technology to share transportation management information across the enterprise, as well as with customers, are

exploiting the value of automated transportation management systems to drive cross-functional productivity, lower costs and improve customer service. While applying transportation management best practices requires close attention to detail, a transportation management system provides the ability to mine data at the lowest level in order to ensure accuracy and relevant analysis. These benefits go well beyond basic shipment tracking and extend to other areas of the supply chain.

Leaders centralize in a visible way:

“Best-in-class [enterprises] take notably different actions than their peers. They are the most likely to have centralized transportation procurement and contracting across their entire company, as well as to have centralized domestic transportation planning and international transportation execution.....[This helps them] share transportation information more effectively internally and with customers [and] have better visibility to transportation costs”

TMS Benchmark Report, Aberdeen (2006)

The PRECISION Solution: An enterprise solution for global transportation & trade

Reducing costs and avoiding delays are essential to being effective on a global scale:

The PRECISION suite of collaborative supply chain solutions redefines transportation management with integrated capabilities for global transportation and trade for the enterprise. The PRECISION platform (Base) leverages services oriented architecture and a rules driven process engine that allow functional modules to be configured to support business processes. It is required to run all PRECISION solutions.

PRECISION integrates easily with leading Enterprise Resource planning (ERP) Applications and Warehouse Management Systems (WMS) and consists of the following modules.

PRECISION Global Visibility connects the players in your supply chain to provide the centralized view of shipments that you need. From a centralized web based portal you can see the status of inbound and outbound orders, and use this information to calibrate and improve your supply chain. Get 'real time' updates from carriers, forwarders, brokers, suppliers and other parties involved to help you continually drive improvements, have visibility to inventory in-transit and give you the edge to be successful in this competitive environment.

PRECISION Global Trade Management (GTM) solution provides organizations with an integrated and comprehensive way to manage and automate import and export business processes. From restricted party screening, to the creation of trade documentation and customs reporting, to support for specific

country regulatory and security acts, you can trade promptly and with confidence using this dynamic and robust platform.

PRECISION Freight Forwarding provides Logistics Providers (Carriers, 3PL's 4PL's) with a fully integrated infrastructure to automate and manage all domestic and international services for ocean, air, road and rail from a single instance. The Freight Forwarding solution enables collaboration of shipment information in multiple locations, using multiple currencies around the globe.

PRECISION Transportation Management (TMS) provides organizations with the transportation planning and execution capabilities needed to manage shipments throughout all stages of their life. From one system, users can consolidate shipments, plan and execute truckload movements, track goods, and ultimately complete the cycle by auditing freight invoices against rated shipments.

PRECISION Parcel Shipping provides organizations with the ability to manage and automate their parcel shipping requirements across the organization. From the front-office to the production floor, this solution supplies flexibility and control via a robust routing guide that is designed to determine the most appropriate carrier, service and transport mode applicable to a proposed shipment. Rate shop between carriers; manifest shipments, print carrier-compliant labels, track proof-of-delivery and audit freight bills.

Conclusion: Good transportation management is more than 'good' business

Getting your Transportation Management right:

Transportation Management has become a driving factor in our overall economic and environmental wellbeing. The classic just-in-time supply chain that's been perfected over the past ten years didn't necessarily focus on transportation as a major cost variable, what with fuel costs low and suppliers close by.

However, as global supply networks expand and products are sourced and shipped from all corners of the world, meeting customer demand profitably is only becoming more challenging. That's why technology is an important enabler of the accuracy, accountability, efficiency and sophisticated business processes required to run global supply chains effectively.

Indeed, the inherent risks and potential costs of competing in today's global marketplace are high — but enterprises of all sizes and types have tremendous opportunity to manage their global supply networks and to create sustainable competitive advantages by mastering transportation management best practices.

Integrated transportation management software solutions not only provide the means to reduce transportation costs, they enable a highly competitive supply chain infrastructure geared to consistently deliver the most efficient and effective day-to-day operation through transparency and improved decision-making.,

About Precision Software

Precision Software, a division of QAD Inc (NASDAQ: QADI) provides industry-leading global transportation and trade software to exporters, importers, 3rd party logistics providers and business services companies.

Precision Software's unique integrated platform provides collaborative supply chain solutions that enable agility and lean practices for the global supply chain. With 25 years of global experience, Precision Software helps companies to reduce their transportation costs, avoid delays at trans-border crossings and mitigate risks as they navigate today's dynamic trading environments

Precision's solid customer base which spans multiple verticals including healthcare, pharmaceutical, chemical and industrial, consumer packaged goods, electronics, and food & beverage, realizes the value of the PRECISION suite of solutions. They leverage the flexible and scalable capabilities to deliver significant transportation costs savings and superior customer service.

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