



## Volatility is the only constant in transportation cost

**A disciplined, structured approach to Global Transportation Management (GTM) can provide cost reduction and a competitive advantage.**

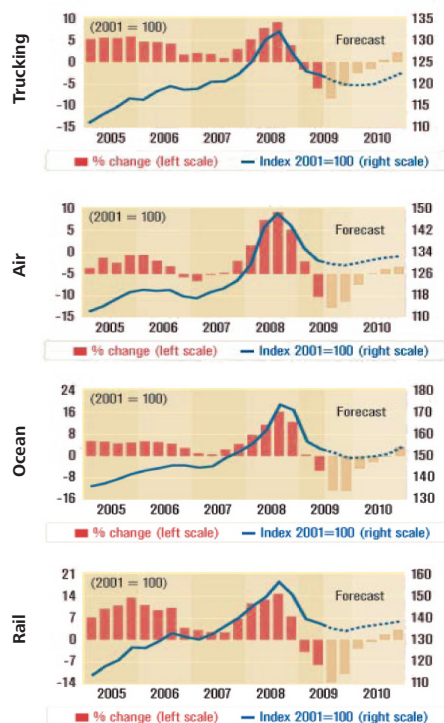
### Background

The roller coaster events of 2008 provided for an unprecedented change in transportation rates, havoc to logistics budgeting, and attention at the highest level of organizations for manufacturing and service companies. The good news for 2009 is the decline in rates has provided much needed relief to the cost pressures. On the other hand, this relief is probably only temporary. When the recession fades and volumes return, the rate of change in transportation costs should revert to the significant increases seen over the last four to five years (see figure 1). This rate of change and complexity of the different modes makes the granularity and visibility of information paramount to controlling costs and maintaining appropriate service level. According to the 20th Annual State of Logistics Report released in June 2009 by the

Council of Supply Chain Management Professionals, in 2008 "trucking increased by 1.3% compared with 4.4% for rail, air, and ocean transport. Truckload industry capacity dropped at unprecedented rates, with freight volumes declining faster than capacity, offering little incentive to keep fleets." The rate of recovery by mode will be significantly different (see figure 1). For example, trucking rates have had the steepest fall in early 2009 and despite decrease in capacity appears to remain depressed longer than other modes.

Aligning the business requirements with the various service levels by mode is a basic requirement, but may differ based on your industry. For example, in the aerospace and defense industry, materials being shipped tend to be higher in value, lower in volume, and time sensitive. Therefore, a majority of the time, the mode selected is either air or trucking (less than full truckload) with minimal activity in ocean or intermodal (rail) because of the inherent longer cycle times. For international shipments, you have little choice, and securing the lowest rates at the appropriate service level for air is the prudent approach. However, for shipments within a region (e.g., North America), trucking usually costs one-third that of domestic air. The value of speed or perceived need for speed versus the increased cost for service is rarely understood.

Figure 1: Rate change trends



Source: Logistics Management Magazine — July 2009

Unfortunately, functions making decisions rarely have the information to choose the optimum choice for the organization.

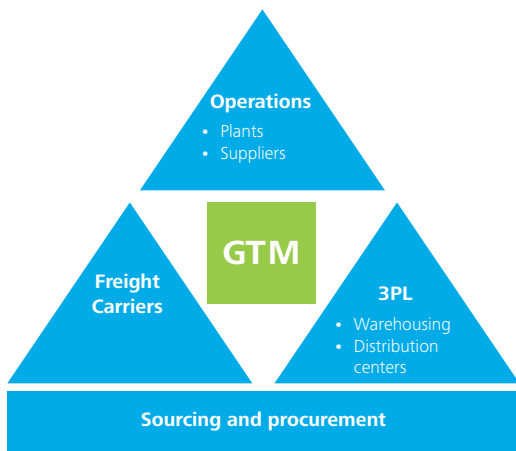
In an industry such as consumer goods, the volumes and lower material values increase your options to include trucking versus intermodal. During April and May, rail and intermodal rates have reversed the trend and begun to increase even with decreasing demand. These trends should be monitored to determine cost benefit of intermodal over full truckload rates, which are severely depressed versus the inventory impact of extended cycle times.

Unfortunately, the functions making mode decisions rarely have the information to choose the optimum choice for the organization.

## GTM: Strategy development

The key to managing cost, service levels, and maintaining a competitive edge is to build a strategic framework that includes plant operations, suppliers, logistics, and sourcing and procurement. This framework needs to consider the sophistication of the supply chain requirements, whether the logistics functions should be a core competency along with the current organization capabilities. Keeping the above in mind, determining the vision for in-house and outsourced roles and responsibilities becomes the foundation of a more efficient operation and management system. Potential frameworks range from a complete in-house vertically integrated business model with supporting information systems to a completely outsourced relationship with a strategic partner(s). However, most companies choose a hybrid model matching their expertise with that of third parties (3PLs or Lead logistics Providers: 4PLs).

### Strategic partner relationship



### Illustrative strategic framework

Function	Global procurement	Network planning	GTM execution	
			Freight planning	Freight execution
Typical activities	<ul style="list-style-type: none"> <li>Carrier selection and certification</li> <li>Rate negotiation</li> </ul>	<ul style="list-style-type: none"> <li>Network design</li> <li>Sourcing shift</li> </ul>	<ul style="list-style-type: none"> <li>Routing</li> <li>Rating</li> <li>Expedite</li> <li>Metrics Management</li> </ul>	<ul style="list-style-type: none"> <li>Track and trace</li> <li>Freight payment</li> </ul>
Potential partner	<ul style="list-style-type: none"> <li>In-house</li> <li>Lead logistics providers (4PL)</li> </ul>	<ul style="list-style-type: none"> <li>In-house</li> <li>Outside services</li> </ul>	<ul style="list-style-type: none"> <li>In-house</li> <li>Third-party logistics</li> </ul>	<ul style="list-style-type: none"> <li>Operations (Suppliers, plants, warehouses, distribution centers)</li> </ul>
Example of IT solution	<ul style="list-style-type: none"> <li>Various enterprise resource planning (ERP) solutions</li> </ul>	<ul style="list-style-type: none"> <li>Stand-alone modeling tool</li> </ul>	<ul style="list-style-type: none"> <li>I2, Manugistics, Oracle, SAP, Manhattan owned or hosted</li> </ul>	<ul style="list-style-type: none"> <li>Oracle, SAP, Manhattan ERP, and/or warehouse management system (WMS).</li> <li>EDI or Web enabled</li> </ul>

## Functional alignment and corporate leverage

Most companies have expended a great deal of effort reducing costs and improving performance in the function silos of logistics. They have achieved this through tried and proven sourcing and procurement practices and continuous improvement programs. The best-in-class companies have moved up the maturity curve to design and implement a strategy to link manufacturing, supply management, and warehousing all the way through the distribution network, including freight execution.

The basic infrastructure and functional requirements of material movement are similar enough to leverage size and relationships across complex organizations.

The first step is to build a global network design, including your various supply chains: new product, aftermarket, and returns. The requirements can vary significantly, but the basic infrastructure and functional requirements of material movement are similar enough to leverage size and relationships. This concept is simple and somewhat obvious, but rarely executed well in large companies or global conglomerates.

Often the network design effort is left to the same resources responsible for the day-to-day operations. The challenge with this approach is twofold. First, there is almost always a conflict of priorities and the strategic work comes second, not receiving the proper level of activity or focus. Secondly, because this is not a regular activity, the proper skills or tools are not available.

The second and probably most important step is to carve out a practical and affordable implementation road map. An easy pitfall to fall into is the tendency to “boil the ocean.” The network design should have tangible, measurable, short-term, and strategic benefits. It needs to take advantage of available resources and have risk and reward for all organizations involved, including potential strategic partners.



## GTM: Program approach

We have found, given the proper focus, logistics can be a target-rich arena for optimization and near-term savings. The near-term savings can in turn self-fund a more strategic GTM vision. Companies can redesign their transportation and distribution networks so simultaneous gains can be made in reducing inventory, warehousing assets, and transportation rates while improving service levels. Using a systematic approach with sophisticated optimization tools, Request for Proposal (RFP) strategies and inventory modeling, you can deliver substantial benefits more effectively than traditional efforts. The approach should be flexible and tailored based on the maturity of your organization and processes leveraging strategies already completed. There are two basic phases involved: Network Assessment/Business Case Development and Program Implementation. The components of each phase can, under the correct circumstance, be executed as stand-alone or concurrent efforts.

A solid network design or footprint is the foundation for any GTM effort.

### Phase I: Network assessment/business case development

- 1. Network assessment and design tools:** A solid network design or footprint is the foundation for any GTM effort. Using sophisticated modeling tools coupled with logistics professionals who understand the implications in your industry allows for the proper design of an efficient model. Evaluating your current network and introducing different concepts (e.g., forward stocking locations, direct point-of-use facilities, consolidation centers) to modify your current strategy can lead to savings in inventory, operations, and transportation. In addition, it is critical to add a broader perspective, such as tax, real estate, and human capital when identifying the full range of opportunities.
- 2. Strategic outsourcing determination criteria:** There are many 3PLs or 4PLs (i.e., freight and warehouse operators, GTM organizations) capable of being strategic partners. However, their capabilities can vary based on geography, function, and industry experience. Working with established criteria to determine if your organization can support the logistics functions internally, or if the better solution is to select a strategic partner, is paramount to eliminating existing bias or predetermined conclusions.
- 3. Executable strategy and practical implementation plan:** Often visions are created that represent the optimum solution, but in reality these are not practical. First, your organization needs to evaluate its appetite for change and readiness to support the initiatives and only then can an implementable strategy be built. Structuring the implementation phase into three steps, you can optimize scarce resources, get early benefits, and lay out an affordable and timely strategic effort.

- a. Step 1** is focused on procedural or compliance areas targeting the high volume or cost areas of your network. The traditional 80-20 rule works well in identifying areas where quick improvements lead to early savings. Later, in the benefits section of this article, we detailed some of these areas (i.e., mode selection, shipment consolidation, core carrier programs, and data cleanup).
- b. Step 2** is the transition step to the strategic vision. It is the step where intense data analysis and cleansing take place. New business processes and tools are defined around the strategic roles and responsibilities split across your organization and partners. Interim implementation plans are executed while RFP and partner selection is taking place. Again, the focus is on high volume and impact areas, but has been expanded to include the requirements of the total network.
- c. Step 3** is defined around the effort to upgrade to the infrastructure (information technology (IT) and organization). As a result of the first two steps, you will have a well-defined set of business requirements, strategic partners selected, data and process gaps identified, and an IT strategy for long-term sustainment.

These steps are sequential in nature, but most times overlap based on resource availability and the complexity of the network.

- 4. Detailed business case:** A detailed business case showing the benefits to justify the improvement initiative is required and must be linked to the overall business objective. This effort is needed to develop capital appropriation requests, cash flow analysis, or other key elements (e.g., internal rate of return, return on investment, return on assets) your organization might require to support an investment decision.

Often visions are created that represent the optimum solution, but in reality they are not practical... however an affordable and timely strategic effort can be accomplished.

### Phase II: Program implementation

- 5. Core carrier program:** With the new network design in mind, your core carrier strategy should be revisited. Our experience developing core carrier programs has taught us the importance of continually optimizing the number of carriers based on the volume mix and material flow of your network. This effort has two phases. First, determine what can be done within the current contract structure, including the renegotiation of rates. Secondly, consider the strategic requirements to be included for a broader RFP initiative.
- 6. Current network optimization:** In a parallel effort to the strategic network design, optimizing your current network to properly deploy inventory, support

customer requirements (e.g., service levels), and minimize cost should be considered. Eliminating waste and inefficiencies prior to conversion to the new concepts not only gains savings, but facilitates the transition to the strategic network.

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**7. Best practices for warehousing/distribution operations and transportation management:**

After the strategic level network design is in place, a detailed set of requirements, including best practices in warehousing design and operations should be used for any retrofit activity or new facilities design. Transportation processes from planning, tendering, track and trace through freight billing, audit, and payment need to be designed and documented to provide end-to-end material management. These requirements become the basis for a global RFP. Without close scrutiny in both of these areas, service-level improvements and cost reduction opportunities may be missed.

**8. Detailed RFP requirements and vendor evaluation tools:**

The selection process should be highly structured and supported by tools allowing the execution team and the key representatives throughout the organization to gain a clear understanding of the provider’s capability, analyze the proposal objectively, and identify those with the better capabilities to meet your needs. Many stakeholders must come to a consensus on weighting of the award criteria prior to issuing the RFP.

**9. Performance and metrics management:** Plant, warehouse, supplier, and carrier compliance scorecards, plus continuous improvement targets for transportation and warehouse operations are two examples of management programs, which need to be designed to help control costs and sustain performance improvements.

Do not underestimate how important change management is to the effort... To ensure success, there must be direction and support from top executives.

**10. Change management and program governance structure:**

Logistics and GTM touch all the constituents of your business: customers, suppliers, and the entire operations organization. Effective communication will keep everyone informed and alleviates some of the fears regarding change. Training and the onboarding process should minimize the learning curve and should expedite the transition to a “normal” state of

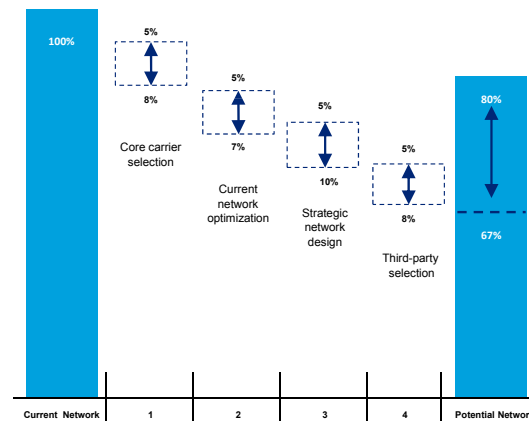
operations. Another key success factor supporting change is to have direction and support from the top executives with clearly defined rules of engagement. A steering committee, meeting on a regular basis with tangible and measurable targets associated with the effort, should be formed. The executives are asked to challenge the strategic direction, make key decisions, and address potential roadblocks in maintaining momentum. An advisory committee from the various business units, appointed by the steering committee, should review and critique the solutions and provide detailed operations expertise as required. The execution team members are the dedicated resources with sufficient bandwidth and skills to design and implement the optimal solution in a timely fashion.

**Network design and GTM: Benefits**

Our experience tells us when the holistic approach to network design and transportation management is implemented, companies typically save in the range of 20% to 30% in logistics costs. These gains are accomplished through the alignment of supply chain organizations with the appropriate number of resource and the correct skill sets. Then by developing incentives and metrics across all programs, functions, and business units, including business partners, you can eliminate barriers like “silo thinking” when determining opportunities.

**Self-funding opportunities: Quick hits**

**Typical benefits**



There are a number of fundamentals each company should do to maximize its ability to cope with the economics for investment and prepare for strategic change. These fundamentals, often referred to as “Quick Hits,” can help the company with cash flow leading to a self-funding program. Transportation has several areas of opportunity where quick hits can lead to operational improvement and cost savings.

**Service level and mode selection:** Freight decisions are often emotional and based on a perception of global and constant urgency. Such decisions lead to higher costs and increasing budget requirements. Establishing company policies and guidelines regulating the use of premium service levels, and consequently driving mode selection, will lead to better cost management and more educated decisions.



Furthermore, compliance can be controlled by implementing a gated process that requires appropriate criteria to be met before any exceptions to the policy are executed. Approval of these exceptions depends on a full understanding of the total cycle time of the material movement, not just the transportation leg. Understanding the true customer requirements is critical to establishing the proper level of urgency, which is not always as great as is thought necessary. Elimination of the incorrect perception of mode effectiveness will avoid biased decisions, in other words, for example, ground movement can often be as effective as airfreight, intermodal meets the service level as well as ground does, or three-day air suffices versus next day air.

**Shipment consolidation:** Companies and/or their suppliers

having a high level of activity in less than truckload or parcel modes do not usually have rigorous standards for consolidation of shipments. By working with the suppliers, shippers, and carriers, a process can be implemented to reduce minimum shipment charges or create a situation for a lower-cost mode. Not only does this reduce cost, but also the effort and paperwork associated with multiple billings and payments.

**Core carrier programs:** Companies can evaluate their carrier base to make sure it has the right number of carriers offering the appropriate services to maximize customer satisfaction on each lane. With the right number of carriers, it becomes easier to manage the freight spend, business relationship, and to measure performance. The core carrier group should provide efficient service on a global, regional, and local scale and be mapped to the shipping requirements, ensuring maximum coverage. Specialty and niche carriers can be considered to allow access to the operation models and a mix of assets which can be useful in special-need situations.

**Master data maintenance:** Maintaining clean and structured data facilitates reporting and decision making is a prerequisite to implementing a global transportation management system. Examples of master data files include item masters, location profiles, and supplier management profiles. A clean and complete item master with weights, dimensions, and special characteristics like hazardous material or export-controlled requirements allows the freight planning organization to properly consolidate freight and identify the right service provider. But something as simple as the correct transit times in your ERP system will allow for the most economic mode of transportation to be selected and can provide early savings.



## Summary

A disciplined, structured approach to GTM can provide cost reduction and a competitive advantage.

- Costs associated with logistics, will, over time, continue to rise and should retain the attention of senior executives.
- Given the proper focus, logistics can be a target-rich arena for optimization and near-term savings. The near term savings can in turn self-fund a more strategic GTM vision.
- Prior to initiating cost reduction and continuous improvement initiatives, build a strategic framework that includes plant operations, suppliers, logistics, and sourcing and procurement. This framework must be linked to the overall organization's priorities, include criteria for in-house or outsourced operations, and identify potential strategic partners.
- A holistic program approach with the proper resources, tools, processes, and governance typically produces 20% to 30% reduction in cost while maintaining or improving service level.
- With the proper design, an executable strategy which is practical, affordable, and timely can be implemented.
- Structure the program to have shared risk and rewards for your strategic partners.
- The key to a successful program is to build momentum and create enthusiasm around opportunities with measurable short-term returns ("Quick Hits") that are visible to the key stakeholders.

## Case studies

Aerospace and defense engine manufacturer		Climate control solutions manufacturer	
Situation	Growth and increased complexity of its global footprint combined with the volatility of logistics cost determined the need to select strategic partners who had capabilities to improve service while reducing cost.	Situation	In an effort to capture market share, increase sales growth, and reduce supply chain and logistics costs, a new supply chain strategy was required to meet the goals of each of the organization's business segments.
Approach	<ul style="list-style-type: none"><li>• Scope includes multiple divisions and geographies for warehousing and transportation</li><li>• Identified a common vision leveraging volumes and organization requirements</li><li>• Perform robust requirements gathering and develop a request for information/RFP</li><li>• Built a customized solution that maximized benefits and created a self-funding implementation plan</li></ul>	Approach	<ul style="list-style-type: none"><li>• Design optimal distribution network to include the number and location of regional distribution centers, customer delivery lead times, and mode/service cycle time</li><li>• Determined high-level warehousing size requirements and operating costs</li><li>• Performed sensitivity analysis and developed target inventory levels</li><li>• Developed the implementation plan, including the finalized transition plan, investment plan, and business case</li><li>• Currently implementing recommendation for two new regional distribution centers (RDCs) and relocation of two existing RDCs</li><li>• Implemented a best-of-breed traffic management system (TMS) that can be integrated with a WMS and ERP SAP (systems applications and products) backbone</li></ul>
Results	<ul style="list-style-type: none"><li>• Reduction in freight cost of ~25%</li><li>• Increased service performance and visibility through implementation of Global TMS, including freight bill audit and payment using a single sourced strategic partner</li><li>• Reduced in-house organization resources and related costs</li></ul>	Results	<ul style="list-style-type: none"><li>• Strategy to lower current operating costs by ~18% and costs as a percentage of sales from 8% to 6.7%<ul style="list-style-type: none"><li>– Included warehousing, transportation spend, and fleet reduction</li></ul></li><li>• Customer service improvement: revenue within one day of RDCs increased from 35% to 80%</li><li>• Working capital reduction of 16%</li></ul>

## About the authors:

### Yanick Desmarais

Manager, Deloitte Consulting LLP  
ydesmarais@deloitte.com

Yanick Desmarais is a manager with Deloitte Consulting LLP's Manufacturing and Operations practice and specializes in logistics and distribution. He has more than 12 years of consulting experience and has provided services primarily to aerospace and industrial companies.

### Michael Nayden

Director, Deloitte Consulting LLP  
mnayden@deloitte.com

Mike Nayden is a director with Deloitte Consulting LLP's Manufacturing and Operations practice and is a leader of the Logistics and Distribution service offering. He has more than 25 years of consulting and industry experience. He has provided consulting services to numerous consumer products, aerospace, and industrial companies.

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