



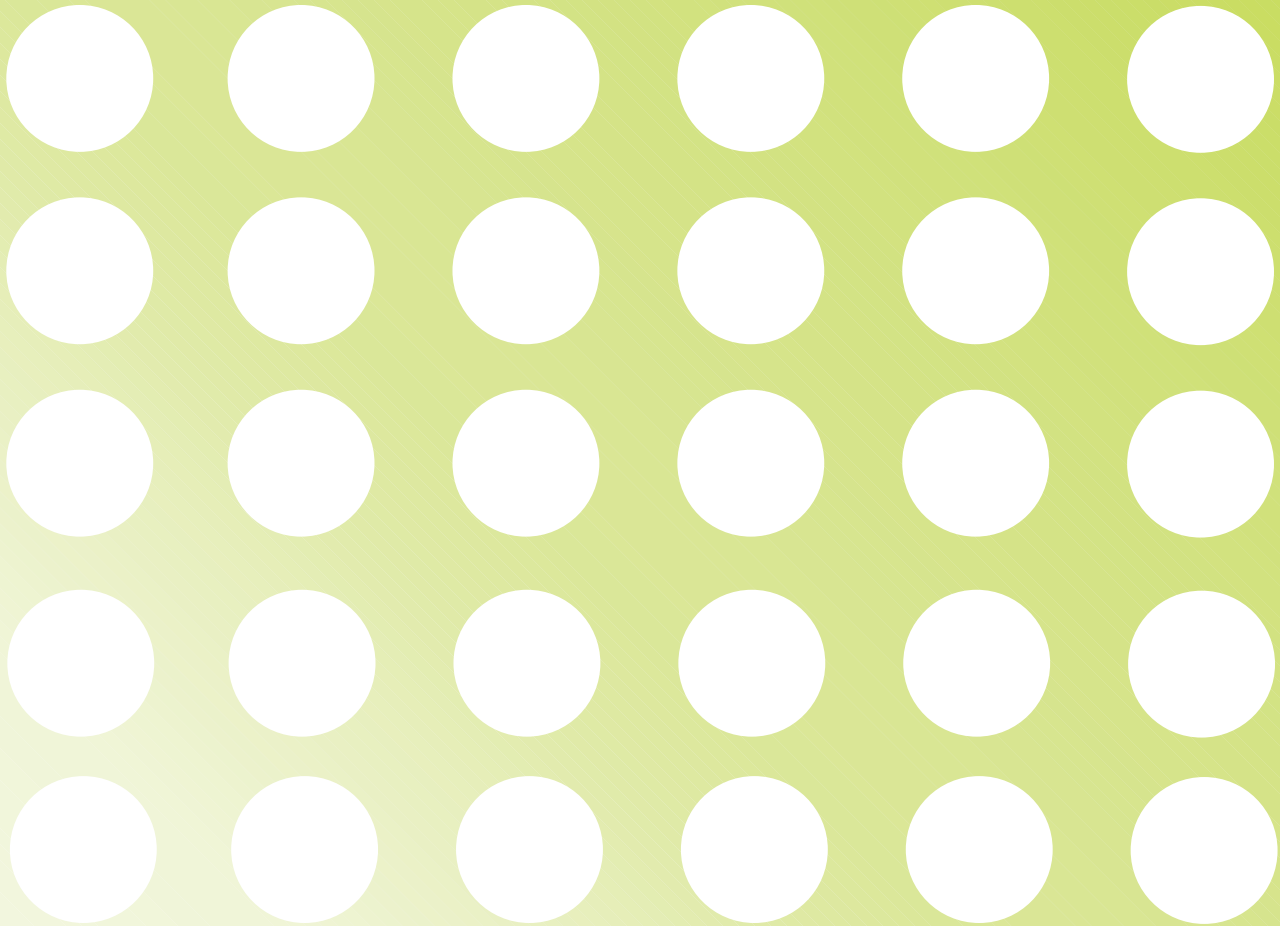
Drivers of Sustainable Supply Chain Management Practice

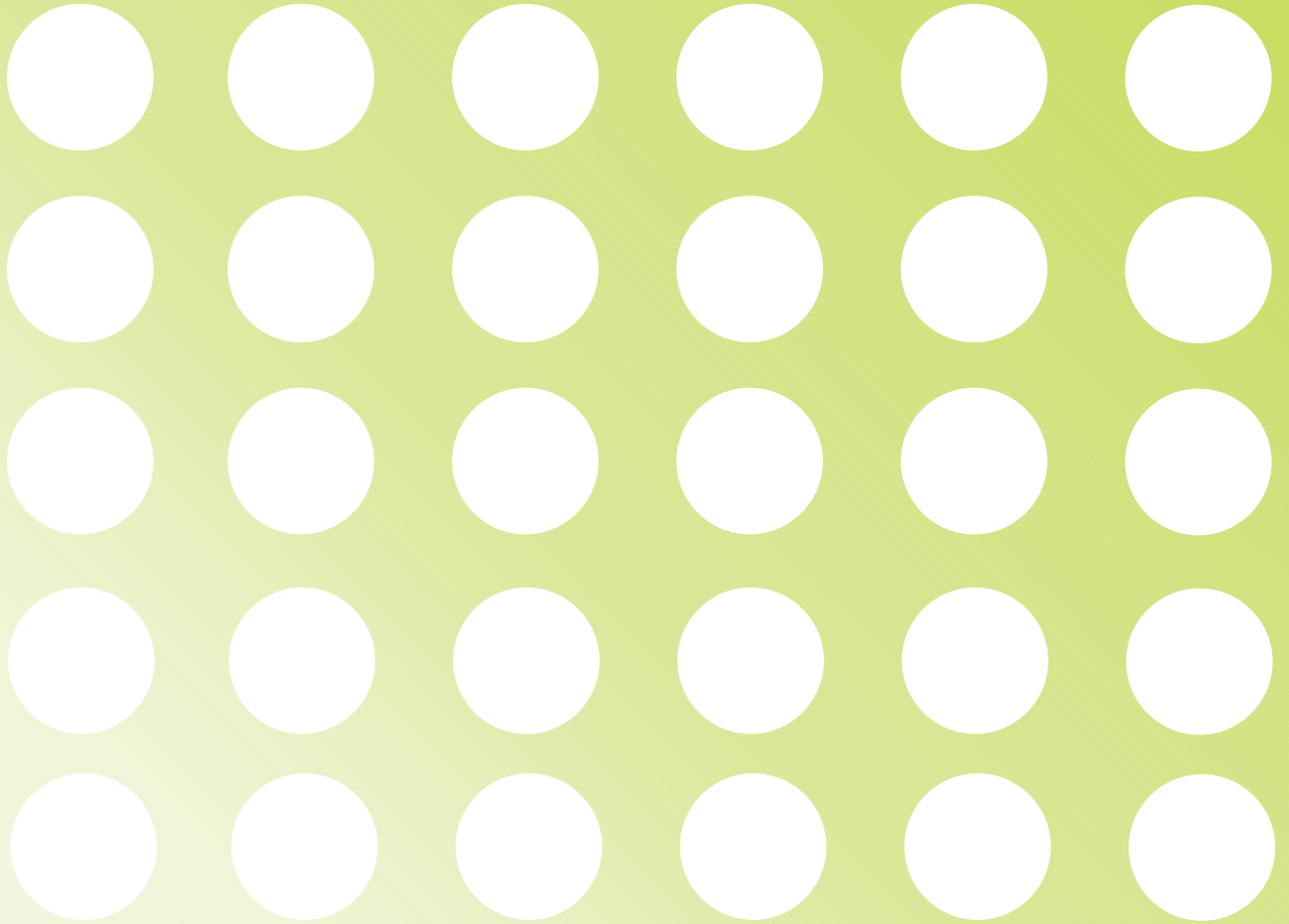
Optimization

September

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Executive Summary

For the past eighteen years we have been conducting an annual study that examines the trends in issues in logistics and transportation in order to provide some insight into best practice by leading edge companies. Just as importantly, the annual studies have presented an assessment of the current state of logistics and transportation practice, along with the identification of opportunities for improvement. Over the course of these eighteen years business conditions have fluctuated from good to challenging – particularly after 9/11/2001. What we have found, however, is that the current economic conditions have created challenges that most of us have not faced heretofore in our careers. It is not too trite to say that we are in unprecedented times.

In response to the economic conditions, many firms are taking actions that we believe are reactionary to the situation. While these changes may have an immediate impact, our concern is that they are not changes that will sustain the business once the economy recovers much less position the firm to take advantage of growth opportunities. This led us to the question – What are the drivers of sustainable transportation, logistics, and supply chain management practice? That is, what capabilities should firms be developing that will enable them to continue to advance in both good and bad economic times?

In the first report from the 2009 annual study, we examined the five fundamental capabilities – optimization, synchronization, profitability, adaptability, and velocity - that firms must develop in order to build sustainable supply chain management practice. This report provides a more in-depth look at one of those drivers – optimization. Supply chain optimization is much more than just the physical network structure. It includes the fundamental problem of how to “best” distribute goods and services to the marketplace, how to utilize transportation for the optimal flow of materials and goods, and how to achieve seamless, end-to-end information flows that enable supply chain decision making that optimizes results for all members. Perhaps no other animal best describes this tenacity than a common ant. Some of the key findings regarding the state of supply chain optimization include:

- The logistics strategy of medium- and small-sized firms is significantly more impacted by the cost of logistics services and increasing customer requirements than large-sized firms.
- The Masters of Logistics (annual sales revenues greater than \$3 billion) have significantly increased their use of core carries for two primary reasons – committed capacity and reduced transportation rates.
- In North American firms, purchasing/procurement drives inbound transportation execution significantly more than in EEA firms where both interface activities meet on a regular basis to discuss strategic decisions for both areas.

The challenge that firms must deal with is how to advance these strategies in a period of financial adversity. The economy has leveled the playing field for business. In the past three years, the Masters of Logistics (firms with sales revenues greater than \$3 billion) had created a notable competitive gap in logistics and supply chain management between themselves and other size firms. This gap has almost disappeared in 2009. The window of opportunity for medium- and small-sized firms to act is now. The study findings indicate that the Masters have implemented initiatives that will enable them to emerge from the economic downturn in a position of greater strength than before the recession.

A supply chain that does not have optimization as part of its core capabilities will not win the competition of supply chain against supply chain. Winning involves the “right sizing” and alignment of global resources to create the most effective and efficient supply chain possible. We hope that this report assists you in your efforts to develop this capability that is a fundamental building block to sustainable supply chain management practice.

Sincerely,

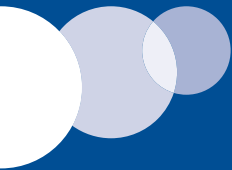
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Optimization is the alignment of global supply chain resources – both tangible and intangible, own or outsourced – to facilitate the success of supply chain members.

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Synchronization is the ability to coordinate, organize and manage end-to-end supply chain flows – products, services, information, and financials - in such a way that the supply chain functions as a single entity.

Profitability is the result of creating value through supply chain activities. Asset performance, working capital, returns on investment for infrastructure, technology, and people, are some of the critical parts that create value in a global environment.

Adaptability is the degree to which respective supply chain members can change practices, processes and/or structures of systems and networks in response to unexpected events, their effects or impacts.

Velocity is the speed at which end-to-end flows occur in the supply chain. It encompasses speed-to-market for new product introduction and execution when conditions are rapidly changing.

Drivers of Sustainable Supply Chain Management Practice



DRIVERS OF SUSTAINABLE SUPPLY CHAIN MANAGEMENT PRACTICE

Sustainable Supply Chain Management Practice

Many of the changes that firms have made during this recession are not ones that will enable them to lead the competition when the economy rebounds. This is because they have not built supply chain management practices that will be sustainable in good times as well as bad. Our earlier report - Drivers of Sustainable Supply Chain Management Practice - presented five drivers that constitute the core of sustainable practice in supply chain management. These drivers – optimization, synchronization, profitability, adaptability, and velocity – comprise the engine that will fuel the firm’s growth and success. They represent capabilities that will be difficult for the competition to emulate, and they are fundamental to creating a supply chain that will outpace the competition.

Why are these drivers so critical to successful supply chains? Perhaps it is the unique set of capabilities, both individually and collectively, that they represent.

The changes that we are dealing with today represent a “new normal.” The new normal is characterized by continual economic, social and technological change. This constant state of change suggests that reorienting to changing conditions will not be possible. Instead, firms must build dynamic supply chains that are capable of evolving and adjusting to new conditions.

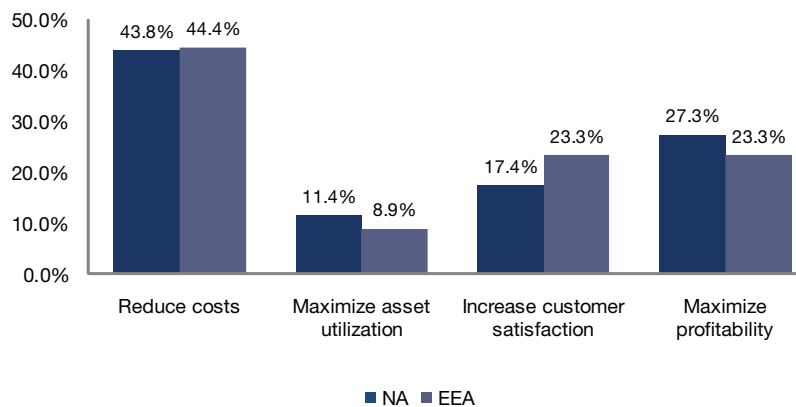
The purpose of this report is to take a more in-depth look at the role and

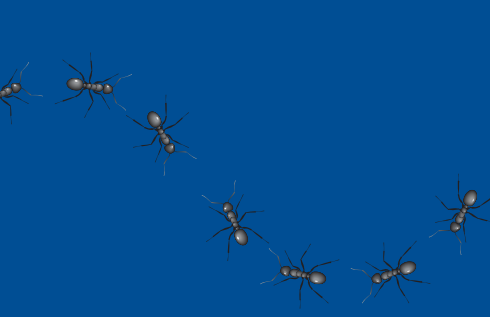
purpose of one of the drivers - optimization - in creating the type of supply chain that is needed for the “new normal.” This examination would not be complete, however, without an assessment of the current state of practice.

Challenges and Issues with The “New Normal”

The recession has prompted many firms to consider how they can endure during these very difficult times. For many firms this has led to a relentless focus on reducing costs. There is an expectation that firms will be able to generate double digit savings on an annual basis and enhanced service in response to increasing customer requirements. The economic slide since 2008 has placed tremendous pressure on firms to become much more efficient and effective than ever before – with far fewer resources. It is somewhat uncommon, however, for firms to place a priority on increasing or achieving high levels of customer

Shifting Corporate Objective during Tough Economic Times





Oxford Industries

Oxford Industries is an international apparel company that operates a diverse portfolio of owned and licensed lifestyle brands. Like many of today's apparel manufacturers, Oxford's legacy business divisions operate complex global supply chains. Much of the product is purchased on an order-by-order basis from offshore third-party producers across the globe, and some of the company's product is acquired on a "cut-make-trim" basis. In this case, Oxford supplies some or all of the materials and contracts with third-party producers to cut, sew and finish the apparel product, or it manufactures the product in its own factories.

Oxford realized that it needed to bring its business divisions up to speed with the latest supply chain management technology that could integrate with its existing ERP system. As a result, the company selected best-of-breed solutions that enabled the company to better understand its customers' evolving requirements and current trends along with historical buying patterns, giving it the ability to create accurate forecasts and synchronize demand for replenished product with sources of supply. Additionally, Oxford can now plan at the style, color, size and dimension level, which ultimately has transformed the company's supply planning process from a planning activity to truly giving it the ability to manage the critical issues.

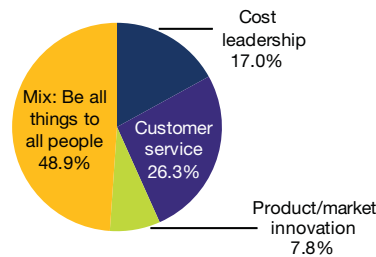
With the support of demand and master planning software, Oxford can compare forecasts with those of its retail customers to ensure that the right amount of product is manufactured, leading to improved collaboration and service levels.

"The flexibility and scalability of the demand and master planning solutions can serve to improve the demand and supply planning processes for any company, and provide the opportunity to increase sales and reduce operational costs through better inventory management at the wholesale and retail levels," said John Baumgartner, chief information officer, Oxford Industries.

► **Large firms (annual sales revenues greater than \$3 billion) and medium-sized firms (annual sales revenues \$500 million - \$3 billion) are much more focused on reducing costs than small-sized firms (annual sales revenues less than \$500 million). Small firms are placing more emphasis on increasing customer satisfaction.**

satisfaction before concentrating on achieving profitability. While customer satisfaction is a key component of the firm's success, there is also a great deal of pressure on the firm to achieve short- and long-term financial results. The ability of the firm to achieve the desired financial results depends to a certain extent on cost management.

Both Efficiency and Effectiveness Drive the Firm's Strategy - North America 2009



Data from our 2009 study on the trends and issues in logistics and supply chain management indicate that both North American (NA) and European Economic Area (EEA) companies are focusing their efforts on improving the efficiency of their organizations. The percentage of firms that cited reducing costs as their primary objective for 2009 has increased from the previous year for both NA and the EEA. The most dramatic shift occurred in the EEA where the number of firms that are focusing on reducing costs increased by 56.8 percent from 2008 to 2009. Before 2009, the primary objective for EEA firms was increasing customer satisfaction, followed closely by profit maximization and reducing costs.

In North America, however, the shift from focusing on increasing customer satisfaction to reducing costs occurred in 2006. Interestingly the percent of companies that concentrate on maximizing profit and asset utilization have remained fairly

stable over time. The data suggest that in times of economic hardship or uncertainty firms direct their efforts to efficiency much more so than in times of economic growth when effectiveness – or service – becomes more important.

That being said, the firm's objective must support the corporate business strategy in order to provide clear direction for the structure and alignment of resources. How does the focus on cost reduction support the business strategy? Although the largest proportion of study respondents reported that their objective is to reduce costs, other results show that only a small percentage of North American firms see themselves as cost leaders – 17 percent. Instead, most companies view their strategy as a hybrid one where they must "be all things to all people." That is to say that both cost and service form the basis for how the firm competes. Of the four strategic directions, this is one of the most difficult to successfully deploy. Why? It requires that customers and products be differentiated to a degree that distinct, and perhaps unique, service can be delivered in a cost effective manner.

The need to "be all things to all people" has been increasing since 2006 when it passed customer service as the top ranked strategy. The balance between cost and service means that tradeoffs must be carefully evaluated for each and every customer transaction. Analysis of firms by revenue size revealed that large (greater than \$3 billion) and medium-sized (\$500 million - \$3 billion) firms are much more focused on reducing costs than small-sized firms (less than \$500 million). Small firms are placing more emphasis on increasing customer satisfaction.

A Call for Optimization in the Supply Chain

The growing need to “be all things to all people” increases the need to optimize the supply chain. For many companies this translated to a determined effort to reduce costs as indicated by the study results. Cost cutting alone, however, will not result in an optimized supply chain. A supply chain that is working toward optimization focuses on effectively reducing inventories, increasing its ability to quickly enter new markets, reducing cash-to-cash cycle times, and becoming more lean overall. This leads to improved customer responsiveness in addition to shared cost savings. Optimization is a shared objective for supply chain members who are willing to work together to determine who can “best” perform the activities and tasks. From here, individual and shared resources and responsibilities are established to maximize the

efficiency and effectiveness of the total supply chain’s efforts.

The need for optimization has never been greater. Both North American and EEA firms agreed that the economic downturn and the ensuing recession was the single largest factor that impacted their overall business and logistics strategy in the past year. The economy was not the only factor that challenged the logistics strategy during this time. The manner in which North American firms conducted logistics activities was greatly affected by the cost of those services. This happened during the same time when customer requirements were increasing.

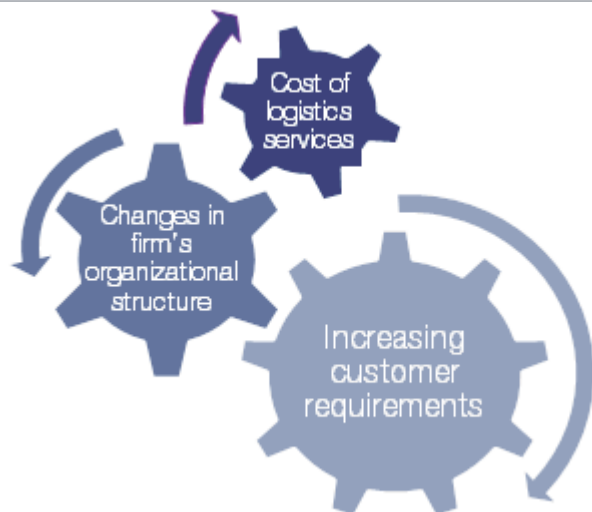
Did all firms experience the same impact to their logistics strategy? The study results indicate that while every size firm was somewhat affected by increasing customer requirements, medium-size firms were significantly more impacted by this factor. Medium-size firms also noted that regulation and compliance mandates changed their logistics strategy. Small firms particularly felt the pinch from the cost of logistics services. This happened at a time

when the firm’s organizational structure was also in a state of change. Whether this was in response to the overall business economy, the cost of logistics services or other forces is not known. Just like small firms, the logistics strategy for large firms was also impacted by changes in the firm’s organizational structure. The 2006 study results indicated that large firms (also known as the Masters of Logistics) had either completed or were in the process of implementing significantly more network design projects than other size firms. As a result of these efforts, they have been changing the structure of their respective organizations and aligning resources to move towards this “optimal” design.

The call for supply chain optimization is also based on strategic initiatives that companies have undertaken in the past year. Expansion into new markets, renegotiated supplier contracts, and lean inventory initiatives lead the list of strategic initiatives for North American firms. To be successful these projects need to be done within an optimal supply chain structure. That is, the optimal alignment of people, processes and technology ensures that the completed strategic initiatives yield the highest results possible.

Did size of firm influence which strategic initiatives that firms engaged in last year? Indeed the analysis indicates that large-, medium-, and small-size firms took somewhat different directions relative to their efforts. Unlike large and medium-size firms, small companies did not expand into new markets as often. Large revenue size firms tackled three additional strategic initiatives that will position them to improve future performance. They developed or began using a more cross-enterprise approach to supply chain

Three interrelated mega trends for both North American and the EEA are driving the “right sizing” and alignment of resources in the firm and across the supply chain.





Case Study: European Beverage Manufacturer

Many people believe that significantly reducing cost in a distribution network can only come at the expense of lower customer service or reduced flexibility. However, as one leading international manufacturer and distributor of spirited beverages recently found this doesn't have to be the case. In response to changing market conditions, this organization made several strategic decisions for their Iberian operations that would immediately affect the supply chain in the short term. These decisions included: closing one of its two production facilities (and transferring production capacity to the remaining facility), reducing the number of direct clients (hospitality channel) and reducing the number of Regional Distribution Centers (RDCs). However, in the long term, the company wanted the flexibility to introduce changes in the main production facilities which would reduce the space for the central warehouse and thus, require the establishment of a Central DC (CDC). In response to these strategic decisions, the client partnered with a leading supply chain management consulting firm to analyze the distribution network scenarios resulting from the changes, optimize the network in the short term and determine the best location for the CDC.

Approach to the solution

The project involved a multi-national team to analyze processes, costs and scenarios with the client and simulate scenarios using sophisticated network modeling tools. During the project:

- Current logistics operations were analyzed, emphasizing possible improvement scenarios to be modeled.
- Scenarios were modeled, such as RDC reduction, factory consolidation; increase in the number of direct shipments to clients (not through RDCs); increase in the volume shipped by wholesalers (reduction in the number of direct clients) and Cross Docking.
- Various recommendations based on the analysis were proposed to reduce distribution costs while maintaining service levels. These included the elimination of four RDC's and one factory; an increase in the number of direct shipments by changing the criteria in operational transportation decisions; and the implementation of a cost reduction program in the hospitality channel with an emphasis placed on special services.
- Additional optimization opportunities were identified, such as reducing inventory by applying new algorithms to calculate inventory stock in all DCs.
- The best location for a new CDC was determined as a function of the remaining capacity in the factory.

Benefits

As a result of this analysis the beverage manufacturer was able to realize several key benefits. Most importantly, the analysis enabled an operational and financial cost reduction of 12.4%, while maintaining the previous level of service. By justifying the addition of the new CDC they also were able to build additional long term flexibility into their network. The end result was "smart optimization" where distribution costs were reduced while maintaining service and flexibility.

management. This was coupled with a move to standardize supply chain processes. Last, but not least, large firms also tackled the issue of excessive inventory in the supply chain by initiating lean inventory efforts. This initiative was cited by small size firms as their number one effort in 2009. Medium- and small-size firms took a different strategic direction from large firms in that they deployed a sizeable portion of their efforts to renegotiation of supplier contracts.

Aligning people, processes and technology to facilitate the flow of information between partners is a critical foundation for supply chain optimization. Surprisingly, the study results show that the customers of small firms are much more willing to share information related to the demand for their products than for medium or large-size firms. Information sharing between small firms and their customers appears to be much more collaborative than other size firms where information sharing would best be characterized as being coordinating in nature. The majority of respondents stated that the top criterion for collaboration with customers is communication. This was followed closely by top management commitment and support, and visibility of demand. While small-size firms seem to have the advantage in collaboration with customers at this time, the strategic initiatives undertaken by the Masters of Logistics (the large-size firms) suggests that they now have in place the three critical factors that are needed for extended supply chain collaboration. If leveraged properly, this certainly creates an advantage for the Masters.

Defining Supply Chain Optimization

Current economic conditions present an opportunity for shippers and carriers to make real improvements across the supply chain as it relates to the location of supply, manufacturing, points of distribution, and flow of goods. In addition to the physical structure, optimization of the supply chain requires that people, processes and technology be aligned in a manner that results in the most advantageous outcomes for individual firms and the entire supply chain. For this reason, many companies are

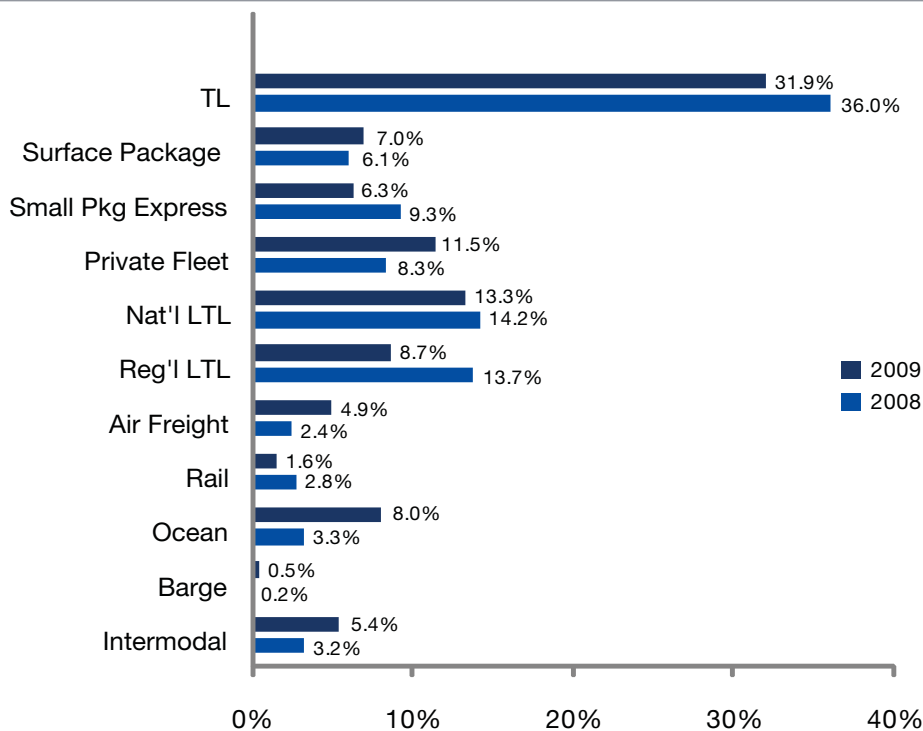
rethinking their location decisions with consideration given to a hybrid geographic strategy that incorporates “near shore” and “far shore” in the network structure. This drive to “right size” the supply chain takes a total-landed-cost approach to all activities involved in supply chain management from product idea to final product disposal. Almost all industrial sectors from auto parts, farm machinery, consumer-packaged goods manufacturers, to retailers are rationalizing their networks in an attempt to design a supply chain that provides the desired level of service at the lowest possible cost. Such was the case with a European beverage manufacturer that faced the dilemma of making changes that would lead to short-term gains versus “right sizing” its supply chain for long-term strategic advantage. What the

company realized when they undertook an optimization initiative is that they could really have both. By optimizing the supply chain network, the beverage manufacturer gained increased flexibility, and obtained cost savings while maintaining service levels. More importantly, the optimization of the supply chain positioned the company to be more competitive in the future.

The Role of Transportation in an Optimized Supply Chain

Transportation providers are also an important part of “right sizing” the supply chain as they manage and control the downstream and upstream flow of goods. Data from the 2009 study show that although

Transportation Plays a Crucial Role in Supply Chain Optimization





The Hershey Company

As a leading North American manufacturer of quality chocolate and non-chocolate confectionery and grocery products, The Hershey Company realized it needed to increase the efficiency of its transportation network and improve control of its inbound and outbound freight in order to expand continuous move opportunities in its network. The company also needed to leverage increased transportation volume for improved pricing from its service providers.

Over the course of a two-phased project, Hershey implemented “best-of-breed” logistics and transportation management solutions to address its business objectives, including transportation planning, event monitoring, freight order management, and shipment execution.

With the support of this technology, Hershey was able to reduce its transportation costs and increase operational efficiencies via the expansion of continuous moves across the transportation network. Hershey also boosted its load-planning productivity, enhanced transportation planning reporting and decision-support tools, as well as improved communication across the entire network. The manufacturer realized a 400-percent decrease in transportation solver run time, and an improvement in key planning metrics such as solution quality of more than 30 percent.

Leveraging the technology has enabled Hershey to operate at a lower cost for both the company and its supplier partners while providing a high level of service to all stakeholders, leading to lower or stable prices and better on-shelf availability from a consumer perspective.

“The transportation and logistics management technology solutions have given us the ability to achieve greater flexibility and agility in our transportation network,” said Hershey’s Cindy Ambrose, project manager, integrated transportation. “We are now a truly consumer-driven company, and we are making better use of available capacity and carrier assets to deliver quality product at a lower overall cost with superior service.”

the truckload (TL) mode lost a sizeable portion of the transportation budget, it still accounts for almost 32 percent of total transportation expenditures. Regional less-than-truckload (LTL) also lost a large percentage of the transportation budget as competition for freight among the various surface transportation modes was fierce due to dramatically declining freight volumes beginning in the fourth quarter of 2008. The modal shift in the TL and regional LTL budget share resulted in gains for ocean, intermodal, private fleet, and air freight. These same modes lost significant percentages of the transportation budget from 2007 to 2008.

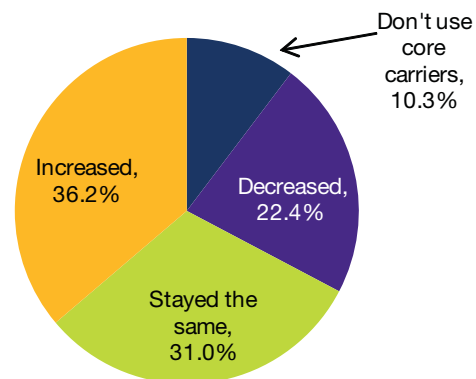
The shifting modal budget is a reflection of several factors including intermodal service levels becoming more predictable and stable at a lower cost than other surface transportation options. Intermodal also represents a “green” option to over-the-road transportation that many shippers find appealing.

The increase in transportation spending for ocean could be the result of several factors. First and foremost, it reflects increases in

freight rates along with rising fuel surcharges. Second, it may be partially attributable to an increased demand for ocean transportation as shippers found they had orders in process that they couldn’t cancel but didn’t need. In order to reduce costs, and slow down the arrival of the goods, they shipped via ocean knowing that the goods would be excess inventory by the time they arrived – regardless of what mode was used.

The study results suggest that modal use will remain mostly the same over the next year, with regional LTL poised to regain a small portion of the transportation budget. The transportation modal pattern has been shifting since 2007, indicating that shippers were trying to find the optimal modal mix for the flow of goods and materials. Supply chain optimization depends on the selection of the right mode to enable efficient and effective flows among the various partners. Too often the transportation decision is sub-optimized when service becomes subordinate to cost. Without the optimization of all the parts – moving and stationary – the firm misses the opportunity to maximize its return.

Core Carriers are Value-Added Partners



One of the ways in which the Masters of Logistics (firms with annual sales revenues greater than \$3 billion) have optimized their supply chain through transportation activities is the use of core carriers. Results from the 2006 study indicate that the use of core carriers was one of several factors that enable these large-size firms to differentiate themselves from their competitors. The use of core carriers has continued to increase over time with the majority of firms in 2009 indicating that they have either increased the use of core carriers or that the use of this strategic supply chain partner has remained the same. Only 10.3 percent of the study respondents reported that they do not use core carriers.

Why are core carriers such an important part of an optimized

supply chain? The study results indicate that core carriers add value through:

- Stable prices
- Improved service levels
- Committed capacity
- Reduced transportation rates

The role of core carriers is to manage the materials and finished goods flows in a way that assists supply chain members to produce optimal results – however they are defined. The advantages cited a continuity in transportation activities that is essential to optimal operations for the firm and its supply chain partners.

An analysis of the data of core carrier use by size of firm revealed some interesting results. The Masters of

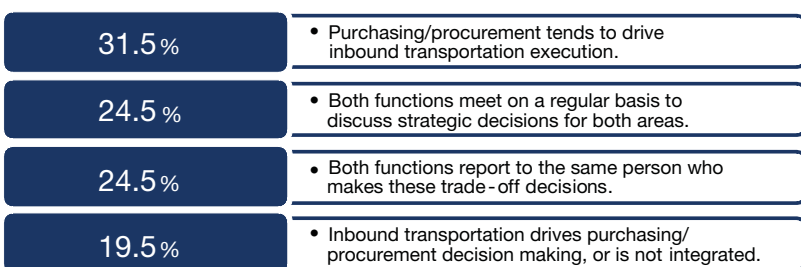
Logistics significantly increased their use of core carriers as compared to other size firms. Some 37.5 percent of small-size firms indicated that too have increased their use of core carriers in the past year. Medium-sized firms, however, moved in the opposite direction with 41.7 percent of firms in this group reporting that they had decreased the use of core carriers.

In addition to the use of core carriers, different size firms perceive different advantages from using core carriers. The list above is a composite of all firms. The Masters of Logistics reported that the primary advantage core carriers provide for them is committed capacity. The second most important advantage that core carriers provide The Masters is reduced transportation rates. These advantages are in contrast to medium- and small-sized firms who cited stable prices as the top advantage, followed by improved service levels. Clearly the role of core carriers in optimizing the flow of materials and goods in the supply chain is different depending on size of firm.

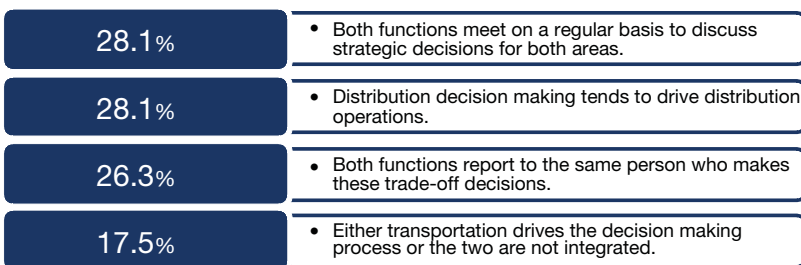
Decision Making for Optimal Results

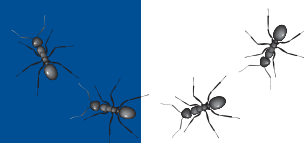
The complexity in planning and execution also challenges companies to determine the best way to manage logistics and supply chain activities for optimal results. This is particularly true for interfacing activities such as inbound transportation and purchasing/procurement and distribution and outbound transportation. The study results show that there are a variety of approaches that are used to manage purchasing/procurement and inbound transportation in North American firms. The biggest percentage (31.5 percent) of study participants uses a decision-making

Purchasing/Procurement and Inbound Transportation Decision Making Approaches



Different Approaches Drive Distribution and Outbound Transportation Decision Making





Black & Decker Hardware and Home Improvement

With manufacturing and distribution facilities in the United States, Canada, Mexico and China, Black & Decker Hardware and Home Improvement (HHI) is challenged with managing both offshore and onshore supply chains where various products with complex product structures are produced, resulting in multi-site dependencies and lengthening lead times. With a downturn in the economy and the housing market and an increase in price for materials, Black & Decker HHI realized it needed to improve component manufacturing and inventory management to control operational costs. Additionally, the company needed to get a better view of consumer demand as soon as the products were coming off of the shelves.

Black & Decker HHI sought a consumer-centric planning system to enable them to incorporate their major retail partners' point-of-sale (POS) data, which gave Black & Decker HHI the ability to predict and react to fluctuations in demand faster and more efficiently. The state-of-the-art supply chain technology allowed Black & Decker HHI to synchronize the flow of materials and resources for multi-stage and multi-site production needs. As a result, Black & Decker HHI's forecast accuracy has also improved by 19 percentage points and its finished goods inventory has decreased by 11.4 percent (against a 2.5 percent target).

"We can now compare forecasts, shipment history, as well as POS and order history for any of our SKUs at any given time. At the end of 2007 this resulted in a 10 percent improvement in forecast accuracy. The forecast development cycle time used to take five days and now it takes only two days, allowing our planners to focus on other variations," said Scott Strickland, vice president of information systems, Black & Decker HHI.

In conclusion, Black & Decker HHI's supply chain operations remain highly flexible and continue to deliver cost-cutting initiatives, inventory reductions and productivity improvements despite the economic downturn and increased price for materials.

model where purchasing/procurement decision making drives inbound transportation execution. This approach is not the best method for optimal operations – for either the firm or the supply chain. The preferred method for optimal decision-making is one in which trade offs for both activity areas are considered.

The decision making process for purchasing/procurement and inbound transportation is different in EEA firms. Unlike North American firms where purchasing/procurement is literally in the driver's seat, EEA firms use a decision making process where both functions meet on a regular basis to discuss strategic decisions for both areas (29.6 percent of EEA respondents). Beyond this approach, there are a variety of decision making methods that EEA firms employ including a lack of integration and discussion about inbound transportation and procurement trade-offs (20.4 percent); purchasing/procurement decision making driving inbound transportation execution (18.5 percent); and inbound transportation decision making driving purchasing/procurement decisions (18.5 percent). Even though the EEA approach of regular meetings to discuss strategic decisions for both areas is not the preferred or optimal method, it is a better way to manage decision making for these important interfacing activities.

The decision making process for distribution and outbound transportation in North American firms also uses a variety of approaches. The data indicate that three very different methods are used to manage these interfacing activities. At one end of the spectrum, both functions meet on a regular basis to discuss trade-off decisions. At the opposite end, distribution decision making drives outbound transportation execution.

Optimizing Information Flows in the Supply Chain

The complexity involved in planning and execution for optimal results requires companies to carefully consider the tools, technology and methods that are employed for information flows – both inside the organization and among supply chain members. A firm's investment in supply chain technology will have implications far beyond the implementation stage. In a global, dynamic, and competitive market, companies must constantly evaluate and effectively utilize the best tools and technologies available to optimize their operations. Software tools need to be capable of providing increasingly complex supply chain solutions in addition to assisting with firm-level decision making. Spreadsheets and most "home grown" tools alone will not provide the decision making tools at the necessary speed in a complex, competitive environment.

The most challenging issue for supply chain optimization involves the end-to-end integration of information flows in the supply chain. There is increasing evidence that failure to achieve integration is a leading cause of why true optimization of the supply chain cannot be reached. What are the barriers to integrating information flows?

- No single synchronized view of demand information.
- Lack (or level) of supply chain visibility.
- Deficient functional/organizational alignment.
- Supply chain management (SCM) technologies not sufficiently integrated.

Information flows that aren't integrated across the supply chain result in a supply chain that is unable to act as a synchronized, coordinated entity. There is loss of efficiency and effectiveness that ultimately impacts its capacity to maximize value for its customers and the respective supply chain members. That is to say, the supply chain has not reached the desired state of optimization.

Supply chain visibility is a key component of optimized information flows. Improving supply chain visibility has been a top priority for companies for the past decade. Visibility is needed to effectively and efficiently manage and control global supply chain processes that span multiple firms. Results from our previous studies suggest that while firms have made progress in improving visibility within the enterprise, external visibility is still rather weak.

Information flows will have to be seamless if true visibility in the supply chain is to be obtained. This means that the demand signal must be shared with all of the participating partners. For instance, if the end consumer purchases 100 units, that unfiltered, unaltered information has to make its way all of the way back to the final partner in the supply chain in a time frame that permits effective decision making by the respective members. In the event that there is a supply chain interruption, that information must also be accessible by both the customer and any other involved supply chain member so that adaptations can be made to the order to ensure that it is fulfilled on time and in full post modification. Lack of visibility into demand, planned promotional activities, or other events whether they are planned or unplanned can lead to excessive inventory, idle capacity, and high manufacturing and

transportation costs. Supply chain optimization relies on information flows that enable decision making from a supply chain perspective. It requires firms to employ a system's perspective. Yet this is often difficult to do for a variety of reasons including inadequate tools, technology, processes and methods – to mention a few.

How critical are these information flows? As King Solomon said, "Consider the ant, and be wise." If information flows suffered within a colony, the ants would perish. If they could not communicate where to find food, each ant would search individually, instead of as a team. This would be highly inefficient. In reality, since ants are social insects, they cannot live on their own and need to live in an organized community or colony. What would happen if supply chain managers across their entire supply chain took that same perspective?



Moving to an Optimized Supply Chain

Optimization is much more than just determining the “best” number of warehouses, the location of facilities, and where goods should be produced. It includes the fundamental problem of how to optimize the distribution of goods and services to the marketplace, how to utilize transportation for the optimal flow of materials and goods, and how to achieve seamless, end-to-end information flows that enable supply chain decision making that optimizes results for all members.

Optimizing the supply chain requires that the members have a common objective to work together to develop the most efficient and effective supply chain possible. It begins with the “right sizing” of the supply chain through the alignment of multiple global resources and partners around this common objective. When done correctly, the alignment will produce desirable results in tough economic times and when the economy rebounds. The only changes that should be made to the network structure are those that demonstrate the ability to create sustainable competitive advantage for the supply chain as a whole. Evidence exists that short-term gains do not have to come at the expense of long-term goals.

Optimization of the supply chain is not a one-time effort. The dynamic nature of the supply chain means it will be an on-going quest to configure, calibrate, and control increasingly complex scenarios to derive optimal results. This will be a difficult task for even the best of firms given the current state of

optimization. A few of the major issues challenging supply chain optimization include:

- A hybrid strategy that requires the firm “to be all things to all people” when the primary focus of the firm is cost reduction.
- Finding the most advantageous balance between the cost of logistics services and increasing customer requirements.
- Decision making for interfacing logistics activities that incorporates the cost and service trade-offs for both areas.
- The transportation modal mix and use of core carriers that will provide the most efficient and effective flow of materials and goods among supply chain members.

Will the investment in supply chain optimization be worth the effort? The results from the four companies presented in this report suggest that the answer is a resounding “Yes!” Oxford Industries move to integrate disparate activities and information flows through a common technology platform enabled them to optimize demand planning across the supply chain resulting in increased sales and reduced operational costs. By optimizing their physical network, the European Beverage Manufacturer was able to reduce costs by 12.4 percent while maintaining current service levels. The added bonus was the increased flexibility that an optimized supply chain network provides. For Hershey, optimizing transportation activities allowed them to reduce these costs and increase operational efficiencies. Just as importantly, optimized transportation allowed the company to lower or stabilize prices while providing better on-shelf product availability. Synchronizing the flow

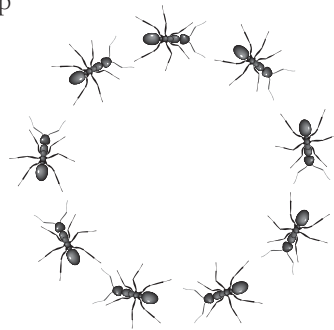
of materials and resources for multi-stage, multi-site production enabled Black & Decker HHI to reduce finished goods inventory by 11.4 percent. Technology solutions that enabled the integration of internal and external information assisted Black & Decker in its continued cost reduction efforts despite increased material costs.

As the study findings and the above-mentioned real-world examples indicate, improved logistics planning and execution efficiencies, better supply chain visibility and increased collaboration between partners represent opportunities to maximize savings and service. Achieving business-process improvements are necessary, as the supply chain battle has intensified in the face of global competition, volatile economic conditions, localized market events and rapidly changing consumer-buying behaviors. Manufacturers are challenged with achieving accurate forecasts to meet demand while their retail partners are engaged in their own competitive struggles and are less tolerant of late deliverables and out-of-stock situations. At the same time, inventory and operating costs continue to increase as companies try to mitigate the risks associated with elongated supply chains and volatile input costs.

Companies need cash in order to ensure the safety and security of their business. With the credit market in turmoil, the more cash that can be sustained the better positioned a business will be to weather the volatility. Winning companies are those that have enough cash to continue to fund their product innovations and market expansion. There are several ways to increase cash, including layoffs, plant shutdowns and selling assets. But the most effective and quickest way to increase cash is

through rationalizing the positioning and the levels of inventory in the whole supply chain network. Sophisticated optimization technology that can evaluate a logistics network and inventory in its entirety can generate substantial results.

Now is the time when successful companies set themselves apart from the rest, viewing the downturn in the economy as the opportunity to change their competitive position and command financial results from their businesses by leveraging one of the most critical bloodlines of their operations – the supply chain. Companies of any size can harness technology that will reduce costs, improve cash flow, automate regulatory compliance, accelerate inventory velocity, minimize stock outs and enhance customer service levels. An agile, resilient supply chain yields strategic optimization, elevating a firm to the next level of business value by allowing it to reap the benefits of supply chain optimization; and that is a goal worth striving for.



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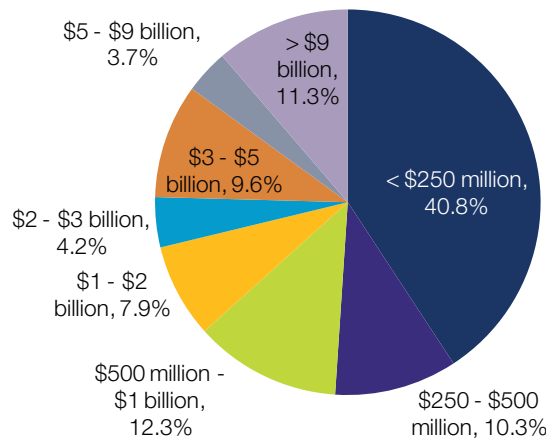
This year's annual study examined a variety of issues and trends ranging from supply chain mega trends to transportation management techniques and approaches. We are taking a different approach in the dissemination of the study results this year. An earlier report – The Drivers of Sustainable Supply Chain Management Practice - presented an overview of the fundamental capabilities that firms must develop in order to build sustainable supply chain management practices. This report is the first in a series of five that provides a detailed examination of a specific driver. The next report in the series will focus on the dimensions and current state of practice for synchronization.

Who Participated in this Research?

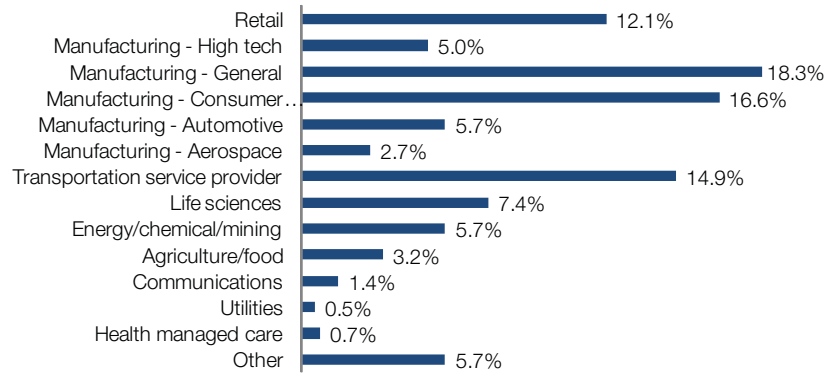
This year 830 individuals across the globe participated in the study. Aggregated as a profile group, 63.4 percent of the companies that responded to the survey have annual revenues under \$1 billion, while those with annual sales of \$1 billion to \$3 billion accounted for 12.1 percent of the sample. Those firms with sales greater than \$3 billion accounted for 24.6 percent. The latter group has been defined as the Masters of Logistics.

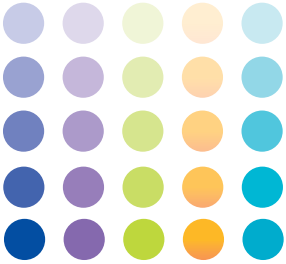
More than 14 industry sectors from energy/chemical/mining to retailing participated in this year's study with the core group of participants in the manufacturing sector (48.3 percent). Consumer products and general manufacturing represented the largest sub-sectors of this group (18.3 and 16.6 percent, respectively). The next largest sector that participated in this year's study is retail, accounting for 12.1 percent of the total participants.

Annual Sales Revenue of Study Respondents



Study Participants by Industry Sector





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Georgia Southern University is a growing nationally recognized logistics program located in Statesboro, Georgia. The University is a major teaching and research institution and offers undergraduate and Ph.D. degrees in logistics and

supply chain management. The faculty publishes in a wide range of topics and is invited to speak at events across the globe. The Southern Center for Intermodal Transportation offers a wide range of research services and resides in the College of Business.

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The internationally recognized logistics program at The University of Tennessee, Knoxville, is one of the most comprehensive and contemporary programs in the nation. The faculty publishes widely on topics of current industry concern and explores future trends through research and studies.

For further information, please visit <http://mlt.bus.utk.edu>

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