

The 2007 Supply Chain Playbook: 16th Annual Trends and Issues in Logistics and Supply Chain Management



The Logistics Playbook

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Introduction

Capgemini, Georgia Southern University and the University of Tennessee are pleased to present this report drawing from the results of our 2007 research on trends and issues on supply chain, logistics, and transportation. This report marks our 16th annual examination of the topics that challenge managers on an on-going basis in the conduct of their business.

Business as usual is not an effective strategy for dealing with the myriad of challenges facing logistics and supply chain professionals today. Since 2004 increasing transportation costs, labor issues, changing customer requirements, global market shifts and escalating energy costs to name a few have created an environment of uncertainty and increased risk. Dynamic conditions require real-time information for effective decision making. In many organizations data or information often lag in meeting this need.

Hence, the development of this playbook. Just like a playbook used in sports, logistics and supply chain managers can benefit from having the “best” strategies, tactics and operations detailed in a manner that enables them to make better decisions in the face of uncertainty or lack of real-time information.

Our research findings suggest four critical plays that managers need in their play book. The first is to focus on the game and learn the rules of the game. In order to compete, managers need to know what their customers want, and the value their supply chains can provide reliably. Second, managers need to focus on the basics and the talent needed to play the game. What skill sets are needed today, and more importantly, tomorrow? Third, managers should focus on developing a few new plays. What are the services that your firm provides that is far above and better than the competitors? What gives you a sustainable competitive advantage? Finally, focus on a few key metrics. Metrics should be easily understood by the organization, visible, and relevant in the decision making process.

This research and resulting report would not be possible without the continued support of the study's participants. We would like to thank these professionals for taking time out of their busy schedules to share with all of us their expertise and insights.

We would also like to give special thanks to Albert Lo, Belinda Griffin-Cryan and Cathy Fitzgerald of Capgemini and to Joe Tillman at Georgia Southern University for their insights, edits and production of this report.

We hope you find this report helpful as you continue the process of developing and executing new plays to improve your supply chain. The game is on, and the players are warming up on the field. Good luck calling the next play.

Sincerely,



Mary C. Holcomb, Ph.D.
Associate Professor
University of Tennessee



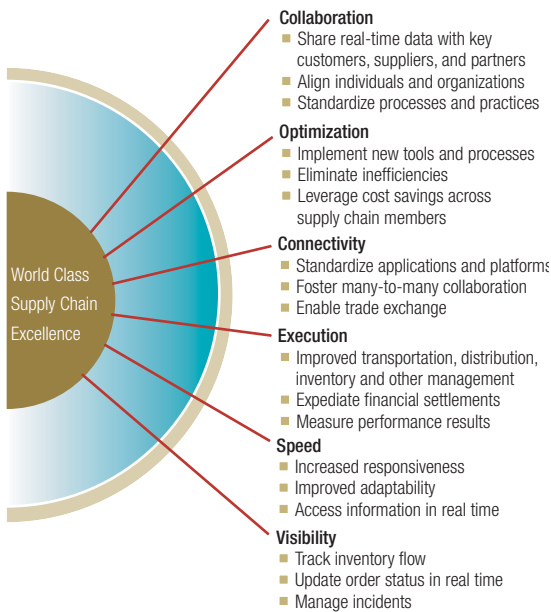
Karl B. Manrodt, Ph.D.
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Past behavior will give us past results, leaving us in the past.

Figure 1 - Developing a World Class Supply Chain



How do you respond to uncertainty?

The only certainty in the business environment today is that uncertainty abounds. The scene around us is much more fluid, with challenges waiting in the next email or phone call that we receive. Detailed analysis becomes a luxury of time, a luxury beyond your grasp. How do you respond in an era of uncertainty?

One of the biggest challenges facing logistics and supply chain management professionals is making real-time decisions when there is limited (or no) information available. Often operations metrics are not available at the same speed for which decisions must be made.

It's a lot like the following situation. Your football team is behind 13 - 10. It's fourth down, with six yards to go for a first down. You're close enough to kick a field goal and tie the game. A first down would put you on the 20-yard line and in great position to score a touchdown. You have the first down conversion and field goal completion statistics from last year, but 40 percent of that team graduated. Thirty seconds are on the clock, and the fans - and the team - want to know: what do you do now in the face of uncertainty?

A lot depends on the situation. Is it the end of the quarter, or is it the end of the game? What option in the playbook will move the team to victory?

Unfortunately, most business challenges don't come with a

playbook of options to lead you to success in the game of business. With so many constraints in the business environment to take into consideration, such a tome would be too confining, and not allow for the entrepreneurial innovation needed to maintain a competitive advantage in the marketplace.

Perhaps a better playbook would provide some more general questions, and not all of the specifics. It should provide some guidance as to what others are doing, and how they are preparing to meet challenges around the unseen corner. It should guide, and not dictate, the next steps as you compete in the global market.

Based on over 1,300 survey respondents this playbook focuses in on four key supply chain processes. The purpose of this report is to provide you with a 'State of the Play' for each process, as well as some context for each process. For instance, large firms may need to manage a process differently than a smaller firm. If so, what are the differences?

The question 'How do you respond to uncertainty?' won't go away, but at least you'll have a better idea now of how others are answering it.

Some Background

For the past sixteen years we have been reporting on the trends and issues in logistics and transportation. Since the late 1990s we have expanded the research to examine the broader landscape of supply chain management in an attempt to gain a better understanding of the complex global business environment in which we operate.

Over the past six years we have examined the six key capabilities that drive a transformation to greater efficiency in supply chain, logistics and distribution processes (Figure 1). These drivers - Collaboration, Optimization, Connectivity, Execution, Speed, and Visibility - are the benchmarks we have used to evaluate our progress in achieving logistics and supply chain excellence. What we found is that many firms are still struggling to implement the drivers, and are therefore unable to achieve the transformation of their logistics and supply chain processes that is needed to move their organization forward.

Hence, a playbook. Just like a playbook used in sports and politics, logistics and supply chain managers can benefit from having the “best” strategies, tactics and operations detailed in such a manner as to provide plans for organizing, managing and controlling four critical processes.

Since 2004 the need for improved logistics performance from both an efficiency and effectiveness standpoint has never been greater. Firms are dealing with a myriad of challenges such as increased transportation costs, labor issues, changing work force and customer demographics, global market shifts, escalating energy costs, and political uncertainty. “Business as usual” is not a playbook strategy to achieve performance, or even guarantee survival. This year’s study offers an assessment of the logistics and supply chain plays being executed by firms today for optimal performance, and insight into how readers can leverage this knowledge.

A process view of logistics and supply chain management is used to assess the current state of logistics and supply chain management practices. Five critical processes were identified including: supplier relationship management, sales & operations planning, distribution management, transportation management, and customer service. To address all of these in a single report would be difficult to digest. What we have planned instead is to examine several of these processes in depth over the next few years. This year’s playbook addresses sales and operations planning, distribution management and transportation management.

Each section of the playbook starts with an introduction and explanation of the critical process being examined. In State of the Play the current condition of each of the three processes noted above will be examined. This ‘State of the Play’ assessment will form the backdrop for a summary section that discusses how the best performers are able to excel in that particular process. In Getting it Right, we present the results of statistical analyses that were performed, based on size of firm, performance, strategic direction, and level of visibility. The purpose of this section of the report is to provide the “plays” that have been proven to produce results.

Finally, we conclude with our collective Stepping Up Your Game, which highlights the results of the past year and suggests the future directions for competing in the logistics and supply management arena.



Five critical plays:

- supplier relationship management
- sales & operations planning (S&OP)
- distribution management
- transportation management
- customer service

Participant Profile

This year 1,376 individuals participated in the survey. The continued large number of participants provides confidence that the results reflect overall logistics, transportation and supply chain trends and issues. The representative nature of the study participants also allows us to statistically analyze the data by several categorizations such as strategic direction of the firm and high functional control versus low functional control firms.

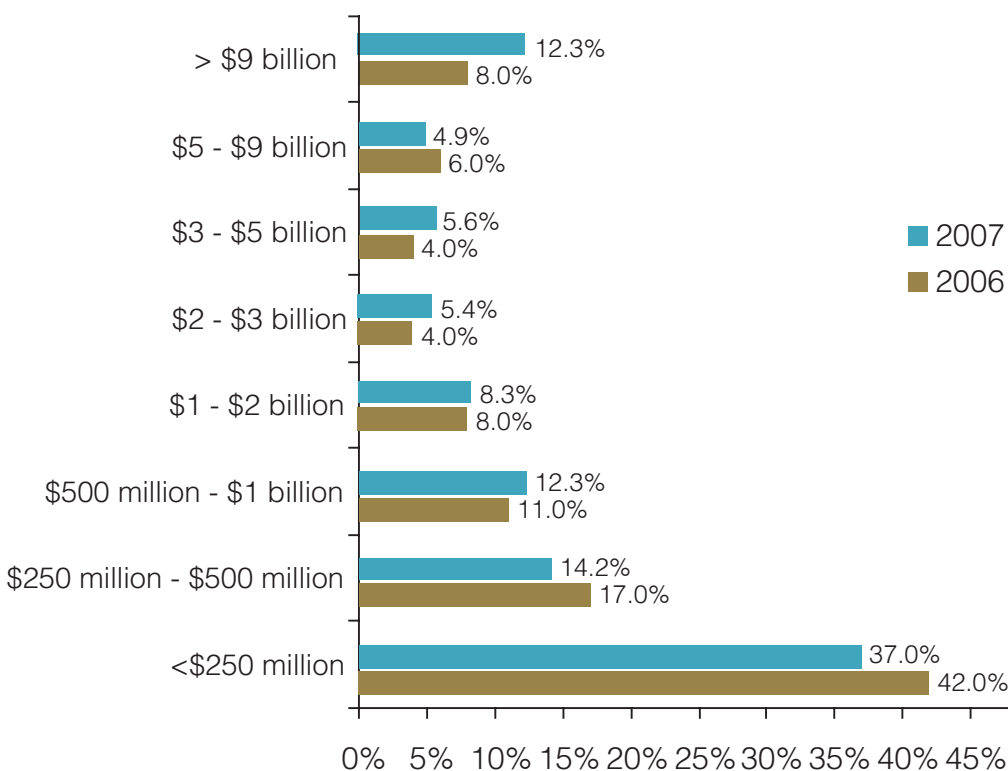
Aggregated as a profile group, 63.5 percent of the companies who responded to the survey have annual revenues under \$1 billion, while those with annual sales of \$1-3 billion accounted for 13.7 percent of the sample. Those firms

with sales greater than \$3 billion accounted for 22.8 percent. This is very similar to results from last year in that approximately two thirds of the companies had annual revenues under \$1 billion (70.0 percent); 12 percent had annual sales of \$1-3 billion. Those firms with sales greater than \$3 billion accounted for 18 percent in 2006.

In 2007, 29.2 percent of the study participants reported that they spent more than 5 percent of sales on domestic transportation. This is quite similar to 2006 when 30.8 percent of firms were spending 5 percent or more of sales on domestic transportation. Since 2004 there has been a significant increase in transportation spending. From 2004 to 2005, the number of firms that spent more than five percent of their revenues on transportation activities rose by 4.5 percentage points (or a 24 percent change). From 2005 to 2006 the increase was 7.8 percentage points (or a 33.9 percent change). Why did we have a small decline in transportation spending from 2006 to 2007? Fuel costs and driver turnover certainly didn't decline, but actual tonnage carried did and there was ample equipment capacity. In addition, there was an intensive effort on the part of shippers to manage and control transportation costs at "reasonable" levels. While their efforts have certainly made an impact, there is much more that can be done.

A key demographic for assessing the representative nature of this study is participation by industrial sectors. More than 14 industrial sectors participated in this study; manufacturers as usual led in

Figure 2 - Respondents By Sales in US \$



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survey responses. They comprised 50.3 percent of the survey sample. This is an increase compared to last year's results of approximately 40.8 percent. When compared to the 2005 study, however, the results are similar with the manufacturing sector comprising 48.1 percent of that year's study group. For 2007 the largest individual sub-sectors were Manufacturing - Consumer Products (16.5 percent) and General at 16.0 percent.

The Plays

Playbooks are used in multiple settings including sports and politics. In general the playbook contains descriptions and detailed plans for organizing, running and controlling the event or operation.

The need for a logistics and supply chain management playbook has never been greater. Today's business environment is one of the most challenging in the history of our profession. According to CSCMP's 18th Annual State of Logistics Report, for the first time in eight years logistics as a percent of gross domestic product (GDP) is on the brink of hitting double-digits. All the indicators of systemic change from rising interest rates to transportation infrastructure issues have started to emerge from 2004. Volatility has become the new norm.

So where do you focus your time and energy? We'll review five basic processes that you can use to improve your plays in the open market.

Of course, each play has to be adapted to the situation. Everyone has different strategies, different constraints, and different objectives. For this reason, the

playbook will give further direction, as applicable, to each of the plays by describing the various types of players.

The Plays: Sales & Operations Planning

Sales and Operations Planning (S&OP) is the process that maintains the current operating plan in support of the business plan. The process consists of formal cross-functional meetings to ensure the company is focused, aligned and engaged in those efforts that support the priorities of the company. Because S&OP deals with the continuous change that the business faces, it should cover a planning horizon adequate to plan resources and to fulfill demand effectively.

Sales and Operations Planning (S&OP) is the process that maintains the current operating plan in support of the business plan.

Table 1 - Who Are the Players

Groups	Players	Description
Size of Firm	The Masters	Sales greater than \$3 billion
	Contenders	Sales between \$500 million and <\$3 billion
	Challengers	Sales less than \$500 million
Performance	High	Self--ranked financial performance better relative to ompetitors
	Moderate	Ranked themselves to be comparable to competitors
	Low	Ranked themselves below competitors
Visibility	High	Based on an aggregate score of sixteen variables
	Moderate	
	Low	
Strategy	Cost leaders	Reducing and maintaining low cost in the market
	Customer service	Customer service is key strategic focus
	Innovators	Product / market innovation as a means of competing
	Mix	Strategy is to be all things to all people

Playbook in Action: S&OP at A Specialty Retailer

For a leading fashion retailer, S&OP proved to be a key enabler in achieving significant inventory reductions. Prior to implementing an S&OP process, the retailer was struggling with the ramifications of managing their business to different forecasts produced by different functions in their organization. So while the merchandising group was creating sales forecasts based on one level of projected sales activity, procurement and distribution were actually deploying product to the stores based on a different, generally lower, forecast about how much product was needed at the stores. This was caused by the fact that each functional area was measured on a different set of metrics and led to the phenomenon of merchandising intentionally inflating their forecasts on the assumption that the procurement and distribution groups would revise the forecast downward. In situations where this upward bias in the merchandising forecast was not sufficiently addressed, substantial inventory overages were occurring.

The objectives of S&OP process that the retailer implemented were: to get alignment from all the key functions in the organization (merchandising, procurement, distribution, and finance) around a single, agreed upon forecast that each function could then work towards supporting; and to have a process in place that would allow the organization to react quickly to demand-supply imbalances that emerged. A key aspect of ensuring that the S&OP process was successful was coming up with a set of shared cross-functional metrics, such as inventory turns, that all the functional areas were measured against. This required alignment from the top executives in the company around the relevant metrics that were important and also required commitment from the executives to the S&OP process itself.

In order to achieve the objectives of the S&OP process, the retailer implemented a multi-step process. This process entailed a series of pre-S&OP meetings where the various functions worked together to develop the single one-number forecast. Once the single forecast had been developed the retailer then conducted the monthly S&OP meeting where demand-supply imbalances relative to the one-number forecast were discussed and resolved. This process proved to be quite effective and not only allowed the retailer to lower overall inventory levels but also allowed them to reduce stock-outs on products that ultimately sold better than forecast. Additionally, the implementation of S&OP fostered greater cross-functional collaboration and teamwork across the organization.

S&OP is a cross-functional effort tasked with items such as:

- aligning supply chain operations to the business direction;
- resolving key issues related to demand and supply balance;
- managing working capital effectively including “best in class” inventory management;
- championing continuous improvement and change in the operations area; and
- setting / monitoring key performance indicators (KPIs).

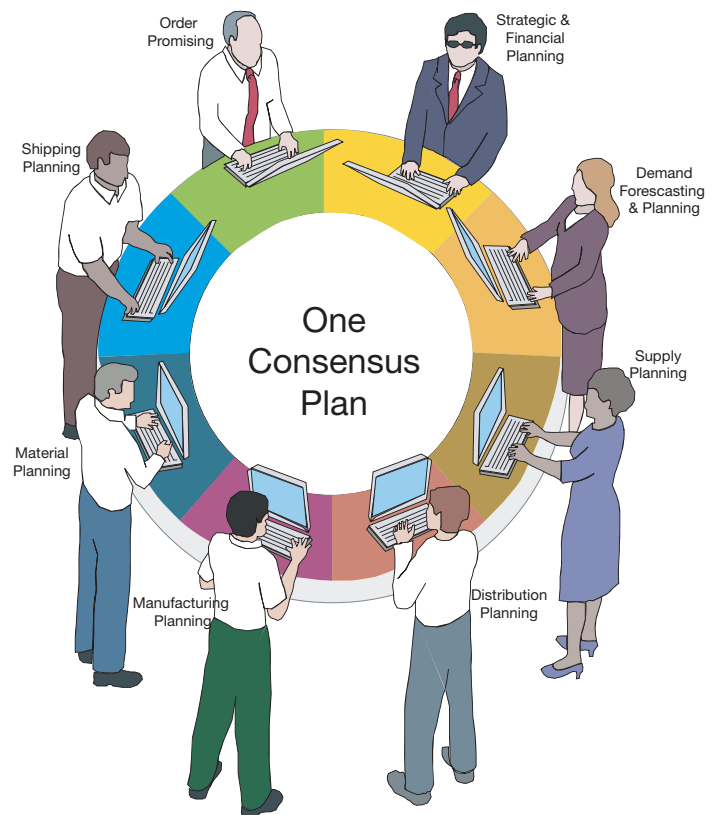
A unified S&OP process is a fundamental part of a responsive and reliable supply chain. As shown in Figure 3, the multi-disciplined approach drives to consensus and commitment

around one plan that ultimately drives the entire organization. The goal of the S&OP process is to have all functions working towards one customer driven plan.

S&OP can't be done in the dark. Information from across the supply chain is required to better understand what, when, and where products and services are demanded. This requires an increased exchange of information electronically within the firm and with customers and suppliers. The expectation is that better integration will enable all parties to better leverage each other's efficiencies and decrease costs on an on-going basis.

The regular exchange of information, in general, is critical to the efficiency and effectiveness

Figure 3 - A Consensus Driven S&OP Process



71.7% of high visibility firms have completed a supply chain network design project in the past three years.

of the S&OP process. What is interesting is that in nearly all cases (except for production schedules and raw materials inventory) 70% or more of the respondents receive the information either in real time or are updated daily. In the two exceptions mentioned above, 63% or more of the respondents report the data being available in real time or daily. As would be expected, the areas where information is most frequently updated include customer order status information, outbound shipment status and finished goods inventory at the field level.

For an S&OP process to work effectively, information from all areas is required. It is interesting to note that the two areas where information was not available were raw material inventory (17.2 percent) and production schedules (11.5 percent). The data in Table 2 indicates that the availability of real time information increases as the raw materials/components move through the supply chain in the process of becoming finished goods. As discussed above, for the S&OP process to be successful all parts of the firm should be unified or integrated to produce one operating plan. In the quest to better synchronize supply and demand, the S&OP process requires information that is real time or near real time. Unfortunately real time information is often only available for the last part of the process - customer order status. Far too many organizations still depend on daily, weekly and monthly updates to provide the critical data they need for the S&OP process.

Another important measure of the success of the S&OP process in

Table 2 - Time Status of Information Exchange

	Real- near real time	Daily	Weekly	Monthly	Quarterly	Information is not available
Vendor order status information	33.9	36.1	15.3	3.6	1.1	9.9
Inbound shipment status	24.8	50.4	13.5	1.8		9.5
Production schedules	26.8	36.8	21.2	3.3	0.4	11.5
Raw materials inventory	31.0	32.1	15.7	3.0	1.1	17.2
Finished goods inventory at plant level	44.4	28.7	11.6	3.4	2.2	9.7
Finished goods inventory at field level DC	47.0	30.7	8.5	4.4	1.9	7.4
Outbound shipment status	46.9	42.9	5.1	1.1		4.0
Customer order status information	53.1	38.7	5.5	0.7		1.8

meeting customer requirements is a firm's order fill rate. Conversely, if the order fill rate is high, this should be reflected in a minimal amount of backorders. As shown in Table 3, 41.7% of study participants reported that the percentage of backorders declined over the past year. When combined with the 30.2 percent of respondents whose percentage of backorders remained the same, it appears that this customer service element has improved.

This initial conclusion is supported by the reduction in obsolete inventory write-offs experienced by this year's respondents. Nearly 38% decreased their write-offs of obsolete inventory; in other words, firms were doing a better job making and selling what customers wanted.

Carrying inventory that does not make the company more effective in meeting customer requirements is a poor use of money. The strategy over the last decade has

Table 3 - Measuring The Success of The S&OP Process

Measures	Increased	Decreased	Remained	Don't Know
Procurement costs	45.8%	20.6%	21.3%	12.3%
Order fulfillment costs	40.9%	18.7%	33.1%	7.4%
Inventory carrying costs	35.7%	31.7%	24.6%	7.9%
Obsolete inventory write-off	21.8%	37.7%	27.0%	13.5%
Percentage of backorders	15.9%	41.7%	30.2%	12.3%

been to reduce inventory. Available, reliable, and cost effective transportation make it possible for companies to streamline inventories across the supply chain. The effort to reduce inventories, however, has been hampered by the fact that companies still need to hold safety stock to hedge against uncertain lead times and/or supply disruptions. Combined with higher interest rates and warehousing costs, the challenge for the S&OP process is to more closely match demand and supply to improve planning effectiveness. This in turn will lead to better inventory results (i.e. increased inventory turnover and days supply of inventory) while at the same time increasing service levels.

The percentage of backorders can (and will) decline if other logistics techniques are employed. For example, if the closest distribution center (DC) to serve the customer doesn't have the desired product,

but another DC in the network does, the firm may decide to incur additional transportation costs to ship the product from the DC with the inventory. Having inventory in the right place, at the right time, in the right quantity is a very complex planning problem. Not getting it right can contribute to higher than anticipated order fulfillment costs.

Table 3 shows that for 40.9 percent of the study participants this was the case over the past year. This is not to suggest that inventory positioning alone was responsible for the increased costs. Transportation costs have been steadily increasing since 2004. The factors driving this increase have contributed to the rise in order fulfillment costs.

Yet, the findings suggest that there has been mixed success relative to inventory. Not only have order fulfillment costs risen, but so too have inventory carrying costs. This could be a function of higher interest rates, or more fundamentally, more inventory in the supply chain. As noted in Table 4, over 40 percent of respondents indicated that they had decreased the amount of inventory held system wide. This is contrasted to an almost equal amount (39.9 percent) that said that the amount of inventory held had increased over the past year.

Table 4 - Inventory in The logistics Network

Change in Amount in Inventory Held	Percent of respondents
Increased	39.9%
Decreased	40.4%
Remained the same	19.7%

The S&OP process is also more complex due to the fact that companies are dealing with multiple channels of distribution. The data presented in Table 5 shows that the majority of customer orders (61.2 percent) are being fulfilled by inventory that is centrally positioned - either at the plant warehouse or other centralized DCs and warehouses in

S&OP

the network. This is a slight increase from 2006 when 60.6 percent of customer orders were being shipped from these locations. The biggest change occurred in the percentage of orders that is being shipped directly from vendors/suppliers. This amount declined by 26.8 percent from 2006 to 2007. It appears that some of the shipment origins shifted to field warehouses and DCs and the remaining customer shipments used other methods.

What else gets in the way? At the heart of the S&OP process is a consensus customer-driven plan. This may be more difficult to accomplish when managerial control for supply chain activities are spread across various functional areas of the firm. There is a significant difference between 'consensus' and 'control.'

Table 5 indicates that most firms still have a very traditional reporting structure. Production planning still reports to manufacturing. While sales forecasting is performed by sales/marketing, logistics / supply chain management's control of this area has nearly doubled in the last decade. Today, supply chain management controls two critical activities - demand management and network design / facility location.

In addition to integration of activities across the organization, an effective S&OP process needs to have integration of the various systems across the firm. Figure 4 shows that more than half of all study participants reported that they are somewhat to very integrated across a host of systems, with one exception - manufacturing to supplier

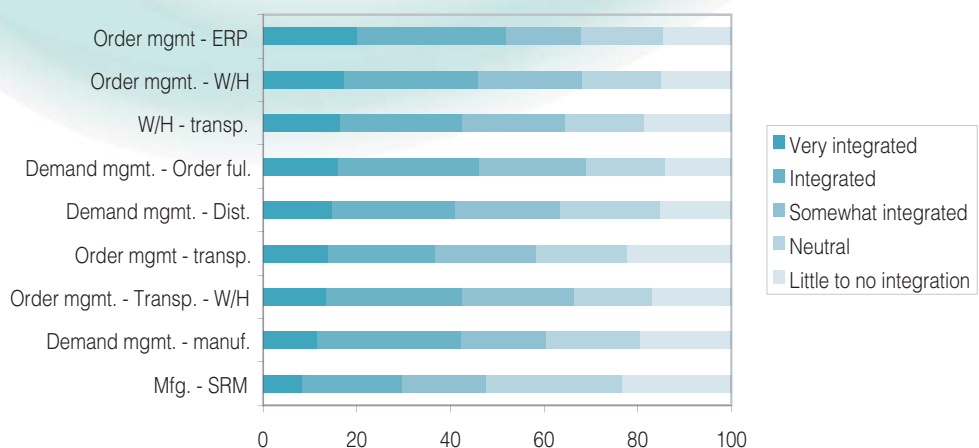
relationship management (SRM). This appears to be the largest area of opportunity for companies in terms of supply planning. It is not just manufacturing and SRM systems that need to be better integrated. The data show that four integration areas need attention - 1) order management - transportation; 2) demand management - manufacturing; 3) demand management - distribution; and 4) warehousing - transportation. Of these four areas, perhaps the most surprising lack of integration is demand

Table 5 - Functional Control of Supply Chain Activities

Activity	Procurement	Manufacturing	Sales / Marketing	Distribution / Transportation	Supply Chain Management	Other:
Demand management	12.1	9.8	23.2	8.6	35.0	11.4
Purchasing / procurement	65.1	4.1	2.3	4.2	18.2	6.0
Network design / facility location	2.7	8.3	4.4	20.9	29.9	33.7
Sales forecasting	1.8	1.2	77.0	2.4	10.1	7.5
Production planning	6.4	46.4	6.2	7.1	22.9	11.0

Note: 'Other' includes Finance / Accounting

Figure 4 - Degree of Integration within a Company



Firms employing a customer service strategy typically had sales under \$245 million; cost leadership firms had sales between \$1 - \$3 billion.

Playbook in Action: Manage The Relationships

Increasingly the “best” companies are reviewing strategies, aligning resources and exploring new ideas in order to keep up with the rapid pace of change. A major forest products company decided to sell their forests and substitute this asset for performance-based supplier contracts in order to focus the business on packaging. This change in corporate strategy had major implications for logistics and transportation. For sound logistics planning and execution in the packaging business, the firm realized that transportation and operations planning must be tightly integrated. Similarly, an international plastics and metals packaging firm sold off its plastic bottle plants but maintained distribution and sales in order to leverage combined size in the logistics market.

“For consumer product companies from automobiles to safety eye wear, we are seeing a focus on brand marketing and distribution supported by performance based supply contracts covering both direct and indirect materials as well as vital services. Business Process Outsourcing (BPO) is a major wave in Supply Chain today” says Gary Baldwin, Consulting Services Vice President at Capgemini.

These strategic and resulting process changes take time. The forest products company is in its second year of transition and a multi-brand retailer reports continuing progress in its third year of transition.

The improvement in visibility, coordination and control of logistics for these firms has resulted in solid savings. Some have reported beating the market in reduced price increases (vs. benchmarks) or even substantial cost reductions despite fuel and related market increases.

Much like an athletic program, charting a new course can be a long transition. With the expected turnover during this time a solid ‘roadmap’ (playbook) and continuity in ‘coaching staff’ is critical to achieving success?

It is easier to change a name than it is to change a process.

management to manufacturing. Some 19.5 percent of firms reported that there is little to no integration of these systems. Far too many firms are still using fragmented spreadsheets in managing their respective processes and activities, making integration difficult, if not impossible, to achieve. If systems integration hasn’t been reached, how are trade-off decisions between functional areas being made in the firm?

One of the classic trade-offs is between transportation and distribution. Figure 5 indicates that in only 36.6 percent of the cases manager controls both transportation and distribution. This would suggest that balancing these two functions can take a significant amount of coordination and collaboration between functional departments.

Interestingly, this also suggests that just over one third of the survey respondents have both transportation and distribution reporting to the same person. In other words, in a majority of circumstances, the trade-offs between transportation and inventory have to be made between two functional areas. Politically, this can be difficult; nearly 11% of the respondents report that they rarely discuss the trade-offs.

The results are much different when it comes to trade offs between procurement and inbound transportation (Figure 6).

Purchasing/procurement tends to dominate in making trade off decisions. Of responding firms only 23.0 percent indicated that both functions report to the same person.

These two questions also highlight the relative insignificance of transportation. In both cases more than 10% of the respondents don’t meet to discuss how transportation can be integrated with either distribution or purchasing. This lack of coordination and synchronization often leads to higher than needed transportation costs, and can result in missed opportunities to leverage other freight movements the firm may be making on a regular basis.

So what does it all mean? To better understand how to obtain the best results, the following plays are suggested for this process.

Developing the Logistics Playbook

The purpose of a playbook is to supply a set of guidelines or actions that have been proven to produce results. In this section of the report, each play (or process) will be analyzed to determine which actions have produced the desired results in the areas of performance, visibility, and strategic direction. For some processes, size of firm also yields logistics plays that are noteworthy. The plays that are included in this section were found to be statistically significant when analyzed within their groups. Because the plays are based on statistical significance, each component - performance, visibility, strategic direction, and size of firm - will not have plays for every process.

Please note: a great playbook is not developed in one season. Plays must be proven to bring the desired result on a consistent basis.

92% of firms that spend between 4-5% of cost of goods sold on transportation have completed a supply chain network design within the last three years.

Figure 5 - Managing Transportation / Distribution Trade Offs

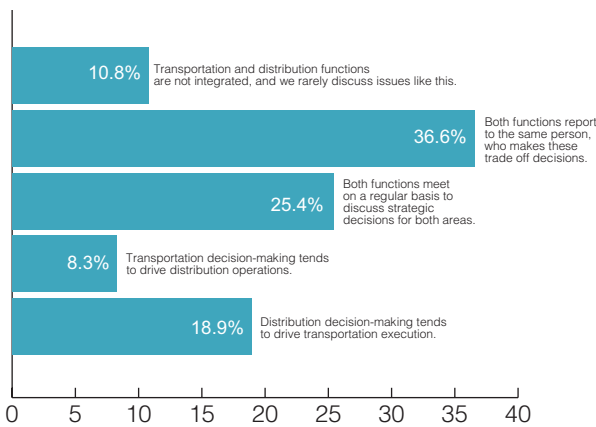
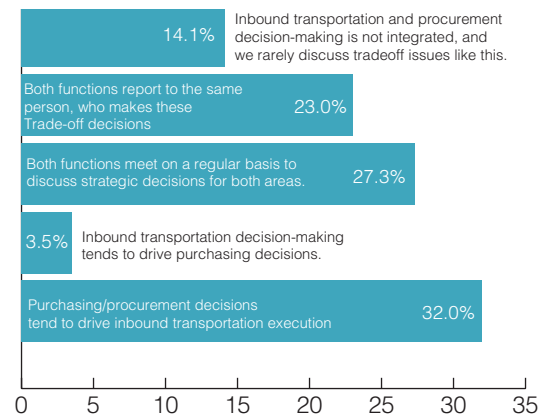


Figure 6 - Managing Procurement / Inbound Transportation Trade Offs



Just as with any coach and sports team, the playbook develops over time as resources and the competition changes.

Getting it Right - Size of Firm

When this research was begun sixteen years ago, the big question was “How are large shippers (defined as companies with revenues of \$3 billion or more) different than their smaller counterparts?” During the first few years, the differences between the two groups were noticeable, but tended to fade after late 1990s. However, differences between the Masters of Logistics and Contenders and Challengers have started to re-emerge.

The Masters are distinguished from others in that they have more highly integrated systems. The high level of integration extends to (in rank order of integration):

- demand management - order fulfillment
- order management - ERP
- order management - warehousing

- demand management - distribution
- order management - transportation - warehousing
- warehousing - transportation
- demand management - manufacturing
- order management - transportation

Getting it Right - Performance

High performers also understand the critical importance of integrated systems. Just like the Masters of Logistics, the high performers are noted for having the most highly integrated systems with one exception - warehousing and transportation.

Getting it Right - Visibility

High visibility firms are noted for:

- Real time (or near real time) updates on information of production schedules while medium and low visibility firms primarily get updates on production schedules daily.

- Having real time (or near real time) information on finished goods inventory at the field DC level.
- Involving manufacturing and supply chain management function in new product development.
- Supply chain management having the most impact on production planning.
- Spending between 11 - 20 percent of their time on strategic planning in the firm. This is the same amount of time that medium size firms spend on this activity.

Getting it Right - Strategy

- A higher percent of firms with the strategic objective of “being all things to all people” have real time information on finished goods inventory at the plant level than any other strategic direction.
- Firms whose strategic direction is product innovation have the highest level of systems integration in the following areas (in rank order of integration):

Without a consensus driven plan that involves support and commitment to the S&OP process by all the functional areas, customer service levels and determining target inventory levels will be sub-optimized.

Table 6 - Managing Procurement / Inbound Transportation Trade

By Sales	Order Mngt - ERP	Order Management - transportation	Order Management - warehousing	Whsing - trans	Demand Mngt-Order Fulfillment	Demand Mngt - Distribution	Demand Mngt - Manu	Manu - (SRM)	Order Mngt - transportation-warehousing
Small Challengers	3.16	3.60	3.00	3.20	3.17	3.20	3.41	3.79	3.19
Medium Contenders	2.84	3.06	2.97	3.02	2.82	3.02	3.24	3.42	2.89
Master of Logistics	2.58	2.91	2.61	2.83	2.52	2.71	2.89	3.21	2.71

1 = Very integrated, 7 = Not very integrated

Table 7 - Integration by Performance

Performance	Order Mngt - ERP	Order Management - transportation	Order Management - warehousing	Whsing - trans	Demand Mngt-Order Fulfillment	Demand Mngt - Distribution	Demand Mngt - Manu	Manu - (SRM)	Order Mngt - transportation-warehousing
High	2.22	2.86	2.71	2.97	2.30	2.32	2.61	2.71	2.49
Medium	2.82	3.10	2.82	2.85	2.55	2.85	2.96	3.57	2.75
Low	3.51	3.89	3.34	3.56	3.67	3.58	3.58	3.93	3.63

1 = Very integrated, 7 = Not very integrated

Table 8 - Managing Procurement

Strategy	Order Mngt - ERP	Order Management - transportation	Order Management - warehousing	Whsing - trans	Demand Mngt-Order Fulfillment	Demand Mngt - Distribution	Demand Mngt - Manu	Manu - (SRM)	Order Mngt - transportation-warehousing
Cost	3.22	3.38	3.11	3.15	3.33	3.33	3.12	3.30	2.96
Customer Service	2.99	3.38	2.92	3.13	2.92	3.13	3.58	3.82	3.09
Product Innovation	2.65	3.20	2.82	3.10	2.84	2.73	2.85	3.39	2.94
Mix: be all things	2.95	3.29	2.86	3.02	2.83	3.01	3.25	3.53	2.91

1 = Very integrated, 7 = Not very integrated

- order management - ERP
- demand management - distribution
- order management - warehousing
- demand management - manufacturing
- order management - transportation
- Cost focused firms are distinguished by having the highest level of integration between manufacturing and SRM systems.

The Plays: Distribution Management

Distribution management (also called physical distribution management) is the movement and storage of finished goods from manufacturing or assembly sites to warehouses and DCs or directly to customers, or from warehouses and DCs to customers. Since the late 1970's practitioners and academics used this term synonymously with business logistics. In the 1960's and 1970's companies focused on distribution management to meet the challenges of those times including: product line expansion, rising transportation costs under a federally regulated system, and the production of less labor intensive higher valued products. This was the first attempt by professionals to manage the interrelated activities of warehousing, finished goods inventory, packaging, order processing, transportation and customer service as a system whose parts should be coordinated.

The primary goal of this period was efficiency. Controlling cost is

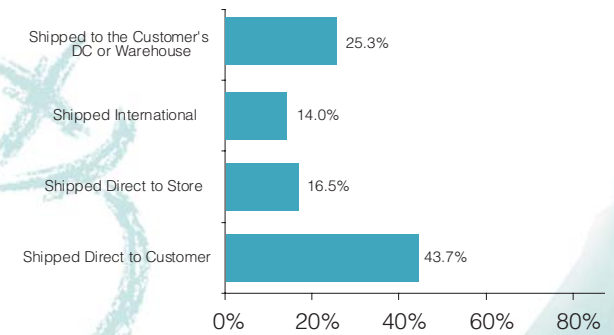
still a primary objective for the distribution management process even today. What we have learned in the intervening years, however, is that efficiency is not the only desired process outcome. Effectiveness and competitive differentiation are also important results from the distribution management process. To shed more light on these differences, this section will focus on three key aspects of distribution management: customers, control and costs.

Customers: Distribution management relies on a physical infrastructure for the process activities defined above. The data on origin of shipments to customers indicated that the majority of customers' orders are shipped from the plant/DC location. Further analysis revealed, however, that for the "masters of logistics" the origination point is significantly different. They ship to customers primarily from their regional DCs (Figure 7). In terms of distribution management, this positions the Masters of Logistics closer to their customers than their counterparts.

The study results indicate that the majority (43.7 percent) of distribution volume is shipped direct to the customer, followed by 25.4 percent that is shipped to the customer's DC or warehouse. The shipment of goods and products to the customer's DC potentially enables the supply chain member to take advantage of economies of scale in freight volume. Much more so than shipping directly to the retail store which generally has less available storage space. Some 16.5 percent of all freight is



Figure 7 - Origination of Customer Shipments



shipped directly to a store. The direct ship strategy is designed to bypass DCs and warehouses, which often enables the retailer to reduce lead times. Very few major retailers, however, utilize only one distribution strategy. In general companies use a variety of distribution methods such as direct ship, cross-docking, and DCs for different products. To ensure that the "right" distribution method is being utilized, the firm must analyze a number of factors including customer demand by location, the variability of that demand, required service level (including the lead time), and transportation and inventory costs.

Control: Direct or indirect distribution strategies are supported through centralized or decentralized control of facilities (DCs or warehouses) in the logistics network. The study data suggest that there is an almost even split between these two approaches. Some 32 percent of study participants reported that rather their inventory management strategy is to hold certain stock keeping items (SKUs) at specified nodes in the network (Figure 8). When a customer's order hits their system, inventory is drawn from

Distribution Management:

The movement and storage of finished goods from various points in the logistics network.

Playbook in Action: Distribution Management

A mid-size flooring retailer experienced five years of consecutive double-digit growth and was on the way to be a leading direct retailer; however, the company was still operating with a single DC on the East coast. The majority of the company's new growth comes from the western and southern regions of the country, but the company's warehouse is approaching full capacity from increases in product demand. The company needed to re-evaluate their warehouse and distribution network in order to support increase in growth and demand. Capgemini was asked to conduct warehouse and distribution network assessment.

Looking to improve service levels and reduce lead times to new growth areas, Capgemini was able to utilize network modeling tools that allowed the client to evaluate the feasibility of utilizing other modes of transportation such as rail and determine the potential placement of future distribution centers. The distribution network assessment provided additional DC locations that would save the client nearly 20% in annual transportation costs.

To address the client's warehousing concerns, Capgemini conducted an assessment that identified short and long term recommendations to increase operation efficiencies. Short term recommendations included a more efficient use of space and strategic product placement that would allow the client to increase its current outbound load capacity by nearly 50%. In addition, the client would save 400 hours of labor by re-slotting only 4 SKUs. Capgemini also suggested the development and enforcement of new chargeback, SKU rationalization, and SKU retirement policies that would allow the client additional operating efficiencies and growth support.

In the long term perspective, the client would need a solution that would address its excessive overtime spend and load planning times in addition to its warehouse capacity and SKU tracking constraints. Capgemini recommended the client invest in an advanced warehouse management system that would increase visibility and operating efficiencies within the warehouse.

Distribution management focuses on the 3 C's:

- Customers
- Control
- Costs

whichever location has the stock. The strategic positioning of inventory is to a certain extent a centralization approach. It enables the utilization of risk pooling, which means that more orders can be met with a lower total inventory. The data in Figure 9 suggest that this is most often the DC or warehouse that is closest to the customer (i.e. the DC or warehouse with the shortest delivery time).

In the decentralized logistics network that 30.7 percent of the study respondents stated that they have, each facility identifies its most effective strategy without considering the impact on the other facilities. Many view this as a local optimization because it doesn't consider the interaction of decisions made at different locations in the logistics and supply chain network.

Transportation costs in order fulfillment are directly related to the number of DCs or warehouses used. As the number of facilities increases and the distance to the customer is reduced, outbound transportation costs will decline. When it comes to order fulfillment, 32.4 percent of the participants reported that the fill customer orders from whatever DC has the lowest freight cost associated with the order. Most often, this would be the DC or warehouse closest to that customer.

Determining where to hold inventory in the logistics and supply chain network is a complex problem that involves multiple trade offs. As a firm moves from a centralized to a decentralized network there is an improvement in service due to the decrease in distance (or travel time) to

customers. This improvement in service, however, brings some undesirable results. An increase in the number of DCs or warehouses leads to an increase in inventory costs because of increased safety stock requirements system wide. There is also an increase in overhead costs, and potentially inbound transportation costs as the distance from vendors and suppliers increases as the volume decreases.

The study results show that the number of facilities in the logistics and supply chain network increased from 2006 to 2007 (Figure 10). The average number of manufacturing locations grew by 30 percent during this time, while the average number of central warehouses quadrupled. There was no statistically significant change, however, in the number of regional (or field) warehouses from 2006 to 2007. The noted change can be attributed to differences in the size of firms (based on revenue) from one study year to the next.

These results were further confirmed by the fact that 34.2 percent of the study participants reported that the number of facilities holding inventory in the logistics and supply chain network had increased over the past two years. For another 39.9 percent of study participants the number of facilities that hold inventory remained the same for this time period.

Costs: While an unlimited budget in distribution management is the ultimate dream for managers of this process, the reality is more challenging. Managing and controlling costs will always be a top priority for distribution. A key component of cost control in

distribution is managing the amount of SKUs and the resulting inventory that is being carried by each DC and the company system wide. Over the past few years there has been a great deal written about product proliferation and its impact on system wide inventory levels. New products have become the lifeblood of many consumer products companies necessitating the need for logistics and supply chain professionals to manage their activities in different ways than in the past. The number of SKUs that a single facility or the entire system is holding directly affects the distribution management process, particularly if a facility independently determines the specific SKUs to be stocked. Product rationalization has become the mantra of inventory and distribution managers across all industry sectors. So how successful have these efforts been? When participants were asked about the total number of SKUs system wide in 2006 compared to 2007, the data show that there was a 5.9 percent decline in the median total number. In 2006, the median number of SKUs in the company was 4,250 compared to 4,000 in 2007.

The results for 2007 in distribution management are mixed. While the number of system wide SKUs declined from 2006 to 2007, the number of facilities in the logistics and supply chain network has increased appreciably. The driving forces behind this are shown in Table 9. The key reasons for more facilities are shorter lead times and the need to serve additional distribution channels which often leads to a facility that is designed or dedicated to handle specific distribution strategies such as

direct to retail store with cross-docking capability.

Many firms have tried to move from pushing inventory through the logistics and supply chain network to a more demand-driven environment where inventory is pulled through the system. Supply chain dynamics, however, have made this transition particularly difficult. On the supply side, there has been a great deal of variability in inbound lead time as firms increase the amount of sourcing they do on a global scale. At the other end of the supply chain, retailers are dealing with unpredictable customer demand that causes order changes to ripple upstream. It becomes a vicious cycle as manufacturers try to make the needed order changes and plan more efficient production at the same time they are dealing with inbound supply issues. The results can often be seen in two outcomes - higher than expected distribution costs in transportation and inventory, and customer service levels that do not meet requirements and/or are declining over a period of time.

Before turning to the specific plays, a few short summary findings are in order. First, distribution management is the one area that you must get right. Nearly half of the respondents had invested in some form of a commercially developed package. We have seen over the past several years that few respondents are relying on packages developed in house, or spreadsheets.

Getting it Right - Size of Firm

Distribution management is another area where differences between the Masters and their

Figure 8 - Inventory Management Policy

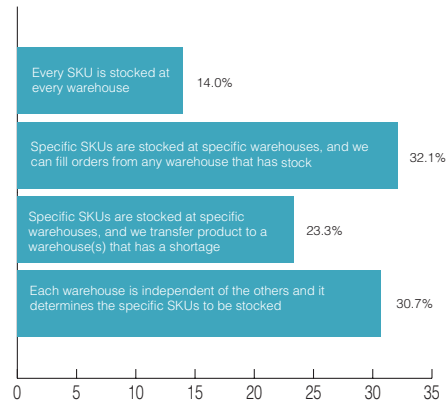


Figure 9 - Order Fulfillment in the Logistics Network

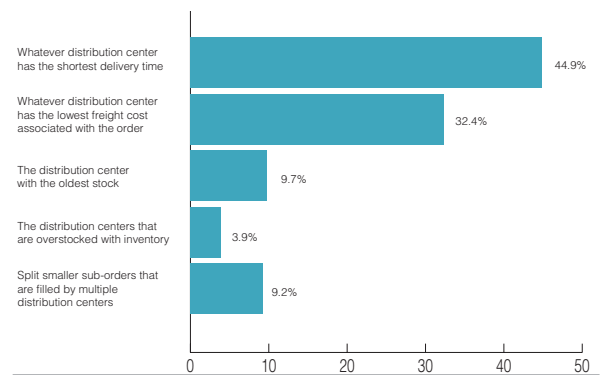
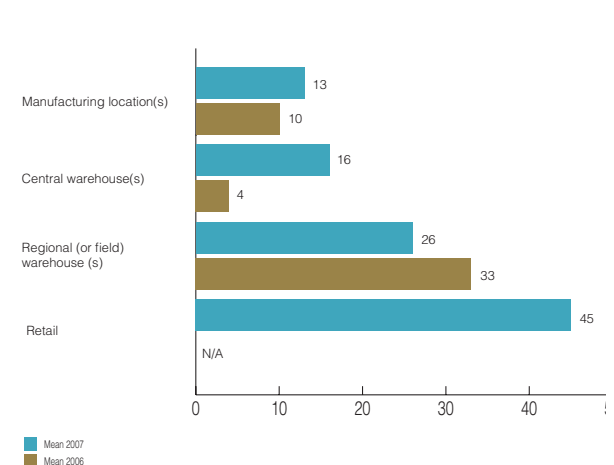


Figure 10 - Logistics and Supply Chain Network Configuration



smaller counterparts are evident. The Masters of Logistics are noted for:

- Moving significantly larger volumes per shipment for an average of 19,617 pounds.
- Having capabilities that enable them to achieve operating

efficiency and effectiveness such as:

- core carrier program;
- extended, 360° scorecards with suppliers and carriers; and
- outsourced freight payment.
- Placing the highest importance on:
 - consolidated shipments;
 - cross docking at DCs;
- electronic tendering of shipments;
 - tracking inbound and outbound shipments; and
 - global visibility of orders.
- Decreasing the amount of finished goods inventory carried by the organization.
- Reducing the amount of obsolete inventory write offs within the last year.
- Shipping significantly more customer orders from their regional warehouses or DCs as opposed to their counterparts that primarily ship from plant/warehouse locations.

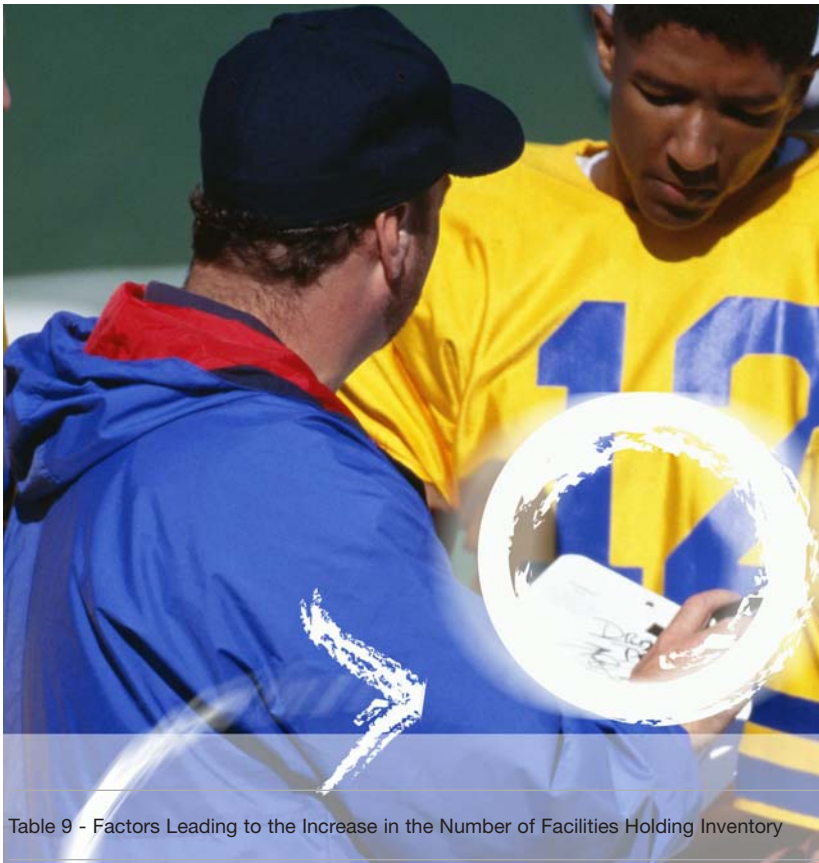


Table 9 - Factors Leading to the Increase in the Number of Facilities Holding Inventory

	Ranking by respondents
Customers' lead times are getting shorter	1
Additional distribution channels are being served (e.g. direct to customer; direct to retail store)	2
Warehouse capacity was insufficient	3
Outbound transportation costs have increased	4
Mergers / acquisitions	5
Competitors are offering higher levels of service	6
Our product life cycles are getting shorter	7

While it does seem that the Masters did all the right things relative to logistics and supply chain management practice, the data for overall inventory management tells a somewhat different story. When compared to their counterparts it appears that the reduction in company-wide inventory levels has not translated to an increase in turns for the Masters. This is most likely due to the 3.1 percent increase in SKUs from 2006 to 2007. The Masters were, however, better able to control product proliferation as compared to medium size firms that reported a 8.4 percent increase in year.

Getting it Right - Performance

- High performers are more likely to ship from regional and field warehouses than smaller firms. Inventory is closer to the customer, ready for a quick response.
- High performers have a longer average length of haul (639.6 miles) and smaller average shipment size (12,292 pounds) than medium performance firms.
- Low performers tend to fill customer orders from DCs that have the lowest freight cost associated with the order as opposed to using the DC with the shortest delivery time, or the DC with the oldest stock, or the DC (or DCs) that are overstocked with inventory.
- Low performers increased the number of facilities where they hold inventory. The number of facilities for the majority of high performers remained the same from 2006 to 2007.
- Even though they have the highest number of SKUs, high performers were able to significantly outperform their counterparts in inventory management.

Getting it Right - Visibility

- The majority of high visibility firms fill orders from the DC with the shortest delivery time.
- More high visibility firms retained the same number of facilities where they hold inventory than medium visibility firms. Low visibility firms were almost equally split between those that increased,

decreased and stayed the same relative to number of facilities holding inventory.

Getting it Right - Strategy

- Cost strategy firms have the highest inventory turns and the lowest days sales in inventory despite a 3 percent increase in SKUs from 2006 to 2007.
- Having a mixed strategy (i.e. being all things to all people) is clearly a challenge as noted by having the highest average days' sales in inventory, one of the lowest inventory turns, and the fast growing product proliferation.

Figure 11 - Distribution Software Packaged Employed

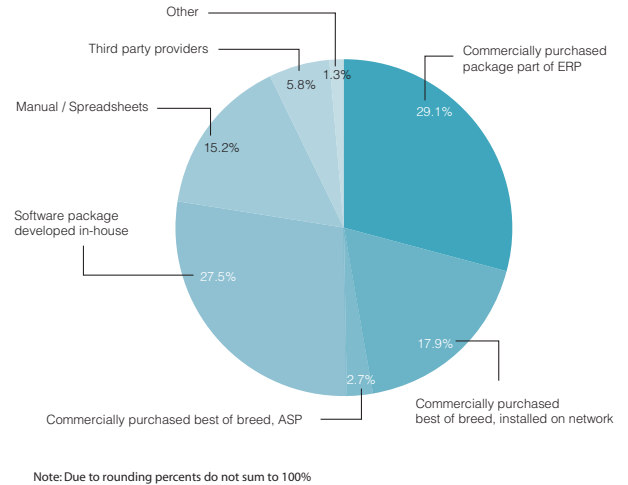


Table 10 - Distribution Performance By Size of Firm

Segment Analysis	Average number of inventory turns	Average days sales in inventory	Average days sales outstanding	Average Number of SKU's 2007	Average number of SKUs 2006	Percent increase in SKU s
Small Challengers	14.24	38.44	35.58	8,553.37	8,430.83	1.5
Medium Contenders	14.84	30.83	30.53	20,475.22	18,886.31	8.4
Masters	14.13	36.67	38.60	13,181.16	12,787.26	3.1

Table 11 - Distribution Performance by Self Assessed Performance

Segment Analysis	Average number of inventory turns	Average days sales in inventory	Average days sales outstanding	Average Number of SKU's 2007	Average number of SKUs 2006	Percent increase in SKU s
High Performers	14.96	27.60	29.60	14,517.97	13,728.81	5.7%
Medium Performers	13.60	32.42	37.77	10,754.80	10,824.61	-0.6%
Low Performers	13.24	43.29	39.34	10,661.11	10,438.40	2.1%

“If you are a medium size firm, and don’t have a TMS in the next three years, you’re dead meat.”

Anonymous

The average shipment was moved 625 miles and weighed 12,807 pounds.

Table 12 - Distribution Performance by Strategy

Segment Analysis	Average number of inventory turns	Average days sales in inventory	Average days sales outstanding	Average Number of SKU's 2007	Average number of SKUs 2006	Percent increase in SKU s
Cost	16.69	28.31	32.86	14,288.64	13,868.67	3.0%
Customer Service	13.11	35.64	37.83	12,597.79	12,360.27	1.9%
Product Innovation Mix: be all things to	15.55	38.48	37.35	16,056.51	15,376.51	4.4%
all people	14.03	39.14	30.94	9,218.10	8,418.45	9.5%

Many shippers in this group saw their domestic transportation costs increase considerably to 2-3 percent of sales and higher from 2006 to 2007.

Regardless of the amount spent on transportation - either domestic or international - firms want assurance that their expenditure for this activity is value added to the company’s logistics and supply chain operations. As the physical link between suppliers, manufacturers, wholesalers, distributors, and customers, the role of transportation is to provide an efficient and effective flow of goods thereby creating time and place utility.

Transportation management is the integrated process of satisfying requirements related to the movement of goods. It involves both strategic and tactical planning, budgeting, services, and associated systems. On a day-to-day basis transportation management includes execution of services, tracking and tracing, vehicle maintenance, fuel costing, routing and mapping, communications, freight handling, and financial settlement - just to name a few. The success of operations is dependent on true, real-time visibility into the movement of goods that allows synchronization and collaboration with other supply chain members.

In order to better understand the challenges facing transportation managers, it is necessary to get a clear picture of the transportation system itself. An examination of the average length of haul for freight moves in North America reveals that 31.2 percent of goods are moving within a 1-day radius (<= 400 miles) of their origin

Plays: Transportation Management

As businesses become more global in reach, the transportation function is connecting supply chain members that are separated by tens of thousands of miles. The increased distances for sourcing, manufacturing, and selling have contributed to increased transportation costs. For most companies, transportation accounts for approximately half of total logistics costs (Annual State of Logistics Report, June 6, 2007). Earlier in this report, data for 2007 was presented on the percent of sales being spent on domestic transportation.

From 2005 to 2006 there was a sizeable shift (increase) in the percent of sales needed to cover domestic transportation expenditures. From 2006 to 2007, however, the majority of the largest shippers were able to hold the line on costs. The biggest change from 2006 to 2007 was the lower end transportation spenders (i.e. those that spend <1 percent of sales on domestic transportation).

T M

(Figure 12). This is contrasted to cross-country moves (> 950 miles) that accounted for 24.9 percent of the total. On average shippers moved their goods 624.9 miles in 2007. This represented an 11.6 percent increase in average distance from 2006.

In addition to moving freight more miles on average, shippers also increased the average shipment size from 2006 to 2007 by a modest 3.6 percent. The data in Figure 13 show that the largest percentage of respondents (23.3 percent) had an average shipment size greater than 30,000 pounds. These truckload movements are contrasted to less-than-truckload shipments (150 to 9,999 pounds) that accounted for a combined 47.3 percent of shipments. In 2007 the overall average shipment size was 12,806 pounds compared to 12,360 pounds for 2006.

The ability to consolidate shipments for larger freight volumes per load and longer lengths of haul is somewhat constrained by the nature of the move itself. This year's study participants reported that 76.5 percent of all their freight moves are considered to be regular route, with the remaining 23.5 percent being irregular route moves. It is the 76.5 percent of freight moves that lend themselves to transportation management practices that result in gains in efficiency.

How do respondents choose what mode to use? Prior to deregulation in 1980, this was the primary transportation decision. Historically, the critical factors included cost, reliability and transit times - the 'Transportation Trinity.' As shown in Table 13,

little has changed since the early-1980's.

Modal choice isn't the only decision facing today's transportation managers. As Table 14 indicates, carrier tracking, shipment visibility, shipment consolidation, a core carrier program and EDI messaging with trading partners should be considered fairly standard. These tend to point to the need for more visibility as freight moves within the supply chain, and attempts to reduce costs through consolidation and a core carrier program.

It is also interesting to see what shippers are not planning to change, and what areas are in play. For instance, only 20% of the respondents are thinking of dropping their core carrier program; the majority of companies understand the value that these strategic partnerships provide in a turbulent transportation environment. It is also interesting to note that the majority of study participants do not plan to use more transportation brokers than currently, nor do they foresee the shifting of more volume to a 3rd party provider (3 PL). This seems to suggest that most firms have reached some point of stability in the "own versus buy" decision relative to transportation and logistics services.

One of the most important components of transportation management is service. In the evolution of logistics and transportation over the years, on time delivery has become one of the critical elements used to measure service. Part of the maturation process of logistics and

Figure 12 - Outbound Moves Increasing

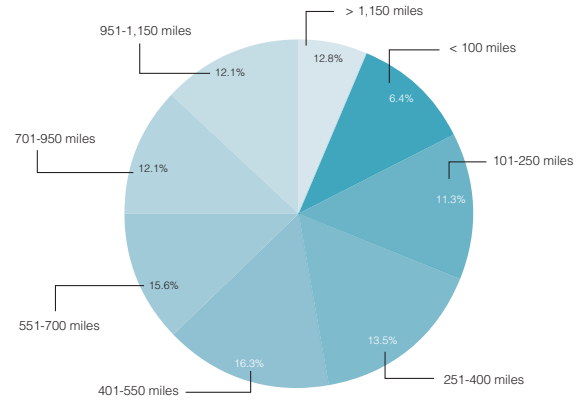


Figure 13 - Shipment Size

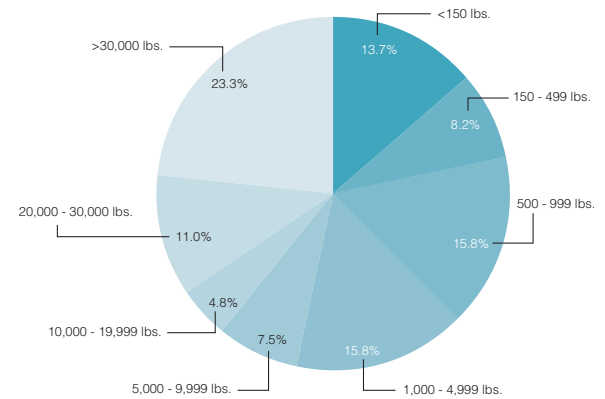


Table 13 - Critical Factors In Choosing Transportation Mode

	Ranking by respondents
Freight costs	1
Reliability	2
Transit time	3
Total landed costs (transportation, inventory, in transit inventory carrying costs)	4
Distance of shipments	5

Transportation management is the integrated process of satisfying requirements related to the movement of goods.

Figure 14 - Degree of Visibility in the Domestic Supply Chain

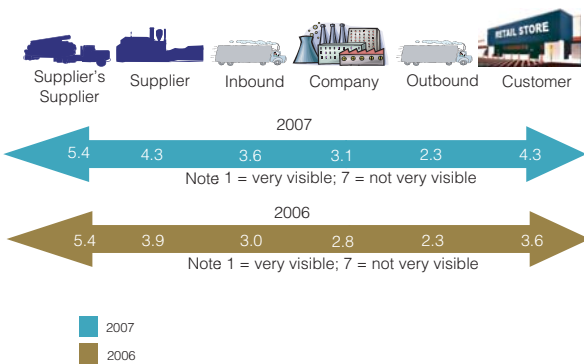
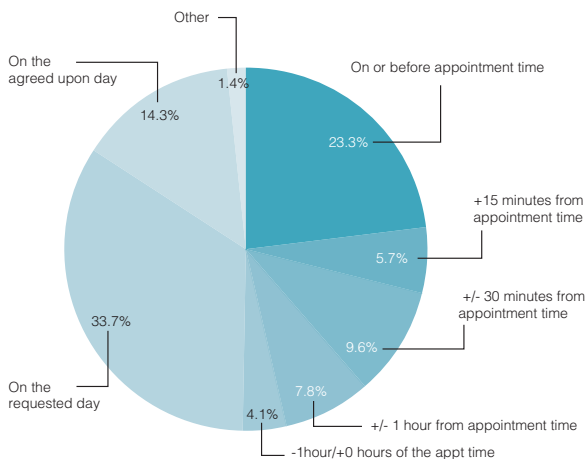


Figure 15 - Defining On Time Delivery



transportation, and the emergence of supply chain management, has been a shift in power to the customer. Customer expectations regarding service - specifically on time deliveries - have continued to rise over time. This led to tighter and tighter windows for pickups and deliveries. Many firms began using appointment times to efficiently manage their personnel and transportation resources.

With the recent turbulence in transportation, however, the question is whether these changes have impacted the level of service being requested by companies. Figure 15 indicates that there are two prevailing definitions of on time deliveries - on the requested day and on or before the appointment time. These two definitions represent opposite ends; “on the requested day” is a very wide delivery window and “on or before appointment time” is a very exact specification of when the delivery should be made. Further analysis by industry sector, size of firm, strategic objective, level of visibility, or level of performance did not result in any significant differences in how on time delivery is measured. That is, none of these factors determines how a company defines this service element.

Perhaps some of the acceptance of a wider delivery window can be attributed to the fact that many firms have increased the amount of visibility they have within their organizations and across their supply chains. This visibility enables firms to know where products are at motion and in rest - in many cases across the globe in real time.

In most areas, domestic visibility is generally better than international visibility. Yet, as Figure 14 shows even domestic visibility has a lot of opportunity for improvement.

Most firms have limited to no visibility the further upstream and downstream they go in the supply chain. It is a tremendous competitive disadvantage not being able to see a customer's inventory levels or view a supplier's inbound shipment status. The data on the “supplier's supplier” is even more disheartening.

Study participants reported that 51 percent of their companies have very limited visibility of the finished goods inventory of their supplier's supplier. In order to combat rising logistics and transportation costs, firms must improve their ability to access and view information at all stages and places across the supply chain in addition to their own four walls.

Getting it Right - Size of Firm

Just as with distribution management the Masters of Logistics are doing things very differently than their counterparts. These differences include:

- Responsibility for the following activities by supply chain management:
 - parts / service support
 - production planning
 - network design / facility location
 - Inclusion of supply chain management in capital budgeting.

- A more comprehensive supply chain organization as evidenced by the number of activities that fall in this area of responsibility.
- Regular meetings of procurement and inbound transportation to discuss strategic decisions for both areas.
- Implementation of the following items to improve operating efficiency and effectiveness:
 - core carrier program;
 - broadened delivery and pickup time windows;
 - extended, 360° scorecards for carriers; and
 - outsourced freight payments for improved audit capability.
- Planning the increased use of regional LTLs by more than 20% next year.
- In terms of organizational structure, small and mid-size firms are different than large firms in that:
 - Parts / service support is primarily the responsibility of procurement.
- Production planning is the domain of manufacturing.

Getting it Right - Performance

The majority of high performers reported that:

- Transportation and distribution report to the same person who makes trade off decisions for these functions.
- Transportation does not drive distribution operations.
- They spend twice as much time on transportation strategic

Table 14 - Actions Taken To Improve Efficiency and Effectiveness

Actions Taken	Planned / Implemented / Completed	Not Planned
Improved carrier tracking	89.3	10.7
Increased shipment visibility	80.7	19.3
Improved shipment consolidation	78.3	21.8
Implemented a core carrier program	77.9	22.2
Implemented EDI messaging with trading partners	69.3	30.6
Special pickup / delivery solutions	69.1	30.9
Adjusted frequency of replenishment	64.7	35.3
Re-routing/ re-scheduling	64.6	35.4
Special shipments	63.0	37.0
Reduced dock load / unload times	62.9	37.0
Emergency shipments	61.7	38.3
Shared capacity forecasts with carriers	60.2	39.8
Increased use of multi-modal shipments	60.2	39.8
Leveled (balanced) freight volumes	55.1	44.9
Implemented differential customer service levels	53.6	46.4
Shifted inventory to accommodate delays	52.0	48.0
Outsourced freight payment for improved audit capability	51.6	48.4
Began using or shifted more volume to a 3 PL	49.8	50.3
Increased use of cross-docking	46.0	53.9
Increased focus on backhaul revenue	41.9	58.0
Extended, 360-degree scorecards	41.8	58.1
Increased use of drop and hook	41.7	58.2
Multi-company collaborative shipping schedule	41.5	58.5
Used more transportation brokers	40.6	59.4
Reduced service requirements (e.g. broadened delivery and pickup times)	39.9	60.1
Dropped core carrier program	20.4	79.5

planning than do other size companies.

- They rank appointment scheduling, carrier selection, and 24-hour custom notification as more important than other size companies.

The average shipment moved 625 miles and weighed 12,807 pounds.

A New Play for LTL Shippers; Cube and Density Pricing

While this study was underway the Surface Transportation Board (STB) announced the planned removal of anti-trust immunity for LTL carriers in jointly publishing rate and rule tariffs as they have done for over 60 years. This change sweeps away the last of the economic regulation (and collective rate setting) by LTL carriers in the United States. This change opens the door for more creative solutions. Some, including Hank Mullen, President of the Visibility Group have stepped forward with a solution that mimics international rate making based upon cube and density. "Shippers have a unique opportunity to explore a new pricing structure and carriers can finally drop these absurd discount programs - some of which exceed 85% of list price!" says Mullen. In addition carriers and shippers can explore accessorial variances that could be tailored to the shippers need. In areas such as insurance, delivery times, day-of-shipment rates shippers and carriers could both provide incentives for good behavior and efficient transportation. A major parcel carrier indicated cost reductions of up to 15% were possible if they could have advanced notice of the cube and density of loads in planned pick-ups. Shippers, many of whom are self-insured could save by reducing insurance costs baked into today's published tariff rates. The LTL contract can become a tool for collaboration and growth. Time for some new plays!

- They are not planning on sharing capacity forecasts with their carriers.
- Low performers are less likely than others to have transportation and distribution meet on a regular basis to discuss strategic issues concerning both functions.
- For medium size firms, both logistics and supply chain management play important roles in inventory management.

Getting it Right - Visibility

High visibility firms are significantly different in that they:

- Spend proportionally more time in strategic planning than low visibility firms - 11-20% versus 0-5%, respectively.
- Spend 21-30% of their time collaborating with customers and an additional 21-30% collaborating with suppliers versus 0-5% for customer collaboration and 6-10% in supplier collaboration for low visibility firms.
- Have multiple areas of the firm that are impacted by supply chain management including:
 - new product development;
 - production planning;
 - inventory stocking locations; and
 - returns management.

The impact to supply chain management wasn't reported a single time for medium to low visibility firms.

Getting it Right - Strategy

- Customer service driven companies consider the following capabilities to be very

important or important in achieving their goals and objectives (in order of importance):

- carrier selection;
- vendor compliance;
- domestic visibility of orders; and
- internal visibility of orders.
- A large percentage (41.1%) of this same strategic group increased shipment visibility in order to improve operating efficiency and effectiveness.
- Cost leadership firms are planning the following initiatives to improve operating performance;
 - multi-company collaborative shipping schedules;
 - reduced dock load / unload times; and
 - increased shipment visibility.
- Firms whose strategy is focused on cost must be able to operationalize this at all levels. In terms of transportation, the data indicate that these firms were successful in doing this. For cost strategic companies, the average length of haul was 74.6 percent longer than customer service focused firms. The average shipment size for cost focused firms was more than twice the size of any other strategic objective.

Stepping Up Your Game

The goal of this research over the years has been to analyze logistics and transportation practice to determine how current methods, processes and systems are meeting the needs of the firm, its customers and its supply chain partners. It is not sufficient, however, just to examine current practice. The end objective is to identify gaps between the current and “best” practice, and to propose ways for firms to move to a level of logistics and supply chain performance that ultimately will transform the way they do business.

Best practice is more than a one-year trend. The value of this research effort is the longevity of the data that enables us to detect trends in logistics and supply chain practice. The best way to understand how to transform the firm for the future is to first study the past.

When this research effort was started sixteen years ago, it was widely believed that larger firms (in terms of sales revenue) were the leaders in logistics and transportation practices. After all, these firms had the necessary deep pockets for acquiring the resources to tackle the changing business conditions of that time. In the early years of this research effort, in-depth interviews were conducted with numerous Fortune 500 firms that were considered to be at the forefront of developing and implementing innovative logistics and transportation practices.

As the research study grew in terms of scope and number of participating companies, the

analysis revealed that there were indeed significant differences in logistics performance between large and small firms. Everyone wanted to know what the ‘big boys’ were doing, regardless of whether or not they themselves should do it.

Unfortunately, many decided that emulating the large firms would result in the same positive performance results. In many cases, however, this meant adopting a strategy that clearly didn’t fit their business. With Dell’s growing success throughout the 1990s, many firms wanted to design and operate their logistics and supply chain network in the same manner even though this approach was not aligned with the strategic objectives of the firm overall. One firm’s VP decided that their firm should also be able to achieve a negative cash-to-cash cycle even though they were in the commodity paper business that bought raw materials in bulk.

Why did large firms have an advantage? The cost of large systems technology, installation and training was quite high. It was not uncommon for firms to invest tens of millions of dollars in search of the Holy Grail technology that would give them visibility and flexibility. At that time most of the ERP software vendors dictated how their software would be installed, and how long it would take. While most projects were successful, there were more than a few war stories being told about failed implementations. Many projects required additional funding just to be completed. In this environment, smaller and medium size firms simply did not have the financial resources to purchase the tools needed to transform their

Nurturing trust in the supply chain will require the guidance of the strategic leaders of the organization – the “CXOs”

Playbook in Action: Transportation Management

A leading consumer products company in the food industry realized it had to re-formulate its playbook for truckload and LTL transportation. Despite recent negotiations and the implementation of a TMS solution several years before, the rates paid to carriers were still too high. By accessing rate benchmarking services at Capgemini Consulting their fears were confirmed. The challenge was to approach the transportation market in a new way. In the past this would mean some type of aggressive reverse auction but in the 21st century it meant a deliberate collaborative exchange with transport companies in combination with a RFQ.

Over several weeks a detailed data base of flows was developed and refined taking into account planned changes in the company's distribution patterns over the coming two years. To demonstrate commitment to agreements, several recent carrier agreements were mutually extended and excluded from the new bid process. LTL carriers were invited to a carrier conference and presented with new initiatives the company was taking to speed unloading at food wholesalers, a chronic industry problem. LTL carriers were also invited to bid using their own tariffs rather than the traditional one tariff with discounts. Both of these concessions meant increased expenses for the company but signaled a commitment to making carrier operations more efficient.

A detailed analysis had shown that 100 LTL lanes represented the breadth and depth of the company's LTL shipping and so carriers had only to rate 100 sample shipments and submit a one page letter detailing rates, discounts and accessorials. A common company fuel surcharge table was presented so that all carriers could bid on the same basis. For Truckload and LTL a single round of bidding followed by one-on-one meetings provided all parties with a clear understanding of the service expectations, transportation management system and settlement methods to be used. Carriers were encouraged to bring forth innovative ideas for mutual cost reduction. All resulting contracts were two years and carriers demonstrated appreciation for the collaborative approach with significant savings in both base rates and accessorials for the company.

This case demonstrates that technological investment is only a part of the answer in addressing rising transportation costs. A new play is process-focused and collaborative with all parties able to put their best thinking into the process. Capgemini Consulting has branded this “The Collaborative Business Experience”™.

businesses. Even if they did, many of them could not afford the risk of failure that seemed to be a part of these endeavors.

Yet, as has always been the case, the cost of technology started to drop. At the same time, ERP, transportation management systems (TMS) and warehouse management systems (WMS) became more user friendly, easier to install, more powerful as multiple vendors entered the market. This allowed the mid-tier market to start adopting the same software tools that just a few years earlier were beyond their grasp.

The result? By the late 1990s our research findings indicated that the differences between the large, medium and small size firms had mostly dissipated. While medium size firms couldn't afford an entire ERP suite, they could install 'best of breed' solutions for demand planning at an affordable price point. And, these solutions were relatively easier to install, in a shorter period of time.

As we stated at the beginning of this report, the late 1990s until 9/11/2001 were the good times in logistics and supply chain. Since that time rapidly changing business conditions have tested the mettle of every logistics and supply chain professional. We were not surprised to find that under such stressful operating conditions that the significant differences between large, medium and small size firms began to re-appear again in 2005.

It is our belief that these differences are not driven solely by technology, but rather, due to vision. In other words, managers at larger firms started to see and understand the changing supply chain landscape, and began to

implement strategic initiatives that they were confident would assist them in weathering the turbulence.

Who's at risk? Or stated with a positive positioning, who has the greatest opportunity before them to close the gap between current and best practice? From our perspective, Contenders (firms with sales between \$500 million and \$3 billion) are those that have the most to gain or to lose. They have the resources available to invest in their future, if they see the vision and have enough understanding relative to where to make logistics and supply chain investments.

For this mid-tier group, supply chain excellence must be a primary concern in the boardroom. Investing in the cornerstones of supply chain excellence - people, processes and technology - that will enable them to once again close the gap between themselves and the Masters.

If the supply chain environment will continue to be marked by challenges, what are some things that today's professionals can do to stay in the game? The playbook contains four winning strategies.

Winning Strategy 1: Focus on the game and learn the rules of the game.

Much like athletes who know which game they are playing, professionals need to know the nature of their business. This begins with understanding how your supply chain meets the needs of your customer base. What benefits do you provide your customers that provide a sustainable competitive advantage? How are your customer's needs

Hall of Fame Profile: The Masters of Logistics

How do you rate against the best? Do your current operations qualify you for the Logistics Hall of Fame? The following criteria can be used to determine how you measure up to best practice.

Control of activities within the firm

- Parts / service support is managed by supply chain management, and not procurement.
- Customer service is least likely to have sales / marketing in control of this activity.
- Network design / facility location is the primary responsibility of supply chain management.
- Capital budgeting is nearly twice as likely to have supply chain management involvement.
- Least likely to have only manufacturing in charge of production planning. As size of firm increases, so too does the probability of having supply chain management in charge of this activity.

Tradeoff Decisions

- Procurement and inbound transportation strategic decisions are made by meeting regularly to discuss the issues.

Process Integration

- All critical processes are integrated to very integrated. This includes: order management to ERP, transportation and warehousing; demand management to order fulfillment, distribution, and manufacturing; warehousing to transportation; manufacturing to supplier relationship management; and order management to transportation and warehousing.

Technology

- Use of commercially available “best of breed” transportation software to manage domestic transportation.
- Use of ERP transportation solutions for international transportation management. Least likely to use manual/spreadsheets.

Transportation Management

- Tracking inbound shipments
- Global visibility of orders
- Electronic tendering of shipments
- Drop ship programs
- Cross docking at DCs
- Outsourced freight payment for better audit capability
- Increased spend on TL (10-20%) while decreasing the spend on national and regional LTL (<10%)
- Use of an average 57 TL carriers
- Higher spend on transportation

Distribution Management

- More shipments directly to the customer
- Most likely to ship customer orders from regional warehouses/DCs
- Less obsolete inventory write offs
- Overall decrease in the amount of inventory held company wide
- Broadened pickup and delivery times as possible

If you want to transform your business, you have to develop a playbook that details the specifics of how to change the way you do things.

changing? How are their markets changing? How will these changes impact your firm?

The results of this year's study indicate that the Masters have the highest level of integration between systems such as order management, transportation and warehousing, and demand management and manufacturing. This level of integration is one of the rules of the game; the bar has been set. Everyone must be able to share data and information seamlessly on a real time (or near real time) basis.

A second critical rule is that visibility is needed throughout the supply chain for products in motion and at rest, in both domestic and international markets. Rising transportation and logistics costs can only be stemmed if companies can leverage information. This means being able to view real time data in order to make better management decisions as conditions change. While firms have made great progress within their four walls to make product and information flows more visible, the lack of visibility across supply chain members still keeps most firms on an isolated island in terms of synchronizing and coordinating critical supply chain activities.

Finally, it is also imperative that the firm's strategy and its supply chain strategy and structure be aligned. It is difficult to maintain any strategy to the customer when key areas for achieving this have objectives contrary to the overall mission. This is especially difficult when several different departments manage key supply chain functions.

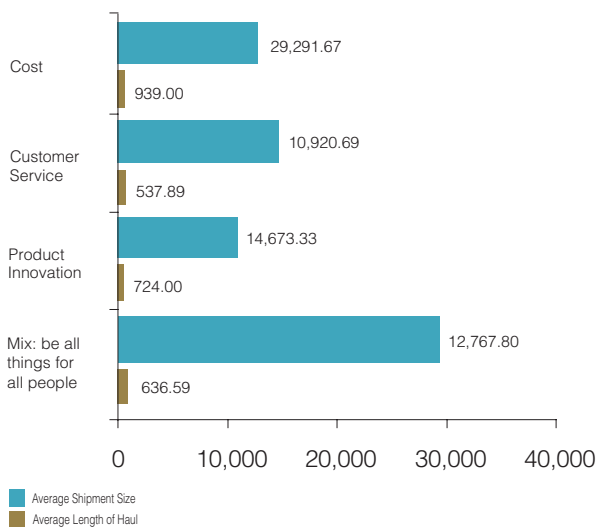
Winning Strategy 2: Focus on the basics and the talent needed to play the game.

At the end of every game a coach will assess the team's performance. If things didn't go well during the game, this assessment and subsequent realignment will happen before the season ends! The assessment is necessary to determine how the team's resources need to be attuned.

This same assessment should be conducted by businesses. What skills and capabilities need to be added? What abilities and expertise are no longer valuable to the organization given its goals and objectives? Acquire the people that will assist the firm in moving forward. The supply is limited while the demand is high, making it a very competitive talent market. From our viewpoint we see many firms not making the needed investment in recruiting the best and brightest. In today's market, it's more than just showing up for the on-campus career fair.

The right people also need the right tools to be successful. What technology is needed to keep your company in the game? Where are you ahead, and where are you behind relative to tools and techniques that will enable your firm to fundamentally change the way it does business? This is a very complex question. It is not always a matter of having the latest and greatest tools. It is a matter of understanding the business issues and problems and then selecting the appropriate tools to tackle them. As discussed above, many of these tools should be integrated both within the firm and across supply chain members

Figure 16 - Transportation By Strategy



Whenever possible, replace assets with information.

to ensure that needed information flows are accessible for better and quicker decision making.

Winning Strategy 3: Focus on developing a few new plays.

Special plays can never take the place of basics. Yet, all teams need multiple plays to beat on the competition they face. Coaches and players work to develop plays that will improve their strengths and overcome their weaker areas.

The same approach should be used in business. First, you should assess your firm, then your supply chain. What are your internal strengths and weaknesses? How does this affect your ability to add value to your supply chain? How do your strengths and weaknesses affect other supply chain members both positively and negatively?

The results from this year's study suggest that most firms are spending too little time in this area. Collaboration with customers and suppliers, and strategic planning across the various areas of the firm accounts for 10 percent or less of managers' time. When conditions change on the field, how will you know what to do? Assess how you are spending your time. Is it spent fighting fires, or preventing them? Where should time - and resources be directed?

Winning Strategy 4: Focus on a few key metrics.

Know the score

Keeping track of where you are seems - at least on paper - easy to do. In practice, as many know, it is challenging. First, what are the critical few metrics that will be used to measure performance? The operative word is few. Too many measures will lead to paralysis.

It is worth noting that some metrics are best used at the tactical level, or at the departmental level. Others are needed at a more strategic level in the firm. It is critical to know the difference, and the importance of each.

Second, how will the measures be defined? Are the definitions easy to understand? How will you ascertain that everyone in the firm will use the same definition for the metric?

Third, from where will the data for the measures come from? For multi-divisional firms, understanding exactly where the data comes from helps to avoid confusion.

Fourth, who is tasked to collect the metrics? Will it be done by functional area, or by division?

Finally, report the results and act. Each metric should provide information as to what the firm should do next. If a metric is not used in helping assess the position of the firm, it is time to let it go.

The past three years have been some of the most challenging that logistics and supply chain professionals have faced. Looking

ahead, environmental conditions seem to be just as turbulent as in the past. Fuel prices continue to be volatile. Driver shortages are not declining. The viability of the transportation infrastructure - highway, rail, air, and inland waterway - is in question from capacity to safety. Global supply has increased the risk for many firms in the event of an unplanned disruption.

These conditions call upon us to develop and use the very best plays that we have to manage our businesses. These plays will have to change and adapt to the changing business conditions we face.

The game is in progress.

Are you ready to play?



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Dr. Holcomb is Associate Professor of Logistics and Transportation in the College of Business at The University of Tennessee. Her research interests focus on two related areas of strategic logistics management: process design for quality and customer service measurement. Dr. Holcomb's professional career includes eighteen years at the Oak Ridge National Laboratory in transportation research of the U.S. Department of Energy, U.S. Department of Transportation, and the U.S. Department of Defense.

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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. The faculty publishes in a wide range of topics and are 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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Capgemini is one of the largest consulting, technology and outsourcing services firms in the world and is publicly traded on the Paris Bourse. The company offers process improvement consulting, systems integration, technology development and design, and outsourcing capabilities on a global scale to help traditional businesses continue to explore growth strategies in the new economy. The organization employs more than 57,000 people worldwide and reports global revenues of over \$5.5 Billion Euros.

Capgemini develops sector-specific supply chain solutions for the Automotive, High Technology, Life Sciences, Financial Services, Government, Retail/Consumer Products, Manufacturing, Telecommunications, Distribution, and Chemicals industries. The Capgemini goal is to help clients increase shareholder value with speed and efficiency by getting closer to their customers, collaborating with suppliers, leveraging emerging trading communities, and making use of information flowing within and across company and geographic boundaries.

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