Logistics transformation
Navigating the supply chain value curve

2012 Trends in Logistics & Transportation Study
October 2012

University of Tennessee
Georgia Southern University
Ernst & Young
Con-way
Executive summary

It’s all about value.

The results of our 2012 Trends in Logistics & Transportation Study indicate that value is produced when companies leverage flexibility, efficiency and differentiation. This year’s study continues our examination of these three drivers of success in the “New Normal,” and it presents a framework for navigating the supply chain value curve. It is the progression up the value curve that leads to logistics transformation.

We believe the transformation journey begins with a focus on cost. Efficient processes, functions and activities must be the foundation on which flexibility and differentiation capabilities are built. Unfortunately, many companies do not have the luxury of tackling efficiency, flexibility and differentiation in a sequential manner. Instead they must press forward on all of these simultaneously.

Each driver of success – flexibility, efficiency and differentiation – is composed of numerous factors. Our analysis shows that seven factors associated with the drivers play key roles in the transformation journey. A brief overview of the factors and the findings regarding them is noted below.

- Achieving the desired level of efficiency necessitates a deep understanding of the cost to serve. A lackluster performance in the market is mirrored in our results. It suggests that further work is needed to truly understand customer and product profitability. Proof that more work is needed: the cash-to-cash cycle continued to increase, rising from 50.2 days in 2011 to 52.9 days in 2012. Days’ sales in inventory also increased by 48.4% from 2011.
- Because technology affects both efficiency and flexibility, it plays a critical role in value creation. This year’s results regarding the primary tools and methods used to manage domestic distribution are encouraging, as fewer companies are using manual methods or spreadsheets to manage domestic distribution. In transportation, more respondents are relying on best-of-breed software rather than on Third Party Logistics.
- Increased visibility is needed to build the necessary level of flexibility and to enable differentiation of service. Unfortunately, the news is not encouraging. While domestic visibility of the physical flow of goods

Flexibility is essential.
Efficiency is vital.
Differentiation is imperative.
and products on both the inbound and outbound sides increased, the rest of the supply chain halted previous progress. International visibility also reported the same results.

- Building flexibility entails strategic, tactical and operational actions and initiatives. Of the top five projects that study respondents have completed in order to gain flexibility, a majority are tactical and operational in nature. They are (in order): use of multiple modes of transportation, alignment of labor force skills to better meet changed demand requirements, shift in inventory within the network, integration of internal systems, and increase in collaboration with key customers.

- Business analytics capabilities are essential to the development of differentiation capabilities. The top five impediments to developing robust capabilities in this area are reported to be: lack of integrated processes, objectives that vary across business units, cost of implementation, lack of standardized data and lack of organizational strategy.

- Differentiation of service recognizes that the cost to serve is not the same for every customer. It’s also a critical underpinning for maximizing a company’s profitability. The study results reveal that from a logistics perspective, companies are not making significant performance distinctions between best and average customers. The gap between the two is fairly low.

- Closer collaboration with key suppliers and customers allows a company to increase its flexibility. The data shows that companies have placed much more effort into sharing information and collaborating with key customers than they have with key suppliers. This deficiency limits the operational flexibility of the entire supply chain.

We hope you find this report helpful as you begin navigating the supply chain value curve. The New Normal has quickly become the status quo. The old way of doing things is gone. New approaches and methods are needed for future success. Those who wait to transform their logistics processes and activities will be left behind in the race to achieve sustainable competitive advantage. Those who press forward with a sense of urgency will reap the benefits of pursuing the value-creation course.

Figure 1: The supply chain value curve

Value creation
Differentiation

Responsiveness
Flexibility

Cost focus
Efficiency
Changing management practice in logistics and transportation

Introduction

It has been said that compelling events are needed as a catalyst for lasting change. Today, there is an abundance of urgent events from which to choose. A multitude of events threaten economic stability, leading to slower-than-anticipated growth. During the recent recession, doing business the old way was not an option for those companies seeking to survive. Post-recession, it is simply not possible to return to the old ways of doing business, as many multinational companies have lost trillions in capitalized value and their revenues and cash reserves are declining. Hazardous waters lie ahead for those navigating the supply chain value curve. The challenge is a daunting one as prevailing conditions such as demand volatility, longer lead times, shorter product life cycles and increasing customer requirements add to the task at hand. Many have referred to the current operating environment as the New Normal. The implication is obvious. We can no longer conduct business as we have in the past.

If that is the case, the question becomes, How should companies compete? A common theme in the 2012 Trends in Logistics & Transportation Study is a renewed focus on balancing service and cost. This year’s study participants reported that the ability to respond to changing customer requirements is the number one factor that is causing them to change the way they manage logistics/supply chain operations.

While factors such as demand uncertainty and length of the supply chain are still concerns in managing logistics/supply chain processes and activities, they have moved down the list and been replaced by factors such as the cost to serve (CTS), inventory and total delivered costs. The cost of fuel has been among the top five issues for the past several years and continues to be an issue as transportation budgets get tighter and other cost drivers keep increasing. All of these can be seen as compelling reasons to seek new ways to create value.

In last year’s study, we suggested that the formula for success in logistics and transportation consists of three main ingredients: flexibility, efficiency and differentiation (the FED model). One of the factors – efficiency – played a critical role in assisting companies in achieving their performance goals during the recession. The data suggests that more work is needed for companies to achieve the level of flexibility that is needed to be competitive. Differentiation is receiving renewed attention, with respect to internal processes and a better understanding of customer segments. In this year’s study, we continue our examination of the FED model with the goal of finding ways for firms to reposition themselves on the supply chain value curve.

Current state of practice: a shift in fundamentals

Where are you? It’s a question asked by parents and managers every single day, and it’s an appropriate question to ask to assess the current state of logistics and transportation practice. Companies want to know how they did on key performance indicators (KPIs) compared with their competitors. Survey respondents were
asked to compare their performances with those of their competitors in five areas. Participants indicated that, on average, and relative to their competitors, their best performance was in the area of customer service levels. This was followed closely by firm profitability. On the lower end of the performance scale was revenue growth and the company’s competitive position or market share. According to respondents, the most disappointing aspect of their performance, relative to competition, was return on assets, which was reported as somewhat better than that of competitors.

How much better? Figure 3 shows the percent of respondents that believe their performance is much better than competitors. It’s interesting how low the numbers are, reflecting reality. Not everyone can be much better than their competitors’, especially in every category. Strategy needs to inform and determine priorities.

Moreover, the way we compete has definitely changed. In 2006 and 2007, a fundamental shift occurred in the way companies viewed their strategic approach to the marketplace. Before this time, customer service reigned as the overall strategy. By 2007, however, companies realized that service alone was not the key to success. There had to be control over costs. This realization led to the emergence of the mix strategy in 2008 as the predominant path companies followed.

The “be all things to all people” strategy states that companies don’t have the luxury of focusing on only one area; they are held accountable for a wide range of

![Figure 2: Competitive performance in the New Normal business environment](image)

![Figure 3: Percent of respondents who report performing much better than competitors](image)

![Figure 4: Overall strategy for division or business unit, 2012](image)
As the data in Figure 4 shows, 49.3% of all companies stated that they use a mix strategy. This percentage is down from 50.8% in 2011.

The strategy that appears to be gaining popularity is product/market innovation. This is driven by consumers’ desire for new and improved products. Innovative new products are less price-sensitive, and service levels do not have to compete with established products, at least in the short term. Time will tell if this trend continues.

Perhaps more revealing than the strategic focus of the company is the primary objective or goal it hopes to achieve. It’s one thing to state that the strategy must be both cost- and service-focused. Often, however, these two goals are in conflict. When this is the case, which aspect wins? Data from the study shows that reducing costs tends to lead over service. This has been the situation since 2005, when reducing costs surpassed increasing customer satisfaction as the primary objective/goal for the division or business unit.

An interesting trend that has emerged since 2010 is an increase in the percentage of respondents emphasizing profit maximization (16.3%) as their primary objective. We believe that if
current economic conditions continue, profit maximization will increase and will overtake cost reduction as a primary objective in the next few years. The goal of profit maximization is one that has been advocated for nearly a decade.1 Success of this objective depends heavily on supply chain managers’ ability to balance the cost/service equation.

While the pressure to reduce costs is evident, some may argue that the results are mixed. Respondents with transportation spending greater than 3% of sales increased from 44.7% in 2011 to 57.8% in 2012. Respondents who spent more than 5% of sales on domestic transportation increased by more than 24% in 2012. The study data suggests that most companies are trying to address increasing transportation costs through tactical and operational means (Figure 7). While these approaches have been shown to be somewhat successful, it is the lack of strategic effort that is disconcerting. Many of the existing supply chain networks were not designed with the current transportation and logistics costs or customer service requirements in mind. Without an optimal network, the opportunity to significantly improve overall efficiency and effectiveness is forgone.

What are companies doing to offset rising transportation costs? The study results indicate the utilization of three primary actions in this effort:

- Shipment consolidation
- Use of core carriers
- Route planning

Evidence of shipment consolidation may take many forms, one of which is a decrease in the use of less than truckload (LTL) freight. Compared with 2011, LTL freight dropped more than 13% in 2012, the total of which is certainly not due solely to consolidation. This percentage will be a data point to follow in

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2013. Using a set of core carriers results in less variation in the process, lower costs of managing the fleet, and longer-term price stability. Determining the best routes while considering cost and customer delivery time windows is essential to efficiently and effectively managing transportation. Technology has enabled shippers and carriers to plan in a manner that enables a quicker response to market fluctuation and a better use of transportation resources.

As transportation costs are rising, so, too, are overall logistics costs. In fact, inventory carrying costs have risen at a faster rate than transportation costs. How, then, do you make decisions that will impact both areas, keeping in mind the firm’s overall strategy and objectives?

One answer may be inferred from a fundamental shift in how distribution and transportation decisions are made. In 2010, when transportation costs were on the rise, outbound transportation tended to be the functional area that drove distribution operations. Currently, the decision-making model is one by which both functions report to the same person, the person who makes the trade-off decision. Usually, both functions meet on a regular basis to discuss a strategic approach that will benefit both areas.

The fundamental changes that have occurred, or are occurring, in strategy, tactics and operations have resulted in improvements in performance during challenging economic times. Yet more is needed to improve competitiveness and create value that transforms a company. How does a company navigate the supply chain value curve? It begins with knowing where you are. It begins with understanding your strategy and approach in the market. It begins with asking, Where do we want to go?

**Figure 8: Who is the decision maker for distribution and transportation?**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution decision making tends to drive transportation execution.</td>
<td>23.9</td>
<td>24.0</td>
</tr>
<tr>
<td>Outbound transportation decision making tends to drive distribution operations.</td>
<td>9.5</td>
<td>15.0</td>
</tr>
<tr>
<td>Both functions meet on a regular basis to discuss strategic decisions for both areas.</td>
<td>27.7</td>
<td>28.0</td>
</tr>
<tr>
<td>Both functions report to the same person who then makes the trade-off decisions.</td>
<td>24.0</td>
<td>27.4</td>
</tr>
<tr>
<td>Transportation and distribution functions are not integrated; issues are rarely discussed.</td>
<td>11.5</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Last year we introduced three capabilities – flexibility, efficiency and differentiation (FED) – that are necessary for success in the New Normal. In this year’s study, we have continued our development of the FED model and offer a more in-depth look at the capabilities. We now know that the combination of the three capabilities assists a company in altering the way it manages logistics and transportation. Managing these capabilities enables a company to enhance the value it creates for its stakeholders and customers.

We have named the FED capabilities and their phases of implementation the supply chain value curve. In Phase 1 (Figure 9), the primary emphasis is efficiency. Transportation and logistics are key areas for companies trying to achieve greater productivity for their dollar spend. Initiatives such as reducing inventory levels or shipping more volume loads are enabling companies to boost their bottom lines. In addition, there are a number of supply chain-related factors, such as energy and commodity prices, supply volatility and demand uncertainty, outside the control of the company that are increasing the need to focus on efficiency. These efforts alone, however, are not sufficient to move the organization to the transformative state needed for long-term success in the New Normal.

In Phase 2, companies add the capability of effectively adapting and responding to change. Flexibility is a multidimensional capability that requires internal and external linkages across logistics and transportation in order to meet an increasing variety of customer needs. Because it is almost certain that demand will fluctuate, companies must be able to quickly meet different customer requirements at the right cost, time and place while creating maximum value for the company. Historically, flexibility generally involved the capability to change production volumes, adjust the product mix or quickly launch a new product. Now, flexibility must encompass manufacturing, marketing, information systems and logistics and transportation. It requires an integrative approach that enables the company and its supply chain members to be responsive to changes in an unpredictable market.

The ultimate goal of the company is to combine the powers of efficiency, flexibility and differentiation to create an organization that produces long-term, sustainable value for itself and its supply chain members.
this, however, the ability to differentiate service must be added to the mix with efficiency and flexibility. A company must be capable of developing and delivering logistics and transportation services that are viewed by its customers as distinctly different from those of competitors. Many companies consider their distinctiveness to be based on the products they offer.

In last year’s report we wrote that logistics differentiation is a multidimensional capability that encompasses elements such as product availability and information visibility. Likewise, transportation differentiation is also a multifaceted ability; it involves essentials like timeliness and order condition. Differentiated service entails an understanding of what service elements are the most critical to creating value for your customer and the ability to deploy those service elements in new, different or changing requirements at the right cost, time and place while creating maximum value.

It should be noted that the depiction of the phases does not imply that one phase must be completed before another, or others, are undertaken. That is, it is possible for companies to work on initiatives in each area as a part of a larger strategy to transform logistics and transportation management as well as the rest of the organization. The scores for the individual capabilities suggest that a substantial amount of work needs to be done in order to reach the value creation state that transforms the company. Given this current state, it seems that concurrent efforts across the three capabilities are warranted.

There were multiple questions associated with the three capabilities of the FED. These questions were analyzed, and respondents were placed into one of three categories — high, medium or low — based on their overall aggregate score for the capability. Finally, appropriate questions in the survey were statistically analyzed in relation to each capability to determine if significant differences existed among the strategy groups.

The percent of respondents for each capability are exhibited by strategic direction in Figures 10-12. This framework was used because strategy affects the emphasis a company places on a particular driver. The results revealed some surprises.

The mix strategy group rated the lowest in flexibility. The aggregate score across 14 items measuring flexibility indicate that 40.8% of mix-strategy companies are deemed as having low flexibility. This is surprising, as this strategy requires the ability to adapt to changing customer needs. The lack of progress to date can perhaps be attributed to the fact that most companies have tackled flexibility from an operational level. Flexibility that leads to sustainable competitive advantage must be developed at the strategic level since it encompasses a
supply chain perspective. The study results show that an increasing number of companies have several strategic flexibility initiatives currently underway. Their impact on the overall score should be measurable in the near future.

Who rated well in flexibility? Those respondents following a product/market innovation strategy had the greatest number of respondents in the high and medium groups. To be successful in deploying a product/market innovation strategy, companies must be capable of quickly launching new products and services. In addition, they must be able to rapidly respond to changes in demand. Figure 10 features some of the key attributes of flexibility.

Last year, we expressed our intention to explore alternative methods for measuring efficiency and differentiation. To this end, this year we have utilized actual reported data for the calculation of the efficiency score. Inventory turns, the cash-to-cash cycle, days’ sales in inventory and average days’ sales outstanding were combined to compute a combined efficiency score. The results are very different from last year’s scores, whereby efficiency showed the most overall progress toward high capability. The scores indicate that the majority of companies are currently at a medium level. Although mix-strategy firms lag behind all others in the percentage with high efficiency (9.5%), this group has the largest percentage of companies at the medium level (55.4%). Surprisingly, cost leadership companies have the highest percentage of firms that scored low in terms of efficiency.

The final capability is differentiation. Twelve items assessing service outcomes and the impact of people and processes on service differentiation were combined to calculate a composite score for differentiation. The results are similar to last year’s. This capability trails the other two substantially with regard to the percentage of companies that have high capability in this area. Most notable is the product/market innovation strategy group, which shows 72.4% of companies as having low differentiation capability.

Each of the three capabilities – flexibility, efficiency and differentiation – is composed of numerous factors. The results indicate that seven factors in particular play key roles in the transformation journey. The factors are:

- Data and business analytics capabilities
- Operations driven by knowledge of cost to serve
- Closer collaboration with key suppliers and customers
- Delivery of differential service to customer groups
- The use of appropriate technology to manage logistics and transportation activities
- The ability to reduce supply and order fulfillment lead times
- Increased domestic and global visibility

Each of the factors is discussed in more detail below.

Creating value through intelligent supply chains

How do you navigate the supply chain value curve without information? Information and data are arguably just as important as the physical flow of goods and products. Yet it is not sufficient just to have the information; companies must convert that information into knowledge and share it with the right people at the right time via the right method or tool. This is the essence of business intelligence (BI). The goal is to provide a better basis for decision-making.

As a subset of competitive intelligence, BI can be a critical weapon in the supply chain arsenal. Many companies have been slow to develop the BI capabilities needed to transform their supply chains. That led us to ask: What are the most significant obstacles to developing and implementing supply chain business intelligence capabilities? The study results indicate that the top five impediments are:

- Lack of integrated processes
- Objectives that vary across business units
- Cost of implementation
- Lack of standardized data
- Lack of organizational strategy

Despite these major hurdles, companies are sharing data with key customers and suppliers. This is the start but certainly not the conclusion of BI. Businesses must take the information provided and use it to make strategic and operational decisions. A navigator may know where the ship is headed, but the information is useless until shared with a captain who responds to the new information.

On the customer side, the primary data that is shared consists of shipment and order status. Of the study respondents, 70% reported that they provide shipment status and 68% reported that they make order status data available. Beyond these two data elements, the information that companies share with their key customers is quite disparate and includes information...
such as advance ship notice (ASN), finished goods inventory levels and freight costs.

A majority of companies share customer delivery requirements and demand forecasts with key suppliers. Additionally, companies share other pieces of information, including production schedules (if applicable), promotional or other marketing plans and finished goods inventory levels. Surprisingly, one of the least-shared pieces of data is sales data.

**Understanding the cost to serve**

Most companies have a good understanding of their logistics and supply costs at a macro level. That is, they know what these costs are as a percentage of revenue or cost per case or pallet. What they don’t know, however, are the costs of supplying specific customers with specific products. This is the basis for CTS: knowing what the expense is for fulfilling a specific customer’s order. Understanding CTS at this level is more focused and detailed than an allocation based on the total cost of warehousing or transportation. CTS is a way of grasping costs for a particular channel (or supply chain) by product category or even by individual customer and Stock Keeping Unit (SKU). Without that knowledge it is easy for underperforming units of the company to be hidden from view.

CTS was identified as one of the main factors causing companies to change the way they manage logistics/supply chain activities. The steps to determine CTS are relatively straightforward, beginning with the analysis and subsequent classification of customers and products based on characteristics such as order size and frequency, geographic location and special handling or shipment needs. Costs for activities including procurement, warehousing, transportation, customer service and others must be determined and allocated to each group or segment. The most difficult part comes next – having the discipline to implement. Implementation is crucial, however, as CTS pinpoints areas of opportunity to reduce costs and improve revenue.

A look at the logistics-related financial performance reveals the need for adopting a CTS philosophy. Inventory turns reported for 2012 are 12.8. While this measure represents a 9.4% increase from 2011, inventory velocity still has not reached the 2007 (or pre-recession) performance level of 14.0 turns. Even more concerning, the cash-to-cash cycle continued to increase, rising from 50.2 days in 2011 to 52.9 days in 2012. Reflecting persistent lackluster global demand, the days’ sales in inventory also increased by a dramatic 48.4%, year over year, and reported in at 49.7 days for 2012.

There is an even more compelling reason to use CTS: results of the annual study indicate that logistics/transportation services are not a basis for charging premium prices. Further, the data shows that most companies, except for high-performance ones, do not view logistics/transportation services as a barrier to new competition. What does this mean? First, it highlights a missed opportunity for companies that do not comprehend how to use logistics/transportation services as a means to create sustainable competitive advantage. Second, the results indicate that it is imperative for a company to recognize the true profitability of its customer and product/services mix. If a company gives “too much” service to a customer based on order size or frequency, the real short-term cost and the strategic long-term cost will not be recovered. The imbalance
Collaborating with key suppliers and customers to create competitive advantage

Much has been written about the benefits of collaboration among members of a supply chain. Research conducted at the University of Tennessee shows that in challenging economic conditions, world-class supply chains benefit when collaboration goes above and beyond, and, in turn, efficiency and effectiveness are improved. These findings indicate that the longer the collaboration, the lower the costs for the supply chain members.

An area of opportunity is the sharing of capacity forecasts with carriers. In this year’s study, we asked respondents what initiatives they were undertaking to offset transportation costs. They answered:

- No plan for an initiative
- A planned initiative (under consideration or in the planning process)
- Implementation of an initiative
- Completion of an initiative

It is surprising to see capacity forecast sharing near the bottom of the list for primary actions taken by respondents to offset rising transportation costs. Sharing capacity forecasts with carriers or other service providers and improving integration of information systems with external supply chain partners were two of the least likely initiatives that companies were willing to undertake in order to reduce costs.

The results on the logistics side were more encouraging: increased collaboration and improved information sharing with key customers made the top-five list of operational flexibility initiatives completed by companies in the past 12 months. This collaboration, however, did not extend to sharing capacity forecasts with key customers. The initiative was ranked number one as not planned. Collaborative efforts, also, did not extend upstream in the supply chain. Increased information sharing and collaboration with key suppliers lags behind the effort on the customer side. Most companies are currently working to increase collaboration with key suppliers. The lack of effort on the supply side limits the extent to which a company, and its supply chain, can develop the level of operational flexibility that is needed for success in today’s New Normal.

As a cost-center function only, they began recognizing it as a key source of competitive advantage. Subsequent research showed that logistics/transportation service capabilities could be leveraged to create value by providing different levels of service for different customer segments.

Unfortunately, not every company views the logistics/transportation function as a source of competitive advantage. Some view it as a differentiating factor for the company, while others view it as a commodity. A value-adding function receives attention and investment dollars from the C-suite as the function attempts to maximize its contribution for the company’s benefit. A commodity function is often tasked with managing a declining budget (the result of focusing on reducing costs) while keeping everything running the same or better.

Respondents were asked a series of questions about how they viewed logistics/transportation as a means to differentiate themselves from competitors. The most strongly agreed-to statement was, “Being better than our competitors in terms of service would significantly improve our competitive position.” The strong agreement with this statement suggests that most companies do view logistics/transportation as a competitive advantage.

An analysis of the six service factors that compose this category revealed that statement 1 (Figure 16) was in a group by itself. The next group of service factors (statements 2 and 3) included acknowledging that 1) logistics/transportation service differentiates just like product characteristics do and 2) innovation in service would significantly improve the company’s competitive advantage. In other words, the second group implies that service does make a difference and, further, that innovative service results in a significant benefit to the company.

Service is an outcome emanating from processes and decision-making. In order to determine the impact that different processes and different people have on developing and delivering differentiated service, we asked participants to indicate their level of agreement with six statements. The data indicates that two primary groupings exist for the people and process components of differentiation.

For the first group, the strongest agreed-to response was a single process statement: “My company focuses on customer service results/outcomes when measuring performance in this area.” This is the statement 1 in Figure 17. The second group is a combination of processes and people, statements 2 and 3. There is agreement among study participants that their companies continually evaluate logistics/supply chain processes for improvement and that suggestions from logistics/supply chain personnel are readily adopted.

Are we seeing differentiation today?
Figure 16: The impact of differentiated service

- Being better than our competitors in terms of service would significantly improve our competitive position: 1.94
- Innovation in logistics/transportation service would significantly improve our competitive edge: 2.58
- Our customers consider logistics/transportation service an important differentiating characteristic that is just as important as our products: 2.59
- Increased costs are often used to moderate logistics/transportation service differentiation: 3.12
- The logistics/transportation service offered by our company is a barrier to new competition: 3.85
- Our logistics/transportation service allows us to charge a premium/prestige price to our customers: 3.96

1 = Strongly agree  7 = Strongly disagree

Figure 17: People and process make a difference

- My company focuses on customer service results/outcomes when measuring performance in this area: 2.39
- My company continually evaluates transportation work routines/processes and redesigns them as necessary: 2.87
- My company readily adopts suggestions from transportation personnel for improving work routines/processes: 2.95
- My company allows employees to make decisions regarding the level (or style) of service a customer receives: 2.97
- My company rewards performance of transportation personnel that results in exceptional customer service: 3.31
- Periodic or ongoing formal training for improved transportation problem-solving skills for personnel is provided on my computer: 3.41

1 = Strongly agree  7 = Strongly disagree
Two observations can be made regarding a company’s current ability to distinguish service levels by customer segments (Figure 28). First, the absolute difference in performance between “best” and “average” customers is fairly low. The small gap represents an opportunity for delivering differentiated service, which in turn could possibly result in cost savings as the right service levels are provided to each customer segment.

Second, the difference between best and average customers has remained relatively unchanged, with the one exception of over/short/damage, where respondents have reported dramatic improvements over the past three years.

Utilizing distribution and transportation technology to create value

Navigating the supply chain value curve requires the use of technology.

Perhaps the greatest benefit from technology is that it facilitates collaboration both inside the company and with external supply chain members. This year’s results regarding the primary tools and methods used to manage domestic distribution are encouraging (Figure 19). Fewer companies are using manual methods or spreadsheets to manage domestic distribution. The data indicates that companies are moving to the integration of silo legacy systems, spreadsheets, emails and web-based portals using a non-intrusive software platform. Commercially purchased software that is part of an enterprise resource planning (ERP) package remains the primary tool used by the majority of companies. In 2010, 27.3% of companies chose this option. As the data indicate, this percentage increased significantly the next year to 40.1%.

There is a significant difference in the tools used by the Masters (annual revenue greater than $3 billion) to manage domestic distribution and those used by other sized companies. The Masters tend to use commercially purchased “best-of-breed” software installed on the network versus other companies that use commercially purchased software that is part of the ERP.

On the transportation side, technology facilitates the management of four key processes including:

1. Planning and decision-making
2. Execution of the transportation plan
3. Physical and administrative management of the shipment
4. Performance measurement

The processes that are integral components of transportation management systems provide numerous benefits, such as freight bill auditing, schedule sharing, real-time updates and data for analyzing operations for cost savings opportunities, to name a few.

In an environment where technology has been leveraged to help achieve efficiency, it is surprising to see that the percentage of companies using manual techniques or spreadsheets to manage domestic transportation has increased. This increase occurred after a significant decline from 2010 to 2011 (19.4% versus 12.8%, respectively).

In the past, domestic transportation did not have a primary tool or method to manage activity. The data for 2012 indicates that commercially purchased “best-of-breed” software that is installed on the network is emerging as a principal technology. In 2011, this tool was used by 11.6% of companies. The 2012 results show this percentage rose to 21.6%. This gain came at the expense of third-party providers and software packages developed in-house.

The tool or method used to manage distribution and transportation affects

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**Figure 18: Key performance indicators by customer type**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Best customer</th>
<th>Average customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-time delivery</td>
<td>96.9</td>
<td>96.8</td>
</tr>
<tr>
<td>Over/short/damage</td>
<td>0.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Correct invoice</td>
<td>98.1</td>
<td>97.6</td>
</tr>
<tr>
<td>Shipments that result in</td>
<td>1.1</td>
<td>1.9</td>
</tr>
<tr>
<td>customer complaint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backorders</td>
<td>96.2</td>
<td>96.1</td>
</tr>
<tr>
<td>Perfect order</td>
<td>2.0</td>
<td>2.4</td>
</tr>
</tbody>
</table>
Figure 19: Primary tool used to manage domestic distribution activities

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>2012 (%)</th>
<th>2011 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercially purchased software package that is part of our ERIP package installed on your network</td>
<td>38.0</td>
<td>40.1</td>
</tr>
<tr>
<td>Commercially purchased best-of-breed SaaS (software as a service) software</td>
<td>15.7</td>
<td>16.4</td>
</tr>
<tr>
<td>Silo systems that are integrated</td>
<td>11.8</td>
<td></td>
</tr>
<tr>
<td>Software package developed in-house</td>
<td>11.0</td>
<td>10.2</td>
</tr>
<tr>
<td>Manual/spreadsheets</td>
<td>11.4</td>
<td></td>
</tr>
<tr>
<td>Third-party provider(s)</td>
<td>6.7</td>
<td>9.6</td>
</tr>
<tr>
<td>Other</td>
<td>3.1</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Figure 20: Primary tool used to manage domestic transportation activities

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>2012 (%)</th>
<th>2011 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercially purchased software package that is part of our ERIP package installed on your network</td>
<td>12.9</td>
<td>10.5</td>
</tr>
<tr>
<td>Commercially purchased best-of-breed SaaS (software as a service) software</td>
<td>21.6</td>
<td></td>
</tr>
<tr>
<td>Silo systems that are integrated</td>
<td>11.6</td>
<td></td>
</tr>
<tr>
<td>Software package developed in-house</td>
<td>7.8</td>
<td>12.8</td>
</tr>
<tr>
<td>Manual/spreadsheets</td>
<td>14.7</td>
<td>17.4</td>
</tr>
<tr>
<td>Third-party provider(s)</td>
<td>14.6</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.3</td>
<td>3.5</td>
</tr>
</tbody>
</table>
other elements, in addition to collaboration, related to the drivers of success. Without the requisite data, supply chain visibility is curtailed. The need for end-to-end supply chain visibility to improve operations in a global supply chain has been promoted for almost 10 years. As discussed in one of the following sections, we still have not made the progress that is required in this area. In addition to supply chain visibility, technology assists in the amassing of data that can be used to enhance or build business intelligence (BI) capabilities. BI is a desired competency, as companies need this ability to manage and control logistics and transportation activities in an ever-changing and volatile environment.

Flexibility drives responsiveness to reduce supply and order lead times

Flexibility is needed by companies in order to modify their range of responses to diverse customer requirements, shorter product life cycles, increasing commodity prices, supply volatility and unpredictable demand. A supply chain is usually capable of operating within a specific range, and a firm’s flexibility will be constrained by that range. For example, a company cannot quickly produce more items than its (or its contract manufacturing partners’) fixed manufacturing capacity allows. Manufacturing flexibility has long been recognized as an important capability in responding to change. There is increasing awareness that supply chain flexibility must be much broader than manufacturing. It must encompass every functional area of the company, from marketing to logistics/transportation, in order to create sustainable competitive advantage.

The data from the annual study suggests that logistics/transportation operations are assisting companies in responding to changing conditions. Sixty-two percent of respondents reported that their companies’ logistics operations are “capable to highly capable” of taking action when increases or declines in demand happen. On the supply side, the ability to respond was slightly lower, with 56% of companies stating that they are “capable to highly capable” in this area. The good news is that only 3% of companies participating in the annual study said that they have “limited or very limited” ability to adjust logistics operations on the supply side.

The news is even better for transportation operations. When asked about their current ability to adjust transportation in response to changing conditions, 72% of respondents reported that they are “capable to highly capable” of doing so. While this high percentage was not surprising, it reaffirms the vital and essential role that transportation plays in creating value.

In last year’s study, we asked participants what operational flexibility initiatives they considered important to their companies and where they currently stood implementing those actions. The list of initiatives that had been completed included several transportation-oriented efforts, such as the use of freight brokers and multiple modes of transportation. These two actions are examples of methods by which transportation operations are able to support flexibility. Use of multiple modes of transportation remains the top initiative

Figure 21: Building operational flexibility: top five completed initiatives

- Transportation takes the lead in responsiveness
  - Of the study respondents, 72% reported that they are “capable to highly capable” of adjusting transportation operations in response to changing conditions versus 62% for logistics operations.
completed this year.

Another action that was on the top-five list from last year – align labor force skills to better meet changing demand requirements – was the second most completed effort this year, with 32.9% of respondents reporting they had finished work in this area.

Two new items made the top-five list of operational flexibility initiatives this year: increased collaboration with key customers and improved information sharing with key external customers. As discussed earlier, tighter relationships with strategic customers, as well as key suppliers, must be formed to create transformative value.

Further analysis of the data revealed an interesting trend from last year. Two central strategic actions necessary to achieve greater flexibility have moved closer to completion. Respondents who last year were planning to implement reduced order-fulfillment lead time and reduced supply lead time did exactly that. These two initiatives have more respondents in the implementation phase; if the timing holds true, these initiatives should be completed by the publication time of next year’s report.

A large percentage of respondents are in the implementation phase of the initiative to reconfigure the order fulfillment process to be more responsive. As with the two initiatives mentioned in the above paragraph, if all of these efforts are completed by next year, the results should be evident in the companies’ performance metrics.

Visibility: using information to improve performance

For most, supply chain visibility begins with sourcing and ends when the consumer purchases the product. Supply chain members should have real-time (or near real-time) accessibility to data and information. This end-to-end implementation of visibility is one that many are struggling to obtain. Still, the benefits of reaching this desired end state should prompt companies to strengthen their efforts in this area, provided they use the data to make better operational decisions. It is true that information can replace inventory in the supply chain. With many companies focusing on lean initiatives, there is a push to eliminate “just in case” inventory.

For more than a decade, we’ve reported on the importance of visibility as a means of increasing supply chain performance. Yet, according to our respondents, significant progress has not been made. The absence of visibility can be attributed to the same issues we reported on in 2002 – lack of systems and functional integration, inability to electronically collaborate with customers and suppliers, unclear understanding of the data that is required to support visibility, and even lack of organizational support for new software deployment.

There is some good news in this year’s results regarding domestic visibility, as measured by 16 questions on the level of visibility across the supply chain. Visibility of the physical flow of goods and products on both the inbound and outbound sides increased. Outbound shipments improved most noticeably from 2011, moving from 2.3 to 1.9 (scale: 1 = very visible; 7 =

![Figure 22: Domestic visibility showing some signs of progress](image-url)
not very visible). The focal firm visibility, which includes multiple elements from raw materials inventory levels to finished goods inventory at the field distribution center, also reported a small but positive increase in visibility.

Further analysis was completed by dividing the respondents by their aggregate visibility scores. High visibility firms reported company performance that was “better than competitors’” for several key indicators, including return on assets, competitive position and revenue growth. Just as important, high-visibility companies posted better performance relative to competitors for the time between order receipt and delivery. Companies with high visibility also noted that their customers consider their logistics/transportation services to be an important differentiating characteristic that is just as important as their products. Unlike low-visibility companies, companies with high visibility are further ahead in their efforts to reconfigure manufacturing to make it more responsive.

The results for international visibility this year show that inbound and outbound transportation visibility also improved from the previous year, particularly inbound transportation, which reported a 15.6% increase in visibility. Other than these improvements, the rest of the supply chain halted the progress it had posted over the past several years.

The difference between high- and low-visibility companies is also evident in international visibility. Companies with high international visibility perceive that they have an overall “better than competitors’” position in the marketplace. Further, these companies view their logistics/transportation service offering as a barrier to new competition. And an added bonus – the service allows them to charge a premium/prestige price to customers. High international visibility companies are also capable of adjusting their logistics operations in response to changing demand conditions, as opposed to low international visibility companies that have limited to no capability to adjust in the short term. Companies with high international visibility have also completed more flexibility initiatives than their counterparts. They have concluded projects to:

- Reduce supply lead times
- Share capacity forecasts with key suppliers and customers
- Reconfigure the order fulfillment process to be more responsive
- Reduce order fulfillment lead times

One of these would be notable; in total, however, the completed initiatives represent an impressive list that underlies a competitive advantage in the marketplace.
The steps to transformation: getting to a value-creating state

The supply chain value curve highlighted seven elements that the study suggests are the most critical to transforming a company from its current state to one of sustainable competitive advantage. Why is transformation needed? Simply stated, there is ample room for improvement.

The data presented in Figure 24 indicates how respondents view their performance relative to competitor performance. While most companies perceive they are somewhat above their competitors relative to performance, there is ample room to increase the gap. The gap is the narrowest for the range of services offered and the level of service innovation. These areas offer the greatest opportunity for companies to improve their competitive positions.

Our analysis of the data provides a basis to assess progress in attaining the seven critical capabilities of a value-creating entity. As shown in Figure 21, we have arguably made the most progress relative to the use of technology in managing distribution and transportation activities. Significantly lagging behind the needed level of ability are differentiated service and business intelligence. While we have seen some progress in collaboration with key suppliers and customers, much more work remains to be done in these areas as well as in increasing overall supply chain visibility.

The action list for moving from the current state to a transformational one is fairly clear-cut. Getting from “here” to “there” involves:

- Gaining a better understanding of the cost to serve at the product and customer levels
- Leveraging technology to assist in developing the other six key capabilities
- Increasing collaboration with key customers and suppliers through greater data and information sharing
- Breaking down the internal barriers to achieving end-to-end supply chain visibility
- Expanding flexibility initiatives into a more strategic role
- Implementing service levels that reflect differences in customer segments
- Developing enhanced business intelligence capabilities, such as predictive modeling and data mining

![Figure 24: Performance relative to that of competitors](image)
Figure 25: Current state of critical capabilities

<table>
<thead>
<tr>
<th>Current state</th>
<th>Cost focus</th>
<th>Responsiveness</th>
<th>Value creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Cost to serve</td>
<td>Collaboration</td>
<td>Visibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flexibility</td>
<td>Differentiated service</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Business Intelligence</td>
</tr>
</tbody>
</table>
Our point of view

After all the data analysis is complete, the question the research team asks itself is: What does it all mean? Each of us brings a unique perspective to answering this question. Our concluding thoughts on what we perceive as the most pressing issue facing logistics, transportation and supply chain managers in the transformation journey are below. We hope you find them insightful and thought-provoking.

Con-way: collaboration is crucial

Collaboration with your key raw materials supplier or major customer is not enough. You have to include transportation providers. The key is to tie the strategic direction planning tools, such as continuous road maps. This shared direction will be the platform that the two organizations can use to strategically measure success and leverage the best practices of each organization.

Next, the two companies will create initiatives to improve efficiencies within each company. Ultimately, they will measure success through the use of tools and techniques, including transportation network planning and demand planning improvements, cost-to-serve modeling and order to cash.

For transportation providers, as well as customers, the win is significant. Both parties can obtain greater stability in costs and service, given a newer level of transparency. Business continuity is increased, allowing for greater information sharing. Instead of reacting to demands from a customer, transportation providers can use this information to be proactive in finding better solutions to their customers’ needs. This increased level of collaboration allows the customer to focus on its core competencies, such as product innovation, instead of the tactical issues around the movement of its goods. Finally, and just as important, increased levels of collaboration reduce the risk transportation providers have to consider when pricing their services.

One excellent example is the relationship between Menlo and Navistar. The development of the strategic relationship has led to a well-defined, five-year vision that will allow Navistar to be “best in class” in supply chain excellence. The relationship is an open book, so the teams have proactively built a supply chain platform that’s flexible and nimble and will accommodate the complex nature of the ever-changing global economy.

More important, the collaboration has allowed Navistar to focus on its strengths (product engineering/innovation and core manufacturing).

One key supporting element of this new level of collaboration is visibility. Increased domestic and global visibility allows for improved planning, which, in turn, helps shippers and carriers to plan fixed and variable resources for more efficiency. The visibility helps with service and cost benefits. On the service side, customers can strategically plan network resources to ensure timely service. On the cost side, customers benefit from reduced costs with improved lead time and more working capital. For instance, the Con-way Freight/APL Ocean Guaranteed partnership helps to create end-to-end visibility for customers. As a result, this visibility improves service options and allows Con-way Freight to pre-plan domestic assets and resources to better facilitate the timely delivery of time-critical freight.

Ernst & Young – Total Delivered Costs drive change

Total Delivered Costs (TDC) is the clear message and common thread we see throughout the results of the 2012 study. The top-five forces, changing the management of logistics/supply chain, identified three key components that are required to move forward with a TDC strategy: 1) Ability to respond to changing customer requirements, 2) cost to serve (outbound distribution) and 3) total landed costs (inbound). Understanding and baselining these three forces are the foundation of TDC.

What was also revealed in the data from Overall strategy for division or business unit, 2012 (Figure 4) is the need to have a balance with trade-offs for an optimal TDC model. There is not a perfect TDC...
that fits all sizes of companies, all types of supply chains, all products, all channels and all customer segments within a channel. Each requires its own TDC model with levers that can be adjusted as the market and business changes. In turn, each of these models will have a specific set of trade-offs and balances to achieve optimal profitability.

The flexibility, efficiency and differentiation (FED) capabilities, identified in 2011 and expanded on in 2012, indicate the need for TDC as a core skill in order to leverage the powers of the combined FED model. They do build on each other, though, as efficiency must be known to add flexibility, and both must be core skills to create differentiation across the supply chain for each segment or channel.

We have seen that TDC is the “eye-opener” for the business and operations when the baseline for end-to-end supply chain has not been examined (and compared with other segment/channel baselines). Opportunities are identified in areas such as cost-to-serve modeling, global trade management, distribution network optimization, transportation optimization/collaboration and others.

Ernst & Young sees TDC as the next wave of improvement for supply chain clients as they continue to deal with the inundation of “big data” (all the data from all of the systems now in place). They can convert the data to usable operations information, applying the information to their TDC models in a sustainable way, and continuously monitor their TDC to keep the edge they need in a highly competitive environment that will likely never be “normal” again.

The academic view – differentiation separates the “best” from the rest

What we’ve been advocating for a number of years is true: one size service does not fit all. The study results suggest that companies that deliver differentiated service can significantly improve their competitive position. Further, it is a differentiating characteristic that is just as important as the company’s products. Strategy, tactics and operational decisions regarding logistics and supply chain must formally address the need to develop and deliver different levels of customer service. The reward for undertaking this course is increased market share and greater profitability. In other words, differentiated service can be used to increase sales and reduce costs.

It’s not sufficient to just reconfigure processes and activities. The design and structure of the logistics network should also reflect the different service requirements that are placed on it from a supply chain perspective. An optimal supply chain is one that is capable of delivering the required level of service to the different market segments. In order to thrive in the current economy, a company must be capable of developing and delivering logistics and transportation services that are viewed by its customers as distinctly different from those of competitors.

This year we expanded the number of items in the study for assessing the extent to which companies are able to differentiate service. The measures examined the impact of both people and processes on this capability. The analysis of the data showed that differentiation trails the other two drivers (efficiency and flexibility) substantially. Very few companies have a high level of capability in this area. This lack of ability is a critical deficit for those companies seeking to achieve two goals that are imperative for future success: profit maximization and sustainable competitive advantage.

More research is needed to better understand the relationship between logistics capabilities and differentiated service. Much like any recipe, varying amounts of ingredients are used to produce a satisfying outcome. Moreover, the dynamic nature of logistics systems, as well as the ever-changing nature of global supply chains, makes it difficult to investigate service differentiation. It is a constantly changing phenomenon. However, this is even more reason to pursue the research. Increasing our understanding of this capability is vital to the transformation process. It is not just an academic charge to advance the knowledge base in this area. To conduct meaningful research, practitioners must also be an integral part of the process.
About the study

For the past 21 years, the study has identified emerging trends and issues in the field of logistics and transportation. This year, 1,370 domestic and global logistics, transportation and supply chain professionals participated in the study, accounting for an estimated $30.1 billion in domestic transportation expenditures and more than $20.5 billion in international transportation. The Masters of Logistics, so named due to their annual sales, which are greater than $3 billion, represented 27.8% of the study participants. Medium-sized firms, between $500 million and $3 billion in annual revenue, accounted for 20.6% of respondents. The largest group of respondents (51.6%) is small firms whose reported annual revenue is less than $500 million.

Respondent companies represent a broad and diverse set of 15 industry sectors ranging from pharmaceuticals to food. Since the beginning of the study, the core group of participants has been the manufacturing sector – this year, that sector makes up 42.6% of the total. Consumer products companies represent the largest sub-sector of that group at 15.0%. The next largest sector taking part in this year’s study is transportation and Third Party Logistics accounting, totaling 13.4% of all participants.

Every part of the supply chain is represented in this year’s study. A company’s position in the supply chain matters when it comes to its primary objective. The list below details the results, which are statistically significant by position:

- Retailer – reducing costs
- Distributor/wholesaler – split evenly between reducing costs and maximizing profitability
- Manufacturer – reducing costs
- Tier 1 and Tier 2 – maximizing profitability
- Tier 3 – reducing costs

Interestingly, analysis shows that Tier 3 suppliers are significantly less capable than other supply chain members when it comes to adjusting logistics operations in response to changing conditions, such as increases or decreases in supply. $5–$9 billion
About the authors

Ernst & Young

Mr. Tony Ross is a senior manager in the Advisory Services practice of Ernst & Young LLP. He leads the supply chain transformations-logistics group within the North American practice. As a leader of this group, Tony focuses on performance improvement in all aspects of supply chain operations. He has more than 25 years of experience in supply chain management strategy, with a blend of both corporate and consulting experience in operations management, organization design and technologies. Tony is a visionary designer of solutions for real client problems based on a keen understanding of trends and key indicators; cross-industry, best-in-class business practices; strategic vision; transformation approaches; and exceptional client relationship skills. Tony has extensive experience in every major sector and has worked on multiple international projects.

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University of Tennessee

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The University of Tennessee, Knoxville, has been recognized as one of the premier institutions of higher learning focused on supply chain management. Its Supply Chain Management/Logistics programs consistently receive top marks in rankings by U.S. News and World Report, AMR Research, Supply Chain Management Review, Supply Chain Digital and others. The faculty publishes widely on topics of current industry concern and explores future trends through research and studies.

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

Con-way Multimodal

Mr. Tom Nightingale is President of Con-way Multimodal, a division of Menlo Worldwide Logistics that arranges third-party carrier services for over-the-road, intermodal, flatbed, heavy-haul and specialized transportation for freight shipments. As president, Barnes is responsible for the strategic growth and financial and operating performance of the company.

Barnes joined Menlo in 2000 as a transportation project manager. He subsequently served as a senior logistics manager and director of transportation procurement for Menlo. Prior to joining Menlo, Barnes was Director of Transportation for Newell Rubbermaid in North America and Europe. He began his career with GATX Logistics as transportation manager for the company's Chicago operations.

Barnes has a bachelor’s degree in Business Logistics and Transportation from the University of Tennessee. He is a member of the Council of Supply Chain Management Professionals, SMC3, the National Defense Transportation Association and the American Trucking Associations.

Con-way Multimodal, a division of Menlo Worldwide Logistics, provides expanded freight brokerage capabilities and services in the third-party logistics and multimodal freight transportation business, focusing on flexible, efficient capacity solutions for the marketplace. Con-way Multimodal complements Menlo's best-in-class 3PL and 4PL services for large customers by offering leverage and personal attention to small- and medium-sized buyers of logistics. Through its network of more than 15,000 carriers, Con-way Multimodal arranges resources to meet the capacity needs of its shippers using over-the-road, intermodal, dry van, flatbed, heavy-haul and specialized transportation solutions. The Portland, Oregon-based company is an operating unit of Menlo Worldwide Logistics, LLC, a subsidiary of Con-way Inc. (NYSE: CNW), a $5.3 billion freight transportation and logistics company. For more information, please visit us on the web at www.con-way.com.

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Dr. Karl B. Manrodt is a professor of Logistics and Intermodal Transportation at Georgia Southern University. His research interests revolve around strategic sourcing, performance measurement and the role of logistics/supply chain management in health care. His publications have appeared in such journals as the Supply Chain Management Review, Transportation Journal, International Journal of Physical Distribution & Logistics Management, Interfaces and the Journal of Business Logistics.

For further information, please visit http://www.manrodt.com.
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