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**White Paper Series**

## **2007 Food Logistics Industry Report**

This industry-wide report identifies common practices, challenges, and emerging trends within the U.S. food logistics industry.



## Introduction

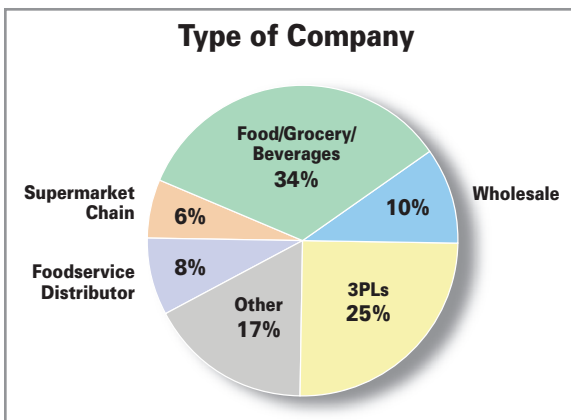
During the first quarter of 2006, executives involved in warehousing and transportation management of food and beverage products were asked to participate in a survey to identify common practices, challenges, and emerging trends. There were 104 food logistics executives who participated, making the findings of this survey statistically valid.

## Demographics of Participants

The majority of respondents were grocery companies, food and beverage processors or 3PLs located throughout the United States. Approximately one-third were with smaller or medium-sized companies earning less than U.S. \$50 million in gross annual revenue.

Many respondents have sizeable warehouse operations. More than one-fifth (22.3 percent) have at least one million square feet of DC/warehousing operations. More than half of the companies have between one and five DCs/warehousing locations. A significant number of companies (18.3 percent) have more than 15 locations. However, many do not operate significant warehousing operations of their own. In fact, nearly two-fifths (37.8 percent) have less than 100,000 square feet of space. Approximately three-fourths (76.9 percent) of respondents have dry/ambient DC/warehouse space. Fewer have refrigerated space (60.6 percent) or freezer space (39.4 percent).

When it comes to the number of SKUs, respondents with dry/ambient DC/warehouse space are at both ends of the spectrum. While 15.4 percent have 10,000 or more SKUs, 21.4 percent have less than 50. More than half (55.4 percent) reported less than 1,000 SKUs. Respondents reported significantly fewer SKUs for refrigerated DCs/warehouses. A third of companies have less than 50 SKUs. Nearly another third (28.1 percent) have 50 to 999. Of those with frozen DC/warehouse space, 43.3 percent have less than 50 SKUs. Another 17.5 percent have between 1,000 and 4,999 SKUs.



Just over a third of respondents (36.5 percent) came from private fleet operations. Roughly another third (34.6 percent) were from dedicated contract carriage operations. Of those who responded "other," nearly a third specified 3PL. Others said common carrier or a combination of private and contract carriers.



## Challenges and Emerging Trends in Food Logistics

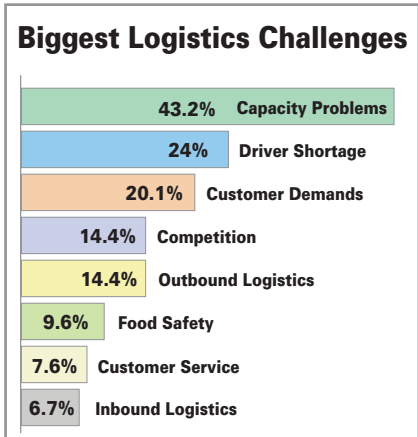
What are the top challenges in the food logistics industry? By far, capacity problems are the most critical. Driver shortage and increasing customer demands in the industry also topped the list. While these challenges may not be surprising, they indicate that there is a significant opportunity for companies who are able to offer solutions.

When evaluating the responses of this survey, it's clear that the food industry is disjointed, reliant upon outsourcing practices, has seasonal patterns of production, and deals with highly perishable products. The industry is dependent upon a highly fragmented truck transportation system for 80 percent of its shipments (more than 600,000 interstate motor carriers in 2002 per Federal MCSA). Meanwhile, out-of-stock products cost the food industry between \$7 and \$12 billion per year, according to recent Accenture research, with an estimated 60 percent of food and beverage items on the shelf being "slow moving" and unprofitable. Inefficient transportation and excessive inventory represent an estimated \$30 billion savings opportunity to this industry. These issues become exacerbated due to mergers and acquisitions. Disparate technology systems overlap and become cost-prohibitive. Physical distribution networks become costly to manage, integrate and re-architect.

Currently, food companies are pressured to address these challenges while they develop a more optimized, more streamlined supply chain in order to hold minimal inventory so they're not burdened with that large investment. What are emerging trends that will help beat these challenges?

*Changing Business Model.* This industry is shaped by an Internet-driven, customer-centric marketplace. Efficient, timely order fulfillment is the new fundamental business requirement for food companies. Smaller, more frequent orders are required and fulfillment focused on value-added handling rather than warehouse storage. Perfect orders (on-time, accurate, and complete) are a food company's most important performance indicator. Neglect this metric, and they risk the inevitable loss of customers and market share. Since their business is comprised of an extensive network of trading partners (including 3PLs, suppliers, contract manufacturers, distributors, and retailers), this means that the quest for perfect orders must ultimately become a collaborative goal.

*Increase in Forward Distribution Centers.* In order to enhance responsiveness and accommodate changing delivery needs, food and beverage manufacturers are establishing more forward distribution centers. This is being done, in large part, as a result of increasing changes in the truckload industry and increased demand placed upon them by their customers.





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*Globalization and Consolidation.* Retailers, manufacturers and 3PLs are consolidating in order to achieve sufficient scale to become global players. In order to compete with the largest competitors, food companies must all look to grow globally through mergers while reducing investment in hard assets and focusing their resources on those areas in which they have core competencies.

*Trading Partner Collaboration.* Leading food manufacturers and retailers are devoting considerable resources in order to integrate information systems with their trading partners using both EDI and, more recently, web-based internet systems or e-market hubs/exchanges. Improved information sharing provides greater visibility and, with visibility, more opportunity for exception event management and supply chain monitoring.

*Supply Chain Management.* SCM addresses unplanned events, such as shipment delays, parts shortages, production delays, and demand swings, which often derail optimized production and fulfillment plans. When addressed with traditional optimization applications, such initiatives give rise to rigid, linear value environments. These food supply chains must give way to dynamic supply networks and collaborative technology that drives them. This technology allows for the processing of high volumes of distributed transactions between various members of a supply chain in a fast and low-cost manner. While focused on inventory and orders, these systems allow for the tracking of an order or inventory stock-keeping unit (SKU) using the unique numbering system (i.e., P.O., S.O., B.O.L.) of the individual trading partner as well as providing a single consolidated view of all trading partner inventory in a supply chain by SKU. This ability to provide a snapshot of the supply chain at any single point enables trading partners to manage their portion of the supply chain.

*Combining Logistics Planning and Execution.* As SCM systems become better at providing the real-time data necessary to manage a supply chain, they also become better at predicting future needs and orders. Eventually, real-time execution systems are anticipated to have the capabilities that incorporate long range forecasts, plans and schedules into real-time execution systems, and will reduce the need for the advanced planning/forecasting systems used today.

Leaders in the food logistics industry are aligning themselves with these new SCM solutions that simultaneously revolutionize the supply chain and optimize customer intimacy. The last decade has demonstrated that replacing inventory with information is not good enough. Companies need to capitalize on inventory information by allowing their frontline operators to make decentralized, optimized decisions in real-time. The food industry needs this new e-Business visibility and execution solutions. A collaborative real-time supply web will give food industry customers what they demand: faster response, better service and lower cost.

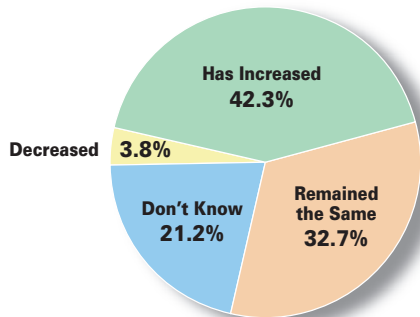


## Warehousing and Transportation Trends in the Food Industry

Cross-docking, the practice of receiving goods at one door of a facility and shipping out through the other door almost immediately without putting them in storage, is definitely a growing trend in food logistics. Nearly 43 percent of respondents have increased cross-docking practices in the past five years. For a third of respondents, the level of cross-docking has remained constant. A meager 3.8 percent have decreased the practice. Cross-docking shifts the focus from “supply chain” to “demand chain.” For example, food stuffs coming into a cross-docking center have already been pre-allocated against a replenishment order generated by a retailer in the supply chain.

The U.S. truck transportation industry is experiencing a national shortage of truck drivers that has become a limiting factor in the operations of many food companies. In fact, more than 25 percent of respondents cite the driver shortage as being a major challenge for them. Nearly half of respondents with private fleets (48 percent) reported using company drivers for 50 to 100 percent of their shipments. Roughly another quarter (24.7 percent) use company drivers for less than 50 percent of their shipments. Nearly half (45.8 percent) of respondents use owner/operators to haul less than 25 percent of their freight.

**Cross-Docking Practices  
(Last 5 Years)**



Equipment ownership practices ran the gamut from “Full-service leased equipment” (27.9 percent) to “Outright owned equipment” (25 percent) to “Leased equipment to purchase” (11.5 percent). Many who answered “Other” used a combination of these options, while several answered that they do not own equipment and are likely to outsource. Such practices are covered in detail later in this report.

For those who do operate their own fleets, how much equipment do they have? More than half of respondents (51.5 percent) have less than 50 tractors, with 29.8 percent reporting less than five. Roughly a quarter (26.2 percent) of respondents have more than 50. More than half of respondents (55.4 percent) have less than 50 dry trailers, and, of those, 36.5 percent have less than five. Approximately one quarter of respondents (24.3 percent) have 50 or more dry trailers. Respondents owned even fewer refrigerated trailers. Nearly half (43.3 percent) own less than five, and only 23.1 percent own 50 or more.



## Order Pick Methods

	Currently Use	Plan To Use	Do Not Use
<b>Paper-based methods</b>	<b>83.2%</b>	<b>1.1%</b>	<b>10.5%</b>
<b>RF</b>	<b>34.8%</b>	<b>17.4%</b>	<b>41.3%</b>
<b>Voice-directed system for order pick</b>	<b>16.5%</b>	<b>11.0%</b>	<b>63.7%</b>
<b>Single order pick through entire network</b>	<b>42.5%</b>	<b>3.4%</b>	<b>43.7%</b>
<b>Multiple order pick through entire network</b>	<b>42.2%</b>	<b>6.7%</b>	<b>40.0%</b>
<b>Wave pick throughout network</b>	<b>24.1%</b>	<b>3.4%</b>	<b>58.6%</b>
<b>Zone Pick</b>	<b>39.8%</b>	<b>4.5%</b>	<b>44.3%</b>
<b>Multiple methods</b>	<b>52.8%</b>	<b>5.6%</b>	<b>32.6%</b>
<b>Other</b>	<b>10.8%</b>	<b>0%</b>	<b>59.5%</b>

When it comes to order pick methods, the food logistics industry continues to rely heavily on paper-based practices. However, nearly 35 percent are using RF methods, and another 17 percent plan to use RF practices in the near future.

## Technology Use in Inventory Control

	Currently Use	Plan To Use	Do Not Use
<b>Bar-coded pallet tags</b>	<b>54.1%</b>	<b>16.3%</b>	<b>25.5%</b>
<b>RFID</b>	<b>21.9%</b>	<b>30.2%</b>	<b>41.7%</b>
<b>Automated storage and retrieval systems</b>	<b>21.1%</b>	<b>11.0%</b>	<b>60.4%</b>
<b>Voice-directed systems for put-away</b>	<b>13.3%</b>	<b>8.9%</b>	<b>68.9%</b>
<b>Other</b>	<b>20.0%</b>	<b>0%</b>	<b>53.3%</b>

Nearly 55 percent of respondents use bar-coded pallet tags to manage their inventory, and more than 16 percent plan to use this method in the future. RFID also continues to be a hot issue, with more than 30 percent suggesting that they plan to use it in the future.

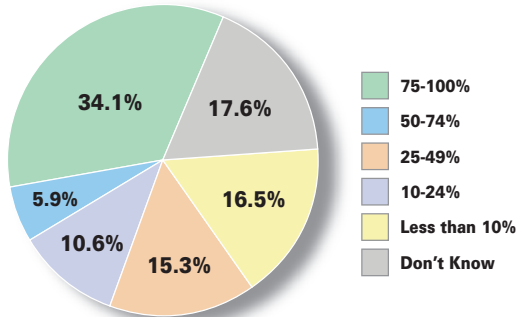
Respondents definitely use smaller-sized shipments for their partial shipments. For 45.1 percent of respondents, outbound LTL shipments were typically less than nine tons. Another 30.8 percent shipped from 10 to 29 tons this way. The median shipment size is 15 tons. Inbound LTL shipments are even smaller. More than half of respondents (56.4 percent) report shipment sizes of less than nine tons, and about a quarter more (26 percent) have shipments of 10 to 29 tons. The median shipment size is just five tons.

A sizeable majority of respondents (58.3 percent) say that they backhaul—which is critical for minimizing costs and maximizing use of their assets, particularly with the current high diesel fuel costs. Of those respondents who backhaul, the greatest number (21.1 percent) say they achieve fewer than 10 percent. Some respondents have great success with 17.1 percent saying they achieve 81 to 100 percent of their backhauls.



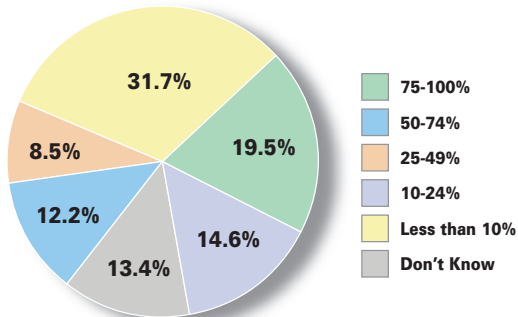
## Outsourcing Practices in the Industry

**Percentage of Transportation Budget Outsourced**



Food shippers are interested in developing collaborative relationships with third-party logistics providers (companies that specialize in both warehousing and transportation) who create leaner, more efficient logistics practices within their supply chain. Nearly two-thirds of respondents (63.5 percent) outsource some or all of their transportation. Less than a third (27.9 percent) do not. Many of those who do outsource rely quite heavily on their partners. More than a third of respondents (34.1 percent) outsource 75 to 100 percent of their transportation budget. Another fifth of respondents (21.2 percent) use 25 to 75 percent of their budget. Some companies do limit their outsourcing, with 27.1 percent using less than 25 percent of their transportation budget.

**Percentage of Warehousing Budget Outsourced**



Although it is not as prevalent as transportation outsourcing, more than half of companies (53.4 percent) do outsource warehousing. Nearly a third of respondents (31.7 percent) spend less than 10 percent of their budget on warehousing. However, companies spend less of their warehousing budget on outsourcing than of their transportation budget. More than a third of respondents (34.1 percent) outsource more than 75 percent of their transportation budget, while only one-fifth of respondents (19.5 percent) outsource more than 75 percent of their warehousing budget.

The majority of companies (57.7 percent) outsource part or all of their packaging. Budgets for packaging outsourcing follow along the lines of warehousing outsourcing. A significant number of respondents (44.1 percent) report using less than 10 percent of their packaging budget for outsourcing, but 18.6 percent use 75 to 100 percent.



## Technology's Impact on Warehousing Practices

One of the primary barriers to an efficient supply chain is a lack of transparent data. Many food companies are finding solutions through radio frequency-based, real-time interface technologies that allow a warehouse management system to direct and track every inventory-related process as it happens. While just 21.9 percent of respondents use RFID currently, another 30.2 percent plan to use it in the future. Unfortunately, this is one area in which smaller companies are at a disadvantage, as there is no way around the hardware costs in equipping a warehouse with the hand-held or forklift-mounted smart terminals necessary for this next phase of warehouse automation. Many companies are then turning to outsourcing as a solution to this challenge.

Nearly one-quarter of respondents (23.1 percent) use automated storage and retrieval systems, but fewer respondents (11.0 percent) are planning to use them. A smaller number (13.3 percent) are using or planning to use (8.9 percent) voice-directed systems for put away.

In applying warehouse automation to improve the quality and productivity of operations, the real bang for the buck appears to show up in picking and shipping. Respondents were fairly evenly split between single order pick (41.9 percent) and multiple order pick (42.7 percent) through the entire network. However, surprisingly the vast majority of respondents (83 percent) report that paper-based methods are used for order picking. Bar-coded pallet tags are the most widely used technology in inventory control. While respondents report using a variety of order-picking methods, it looks like we're far from a paperless system.

In conclusion, technology is one of several areas where the food logistics industry will continue to develop solutions. This, coupled with strategic supply chain management practices, will enable the industry to continue to source and deliver food and beverages safely and cost-effectively to the U.S. marketplace.

### About Saddle Creek Corporation

Saddle Creek Corporation, a leading nationwide distribution services company that provides warehousing, transportation, contract packaging, and integrated logistics services, sponsored this research project.

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