

Transportation and Logistics

Planes, trains and...3PLs?



Trade is as old as human desire. The strength of that desire once forged routes to Asia and mobilized exploration to new continents. The urge to trade has stoked the economies of nations and nurtured odd alliances. Yet, while human desire remains undiminished, the way trade happens—how raw materials and finished products move around the world—has changed exponentially.

In fact, the sheer size and complexity of global distribution has spawned an entire industry dedicated to managing the movement of goods. Transportation logistics is the art and science of managing trade. It makes sure the trucks, ships, planes, and trains arrive on time and at the right place; it finesses the crossings of borders and massages the “events” that inevitably occur in such a vast and fragile enterprise. Logistics has become a highly evolved part of any distribution network. It has become so vital and complex, in fact, that a new breed of independent transportation managers—third-party providers (3PLs)—exist simply to handle the logistical needs of other companies.

This paper examines changes occurring in the character and culture of the transportation industry and how these changes are likely to affect the way the industry views its work environment.

Planes, trains, trucks, and ships.

Because global trade encompasses so much and is so complex, calculating the annual cost of moving people and goods around the world is difficult. Experts estimate that total global expenditure for logistics (which includes transportation by all modes) was \$6.4 trillion in 2000, or 13.7 percent of the world's gross domestic product.¹

In 2003, U.S. revenue for commercial transportation was \$702 billion—or about 6.3 cents of every dollar of U.S. gross domestic product.²

However its costs are measured, the transportation industry operates more like a fractious gathering of shirttail relatives than an integrated industry. Each mode of transportation (truck, train, ship, or plane) is a distinct entity with a unique culture, way of operating, and potential for growth. Further, some segments, trucking, for example, are significantly fragmented. The logistics sector, being the relatively new kid on the block as well as the one wearing the white collar, is even more differentiated from the rest of the industry. So, while the

transportation industry as a whole may move in tandem with macro forces such as global economics, each segment marches to the beat of its own drum.

Take shipping, for example. Although 90 percent of the world's goods move by ship, it is insignificant as a mode of transportation in the U.S., accounting for about 1.1 percent of domestic transportation in 2003.³

At 5.1 percent of total revenue, rail transport is only slightly larger.⁴ That sector, which mostly hauls bulk commodities such as coal and cement, is dominated by four major railroads that control 84 percent of the segment's revenue. Generally, rail is an efficient way of moving goods, although the industry itself tends to be conservative and slow growing.

Intermodal transport (integrating rail with other modes, usually trucking) has been a bright spot on the horizon for some time, and it remains the rail industry's most promising hope for the future. "Rail's been heavily into intermodal for years, and it's actually had some success. But the industry has always been very slow to change," says Amelia Regan, Ph.D., Transportation Systems Engineering, University of California, Irvine.⁵

The movement of freight by air is a small but growing segment. It tends to involve high-value, time-sensitive goods that are handled by express companies such as United Parcel Service (UPS) and Federal Express (FedEx) that have their own fleets or by companies that contract for cargo space in the belly of passenger aircraft. Some passenger airlines have fleets dedicated to moving freight, and a few companies, such as Airborne Express, are for-hire airfreight companies.

With 86.9 percent of market share, trucking is the linchpin of commercial transportation in the U.S., far outweighing every other mode.⁶ Trucking works so well because the country has an extensive highway system and is a homogeneous geographic and cultural unit without the barriers of language or borders.

Trucking is divided into two categories: the truckload (TL) sector and the less-than-truckload (LTL) sector. The latter includes a smaller package delivery subsegment dominated by UPS and FedEx.

The TL segment is by far the largest and is similar in some ways to

rail transport in that it moves bulk goods and containers. And, like rail, the industry has little incentive to change. "The major carriers have good routing and scheduling, and that's about all they need," says Regan. "TL trucking doesn't need to embrace new technologies or to react to change."⁷

Unlike the rail industry, however, TL trucking is extremely fragmented. JB Hunt and Schneider National are the two leading TL trucking firms, and they control perhaps 10 percent of the industry. Below these major players, the median size of a TL firm is seven trucks, and there may be 500,000 of these small trucking firms.⁸ Since the cost of entry to this market is low, trucking tends to be a revolving door through which small outfits come in and go out of business regularly.

Considerably smaller in size (about 8.8 percent of the trucking segment), LTL trucking is the industry's agile little brother. Unlike TL trucking, this segment is consolidating and growing. Cost of entry into the market is high because it requires a network of terminals and hubs to offload and reroute loads. It also requires investment in the IT systems capable of handling complex distribution. Until recently, profitability in this segment was an uphill battle.

The trend within this segment is toward consolidation: The third largest LTL firm, Consolidated Freightway, closed its doors in September 2002 and that December, the two top LTL players, Yellow and Roadway, merged.

Managing the trade routes—the 3PLs

There have always been transportation intermediaries: the farmer who lends his horse to the neighbor; the customs broker; the freelance trucker. But supply chains have become more complex and global, and outsourced transportation services have become more efficient and cost effective. In response, a new breed of intermediary has evolved: the third-party logistics provider (3PL).

In the U.S., total revenue for 3PL services in 2003 was \$76.9 billion.⁹ While growth in that segment continues to outpace the rest of the economy, it has recently slowed to about 6 to 7 percent per year.¹⁰

When a 3PL owns its trucks, planes, or warehouses, it's classified as asset based. UPS and FedEx are asset-based 3PLs.¹¹ But a 3PL may also be a pure logistical company that subcontracts the modes



of transportation its customers need. Then, it's classified as non-asset based.

Service is the hallmark of a 3PL. "A 3PL has a host of value-added services. That distinguishes it from a pure transportation company or a pure warehousing company," says Richard Armstrong, a well-known logistics consultant and researcher.¹² These services might include customs brokerage, freight forwarding, bill auditing and payment, even packaging and labeling. "Service," says Jim Zamjahn, former director of Global Logistics at General Motors, "is the cost of admission, and then it becomes price. Everything else is given."¹³

Third-party logistics providers face intense competitive pressure both to contain costs for basic services, such as transportation and warehousing, and to continue to develop the broad range of value-added services their customers expect.

Customer expectation is an important driver in any industry, but it is especially critical in the service- and knowledge-based logistics sector. As distribution processes become more efficient, customers expect faster deliveries and more sophisticated services, such as light manufacturing and assembly (called partial postponement) and radio frequency identification (RFID) capability.

"Our customers are far more educated. They understand the transportation business and what their options are. For example, customer demand for our time-critical, time-advantage products is increasing rapidly," says Tim DeGross, complex manager, Roadway Express. "Twenty years ago we had eight-day service standards across the country. Now we're seeing four-day standards. I don't see customer demand changing."¹⁴ With global trade expanding and the Internet becoming a bigger factor in communication and e-commerce, customer expectation continues to push 3PLs to develop broader service capabilities.

The right technology undeniably gives a logistics provider a competitive advantage.¹⁵ It allows a 3PL to offer an array of services, from managing customers' suppliers to managing their warehouses to managing their global trade. Implementing that technology, however, is often a challenge. "As an industry [freight transportation intermediaries] have been very slow to change and slow to adopt new technologies, both because of reluctance to do so, and a lack of

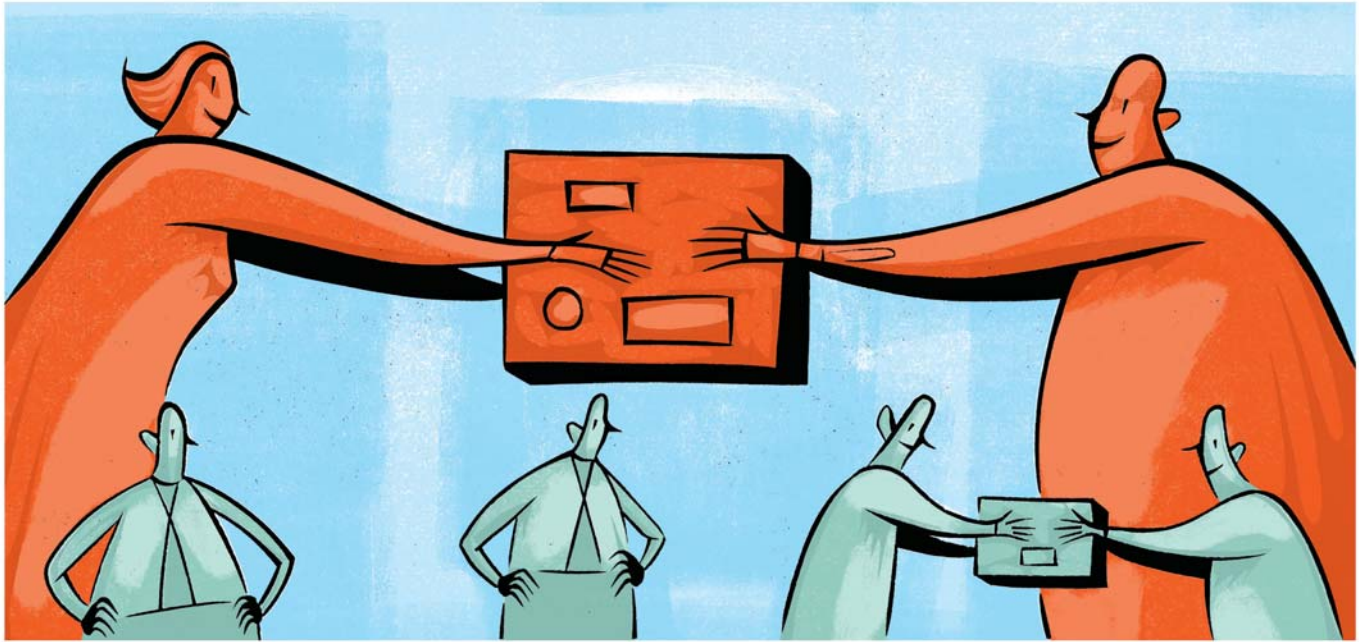
resources needed to make it happen," says Regan.¹⁶ Obviously, the 3PLs with the deepest pockets will have both the motivation and the resources to incorporate technology more quickly, and those companies are likely to be the industry leaders.

While many North American companies still manage all or part of their supply chains and distribution networks in-house, outsourcing logistics services has become a more important part of their strategy. Seventy-eight percent of North American companies that responded to one survey reported outsourcing at least some logistics services to 3PLs.¹⁷ In general, the larger the company, the greater its reliance on outsourced transportation and logistics: 88 percent of the largest *Fortune* 500 companies used 3PL services in 2002 compared to 27 percent of the smallest *Fortune* 500 companies.¹⁸ Yet, according to Armstrong, 3PL revenue from *Fortune* 500 companies was \$61.4 billion, or only 7.5 percent of the total \$817.7 billion of the total amount those companies spent on logistics, suggesting that there is still significant opportunity for 3PLs to grow their market share.¹⁹

Companies typically outsource logistics and transportation services to 3PLs because

- Outsourced services are more cost effective than maintaining in-house capability.
- Companies continue to focus on developing their core competencies and to outsource non-core activities.
- Companies don't have the in-house resources or expertise to manage increasingly complex supply chains, especially as their customers and suppliers become more global.
- The evolution toward just-in-time (JIT) manufacturing, which demands reliable, timely delivery both of parts to the plant and of finished products to the customer, creates a sense of urgency and builds complexity into the supply chain.

This growing demand for outsourced logistical services indicates an evolution away from the need to simply deliver a commodity (basic transportation services) and toward a greater integration within the customer's supply chain as a strategic partner. As their specialized expertise develops, 3PLs will be positioned to penetrate further into their customers' supply chain and to become essential to its smooth functioning. According to Armstrong and others, the business model



of a 3PL as a strategic partner in a manufacturer's global supply chain has become well accepted throughout North America and Western Europe.

"We're seeing a dynamic shift in the relationship between business plans and logistics, a shift by our customers from the perception of our industry as a back-end process to a front-end strategy that informs and supports the entire business plan. Your supply chain strategy, in effect, becomes your business plan," says Michael Eskew, chairman, United Parcel Service.²⁰

While hundreds of companies in the U.S. offer logistical services,²¹ the top players are consolidating and strategically acquiring the functions they need to negotiate on a global playing field. In turn, established European transportation and logistics companies, such as Excel and Deutsche Post, are also poised to penetrate the U.S. market. "It's market positioning on a global scale," says Armstrong.²²

As a handful of top 3PLs develop the skill and technical capacity to manage the complex, global logistical needs of large companies, and as they subcontract those services to a host of smaller 3PLs, a new type of logistics provider is emerging: the 4PL or leading logistic provider (LLP). An example of this model is Vector SCM. Created and partly owned by General Motors to manage its supply chain, Vector subcontracts many of its logistical operations to other service providers, yet it remains GM's single point of contact for logistics services.

What this means for workplace

Generally, TL trucking and the rail industry are the most conservative and slowest-growing sectors. They have well-established processes, a defined (although perhaps not an expanding) market, and little incentive to change. The facilities of these industry leaders are likely to reflect their conservative culture and to maintain a traditional work environment. Buying decisions are likely to be based on precedent, comfort level, and the perception of value.

The transportation industry as a whole is less concerned with image, aesthetics, or intensely collaborative work processes. "Image is a very low priority," says the manager of the central office of a top global 3PL. "We don't have guests coming through. Our offices are practical and durable."

As the 3PL sector evolves and matures, new issues may influence its view of workplace and its buying decisions. To remain competitive, logistics providers must be technologically sophisticated, so investing in new technologies is an important driver in this sector. 3PLs may become more willing to invest in an infrastructure that easily accommodates technology, that enables employees to work efficiently in a tech-heavy environment, and that allows for easy moves and changes.

Brand recognition may also become an important differentiator among 3PLs as fewer players jockey for market dominance. Following its acquisition by Deutsche Post, for example, DHL has moved aggressively into the domestic parcel-delivery service, challenging UPS with its bright trucks and "yellow is the new brown" slogan. In this case, customer-focused brand recognition is clearly a priority.

Branding may become a more important internal issue as acquisitions continue in this sector. Some companies, such as Yellow and Roadway, which merged in 2002, are expected to combine back-office processes but to continue functioning as separate organizations. Other companies, however, may attempt to create a more unified *esprit de corps* within their ranks, and for those companies branding may be a way to reinforce that message. DHL, for example, has also developed an internal "Power of One" campaign that specifically refers to its corporate vision and its global team.

Logistics is an industry built on speed and reliability, values that are reflected in its environment. "I've visited some of their corporate headquarters. UPS and FedEx, for example, are pretty modest companies. They're very efficient, and that's what they project. Their headquarters totally project efficiency," says Regan.²³ For such companies, a workplace environment that measurably improves performance could be compelling.

Finally, as 3PLs become more integrated into their customers' supply chains and as they increasingly function like strategic partners, they might in turn recognize the value of creating strategic partnerships with their own suppliers, and that these partnerships could increase the efficiency and cost effectiveness of their own operations. In the future, a more developed view of the workplace for these companies may be linked to measurably demonstrating how a high-performance work environment could impact their bottom line.

“Intense and driven”

A look at two companies illustrates the differences—and similarities—in the culture and consciousness of workplace that are common to both the transportation and logistics sectors. One company is a leading LTL trucking firm; the other is a global, non-asset-based 3PL. Both facilities are located in Chicago, and while neither is a headquarters location, both are major facilities for their respective companies.

The LTL facility is a terminal with 1,300 employees, most of whom are dockworkers who offload and reroute the 170,000 shipments that stream through the facility every week. Only 52 employees are office workers who process the massive amounts of paperwork associated with the movement of so much freight. Work processes are linear in the sense that paperwork moves from one department to another with little need for collaboration. The offices are a traditional systems-style environment surrounded by perimeter offices with a corner suite for the top manager.

Both the dockworkers and the office personnel are unionized, with a managerial level that oversees them. As a union shop, the company pays a premium for its workers and consequently tries to educate them as to their importance to the organization. The company also emphasizes safety, mostly relating to its drivers and dockworkers, but that awareness is reflected in some level of ergonomic concern for office workers.

The 3PL, by contrast, employs 700 people. These are predominantly office workers who sit in an open call-center environment that its manager describes as “like a trading floor.” While other field offices of this 3PL may have a more traditional system-furniture environment, this Chicago office is without walls, partitions, or hierarchy. The director sits right in the middle of the action at the same trader’s desk as his workers.

Managers at both locations describe the environment as “driven” and “intense.” Both mentioned that their people are critical to the success of their business, but for different reasons. The 3PL describes itself as “a people and relationship business.” Its people are the intermediaries between its customers and the transportation companies whose services it subcontracts. As such, the quality and morale of its workforce directly impacts customer experience, a

connection that is not yet reflected in its work environment.

Although both managers mentioned the importance of their people and the intense pace of work, neither connected a pleasant, effective work environment with greater efficiency or employee satisfaction. And although both readily described their company’s culture, neither could articulate how that culture was reflected in the workplace.

Obviously, transportation and logistics represent an industry with sectors that are enormously varied in their history, culture, and potential for growth. While segments of the transportation industry tend to be more established and conservative, the logistics sector is more oriented toward knowledge workers, functions as a service industry, and is evolving on a global stage. Efficiency, practicality, and durability might describe its workplace in the short term, but as the sector matures, it might be open to a more strategic view of its work environment.

- 1 Alexandre M. Rodrigues and David J. Closs, “Measuring Global Logistics Expenditures.” Council of Logistics Management: Eastern Michigan Roundtable. 16 September 2003
- 2 Standard & Poor’s Industry Surveys, “Transportation: Commercial,” 19 August 2005, 7.
- 3 S&P, 7.
- 4 S&P, 7.
- 5 Amelia Regan, personal interview, 7 September 2004.
- 6 In 2002, trucking in the U.S. accounted for 86.9 percent of total revenues—about \$610.1 billion. S&P, 7.
- 7 Amelia Regan, personal interview, 7 September 2004.
- 8 Joel Sutherland, “Logistics Trends in the USA,” presentation, 18th Logistics Seminar, 30 January 2003.
- 9 Richard Armstrong, “Third-Party Logistics Market Analysis,” presentation, 2004.
- 10 Richard Armstrong, personal interview, 21 September 2004.
- 11 UPS and FedEx “are the only domestic firms with an apparent long-term goal to expand into all time and weight classes and to cover every market, whether international or domestic.” S&P, 16.
- 12 Richard Armstrong, personal interview, 21 September 2004.
- 13 Quoted in C. John Langley Jr., Gary R. Allen, and Mark J. Colombo, *Third Party Logistics: Results and Findings of the 2003 Eighth Annual Study*, joint research project of Capgemini, Georgia Institute of Technology, and FedEx Supply Chain Services, 18.
- 14 Tim DeGross, personal interview, 21 September 2004.

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- 15 "...around 95 percent of respondents in North America and 85 percent in Western Europe indicated that 'having the right software' would give a 3PL provider a competitive advantage in the marketplace." Langley, et al., 15.
 - 16 Amelia Regan, Ph.D., "Trucking Operations," forthcoming in the *Transportation Engineer's Handbook*.
 - 17 Langley, et al., 8.
 - 18 Richard Armstrong, "Third-Party Logistics Market Analysis," presentation, 2004.
 - 19 Armstrong, presentation, 2004
 - 20 Quoted in "The Next Generation Transportation Management System," white paper, eyefortransport Global Research, 2004, 4.
 - 21 "About 100 3PLs now control almost a third of an estimated \$270bn that is spent on outsourced value-added logistics services each year around the world." Thomas A. Foster and Richard Armstrong, "The Top 25 3PLs Extend Their Global Reach," *Global Logistics and Supply Chain Management*, May 2004, 3.
 - 22 Foster and Armstrong, 9.
 - 23 Ameila Regan, personal interview, 7 September 2004.