

Table 5. Comparative Information on Selected Logistics Markets

Market	Estimated Market Size (\$billion)	Estimated Growth Rate	Years behind the United Kingdom in Market Maturity	% of Companies Outsourcing
United Kingdom	100	15% to 20%	0	40%-50%
North America	>300	>15%	8	10%-10%
Europe	250	20% to 25%	0	10%-10%
Australia	1.0-2.5	>20%	5	20%-30%
Asia	>250	>25%	15	<5%

Source: Council of Logistical Management Proceedings

approach. 3PL and 4PL solutions are particularly attractive for smaller firms in that they can focus on their core competencies.

3.3 Other Trends

Willoughby (1999) mentions the growing interest in “reverse logistics” which involves the collection of discarded equipment when new articles are delivered so that component, materials and product recycling can be facilitated. This will increase as environmental damages are priced and waste disposal costs increase.

Information exchange for trucking firms facing backhaul problems, or with empty space on less than full load trucks, is growing in importance. For example, The Trucking Information Exchange (TIE Services) provides information on available trucks and loads to shippers, brokers and trucking firms (Logistics Management Distribution Report, 2000). The National Transportation Exchange is an e-commerce member based trading exchange that operates an online exchange for shippers, third party logistics firms and freight carriers. With more than 500 members, it automates buying and selling transactions between shippers and freight carriers (Richardson, 2000). Nationwide unused truck space is valued at a staggering \$31B annually

(Littman, 1999). The NTE helps members to link empty space on trucks with small loads of merchandise that need to be shipped. While the NTE does not own trucks, as its business is information exchange, its subscribing members control approximately 200,000 trucks. In addition to matching available space on trucks across the nation with the needs of LTL shipment, NTE provides real time information on shipment tracking and deliveries, guarantees payments and the quality of transportation services through monitoring and evaluation of performance. Chillicotte, a NTE client noted that his business increased by 25% after becoming a client of NTE.

4. SPATIAL IMPACTS OF TRANSPORTATION LOGISTICS

There are several impacts of these changes in transportation logistics which have consequences for physical infrastructure and spatial patterns. They are listed and briefly described.

- 1) Firms are locating close to transportation hubs, or the bases of third party carriers so as to maximize the benefits derived from customer driven needs. For example, the design of manufacturing strategies responds to the need for streamlining component and materials movement from sourcing, through production to customer service, that is, to achieve a seamless process in all aspects of value adding. The growth of enterprises near the FedEx facility in Memphis is a case in point.
- 2) Ocean shipping has increased due to globalization. Containerization, vessel sharing agreements and other forms of rationalization have worked in favor of the

larger carriers such as Maerstar and Sealand. One aspect of this reorganization of the shipping industry is tied toward larger and larger ships, increase in the size of the containers (over 6-8000 TEUs) and need for deeper draught (close to 50ft.) ports—sharply reducing the number of such deep draught ports available on the east coast of the U.S.. This may encourage the emergence of a hierarchy of ports based on the size of the draught, the efficiency of intermodal connections through physical and logistics infrastructures. The larger ports can streamline operations through improved logistical and institutional developments involving harmonization of international standards. At the first tier ports, containers can be offloaded to smaller ships, with appropriate draughts, for regional ports. This has implications for coordination of multimodal and institutional infrastructure.

- 3) MergeGlobal Inc., a freight transport consultancy firm claims that carriers will be segmented by the number and frequency of stops. For example large firms like FedEx and DHL get their efficiencies from filling planes and trucks to capacity and thus will be competitive in delivering packages over long distances or from central business district to central business district. Local delivery firms, with local warehouses, will be more competitive in metropolitan and regional markets as they can provide same day response to orders placed at any time of the day – such as Shipper.com
- 4) There are pressures for the development of transportation corridors such as the Alameda corridor in S. California.

5. CONCLUDING COMMENTS

This paper has sought to describe and interpret a novel and rapidly evolving transport sector servicing the global economy, where U.S. firms play a major role. Transport logistics is a key and growing part of the global supply chain management system that coordinates globally dispersed production activities. This paper has described the major attributes and operation of the transport logistical function.

Instead of summarizing the findings, some thoughts about future directions are explored in this concluding section.

Even though transportation companies are emerging as leaders in linking customers, suppliers and partners together on line, there is still room for improvement in merging the potentials of information technology with transportation services. Internet based logistical systems are still in their infancy. Providers of e-supply chains have to rearchitecture their software for automating the entire supply chain process for customers from order taking, inventory monitoring, tracking and delivery for a dispersed and wide ranging set of customers.

As the process is still in a formative stage we can anticipate a widening of the process as well as deepening. Widening will occur as additional firms adopt the strategic changes from the best practice firms. Moreover the expansion of e-commerce will require shipments, that is, the demand will increase for shipments in a timely manner. The success of e-commerce firms will depend on their ability to get their merchandise to consumers in a timely and accurate way. This will require merging of information and transportation technologies in a seamless way. Deepening will occur as alliances form between transportation service providers possessing complementary skills.

Deepening will also involve increase in the level of customization. We already see trends in express package services with several pricing options tied to urgency of delivery. There will be an increase in the importance of multimodalism due to the differential relative advantages of the different modes. While multimodalism still accounts for a small proportion of the total traffic, logistical developments will increase its share as transaction costs and costs of load transfer between modes are reduced.

We can expect and intensification of public private partnerships. Gwilliam (1998) notes that in the maritime sectors in Malaysia, Thailand and the Philippines, public-private joint ventures in container terminals have increased the capability of these countries to meet the demands of global production chains. Public sector role in infrastructure investments through grants, land consolidation, loan guarantees, bonds for raising capital and like can be combined optimally with the more portable private sector investment in equipments, logistics developments and management of facilities. Their combined strengths will provide cost savings. Such savings are already being realized in the shipping and trucking sectors.

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