Delivering

The retail world is in upheaval over e-commerce — can transport carriers be far behind?

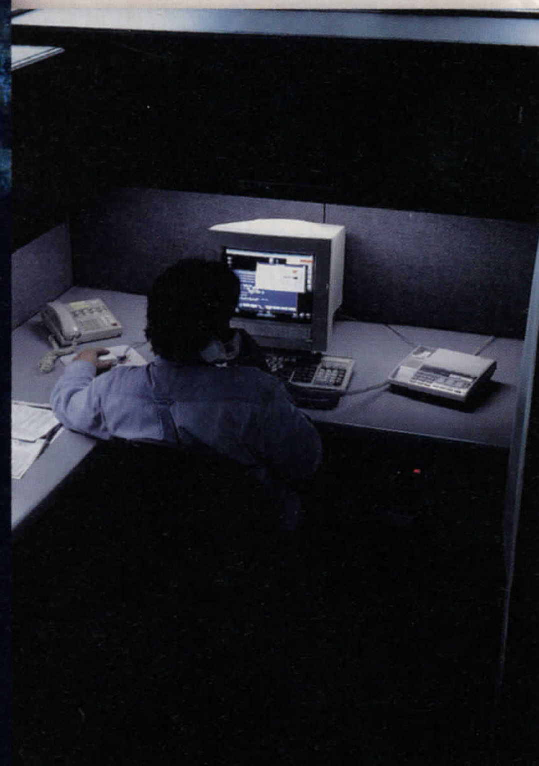
by Satish Jindel

In recent months, the Internet has had an enormous, historic impact on the stock market in many different ways. Real-time access to stock prices and lower transaction cost has increased trading by small investors, causing stock price fluctuations not seen in the past. The influence of the Internet on other industries will be of similar proportions. Because of the new dynamics created by the buying and selling of goods over the Internet, the global transportation industry will feel much of the impact of electronic commerce through the changes in the retail sector.

Only recently, even the most enlightened transport operators viewed the Internet merely as a tool for doing business. But the rapid growth of on-line commercial business promises far greater changes that are already being felt in the United States and will soon have a similar impact in other parts of the world.

The retail sector has undergone a few structural changes in the last 50 years. Each development has had major impact on the transportation sector. Although it is too early to quantify the impact of Internet-driven e-commerce, it promises to bring a monumental change for both the retail and transportation sector.

Already, the ability to reach consumers directly is changing the relationships



E-Commerce

between retailers and some of the large manufacturers such as Nike and Levi Strauss that have created virtual outlets on the World Wide Web. The flow of goods between manufacturer and consumer will alter dramatically. *(See Table 1)*

Direct Sales

Through the Internet, sophisticated manufacturers will gain access to the consumers for direct delivery to businesses and households. Depending on the product mix and characteristics, and the logistics capabilities of the manufacturer, consumers will bypass the retailers for lower prices, more choices and more efficient delivery. More businesses will be able to order their regular quantity of office supplies, janitorial supplies, and so on, directly from the manufacturers.

The Internet revolution will give small businesses, and even the individual consumer, the ability to create a virtual just-in-time delivery system and eliminate the non-value added handling and transportation costs that are built into so much of retail trade.

And it will do to the major retailers what they have done to the "mom and pop" retail stores.

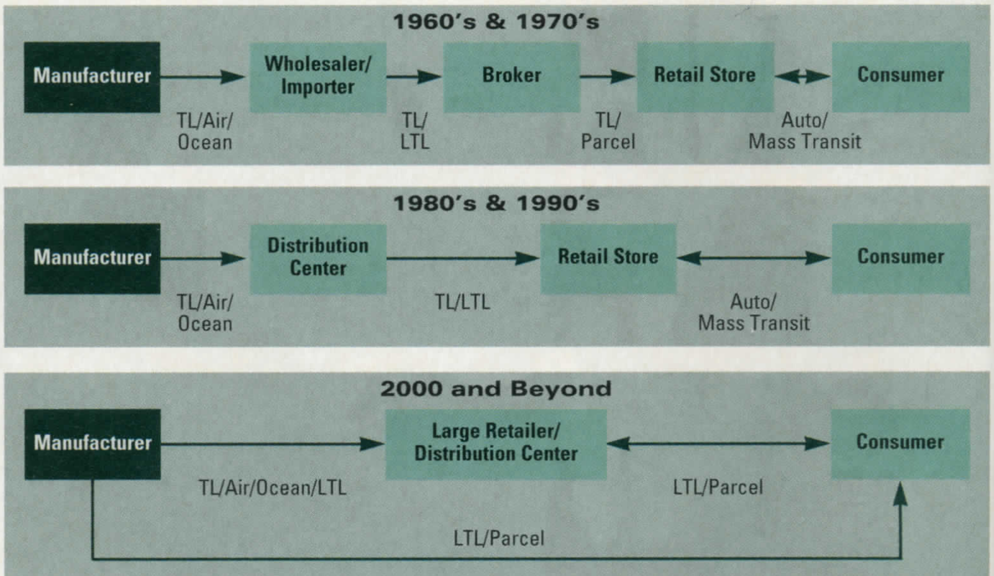
A successful case study of the direct retail channel is Dell Computers, with $17 billion in annual revenue. The Internet represents 20 percent of Dell's total revenue, triple what it was a year ago. By selling directly to businesses and households, Dell is able to offer lower prices due to elimination of retailers and reduced assembly cycle time. Dell is growing faster and achieving higher profit margins than its competitors, forcing companies such as Compaq to follow a similar model or risk losing even more of its market share.

With more industries following the Dell model, there will be huge growth opportunities for logistics and parcel companies.

Modal Shifts

The Internet-driven manufacturer/consumer retail

Table 1



model will result in shifts in the kinds of transport sellers use and increased spending on transportation. Large shipments from manufacturer to distribution centers will be converted into smaller shipments delivered directly more frequently to consumers, both businesses and households.

The new retail model may also result in major modal shift for transcontinental movement of goods. For instance, the elimination of intermediate steps may either generate more air express traffic or shift some existing air cargo to ocean carriers.

The elimination of some wholesalers and retailers will trigger many changes in the economy with major implications for the transport industry. It will:

- Reduce cycle time for getting products to consumers, which will result in elimination of additional handling and transportation of freight by wholesalers and retailers.
- Increase sales through lower prices due to the elimination of huge markup by wholesalers and retailers. The stock market has demonstrated this phenomenon with $5 broker commissions and real-time access to stock prices that has fueled more transactions by investors.
- Provide additional revenue for the manufacturers to cover the higher shipping and handling cost of smaller shipments delivered more frequently to consumers.
- Offer higher margins to the manufacturer to push more rapid improvements in the products.

The Internet will create international shopping malls that will erase national boundaries for businesses and households around the world. It will eliminate retail channel steps that do not add value and permit businesses to buy products at more attractive prices directly from manufacturers in other parts of the world.

Global Implications

This information revolution will benefit manufacturers with the logistics capabilities to take orders and ship products directly to consumers, particularly to businesses around the globe. For instance, manufacturers in China, Taiwan and South Korea will have the opportunity to sell their products directly to retailers or consumers in the United States and other parts of the world and look virtually the same to the buyers as sellers down the street.

Moreover, they will be able to eliminate the traditional markup on their products by the brokers and wholesalers.

The shipping and handling task now performed at the retailers' distribution centers will shift to the manufacturers' plants. The lower cost of labor in the exporting countries will make it attractive for some manufacturers to perform these logistics functions with their people. Although transcontinental movements will continue to occur in large shipments, distribution at the destination country will result in smaller shipments with greater frequency delivered directly to retail stores or consumers.

Here are some of the implications of these changes for select transportation sectors:

Logistics Companies

The companies with global scope stand to benefit most from these changes. In the best position are companies prepared to handle the increased shipping and handling functions at the retailers' distribution centers or the manufacturers' plants and which have the capability to design a totally integrated distribution solution.

The logistics companies have the opportunity to help manufacturers establish a shipping and handling operation that can assemble smaller shipments of multiple products for delivery to the final consumer. In some cases, that may involve merging products manufactured at different plants, cities and even countries into a single delivery either in transit or at the final destination.

Hence, companies already positioned to meet these challenges and take advantage of these changes are FDX Logistics, UPS Worldwide Logistics and the new Danzas/Deutsche Post combination. The push by other logistics companies to establish global capability via alliances and acquisitions of parcel carriers appears to be driven by such future growth opportunities.

International Freight Forwarders

These companies are big players in the international movement of goods from manufacturers to distribution centers. With logistics changes at both the manufacturer site and in the destination country, these companies will get increased competition from logistics companies with greater capabilities.

The transcontinental modal shift between air and ocean transport provides opportunities for freight forwarders to add value to the design of a totally integrated distribution solution.

However, with more shipments crossing international borders more frequently, the customs clearance activities will become more challenging. Hence, the brokerage expertise of freight forwarders will make them attractive merger/acquisition targets for some global logistics companies. Companies such as Air Express International and Kuehne & Nagel with strong customs experience could be early targets.

Integrated Express Carriers

These carriers could gain significantly from this development if they enhance their international capabili-

Tracking

With Internet-based tracking systems all the rage in the freight world, transport carriers are looking for new ways to fill the demand and technology firms are lining up to help them. Looking for business from smaller operators, Atlanta-based software developer Datatrac says its new Internet-based service brings pickup and delivery companies of all sizes into the Internet tracking loop. This will allow freight forwarders and couriers without the full-fledged information systems of larger competitors to track the status of their shipments from pickup to final delivery.

Under the system, when pickup and delivery companies update on their computer system the status of jobs, the information is automatically forwarded to a central data warehouse for immediate access and distribution. The same concept also applies to participating courier companies, allowing their customers to retrieve and browse up-to-date tracking information off the Internet.

Datatrac plans to have the new service up and running by April.

Forwarder Eagle USA Airfreight is even trying to look beyond such Internet tracking, offering a software program called E@GLE ADVISOR that uses "extranet" technology to get customers to Eagle's tracking Web site without separate browser software. ■

ty to handle increased shipping activity efficiently and reliably. The integrated carriers will see tremendous increase in total volume of parcels and lower weight shipments. This will increase the so-called density, or number of shipments going to one address, of business deliveries and reduce operating costs.

Moreover, household deliveries may prove unprofitable unless the operating model and pricing structure is revised to handle this growth. FedEx's 1997 acquisition of Caliber System and its RPS package subsidiary allows FedEx to capitalize on these developments. The Global Package Link and domestic Priority Mail services of the U.S. Postal Service (with planned service enhancements) are also positioned to benefit from this development. The international expansion of postal authorities in the Netherlands and Germany also puts them in an excellent position to capitalize on the trend.

It is still too early to estimate the impact of growth by segment, but the total spending on logistics and transportation services will be significantly higher with more direct shipping and streamlining of the retail distribution cycle.

U.S. market

In the world's largest domestic delivery market, the United States, the transportation industry will see similar modal shifts as smaller and more frequent direct deliveries of products go to businesses and households. Full truckload movements may convert to less-than-truckload and LTL shipments may see bundled hundredweight shipments become parcels. Moreover, the final leg of the retail distribution channel is really now performed by the consumer in a personal vehicle. The Internet retail channel will replace this transport link with direct delivery by a parcel carrier. For business deliveries, the impact on the local delivery and courier industry will depend on the evolving shape of the retail channel.

The prospects for the LTL industry will be determined by these carriers' ability to handle a decline in the shipment weight and deliver heavy parcels and lighter shipments to residences. With the growth of residential deliveries, the distinct and unique logistics requirements of the residential consignee will result in more changes in the transportation sector.

Business-to-Home

The domestic business-to-residence parcel delivery represents $5 billion in revenue in the United States. This market is primarily served by parcel carriers, with the

One new retail site on the World Wide Web is starting up with the delivery strategy as a key part of its business model. WorldSpy, which is creating something of a virtual department store on-line, has already set up inventory management and transport agreements as it negotiates for productions from manufacturers and wholesalers. Less than a year into its development, the *worldspy.com* business has "built a very sophisticated back office that allows manufacturers to be involved in e-commerce," said company President Alan Clingman. The company its site to become a kind of ultimate broker by setting up deals with banks, manufacturers and inventory managers so that "we never touch the money and we never touch the merchandise."

Integrated Web

The company signed a contract with UPS Worldwide Logistics to manage the warehouse and distribution operations that put the goods in consumers' hands in a promised three days. That is an attempt to build certainty into delivery to overcome a weakness Clingman sees with other, more prominent electronic retail sites.

"Using focus groups, we found that among the largest complaints about Internet commerce were that buyers could not get accurate deliveries," said Clingman. "They did not know when the goods were coming and misdeliveries were too common."

But the management pact with UPSWL does not include a bias toward UPS delivery, he said. Instead, a purchase will trigger an electronic search within the WorldSpy computers for the best routing and cheapest price to achieve three-day delivery. Buyers can request faster delivery and WorldSpy will then search out the cheapest price to meet the buyer's demand. The buyer can then track and trace shipments from the WorldSpy Web site.

Clingman said he and a partner seized on the plan after researching their own investment options. "What we saw occurring was the disintermediation of the retail supply chain, and we wanted to be at the forefront of that," he said. ■

lion's share handled by UPS Ground Service and USPS Parcel Post. With changes such as zoned pricing for express services and the growth of home-based businesses, Priority Mail and the express services of UPS and FedEx are becoming a bigger factor in this market.

With e-commerce, this market will grow at the expense of deliveries to retail stores. The retail industry uses several modes of transport, but most of them are surface operations. Discount retailers such as Wal-Mart, with annual revenue of $135 billion, use huge private fleets of trucks. When such retailers see a shift of retail sales to direct delivery to the consumer, the impact will surely be felt by all segments of the transportation industry.

In the United States, domestic intercity freight trucking amounts to $200 billion in revenue and the retail sector represents 20 percent of this traffic, or $40 billion. With a 25 percent shift of retail sales to direct consumers, $10 billion in intercity freight trucking revenue would convert to residential deliveries.

This figure could more than double due to the difference in unit transportation costs between truckload delivery to a large retail store and parcel delivery to consumer. Hence, considering the normal growth factors and modal shifts, the business-to-residence market could reach $25 billion in annual revenue by 2004.

This explosive growth represents numerous challenges for the entire U.S. transportation industry, but mostly for the parcel carriers.

In order to benefit from this growth, the carriers will need to modify their operations to handle

Table 2
Characteristics of Commercial and Residential Deliveries

Service attributes	Commercial Delivery	Residential Delivery	Business at Residence Delivery
Preferred receiving hours	8 to 12 noon	4 to 8 p.m.	8 to 8 p.m.
Pickup frequency	Daily	Rarely	Infrequent
Consignee signature upon delivery	Daily	Rarely	Occasionally
Claims exposure with deliveries	Very Low	High	Low
Weekend delivery	Not required	Desirable	Not required
Guaranteed delivery commitment	Required	Preferred	Required
Parcels per delivery stop	2.5	1	1 to 2
Average revenue per delivery stop	$14.00	$5.20	$8.10

the specific characteristics of the business-to-residence (including residence-based business) delivery market segment.

Parcel Carriers

The operations of parcel carriers is based on requirements of business-to-business shipping. As shown in Table 2, this model is not suited to handle business-to-residence deliveries.

- The deliveries are made early in the day when most residential consignees are at work. Hence, the package has to be either left at the home, increasing claims exposure, or requires costly return trips by the drivers.
- Pickup service is not user-friendly for returns from residential addresses.
- The information system does not automatically provide parcel data to the consignee. Recent pricing changes by UPS, including fees for certain services and area deliveries, partially address the cross-subsidies among consignees. However, the overall pricing structure needs to be revised based on the business-to-residence operating model.

The growth in business-to-residence volume will improve operational density, but service needs for residential deliveries are unlikely to change. Although some businesses may permit employees to receive deliveries at offices, the approach has many shortcomings:

- In large corporations, it will add significant cost and logistics challenges for a) accepting increasing number of parcels, b) responsibility for loss or damage claims, c) distribution to employees' work areas, and d) storage of parcels for out of town employees.
- For employees commuting via mass transit, or parking at remote lots, this option will be no better than buying from a retail store.

The successful parcel carriers and logistics companies will be those that realize the differences in the business-to-business and business-to-residence operating models and establish operations that deal with those variations and make the service more attractive for the business-to-residence customers.

Opportunities

The logistics companies and parcel carriers that position their businesses to handle this change in the retail channel and the shift in shipping and handling operations from retailers to manufacturers will stand to benefit in the future. The opportunities are already there. With Dell experiencing phenomenal benefits from the Internet in terms of sales and profits, companies in broader consumer industries such as Proctor & Gamble, Gillette, General Electric, Johnson & Johnson, and so on, will not be far behind in developing this capability.

It used to be that blue jeans were not available at all in the Soviet Union. Soon, consumers anywhere in the world will be limited only by the ability of transport companies to reach their homes.

The manufacturer-to-consumer retail channel not only provides for more growth for logistics and parcel carriers, but also an opportunity for higher margins because they will be able to squeeze cost from the system through reduced handling. This transition will increase the number and average weight of parcels for delivery to businesses and households.

The global and domestic carriers who are slow in responding to these challenges will miss a tremendous growth opportunity. Hence, the impact of e-commerce on the transportation industry will be a mixed bag of good and bad news, depending upon how the individual segment and carrier responds to the developments.

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