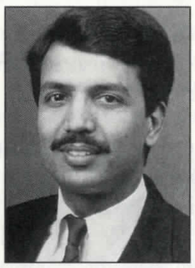
# E-commerce's Mixed Blessings

BY SATISH JINDEL

In the last few months, the business media has gone e-commerce crazy. The sudden crush of stories on the benefits of Internet-based commerce is rivaled only by the rush of reports on investors who are willing to buy the stock of any company with a name that ends in ".com."

But just as investors are overlooking the fundamentals of investment evaluation when it comes to Internet stocks, the business media is equally myopic when writing about the benefits of e-commerce and how it will affect various industries. There is no doubt that the transportation industry will play a significant role in the growth of sales driven by e-commerce. However, the resulting impact on carriers' operations — and their bottom lines — will be mixed.

Let's consider three factors. First, e-commerce will shift deliveries from retail stores to residences while only marginally increasing total retail sales in the economy. Second, the current operations model most carriers adhere to calls for delivery to commercial addresses. Third, commercial deliveries are more profitable than residential ones.



Therefore, the e-commerce shift will convert profitable deliveries of shipments to retail stores into break-even or money-losing home deliveries for carriers.

The business-to-residence delivery market currently represents $5 billion in revenue. This market is primarily served by the parcel carriers, with the lion's share handled by the ground operations of United Parcel Service and the United States Postal Service. With recent changes such as zoned pricing for express services and the growth of home-based businesses, Priority Mail and the express services of UPS and Federal Express are becoming a bigger factor in this market. As e-commerce expands, growth in this market mostly will come at the expense of deliveries to retail stores.

The retail industry utilizes several transportation options, including truckload, LTL, parcel and express carriers. Discount retailers such as Wal-Mart maintain a huge private fleet of trucks for deliveries. Hence, when retailers such as Wal-Mart, K mart and Sears experience a shift from retail sales at stores to direct home delivery, the impact will be felt by truckload, LTL, parcel and express carriers.

The domestic intercity freight trucking market amounts to $200 billion in revenue (excluding flat bed, household and other special carriers) and the retail sector represents 20 percent of this traffic, or $40 billion. With a 20 percent shift of retail sales from stores directly to consumers, $10 billion in intercity freight trucking revenue would convert to home deliveries. This figure will more than double due to the difference in unit transportation cost between truckload delivery to a large retail store and parcel delivery to the consumer.

The increased cost of transportation to the retailers easily will be offset by reduced operating costs as expensive store operations

## 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 |
| Driver release | Rarely | Frequently | Frequently |
| Express deliveries | Frequently | Rarely | Occasionally |
| Tracking and Tracing required | Frequently | Frequently | Frequently |
| Guaranteed delivery commitment | Required | Preferred | Required |
| Seasonal volume pattern | Low | High | Low |
| Average weight of parcel | 18 lb. | 6 lb. | 12 lb. |
| Parcels per delivery stop | 2.5 | 1 | 1 to 2 |
| Average revenue per parcel | $5.60 | $5.20 | $5.40 |
| Average revenue per delivery stop | $14.00 | $5.20 | $8.10 |
| Parcel density | High | Very low | Low |

are cut back. The convenience of competitive-price shopping and order placement via the Internet will fuel the growth of online shopping. Hence, considering normal growth factors and modal shifts, the business-to-residence market could reach $25 billion in annual revenue in less than five years.

This explosive growth represents numerous challenges for the entire transportation industry but most extensively for the parcel carriers. Hence, the carriers that will benefit from this development will be those that modify their operations model to handle the specific characteristics of the business-to-residence (including businesses operated from residence) delivery market.

The growth of residential deliveries presents an opportunity or a risk for the parcel carriers, depending upon how each carrier undertakes to handle various operational, pricing and technological processes. The current model is based on business-to-business shipping. Hence, it is not suited to handle business-to-residence deliveries.

Based on the differences in the expectations of the residential consignee and the parcel characteristics *(see chart, page 47)*, the business-to-business model has many shortcomings when used for the business-to-residence segment:

1. 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 house, which increases claims exposure, or requires return trips by the drivers, which adds to the operating cost.

2. The pickup service is not user-friendly for returns from residential addresses.

3. The information system does not automatically provide parcel data to the consignee.

4. The delivery equipment is sized for larger shipments for business deliveries. It contributes to a higher cost structure even for smaller parcels delivered to residences.

5. The residential areas have lower density and thus increase travel time between stops which increases the delivery cost.

## Changing operations

How should operational, pricing and technological systems of carriers be changed to reflect the demands of the business-to-residence delivery model?

The operations of the parcel carriers are driven by the business hours, shipping patterns, information needs and physical location of business consignees operating from commercial addresses. The various aspects of the operation that are not ideally suited for residential delivery are:

• Local pickup and delivery routes. These typically are setup for businesses operating between 8 a.m. and 5 p.m. Hence, the drivers generally deliver prior to noon and pickup in the afternoon while returning to the operating center. In contrast, residential deliveries would occur between 4 and 8 p.m. and not require the drivers to return to the terminal.

• Line-haul runs. These are scheduled to match the pickup and delivery requirements of consignees. A residential model would offer other options more advantageous for shippers and consignees.

• Sort schedules. These leave most operating centers underutilized in late morning and early afternoon hours. A residential delivery model could provide for better utilization.

In addition, job requirements for the workers are driven by the business-to-business model. Consequently, the carriers compete for the same workers in demand by other industries, resulting in higher wages and benefits. A residential model may show that other population groups are more desirable workers from both service and cost viewpoints.

The pricing for residential deliveries is based on the costing for the business-to-business operational model. Hence, it is not reflective of the true cost of delivering to residential addresses. UPS introduced its residential delivery surcharge in 1991, will add a delivery area surcharge next week and will begin charging for proof of delivery by mail this year. These changes are attempts to establish fee-based services and to eliminate cross-subsidies among different parcels and consignees. While these features are appropriate, the overall pricing structure would be different if it was based on the cost structure of the business-to-residence operating model.

## Technological capabilities

Since the consignees are placing orders via the Internet, the technological capabilities of the carrier are important, specifically for tracking and tracing the parcels. The websites of major carriers like UPS, FedEx, Airborne and RPS already are capable of providing extensive information and thus will require minimal effort to satisfy the needs of the business-to-residence model. The widespread use of the Internet also will create opportunities for drivers to transmit delivery information to operating centers, thus reducing operating costs under the current model.

Many retail shippers presently operate highly automated and mechanized warehouses and distribution centers. Consequently, with thousands of parcels shipped every day, these shippers can load trailers so that parcels are presorted by either three-digit ZIP codes or five-digit ZIP codes. This presents tremendous opportunity for the carriers to restructure their operations to reduce handling and delivery costs. With the growth of this market segment, the shippers will have greater automation capability for handling parcels and transmitting information to carriers and consignees to squeeze the cost out of the process.

With the business-to-residence retail parcel delivery segment having a potential to deliver $25 billion in annual revenue for the parcel carriers, the successful carriers will have an operational, pricing and technological infrastructure specifically designed to the meet the unique and different needs of this customer group. The size of this market segment and the delivery model will require that the deliveries to residential addresses are also guaranteed. Presently, both UPS and RPS Ground service guarantee is limited to commercial addresses.

In the end, carriers that piggyback residence delivery on the business-to-business delivery model will lose ground to those with a well-designed and executed business-to-residence delivery model.

---

*Jindel is a principal of SJ Consulting, Pittsburgh.*