

## Reverse Logistics in the Supply Chain

a report by

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In evaluating the importance of logistics within supply chains, many published 'lists' of logistics attributes have reverse logistics rated relatively low in importance. Such ratings are, however, misleading. Product quality, competitive prices, consistent order cycle times, on-time deliveries and low damage rates have traditionally been very important, and will continue to be so in the future. Today, they are the 'price of admission' to the competitive arena. Many competitors have reached parity on many of these important logistics attributes and they have become standard offerings of these companies and basic requirements of customers. Organisations not meeting standards on these attributes are usually not even considered in purchasing and/or outsourcing decisions. When a firm achieves acceptable standards on these attributes, other factors become differentiators in the customer's purchase decision. One of the factors that becomes more important in these situations is reverse logistics, where many firms offer programmes, but relatively few provide optimal solutions.

Reverse logistics has been defined as

*"... the term most often used to refer to the role of logistics in product returns, source reduction, recycling, materials substitution, reuse of materials, waste disposal, and refurbishing, repair and remanufacturing."*<sup>1</sup>

The concept is broad and encompasses a number of activities within logistics and other functions carried out within supply chains. A flow model of the major events or activities that occur within reverse logistics is presented in *Figure 1*.<sup>1</sup>

For the majority of supply chain members, product

returns are the most significant aspect of reverse logistics. The types of items that come back and require reverse logistics processing may include product returns, product recalls, end-of-lease equipment, old/obsolete items being replaced, packaging materials and myriad other items. Some statistics that highlight the importance of reverse logistics include the following.

- Reverse logistics costs account for between 0.5% and 1% of the total US gross domestic product.<sup>2</sup>
- Online US retail sales were US\$20.2 billion in 1999 and are expected to reach US\$74 billion in 2001.<sup>3</sup>
- Average return rate for online retail sales is 5.6%, although it varies by product and time of year.<sup>4</sup>
- Twelve per cent of the US\$5 billion worth of products sold online during the two-month Christmas season of 1999 were returned.<sup>5</sup>
- Ninety-five per cent of consumers would rather return a product purchased over the Internet to a physical location; 43% would always use that option if it were available; 37% of online buyers and 54% of online browsers were deterred from purchasing online because of return and exchange processes that were too difficult.<sup>6</sup>
- The cost of processing a return can be two to three times that of an outbound shipment.<sup>7</sup>
- Returns will cost catalogue and Web retailers US\$3.2 billion in 2001.<sup>8</sup>

Certainly, reverse logistics is an integral component

1. James R Stock (1998), *Development and Implementation of Reverse Logistics Programs*, Oak Brook, Illinois, Council of Logistics Management.

2. *Reverse Logistics Executive Council*.

3. *Forrester Research*.

4. *National Retail Federation*.

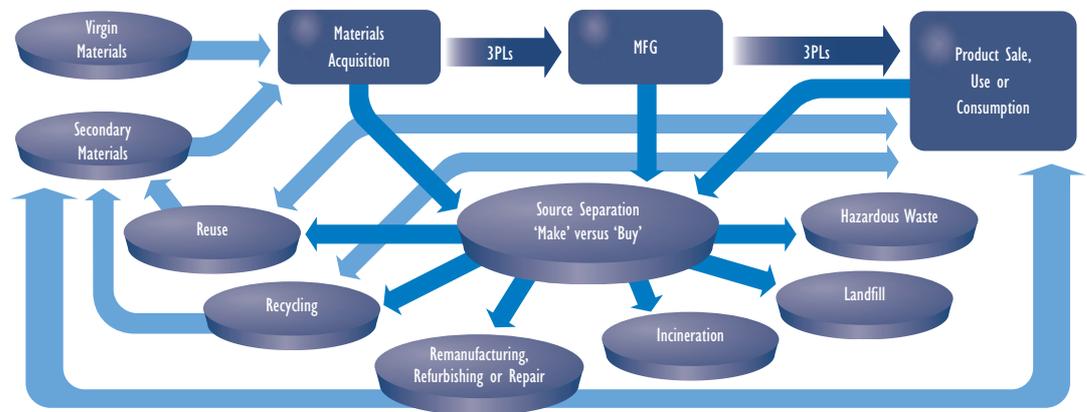
5. *Bizrate.com*

6. *Jupiter Research*.

7. *Returns Online, Inc.*

8. *R. R. Donnelley Logistics*.

Figure 1: Reverse Logistics Within One Portion of a Typical Supply Chain



Source: James R Stock

of supply chain management systems because of the cost and service dimensions associated with the process. Inasmuch as product returns are a fact of life for manufacturers, traditional retailers, e-tailers, logistics service providers and others, reverse logistics will likely increase in importance.

### Successes in Reverse Logistics

While it is probably true that relatively few firms have implemented optimal reverse logistics programmes, there have been some 'success stories' worth noting, such as the following.

- Egghead processes more than 70% of product returns within 24 hours; 95% are processed within 48 hours. The firm believes that the improvements in customer service and financial results of their programmes are competitive advantages.<sup>9</sup>
- Yantra PureEcommerce software consists of a
  - “... platform for managing customer orders and a web-based portal for linking the retailer with its network of suppliers. The multi-step software package allows the consumer to initiate a return via the Internet or telephone, then receive an authorization number and directions as to where the item should be shipped or returned by hand. Simultaneously, the system informs the supplier that a return is on the way, then provides status reports on its transit.”<sup>10</sup>

- Levi Strauss, in conjunction with Genco, a third-party reverse logistics service provider, developed a returns-processing method that computed estimated costs, generated paperwork in advance of the product being returned, matched the item automatically with the prepared paperwork and processed the item within 72 hours.<sup>11</sup>

- Three major transportation providers, FedEx, United Parcel Service of America, Inc. (UPS) and the US Postal Service, provide e-tailer customers with online return labels, saving both customers and companies time and money.<sup>12</sup>

- Buy.com, an Internet superstore, utilises UPS for its product returns.

*“Instead of calling a toll-free number and going through the usual rigmarole, customers can go to Buy.com’s Web site, log onto the returns area, go through a self-service process that lets them obtain a return merchandise authorization (RMA) number, generate and print a pre-addressed return label, and get complete shipping instructions, a list of local drop-off locations, and maps.”<sup>13</sup>*

- Sierra Trading Post minimises customer returns by utilising a variety of strategies on the forward logistics side, such as:

*“... the company hired a size and fit specialist for shoes and puts a lot of effort into accurately representing product colors in its catalogs,*

9. Leslie Hansen Harps, “Getting a Good Return”, *Inbound Logistics*, Vol. 21, No. 1, January 2001, pp. 185–194.  
 10. Robert J Bowman, “From Cash to Cash: The Ultimate Supply-Chain Measurement Tool”, *Global Logistics & Supply Chain Strategies*, Vol. 5, No. 6, June 2001, p. 47.  
 11. Presentation by Levi Strauss at Annual Conference of the Council of Logistics Management, September 2000.  
 12. “Parcel Carriers are Helping e-tailers Handle Returns”, *Logistics Management & Distribution Report*, Vol. 39, No. 11, November 2000, pp. 24 and 27.  
 13. Dana Dubbs, “Many (unhappy) Returns”, *Operations & Fulfillment*, Vol. 9, No. 3, March 2001.

including describing the various shades within a single color range. *Sierra Trading Post* also regularly pulls together a group of employees to try on different shoes and then works their feedback about the footwear into the catalog copy, along with recommendations.<sup>13</sup>

- Canon Computers has reduced open chargebacks from US\$37 million in 1997 to US\$15 million in 2000. Most were due to errors in pricing or missed shipping dates, etc. With the reduction of errors prior to shipping, returns are minimised.<sup>14</sup>
- Oxford University Press has reduced its handling time for product returns from four weeks to four days through better information management and faster processing at their distribution centre.<sup>15</sup>

The results of reverse logistics successes are improved service levels to customers and better financial performance for the supply chain as a whole and its members individually. To realise these benefits, companies must recognise some basic 'truths' regarding reverse logistics strategies and programmes. They must be able to identify the similarities and differences that exist between forward and reverse logistics, and translate them into strategies and programmes that result in win-win situations for customers and the firm.

### Reverse Logistics 'Truths'

Whether strategies/programmes are developed for a supply chain or its individual members, there are several important truths regarding reverse logistics that have significant implications for costs, revenues and customer service. There are many that could be listed, but some of the more important ones are identified as follows, along with some of their general implications.

- The most successful reverse logistics solutions merge efficient forward and reverse flows into one process. Implications are that, in much the same way as companies realised significant customer service and financial benefits through the integration of inbound and outbound distribution activities, the combination of forward and reverse logistics together result in benefits. Equipment, facilities and personnel can share both forward and reverse logistics activities, resulting in synergy in terms of reduced costs and improved service levels.
- Reverse logistics programmes should be developed primarily for 'uncontrollable returns' and not all
- returns, which also include 'controllable returns' (for example, wrong product or quantity shipped, out-of-date products, damaged products). The implications are that, sometimes, firms develop systems and programmes for all returns, even those that could be eliminated through improvements in product quality, better on-time delivery performance, or a reduction in shipping errors. Optimal reverse logistics programmes should be developed only for those uncontrollable returns.
- Shorter product life-cycles require a faster return on investment from all systems and processes of a company or supply chain, including the reverse logistics process – for example, personal computers have a marketing life of 26 weeks, semiconductors nine months.<sup>10</sup> The implications are that products with short product life-cycles lose their value more quickly. Thus, any delays in forward or reverse logistics that keep the items in the distribution system longer than necessary will result in some loss in product value. As products move into the mature or decline phases of their product life-cycles, prices tend to decline, causing margins to shrink.
- When communication gaps or misinformation occurs, physical product tends to fill in the gaps.<sup>10</sup> The implications here are that, historically, safety or buffer stocks are typically larger in companies or supply chains when inefficiencies exist within or between firms. For example, lack of information about customer demand requires additional products to cover for the uncertainty in demand. Lack of data on when transportation carriers will make pick-ups/deliveries requires that shippers/consignees hold more safety stock to cover for transport uncertainty. Generally, uncertainties usually result in excessive safety stocks as a means for protecting the firm or supply chain.
- Most distribution facilities were not designed to handle reverse product flows, nor are personnel trained to effectively or efficiently decide whether to reshel, repair, discard or return items to vendors/suppliers.<sup>16</sup> The implications are that, often, when touring warehouse facilities or retail 'backrooms', product returns are usually just 'sitting around' rather than being handled and stored with the same diligence as products moving in a forward direction. Pallets of returns do not resemble the neat and efficient stacks of new merchandise being shipped to customers. Usually, returns are placed in a more haphazard fashion on

14. "Canon Slashes Chargebacks by Underscoring Accountability", *Chargebacks Solutions Monitor*, Vol. 4, No. 4, February 2001, p. 3.

15. Jennifer S Kuhel, "Reversal of Fortune", *Supply Chain Technology News*, Vol. 3, No. 5, May 2001, pp. 40–45.

16. Robert J Bowman, "E-tail Distribution: Making it a Two-way Street," *Global Logistics & Supply Chain Strategies*, Vol. 5, No. 2, February 2001, pp. 44–48.

pallets and shrink-wrapped to maintain their integrity. Products being returned may not be in the same boxes in which they were shipped, so the use of bar-code reading devices may not be appropriate. Each item must be checked individually to determine its specific identity.

- Good product quality and efficient logistics programmes on the forward side invariably reduce the number of returns on the reverse side.<sup>13</sup> The implications here are that 'the best return is no return'. Product returns that can be eliminated before they become returns dispense with unnecessary time and costs needed to handle, store and dispose of them. The most highly efficient and effective forward logistics programmes have fewer product returns as a percentage of total revenues or sales. Optimal reverse logistics programmes are developed only for those returned products that need them.

Good reverse logistics programmes do not just happen. Supply chain members and logistics service providers must devote sufficient resources to planning, implementing and controlling reverse logistics strategies, policies and programmes.

## Conclusion

Individual firms and supply chains will continue to seek ways to achieve competitive advantage. Reverse logistics will be one way to reduce costs, increase revenues and customer service levels and help to obtain market advantage. To accomplish this task, metrics that measure various aspects of the reverse logistics process must be developed and implemented. These metrics across the supply chain are equally important in forward or reverse logistics (although common metrics are much less evident in reverse logistics). In a related way, whether items are in forward or reverse channels, they impact a firm's financial statements in similar ways. For example, product returns reduce current assets (accounts receivable are reduced; inventory values are lower for returns), reduce fixed assets (more depreciation), increase short-term liabilities (repairs and refurbishment of items), decrease sales revenue and increase cost of sales.<sup>17</sup> In sum, for many reasons – costs, customer service and revenue – reverse logistics is an increasingly important part of current and future supply chain strategies. It behoves firms to be on the leading edge of reverse logistics process development. ■

17. Ron Giuntini, "The Reverse Supply Chain – Unplanned Returns: Managing the Accrual Expenditure Accounts", The OEM Product-Services Review, June/July 2001, p. 3.

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