

Challenges in reverse logistics



Reverse logistics—the movement of products back toward the manufacturer in a channel of distribution—is a topic that has been given scant attention. However, the increased contemporary emphasis on reverse logistics appears to be the result of public policy and social marketing influences. Broadly speaking, reverse logistics may be the result of one of the following types of initiative:

Customer initiative—voluntarily returned goods.

Government initiative—product recalls.

Industry initiative—recycling.

The latter two factors have a distinct consumerist/public policy flavoring, and have become mainstream issues largely in the past thirty years. For instance, while product recalls have existed since the early years (Schneider 1974) of the 20th century, they have become prevalent only since the mid-1960's. Two important pieces of federal legislation—the Motor Vehicle Safety Act of 1966 and the Consumer Product Safety Act of 1972—have generated an increased number of product recalls. Similarly, interest in recycling surged in the late 1960's and early 1970's.

As a result, prior to the mid-1960's, it appears as if reverse logistics considerations primarily involved customer initiative. Since customer motivated return of goods is a relatively small-scale phenomena, it was overlooked by scholars. As a result, the reverse logistics costs, both direct and indirect, associated with voluntary returns are likely to be miniscule. This

low cost scenario provides one explanation for why the distribution ramifications of voluntary returns have gone unstudied.

On the other hand, government-initiated and industry-initiated reverse logistics are generally conducted on a much larger scale than is the case with voluntary returns. For instance, with respect to recalls, in 1979, one firm (Corning Glass Works) had to recall nearly 18, 000, 000 (CPSC Annual Report, Fiscal Year 1979) defective items of the same product. As a result, the costs associated with recall and recycling are likely to be greater than those of voluntary returns. And, since physical distribution is concerned with costs, it is only natural for there to be greater interest in either government-initiated or industry-initiated reverse logistics.

Virtually all companies must deal with returns. Consider such diverse organizations as Phillips Electronics and Aurora Health Care Pharmacy. Both companies are highly successful in dealing with returns. Phillips reduced the number of returns from 1. 2-1. 3 million per year to less than 500, 000 (Sciarrotta, 2003). Aurora keeps returns at less than 2% of its total inventory despite stringent FDA regulations related to expiration dates, manufacturer recalls, and proper disposal of drugs (Morton, 2006). The common success factor: both firms have established and meticulously enforced returns-related policies and procedures. They each put a structured program in place to manage returns (Morton, 2006; Sciarrotta, 2003). Regardless of products and/or services involved, managers need to get control of their return operations.

Control has been recognized as a crucial component of supply chain management (SCM): “ The first step (in SCM) is to introduce structure and discipline to the supply process, tightening up procedures, and taking control of all activities in the supply chain.” (Sandelands, 1994, p. 44). One important way to introduce such structure is to formalize the operation. Level of formalization is indicative of how much control a given firm has over its reverse logistics operations. Thus, the issue of control becomes associated with the formal development and implementation of written down policies, rules, and procedures related to reverse logistics.

Literature review and practitioners’ perspectives indicate that formalization is a necessity for managing all aspects of the distribution effort including the return movement of goods and services from the market. The purpose of the current research is to provide an analytical tool for measuring the level of reverse logistics process formalization achieved. Such a tool will allow for a more precise assessment of firms’ readiness to deal with the complexities involved in managing reverse logistics. Accordingly, this study examines the relationship between reverse logistics program complexity and reverse logistics process formalization.

James (1974) recognized that transportation and warehousing are key components of a reverse distribution system. Large companies are heavy users of private warehousing. One advantage to private warehousing is control; perhaps one aspect of control is an efficient procedure for calculating warehousing expenses. The transportation-related research that has been done suggests that, for the most part, affected companies bear (Yaros 1976) the freight expense for recalled products. However, only about

one-quarter of the affected companies (Yaros and Wood 1981) have control over carrier selection.

Three warehousing-related variables —contract warehousing, private warehousing, and relative use of private warehousing— that show statistically significant relationships with revenues at all locations. Contract and private warehousing are more prevalent among larger firms; this may be an indication that larger firms strive to exhibit more distribution control than smaller firms. Among those firms who utilize private warehousing in both forward and reverse distribution, large firms tend to use private warehousing more in the forward channel. This may be an indication that larger companies are more flexible in their warehousing patterns. That is, the magnitude of a recall might influence whether or not private warehousing is used in the reverse channel (e. g., for “ small” recalls, private warehousing may not be utilized).

Reverse Logistics

Reverse logistics is “ the process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or for proper disposal.” (Rogers & Tibben-Lembke, 1999, p. 2). Despite the growing recognition of the importance of reverse logistics, many companies are not ready to meet the challenges involved in handling returns. The rapid growth in the volume of returns far outpaces the abilities of firms to successfully manage the returns (Rupnow, 2007). Because of all the uncertainties involved, reverse logistics program development and implementation

becomes very complex. The major challenges involve the considerable number of unknowns that have to be accounted for in developing reverse logistics programs (A. T. Kearney's Executive Agenda, 2004).

The process of measuring and analyzing returns-related performance criteria is aimed at improving reverse logistics quality and identifying potential problem areas. The following metrics were identified by returns managers as the most important reverse logistics indicators: 1) volume of returns; 2) type/condition of returned product; 3) dollar value; 4) percent of sales; and 5) resources, including human resources, dedicated to returns. In-depth analysis of these measures can help to identify problem areas. Analyzing the volume, type/condition of returns, dollar value, and percentage of sales can provide a comprehensive list of reasons for returns and identify trends. For example, if a particular customer is constantly abusing the returns policy, this will be apparent when volume of returns and percent of sales data are analyzed. Type/condition of the returned product measures can uncover damage-related problems with specific carriers. R&D product designs and/or supplier selection procedures can be reconsidered if the number of defective products coming back exceeds a pre-determined level.

Measuring and analyzing reverse logistics programs can streamline resource allocation decisions as well. Targeting resources to potential efficiency gains should be a priority. Some firms start to apply reverse logistics-specific ROI ratios to identify the value-added to both the firm and the customers.

Investments in employee training and new reverse logistics technological solutions, for example, are tied to pre-determined performance outcomes. Process formalization will enable the application of standardized analytical

and measurement tools, like ROI, which can provide feedback useful in improving the service-quality and economic performance of the reverse logistics program.

The Effects and Implications of Reverse Logistics Process Formalization

Consistent with the RBV of the firm, in its dynamic capabilities extension, (reverse logistics) processes/competences help to transform property-based and knowledge-based resources into enhanced (reverse logistics) capabilities and (reverse logistics program) performance (Teece et al., 1997). The formalization of these processes/competences becomes a necessary condition for building a state-of-art reverse logistics program. The formalization of the reverse logistics processes addresses the issue and provides several related benefits discussed bellow.

First, the formalization of the reverse logistics program can serve as a foundation for developing and implementing a solid monitoring system. Specific measurement items can be developed to help companies get control over their reverse logistics operations through increased visibility of the processes and activities involved. In addition to enhancing control, multiple monitoring/check points can help firms to modify certain processes and related activities. A constant feedback system can be established allowing for continuous process improvement.

Second, reverse logistics program formalization defines roles and responsibilities. A clear and shared understanding of what is involved in managing returns can increase employee motivation and contribute to

increased operational efficiency. Clear delineation of required activities and associated responsibility can reduce returns processing time. The managers interviewed believe that reverse logistics process formalization allows employees to focus on ways to increase productivity. Measurable gains can be achieved, for example, by avoiding discussing potential options for every returned product. Instead, the prescribed policy/rule can be automatically applied. In addition to pure operational gains, providing structure to the reverse logistics program can contribute to enhanced performance by enabling reverse logistics personnel to build upon shared and in-depth, firm-specific knowledge and experience. Capturing standard policy through written formal procedures provides institutional memory and creates a firm-specific knowledge database.

Next, reverse logistics program formalization can help to identify necessary resources and indicate how resources should be utilized. A step-by-step schematic of what exactly is involved in handling returns can greatly contribute to securing senior management support. Problem areas can be readily identified as well as potential economic and strategic benefits.

Tailored investments can be made, for example in returns inspectors training and wireless technologies. These investments should be related to clear-cut performance outcomes through developing distinct IT, innovation, and responsiveness capabilities. More importantly, gaining support for reverse logistics was cited as the necessary first step in changing the attitude toward returns, the culture from “let’s try to lose less money” to “let’s try to identify opportunities.”

The development of an effective, formalized reverse logistics program can also help companies to improve relationships with customers. When reverse logistics processes are formalized and documented at the detail level, preparing a customer-tailored offering can become less burdensome. Different activities can be adjusted as necessary and presented to the customer. The reverse logistics program can become an important element of the overall selling effort. Leading firms in reverse logistics management already include returns experts as part of their sales team. Formalization of reverse logistics processes can become a key, customer-oriented strategic tool.