Strategies to Optimize Return on Investment (ROI) Through Effective Reverse Supply Chain Programs

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Abstract

According to a study conducted by Dr. Dale Rogers, Professor of Supply Chain Management of University of Nevada, U.S. companies spent over $35 billion a year to handle Reverse Supply Chain problems and issues in 2000.

As indicated by Gartner Group (May, 2001), returns can erode 100% of the profit margin on the Cost of Goods sold if not managed effectively and efficiently.

Supply-Chain Services, Inc. (SSI) manages national and/or regional product return programs for Fortune 1,000 OEMs. We specialize in industries such as telecommunications, consumer electronics and industrial electronics. We have acquired considerable knowledge and experience in structuring a viable Reverse Supply Chain Model that maximizes OEM's Return on Investment (ROI).

In this paper, we would like to share this model with the industry.

Keywords
Supply Chain/Reverse Logistic Management

RETURN GOODS CATEGORIES

There was a misconception that returns are largely comprised of defective goods. However, on the contrary, according to SSI as well as its OEM customers' statistics, only 6-15% of returns contribute to defectiveness of equipment or components. There are a lot more complex factors that contribute to returns.

In general, there are two major sources of returns:

1. Returns from OEM's business customers: retail stores, distributors, wholesalers, service providers (such as cellular service providers Xingular and Sprint to Motorola and Nokia), etc.
2. Returns from consumer end-users to retail stores, catalog houses or internet based retailers

Different types of customers have different reasons for returning goods.

Business Customers

- **Overstock Inventories:**

This category could account for 30-40% of the returns. They are usually goods returned from OEM's customers (i.e. large retail stores, wholesalers and distributors). Typical reasons for overstock are inaccurate forecasting, overly aggressive sales management, declining economic conditions, successful competitive strategies and unsuccessful marketing campaigns.

Some OEM's are implementing tougher return policies, however, large customers still have a powerful advantage via their buying power. One OEM tactic is to accept returns in exchange for new orders of newer models. For example, one OEM we work with was asked to take 20 trailer loads of products from Walmart's four Distribution Centers. In exchange, Walmart gave them a new order of considerably more value. The OEM was then faced with new product in packaging imprinted with "Made for Walmart" on the backside. SSI minimized the OEM's return costs by replacing the private labeled packaging with the OEM's standard packaging, enabling them to sell the returned product to another customer at a higher price.

OEM's can make more profitable business decisions with their customers by educating their sales management teams of reverse logistics and repackaging costs. Successful business partners understand that their partnerships are the strongest when both parties are able to make win-win decisions. Minimizing costs on both sides ultimately means higher profits overall. SSI educates its customers about return/reverse logistics costs before they make returns/exchange decisions.

- **Errors**

Errors occurred when customers order the wrong items or OEMs pick and ship the wrong items.

- **Damaged Goods**

Damage goods are often due to negligence during transportation, loading/unloading and shelving at retail stores or distributor's warehouses. Usually, only the corrugated packaging box is damaged, not the product itself. A well thought out plan needs to be implemented to minimize reverse logistics and redeployment cost versus value of **each product or product category.**

- **Cancellation of Orders**

Large business customers of OEM's have the muscle to cancel orders when it desires. Smaller customers may be charged for certain penalties.

- **Obsolete and Excessive Inventories**

  The rapid changes in technology and competitive marketing strategies have caused OEM's to retire large volumes of inventories at an ever-increasing pace. These inventories are being returned from OEM's distribution centers and field warehouses. For example, several of SSI's OEM customers purge their inventories twice a year. Each time, there are about 30-40 trailer loads of new product in original, unopened packaging. SSI provides an efficient, inexpensive de-manufacturing and domestic recycling service to insure these products do not re-enter their supply chain. OEM's who are educated on recycling costs can project them into their overall pricing policies.

Consumer Returns

Historically, consumers were not direct customers of OEMs. However, the internet is becoming an important sales channel for OEM's to sell product direct to consumers. Whether consumers purchase from the traditional retail channels or direct via an OEM web site, their reasons for returning products are usually more diverse, more complex, more expensive and sometimes more suspect.

Based on SSI's experience of serving as a national return center for OEMs in a wide variety of industries, returns from end-users can be summarized as follows:

- **True Defects:**

  When asked about returns, many people (even top management of OEMs) believe most returns are a result of defective products. However, according to SSI's experience and industry statistics, only about 6-15% of returns are defective. For electronics, the average is about 10%.

- **Perceived as Defects Due to Product Usage Complications**

  Returns under this category could be as high as 30%. As technology improves, it gets more and more complicated to install and operate new products. If the operation manual is not clear enough, the consumers are not technically savvy, or the consumers do not have enough time to read the fine details, the product may be returned as defective.

  One of SSI's OEM customers experiences high return rate on their satellite dish systems. After an in depth study, it was learned that many consumers were frustrated by the perceived complexity required to install the dish. By identifying the problem, Based on SSI's research, the OEM added customer service representatives and 800 lines to help challenged customers achieve successful installations. Through this action, returns were reduced by approximately 80%.

  Another SSI customer is a leading landscape lighting manufacturer. They experience a high return rate on solar powered lighting systems. Customers returned the products at will, but were not asked about their reasons for returning. SSI alerted the OEM about the high number and cost of recycling batteries. A study was conducted and learned that the customers did not understand that the first charge of the solar charged battery dictated the "full charge" level of the battery in the future. If the battery was charged for an hour, a computer chip in the battery would consider that level "full charge" forever. After this problem was identified, the OEM made a major change in its instructions. They used drawings, large fonts and colors to underscore this issue in the operation manual and product packaging. Afterwards, the return rate was significantly reduced.

- **Pricing Difference**

  When consumers find a better price for the same product at another store, they will return the product to the original store within the period of time allowed under the return policy. When consumers return the products, they could have opened or even used the product.

- **Not as Expected**

  OEMs and retail stores spend millions of dollars in advertising to attract consumers to purchase their products. Features and benefits may be overstated. When consumers actually use them, they may feel that the products fall short of their expectations. The higher the price of the product, the higher the return rate will be.

- **Missing parts or Components**

  Depending on the product, whole units may be returned because some small, but vital part is missing. Even though information is provided to arrange for missing components to be sent from the OEM to the consumer, the consumer may elect to return the whole unit because it is less expensive or less time consuming.

- **Wrong Size, Model or Parts**

  Wrong size problems occur frequently in the clothing industry. The mistake could be the fault of the consumer or a labeling mistake of the OEM. Wrong model often occurs with purchasing a part or accessory to match existing equipment. For example, a consumer purchases the wrong cable for a computer or printer. Definitely, the product itself has no defects, it is the user who made the wrong purchasing decision. However, the product packaging is usually opened and used, as a result, it can not be resold as a brand new product at a normal price.

- **Impulse Buying and Buyer Remorse**

Impulse purchases account for a significant percentage consumer purchases. Buyers remorse then becomes a significant contributor to product returns.

- **Recalls and Warranty Returns**

  Recalls and warranty returns do not fall under the normal return stream. These types of returns usually cost more to handle.

  In addition to the costs involved in handling normal returns, costs incurred in handling recalls and warranties are:

  1) Verifying ownership information
  2) Verifying if warranty has expired
  3) Cost of testing, repairing and parts
  4) Cost of new replacement if repair is not feasible
  5) Cost of detail recording of each of the returns
  6) Cost of repackaging and shipping
  7) Cost of company's image in producing quality products

- **Bad Intention**

  As SSI processes our customers' returns, we have identified about 5-10% to be categorized as "bad intention". For example:

  1) Printers are returned without printer cartridge: People purchase the printers to get free printer cartridge;
  2) PCs are returned by college students after final exam;
  3) Consumer electronics are returned with a total different product: This is the worst return scenario. Negligence at the retail store return desk is the primary reason for this return issue.

ANALYSIS OF OEM'S CURRENT MODEL OF MANAGING RETURNS AND EXCESS INVENTORIES

As pointed out in the Abstract section of this article, U.S. corporations spend about $35 billion annually to handle reverse logistics. The major costs are in the following areas:

- Transportation/ Logistics
- Warehousing
- Processing: receiving, recording, inspection, testing, repair, repackaging, re-distribution, etc.
- Reconciliation: costs in reconciliation effort spent with customers, suppliers, as well as on inventory and financial records.

The high cost of handling returns can be minimized if effective efforts would be devoted to the whole process. However the majority of the OEMs, particularly the industrial electronics industries, do not have a well defined and managed mechanism to handle returns in the same way that they take on the new product distribution logistics. Before we recommend strategies to curt costs and enhance their return on investment, it is critical for us to perform a detailed examination of their entire reverse logistics and return practices:

- **Lack of Visibility Throughout the Entire Reverse Logistics/Supply Chain Process:**

  As we observed, this is the single most critical factor that causes all the inefficiency problems in managing reverse logistics. The major reason is a lack of a well-designed dedicated information systems. This system must be capable of allowing OEMs to approve, track and control the movement of returns. Without this type of control, we see double or triple handling of returns. Also, during the process, OEMs have little control or knowledge over several major issues:

  1) Whether a Return Merchandise Authorization (RMA) should be approved:

  Clear and consistent policies regarding RMA rules need to be in place and accessible to anyone in a position to authorize returns. We have witnessed that some OEMs are still using manual methods to process RMA's. Policy changes are often overlooked or misunderstood.

  2) All the parties involved in handling the returns are not well-informed:

  - The Logistics Department does not know if the customers have shipped the authorized products or inventory. If the products were shipped, they also do not know where the shipments are and when they will receive them.
  - The Receiving Department does not have sufficient information to verify if the returns received are in fact the products or inventory being approved by the RMA person. Many times, they are not sure of the quantity of each model that the customers are authorized to return.
  - The Processing Department does not have sufficient information on the issues of the returns. For example, if the returns are excess inventories, defective items, ill designed manual, or other reasons mentioned in the previous section "Return Goods Categories." If the returns have defective problems, what are defects identified – not enough power? short of accessories? or simply cosmetic problems? Without this input, it will take the Processing Department extra or unnecessary time to perform diagnostic tasks.
  - The Accounting Department does not have sufficient information to perform financial reconciliation in accordance to the sales or return terms, actual received returns, etc. This not only is costly, but also could cause unnecessary conflict with valued customers.

3) The Management needs information to make intelligent product, marketing and sales decisions. For example:

- Design Engineering Department: Needs sufficient statistics to show what design changes need to be made.
- Purchasing Department: Needs sufficient information to identify suppliers/vendors who make non-quality parts or products.
- Sales/Marketing Department: It is critical that detailed analysis of customer returns be provided to the Sales/Marketing Department to help them negotiate future contracts with customers. The analysis should include:
  - Return reasons by customer
  - Volume of returns by customer
  - Review of sales agreement terms with different customers

- **Lack of Velocity in Managing Reverse Logistics/ Supply Chain:**

  How fast the returns could be shipped back to the return center and the speed of the returns are processed play important roles in minimizing return goods losses. This is particularly critical for technology products that changes rapidly. However, our experience and observations are quite on the contrary:

  1) The lead time that a product can be returned is very long. Once a consumer returns the product back to the store, retailers immediately issue credit to the consumer. At the same time, retailers also request RMA and credits from OEMs. However, they let the returned products sit in the store's back room until certain quantity of returns is accumulated.

  2) We have toured many OEMs plants or distribution centers (DC's). We observed that returns are usually being staged at the back of the facility. The allocated space is cramped. There is no or limited shelves to organize the returns.

  3) OEMs do not allocate sufficient staff to handle returns. Some even do not have regular dedicated staff. When the production is slow, then they will shift certain staff to process the returns. In essence, returns are not viewed as a priority.

STRATEGIES TO EHNANCE RETURN ON INVESTMENT (ROI) THROUGH EFFECTIVE REVERSE LOGISTICS/SUPPLY CHAIN PROGRAMS

All the above analysis was written for the purpose of setting the stage for the heart of this article, that is Developing Effective Strategies to Enhance the ROI on Returns by correcting and streamlining the process. Once the issues and problems are identified, appropriate strategies can be readily developed. The strategies are centered around one main concept:

Cutting Costs and Increasing Revenue Through Reverse Supply Chain Intelligence

Strategy # 1: Strengthening the Front Line

There are two aspects of the "Front Line;" one toward the business customers, one toward the consumers.

1) ***Business Customers***

The key in this area is to take preventative action so the returns from business customers could be minimized. It is important that OEMs establish better and fair return policies and then stick to them.

Many times, sales managers' eagerness to get orders from large retailers and distributors convince their companies to accept costly return policies. Understanding the costs of reverse logistics/supply chain and to comprehend each of their customers' return patterns and history is the key to making intelligent decisions in the sales cycle.

Company's top management should also closely monitor the sales and marketing managers from giving deep volume discount or special promotions to retailers or distributors who are not able to sell the quantity of products under the promotion program. Sales and marketing manager's performance measurement and commissions should be tied in with the expense incurred for returns.

Clear policies and guidelines should be instituted. What can and cannot be returned should be clearly delineated. Which party should bear the responsibility of the costly transportation expenses should also be clearly defined.

2) ***Consumer Customers***

Liberal return policy of the retail stores is the other major reason for the high cost of return management. The retail store is the gatekeeper of the returns. If there is no sufficient control mechanism instituted at this initiation level, the cost for handling returns will be compounded down to each step of the return process.

There are several ways that retail stores can help curtail the cost of returns:

- Institute tighter return policies:

  Several major retailers such as Best Buy have taken initial steps to minimize losses from returns. Allowable return lead time has been shortened for PCs, printers, and other electronics. Stricter rules were set up to prevent consumer customers from taking advantage of the return policies.

- Returns should be checked at the return desk: Retailers need to train their staff how to check the return goods to insure that customers:
  - return what they bought
  - return all the accessories such as printer cartridges or camera batteries
  - give a detailed reason for the return

Strategy # 2: Optimizing Visibility and Velocity by Installing Dedicated Software Programs for Return Logistics/Supply Chain

As stated earlier, the issues and demands involved in the Reverse Logistics/Supply Chain are quite different from those in the Forward Logistics/Supply Chain. Dedicated software is very crucial in assuring greater management control and speed throughout the post sale Supply Chain Process.

The key concept for the design of a robust software is to:

Optimize Visibility by Empowering Intelligence to Eliminate Double and Triple Handling While Streamlining the Whole Reverse Supply Chain Process

What features should be incorporated into a truly powerful Reverse Logistics/ Supply Chain software?

- **Decision Tree Based Structure**

  The software developer should work with the OEM management to establish a clear decision tree structure. The right decision tree eliminates the need for manual decisions by personnel on the reverse route of each SKU before it is shipped. In other words, the software will eliminate poor decisions made by uninformed employees and automatically dictate the best destination and handling options.

  The benefits of a decision-tree based software are the minimization of transportation cost, elimination of multiple handling, improving the speed of the whole returns process and cut the cost of mistakes. At the same time, increased reliability and efficiency can be attained.

- **Web-Based Real Time Communication**

  Just like the Forward Supply Chain, timely communication is critical throughout the reverse supply chain. Therefore, the software needs to be web-based allowing real time communication among all parties involved. For example, as soon as OEM authorizes RMA:

  - The shipping labels with correct return center address, customer ID and RMA numbers with barcodes can be automatically printed by the requestor. This automation capability not only will avoid any mistakes and confusion, more importantly saves substantial manpower to generate and track all the shipments.
  - A pre-contracted transportation carrier will be automatically notified so a timely pick-up can be scheduled.
  - The returns processing center (may be OEM's own facility or a 3rd party service provider such as SSI) will be instantly notified and alerted of the upcoming shipment to the center. In addition, the models, quantity and return reasons are also well communicated ahead of time. With this knowledge, the processing center can forecast its workload and be well prepared before the shipment arrives. What actions (testing, repackaging, parts retrieval or recycling) need to be taken for each of the returned products will be predetermined to save guessing, evaluation and back and forth communication time.
  - Every critical step and decision-making point (such as inspection/testing, repair, repackaging, recycling) is to be recorded. Through real time capability, OEMs can monitor reverse inventories, forecast the availability of re-sellable items and parts, and make important business decisions to improve operations and ROI.

Strategy # 3: Enhancing Velocity by Capitalizing the Strength and Efficiency of a Professional Service Partner

Time is money! In the Reverse Supply Chain world, this could not be more true, especially for electronics. As discussed earlier in this article, many OEMs do not treat reverse supply chain as a top priority. However, they do not realize how fast they are loosing money every day at the other end of the business in view of the rapid obsolescence rate of electronics.

As compared with Forward Supply Chain, managing Reverse Supply Chain definitely is not OEMs core competence. Particularly, at the time of a slow economy, less and less manpower will be devoted to this area.

Reverse Supply Chain Management is a make or buy decision for the OEM. To cut cost they must budget the resources to improve their system, or establish a partnership with a professional reverse logistics outsource.

The benefits of using a professional Reverse Supply Chain Service Provider (RSCSP) are as follows:

- RSCSPs usually serve multiple customers in similar or diverse industries. This allows OEMs to readily capitalize their established infrastructure and valuable experience. In addition, the fixed costs are shared among all the customers. In other words, each OEM's expense in handling reverse supply chain can be substantially reduced.

- RSCSPs usually have dedicated facilities, well trained staff, well organized set-up and well run processing procedures. It usually only requires a very short learn-

ing curve for new projects. Once RSCSPs grasp the key factors of managing the returns for any new OEMs, the processing speed will be faster and thus quickly achieve optimal efficiency.

- RSCSPs usually have better developed software devoted to the Reverse Supply Chain management. This will not only minimize OEMs cost in developing expensive software, but most importantly, provide OEMs with an effective tool to make better asset recovery management decisions.

As our experience has shown, a good RSCSP will significantly enhance the velocity of the Reverse Supply Chain. This translates into faster profit recovery rate and eventually better ROI.

Strategy # 4: Maximizing Return on Investment (ROI) by Building a Network of Secondary Markets

Times have changed. A few years ago, all the OEM customers that SSI serves all wanted us to perform total product destruction even if the returns were brand new untouched overstock inventories. Nowadays, the mind set has changed. More and more OEMs are asking us develop manageable secondary markets to help recover their financial losses. OEMs also begin to realize that the customers profile in a secondary market is different from the primary market. Under a well-defined and managed market segmentation program, concerns over secondary markets interfering with their primary markets is minimized.

Many OEMs believe they are capable of finding the best markets for their returned goods, no matter what the return reasons are. However,

Returned, overstock and obsolete goods is a fast moving and very specialized market. To acquire and maintain a secure secondary pipeline while maximizing the sale price requires a close vigilance over secondary markets. Most of our OEM customers have found out the hard way, this market can be a very slippery slope.

The following needs to be established to assure true success of a remarketing program:

- ***Partnership***

  Partnerships are also very important in the remarketing arena. No matter if the OEMs or non-OEMs wanted to do it by themselves or utilize a service company to manage the program, no one is or can be specialized in every industry, product line or resell channel. Multiple partnerships empower the expansion of extensive sales channels.

  OEMs or 3rd party remarketing service providers should be prepared to audit and develop authorized secondary resell channels and/or manage a bidding program.

- ***Turnkey Infrastructure***

  The goal of the remarketing program is to maximize revenue while minimizing costs. In order to attain the best recovery value, the following turnkey infrastructure needs to be established:

  - Testing

    Many times, simple testing of a returned item before it is offered for sale in a secondary market can generate two or three times more revenue than not tested.

    Product specific testing software is usually provided by the OEM customers.

  - Repair and Refurbish

    Repaired or refurbished items usually can generate top recovery dollars. However, it is expensive in terms of set-up, machine, tools, and technician cost. This function will be used only for high valued items.

  - Re-Kitting and Repackaging

    For non-defective returns with missing accessories or parts, rekitting and repackaging tasks are necessary to make them resellable items again. Cleaning and relabelling are also part of the process.

  - Parts Retrieval and Replacement

    For OEMs who choose not to resell products as a whole unit, may benefit from the harvesting and selling of parts from the product.

    In addition to resell, parts retrieval is an economical way to inventory parts for warranty or remanufacturing purposes.

SUMMARY

As discussed and hopefully demonstrated throughout this paper, Reverse Logistics can be a very positive or very negative impact on an OEM's bottom line.

In this paper, we have discussed a variety of reverse logistics challenges. We cannot over emphasize the point that ignorance of and controlling the costs of returned, excess and obsolete goods can be the single most negative contributor to a corporations bottom line.

By using information technology as the backbone and "nerve center" to enhance Visibility and Velocity is the key concept in achieving optimal ROI in the Reverse Supply Chain arena.

Every Reverse Supply Chain management center should function as a value-added service center that is aligned with the OEM's strategies in maximizing revenues and profits.