Reverse Logistics: Backwards Practices that Matter

CAROLINA LOGISTICS SERVICES
CASE STUDY

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I. GENERAL OVERVIEW

Carolina Logistics Services (CLS) has been in the reverse logistics business for more than 20 years. They are the parent company of Carolina Supply Chain Services (CSCS) and CLS MedTurn Healthcare Services. CSCS specializes in Supply Chain Analysis for all markets, while CLS MedTurn specializes in returns management for the pharmaceutical and healthcare markets. The best practices described in this case study are a combination of physical returns management practices and supply chain analysis returns prevention studies. Since CLS is the parent company, the paper will refer to all the case studies as CLS.

The CLS organization began as Carolina Reclamation Services, which was a reverse logistics company that provided software to retailer reclamation centers. Over the past 10 years, CLS has undergone a series of acquisitions, thus expanding its capacity and capabilities. In 1998, CLS acquired National Service and Supply, which launched the organization into warehouse facilities management. A second progression occurred in 2003, when MedTurn was acquired and transformed into the healthcare services division of CLS. In 2005, the organization acquired USF Processors, which provided additional return capability for prescription and non-prescription drugs. In the same year, CLS acquired Universal Solutions Consumer Products Division which included additional return capability as well as the Supply Chain Analysis capabilities supported with a national field force and a performance research group.

CLS is a subsidiary of the privately held Inmar organization, which specializes in logistics management. Inmar comprises a large family of enterprises, of which CLS is the reverse logistics arm.

With more than 20 years of experience in reverse logistics, CLS operates both domestically and internationally. The organization performs more than 1,200 supply chain audits annually and maintains 40 reverse logistics facilities, in which it manages 3 million square feet of warehouse space. CLS is supported by a highly skilled field force that uses its supply-chain-analysis expertise to service more than 250 manufacturer and retailer clients.

The CLS Supply Chain Analysis staff includes more than 50 full-time project leaders who are packaging/supply-chain process analysts. Through its alliance partners, the organization deploys field personnel in 52 countries, with current projects in 16 countries. It has more than 10,000 “on-call” field representatives worldwide, approximately 3,000 of whom are located in the United States.

CLS’ clients include organizations involved in a wide range of industries, including home and hardware, auto parts, toys, consumer goods, healthcare, pharmaceuticals, HBC, non-food grocery, grocery, over-the-counter drugs, specialty retail, footwear, and apparel. (For a partial client list, see Appendix A.)

To enable its solutions, CLS relies on its sister organization, Stratapult, an IT consulting firm providing best-in-class technology and development support. Stratapult uses its staff of 130 technology professionals and their diverse technical and business experience to support CLS, as well as other internal and external partners.

Stratapult has been recognized for maintaining the largest peak-production workload on a Microsoft platform. The organization’s staff includes two Microsoft-certified database administrators, as well as professionals with Microsoft Certified Software Engineer (MCSE) and Microsoft Certified Solution Developer (MCSD) certifications. Stratapult is experienced in current technologies and techniques for maintaining data in large-volume and high-availability production environments.

CLS has key core competencies, allowing it to provide reverse logistics services to multiple-channel partners and new markets by making minor modifications to meet the specific market needs. These capabilities are listed below.
Reverse Logistics: Backwards Practices That Matter

- Returns prevention—CLS analyzes the supply chain to reduce and avoid returns. It uses best practices to identify improvement opportunities by developing scorecards, and analyzing packaging and handling practices at all touch points within the supply chain, including manufacturer plants, distribution centers, retailers’ regional distribution centers, and retail stores.

- Returns management—CLS realizes that returns will never completely disappear. It provides a single-source solution that ranges from return authorizations to final disposition. Available services include facility management, processing of physical returns, debit and credit financial management, policy consulting, and product disposition.

- Asset recovery—CLS understands that much of the product returned still has market value. It provides value-added liquidation for discontinued, overstocked, withdrawn, surplus, closeout, salvage, obsolete, and distressed inventory while balancing between client goals of optimal revenue maximization and brand and channel protection.

- Risk management—CLS handles regulatory compliant disposition, recall management (including notification), product retrieval and payment, and counterfeit detection and monitoring to ensure brand protection and supply-chain integrity.

- Information Intelligence—CLS provides Web-based information that includes industry knowledge and insight, along with dashboards and analytics for returns-inventory management and customer, event, and supply-chain intelligence.

This case study describes CLS’ best-practice approach, providing information and examples from several manufacturer and retailer clients in industries such as household, personal care, cosmetics, over-the-counter drugs, food, specialty retail (toys, furniture, and auto), footwear, and hardware.

Reverse Logistics Supply Chain

Figure 1 illustrates the reverse logistics supply chain. It demonstrates how reverse logistics mirrors forward logistics, and how improvements in the product, packaging, distribution, sales, and marketing (represented by the green arrows) occur as a part of reverse logistics. CLS has two types of clients: retailers and manufacturers. Figure 2 illustrates the retailers’
return process flow. Returns are transported from the stores to the distribution center, which ships them to the CLS return center. Here, the returns are processed, and the disposition is determined. Depending on vendor policies, some products are returned to the manufacturer.

Figure 3 shows the manufacturers’ return process flow, which occurs when a manufacturer’s policies mandate the receipt and disposal of its own returns. In such cases, CLS helps the manufacturer process returns for disposition and credit.
II. REVERSE LOGISTICS STRATEGY DESIGN

Although cutting costs and simplifying processes are often the initial catalysts for implementing a reverse logistics program, CLS clients discover other benefits over time. In some scenarios, a client begins its relationship with CLS by asking for assistance with an immediate challenge, which could be as simple as administering the client’s policy or handling distribution center backlog. When the relationship proves valuable, the client usually requests a more robust set of services in response to changing risks or a newly arisen need for an information consultant, trading partner, or collaborator. According to Vice President of Performance Research Systems Gene Bodenheimer, “A success in one area leads to an opportunity in another.” Figure 4 illustrates the advantages that clients obtain from closer relationships with a reverse logistics provider.
The programs that CLS develops for its clients have evolved over the past 20 years in response to changing processes and demands.

The 1980s were a period of pre-reclamation. Processes were inconsistent, and the lack of data prevented organizations from determining why customers and stores were returning products. In 1985, an early reclamation period began, in which manufacturers and retailers organizations standardized processes and the amount of data increased. Access to new information led organizations to ask questions about their returns.

Manufacturers that had never experienced claims before began to receive them. They established returns policies, verified counts, and identified non-payment condition codes, which created variances; that is, manufacturers began to distinguish differences between one returned product and another. In 1989, manufacturers started to develop audit programs to verify returns and capture data regarding the condition of returned products as a way to understand the causal factors.

A joint industry report (JIR) was issued in 1990 that “levelled the playing field” regarding returns. Manufacturers began to accept limited financial responsibility and to participate in discussions concerning product ownership and disposition. Increased accountability led manufacturers to build return centers that could verify claims, amass condition-of-product data, and ensure appropriate disposition.

Manufacturers developed the first adjustable rate policies (ARPs) in 1997. The policies documented the rate at which the manufacturers would reimburse the retailer for returned products and gave the retailers the incentive to keep returns to a minimum. The policy mandated analyzing the supply chain to determine the origin of each problem and then assigning appropriate accountability. Inconsistencies in the first ARPs resulted in collaborative studies between manufacturers and retailers; during the studies, all parties that touched a particular product would work together to determine the root cause of failure.
Joyner-Payne, Vice President of Marketing says, “There is a lot you can learn from collaborative studies that benefits both parties.”

In 2005, another JIR stipulated that the best practice for returns is to handle the products at a centralized location. This ensures that the returns process can be well controlled and enables the efficient collection of returns data.

For this case study, CLS looked at clients whose reverse logistics programs have achieved high levels of success. The initial catalysts for these programs often involved increases in the rate of returns and the associated costs. Because the organizations’ returns processes were decentralized, inconsistency and inefficiency abounded. Distribution centers were experiencing space constraints, and returns sometimes bled over into plant and manufacturing space. The organizations were unable to validate their returns or issue credits to customers in a timely manner, which led to overpayment, deductions or chargebacks. In addition, ever-changing regulatory requirements were making it increasingly important to minimize risks and control disposition. Recognizing the need to streamline their processes, the organizations turned to outsourcing because managing returns was not their core business and they did not want to invest in it.

The reverse logistics program at a typical CLS client originates with an advocate. For retailers, the recommender often comes from distribution, supply chain, or inventory management. For manufacturers, the initiative is usually driven by the group that is experiencing the most “pain” from an inefficient returns process—for example, the distribution and manufacturing teams whose warehouse space is overflowing, or the finance group who sees an increase in returns.

The organization takes action by forming an approval team made up of the various organizational functions affected by returns. Final approval for the reverse logistics program usually comes either from a vice president of a division or jointly from the vice presidents of operations and sales.

Justification for funding a reverse logistics program depends on the organization’s initial catalyst. Some examples are listed below.

- If the catalyst is financial (increased return rates and associated costs), advocates for the program focus on ways in which the program would save money (such as increasing efficiency, ensuring that return policies are adhered to, and providing new data that would allow the organization to determine responsibility).
- If the catalyst involves space constraints, advocates emphasize how the program would free up warehouse space, decrease labor costs, and increase production efficiencies.
- If the catalyst is compliance with regulatory requirements, advocates compare the cost of the program to the investment that would be necessary to obtain required licenses or develop the capability in-house.
- If the catalyst is that the returns process is too decentralized, advocates highlight benefits such as lower transportation and handling costs, proper invoicing, decreased shrink, and regulatory compliance.

Clients present a business case that includes the full range of costs and savings associated with a reverse logistics program—cost to implement, cost to maintain, and payback. Program payback ranges from three months (if, for example, the organization simply wants policy compliance) to three years (if, for example, the organization becomes involved in packaging changes or returns avoidance).

Some clients opt to conduct pilot programs with limited scope in order to validate assumptions before making significant investments. However, pilots are not practical in every situation; they work best in manufacturing environments. In a retail environment, a
retail chain relies on economies of scale, so only a full-fledged program can demonstrate optimum results.

Using Data to Break Down Silos

Every CLS client has silos, which are various departments and areas separated tactically from one another. Common challenges exist across the silos, but the separations prevent employees from recognizing and addressing them. Although the clients find it difficult to break down walls and implement reverse logistics solutions, a few best-practice organizations—those with strong project leaders—have been relatively successful. These organizations establish cross-functional design and implementation teams with representatives from sales, customer operations, distribution, legal, environmental and regulatory, logistics, manufacturing, packaging, and quality. The best such teams are able to translate benefits into dollar amounts, which justifies the project funding to the executives and results in project funding.

A cross-functional team is also a helpful forum for “trade-off” discussions. Joyner-Payne says, “Whenever someone has a great idea about how you want to handle a situation, the idea will have an impact on someone else. The person with the idea sometimes does not understand that.” The team is responsible for highlighting and working around the impact.

Effective teams meet frequently. Usually, they begin with weekly sessions and later adopt a less frequent monthly schedule. The most successful organizations keep the teams in place even after implementation to facilitate process improvement.

CLS finds that certain members of cross-functional teams are most likely to resist the formation of a reverse logistics program:

- **Bodenheimer** says that in many cases the most resistance occurs in **sales**. Sales agents may be concerned about the impact that a reverse logistics program will have on their relationships with the customers; they will need to take time to discuss claim discrepancies with their customers rather than make new sales. The reverse logistics program may also affect sales commissions if the organization changes its incentive plans to be based on profits (which take returns into account) rather than revenues. Allowing sales agents to check their returns on the Web has increased sales buy-in by enabling the agents to better prepare for their account reviews.

- The **warehouse** area resists increases in transportation costs that a reverse logistics program may cause. Teams have overcome the resistance of warehouse staff by demonstrating the return on investment offered by a centralized operation.

- **Manufacturing** employees are fearful that a reverse logistics program will negatively impact their quality ratings and incentives. Teams have secured manufacturing buy-in by demonstrating how data will help them justify resource investments for improvements in materials, processes, equipment, and machinery.

A common theme in overcoming resistance is data availability. When sales, marketing, warehousing, and manufacturing are given access to Web-based data, they no longer feel powerless and are able to continually improve their processes.

Figure 5 demonstrates that disseminating reverse logistics data widely is a best practice. According to Bodenheimer, vice president of CLS’ performance research systems, buy-in increases dramatically when employees are able to access reverse logistics data easily, understand it, and use it to improve. Effective managers streamline data sharing, which helps to break down silos.
In working with many clients, CLS has found that certain actions can benefit employees in one silo while negatively affecting the organization as a whole. By sharing data across all functional areas, leaders are able to reach a consensus about which practices are best for the entire organization.

Using Data for Returns Avoidance

CLS employs extensive coding systems to categorize and process returns. Precise reason codes are assigned to different types of returns, such as recalls, withdrawn/discontinued, and damaged/outrated. Clients also collect reason codes for payment or credit (undamaged, razor cut, empty container, expired) or damage/condition reason (crushed, dented, etc.). Trading partners from all organizations involved in the supply chain (manufacturers, distributors, retailers, etc.) can assign supplemental reason codes at different points along the supply chain.

For reason code data collected at the returns center to be accurate, credible, and useful, the reason codes must be standardized. CLS works with clients to specify clear criteria for each code. CLS employees capture the reason codes at the point of the scan. CLS has developed an extensive training program to ensure that the scanners can properly analyze the reason codes for either credit or condition purposes using UPC, customer, reason code, and category.

Figure 6 shows how the issuance of credit is determined by both the retailer claim information and a physical inspection process. Best-practice clients validate and reconcile payment to the store when the merchandise is processed at the returns center. The claim is then sent to the manufacturer, which validates the claim to determine credit and responsibility. Typically, the retailer ensures that the stores are in compliance with its policies.
CLS reason codes are enhanced with two types of information: directional (which is credit information that is collected at the return center) and actionable (which is information that is collected throughout the supply chain, including at the manufacturing plant, manufacturing distribution center, retail distribution center, and retail store). Actionable information includes, but is not limited to the UPC, package condition reason, lot code, date code, pallet type and quality, and pallet configuration. CLS aggregates enhanced-reason-code data for its clients so that they can better understand what is occurring at each point of the supply chain.

Using Reason Codes to Prevent Defects

Figure 7 represents a defect tree that CLS created for a client using enhanced reason codes. Rather than attempting to expose problems by examining individual returns, this best-practice client studied the tree to evaluate plant issues.

The tree analysis enabled the client to isolate certain plants and determine if defects were plant specific or package type specific.
Another example of best practice involves a CLS manufacturer client that initiated its reverse logistics program because it lacked knowledge about deduction amounts and their validity. CLS analyzed data from the manufacturer’s enhanced reason codes and created a summary of retailer-level differences between the deduction amounts and the actual returned product amounts; the client then used this summary to identify customers with especially high numbers of returns. CLS worked with the client to match the products with the returns, helping the client to understand what was driving the returns. This enabled the client to design customer-specific buying and returns programs that, over a five-year period, reduced returns from the customers by 60 percent.

A third client, a retailer, improved its process by examining summary-level physical count differences between store-claimed amounts and actual returned-product amounts. The client was able to design a real-time reconciliation program that rapidly identifies spikes or anomalies requiring research. When problems are spotted quickly, the client can make corrections while the product is still in the pipeline. The retailer reduced returns errors by 15 percent through retraining and reinforcement of policy in the forward supply chain (the stores).

A fourth successful client uses information on the ages of returned component parts to determine whether the parts are good usable products. The organization feeds component information into the inventory system, enabling viable returned components to be used in place of new products. This has reduced the client’s need for raw materials by 20 percent.

A fifth best-practice example concerns a client’s ability to adapt to industry changes. Standards in the client’s industry were moving away from closed-code dating systems (in which only the manufacturer can decipher a product’s expiration date) toward open-code dating (in which expiration date is clearly readable by consumer). As the organization was transitioning to open coding, supply-chain analysis and reason code data collected through the returns process helped the packaging department realize that the product had an
insufficient shelf life to survive the normal velocity of the supply chain. Packaging addressed the problem by working with the quality group to change the product’s formula and extend its shelf life. As a result, returns of expired product did not increase when open-code dating was implemented. Through its reverse logistics program that included other initiatives in addition to the example above, the client was able to reduce damages by 75 percent over a five-year period.

CLS has also experienced success in using returns information to address clients’ packaging problems. By analyzing returns information related to packaging types, a client was able to determine that, no matter what type of glue was used to affix paper labels to its bottles, damage occurred. Thus, the client converted to plastic labels and reduced the number of damaged products by 91 percent.

A final example of best practice involves analyzing returns to evaluate manufacturer promotions. Most manufacturers have promotional periods, during which they push a product into the retail environment for a certain period of time. Through the returns process, CLS has been able to uncover numerous instances in which the manufacturer or retailer conducted back-to-back promotions that pushed inventory into the pipeline when it did not have as much as 50 percent sell-through of the original promotion. Too much inventory in the pipeline can lead to physical damage and, for dated products, expiration risks. However, by analyzing returns data, CLS helped clients make better promotional decisions.

Disposition Strategy to Meet Key Goals

Most CLS clients use a combination of the following disposition options, specifying a primary and a secondary choice:

- donation,
- secondary sales/salvage,
- destroy/dispose,
- recycle, and
- return to inventory.

Many clients create additional subcategories based on the nature of the product; for example, clients that sell returns create product categories necessary to create additional sales opportunities. They may also create additional subcategories by waste stream because different products require different methods of disposal.

Since disposition decisions depend on an organization’s attitudes toward risk and return, a best-practice disposition in one organization may not be best practice in another. One might assume that a best practice would be to recover as much product as possible in secondary-sales opportunities, but some organizations insist that all products be destroyed because risk avoidance is more important to them than are additional sales. CLS acts according to the disposition policies specified by each client. As Figure 8 shows, the number of controls an organization places on reselling is inversely proportional to how quickly and aggressively the product can be resold. CLS discusses disposition with each client to understand the appropriate balance between risk and return.
CLP provides Web-based tools for disposition analysis. This analysis includes the various disposition types, the quantity of returns, the dollar value of returns, and trends. Some analyses may include asset recovery figures, the value of the product, and the percentage of the list price that can be recovered. Dashboards are developed to assist clients in monitoring their disposition policy. These can include: percentage of product by disposition type with drill capabilities into origination source and final destination and recovery values by product or category.

For clients that cite asset recovery as a catalyst for their reverse logistics programs, CLP offers an auction site (B2Bid.com) that maximizes resale revenue. To mitigate risks, clients stipulate specific criteria regarding the buyers allowed on the site, and they carefully monitor auction activity.

Some clients are focused on maximizing the value of their disposition efforts. For instance, one client asks CLP to remove stickers from its returned products and combine various products in one box (known as a multi-pak). By this practice, the client was able to increase its product recovery rate from 20 percent to 80 percent.

A second client has packages that were damaged, but the high-end product inside was good. CLP worked with the client to repackage the product, resulting in the successful resale of 50 percent of the returned product as first quality.

CLP worked with a third client that sells a high-end seasonal product. CLP trained its personnel to perform quality audits and then repackage the product that passes the audit for first-quality condition. As a result, 98 percent of returned product is now transferred to a high-end secondary market.

For a fourth client, CLP was able to capture not only the UPC code, but also the manufacturing code (item number), which identifies the product formulation. Prior to
capturing the additional code, the client could not tell the difference, so it destroyed all returns to avoid the risk of selling reformulated product. Now, it is able to resell products. As a result, 50 percent of the product is recovered and sold to a secondary market.

**CLS Strategic Practices**

Many requests for CLS services are from prospective clients that do not understand the drivers of their returns: The organizations know they have problems, but they do not know why the problems are occurring. As part of its initial service, CLS helps a client delve into supply-chain mechanics, suggesting ways in which the client can learn more about its reverse logistics challenges and/or inefficiencies. CLS may offer to facilitate process mapping or other activities to help the client understand its pain.

CLS has worked with clients that want to begin their supply-chain analyses at the origin point of return, working backwards from—for example—a pharmacy or retail-store point-of-sale. Other clients prefer to start with the manufacturer and then work forward. CLS finds the approaches equally valid. However, one manager points out that many problems can be solved by examining the interaction between the distribution center and the retailer. Beginning at the end of the chain allows the team to reach that interaction earlier in the study.

When an organization implements a reverse logistics program, it is able to identify low-hanging fruit rapidly—within three months of operation or sooner. Correcting a buying, selling, or promotional practice is an example of action that results in early benefits. However, the corrective measures necessary to produce some long-term benefits may require six to 12 months to roll out.

One way in which CLS is improving reverse logistics efficiency is by working toward a “single location strategy.” The organization has an extensive list of retailer and manufacturer clients, many of whom are trading partners. CLS is coordinating programs in which the retailers and the manufacturers partner to perform as many returns functions as possible at the retailer’s location. This reduces costs by eliminating transportation back to the manufacturer’s location.

**III. Establishing a Physical Reverse Channel**

CLS ensures that its facilities and operations are scalable, and it locates sites within proximity of clients to reduce transportation costs. The organization uses forecasting based on product sales to determine the appropriate number of sort bins necessary for handling a high volume of returned items by UPC.

CLS designed a warehouse for one client (a specialty retailer) that enabled one-touch disposition of 96 percent of processed items. In addition, CLS increased the client’s scanning capacity by 40 percent and productivity by 20 percent; it also improved sorting accuracy and redesigned pallet tables to reduce bending and heavy lifting. However, according to Tom Marcellino, senior vice president of sales and client services, “These excellent results are not possible in all industries.” Bodenheimer adds that, “The simpler the disposition array, the easier it is to dispose of an item with one touch.”

CLS works with clients to develop process flow maps containing detailed instructions. A comprehensive map includes the physical product flow, the systems flow, and the return process flow. The return process flow includes return authorization issuance, return receipt and routing, processing and product inspection, product disposition, and product shipping. The flow maps should also include ancillary processes such as system data uploads, deduction processing, and physical inventories and audits.

Much of the disposition process is computer-aided. The UPC scan controls disposition to ensure proper sorting, either to the waste stream or to secondary sales categories. In some cases, CLS uses cross-reference tables for lot codes to systematically drive the disposition
decision. When possible, disposition decisions are made on the first scan, which minimizes costs by ensuring that products are handled as little as possible. However, certain products, such as electronics, require a second step—an evaluation—before the ultimate decision is made. Figure 9 is a sophisticated example of an asset recovery flow. In the example, the client breaks down the disposition decision into categories and takes action accordingly.

### CLS Asset Recovery Flow

1. Mfr. Returns Center issues returns authorization to retail stores
2. Retail Store ships returned product to Mfr. Returns Center
3. Mfr. Returns Center employee performs Scan, Disposition, and Sort processes
4. Product is depacked and sorted by UPC or Work in Progress
5. Mfr. Returns Center sends data to customer that feeds into their inventory system

**Figure 9**

### CLS Client Communication Strategy

CLS' communication strategy includes weekly meetings with the client’s management team, cross-functional weekly management meetings, and cross-functional weekly meetings with the client’s staff.

CLS pairs its team members with appropriate counterparts in the client organization. Aligned client-CLS team members communicate directly to address issues and smooth workflow. For example, the CLS client development manager communicates directly with the client’s program owner, and the CLS account representative communicates with client financial services. Analyst and warehouse operators from both organizations work together.

CLS employs its business intelligence tools to perform a limited amount of predictive analytics. Some clients use CLS software to study sales volumes in certain categories of products. Together with clients, the organization is beginning to predict expected returns. Sales data, for example, can be an effective indicator of return volume expectations. Prediction is most successful in cases where the product has a limited shelf life.
Reverse Logistics: Backwards Practices That Matter

Larger retail clients provide forecasts to CLS, whereas certain other clients review the product at store level before it arrives at the CLS facility. CLS finds this kind of information helpful in managing reverse logistics programs.

The extent to which CLS can rely on a client’s forecast is dependent on the maturity of the client’s program. Some manufacturers have initial difficulties forecasting returns volumes because they do not have the necessary level of data. However, as their programs mature, their information becomes more accurate. For many clients, the returns system grows to be a key component in evaluating the introduction and launch of new products. The client can analyze previous records of damage and failure to predict future product performance.

Best Practice in Organizational Structure and Ownership

The reporting structures of reverse logistics functions differ depending on the industry. Common departments in which to locate reverse logistics include supply chain, distribution, and inventory management.

Figure 10 describes how five of CLS’ clients are structured to achieve best-practice results. The table lists the process owners, their departments, the range of their responsibilities, whether they are full time, and the total number of employees dedicated to reverse logistics. Process owners in best-practice companies are full time and operate at least at a director level. Client C, which has five people working full time on returns, has attained a high level of success in avoiding returns and making improvements throughout the organization. Joyner-Payne says, “If you have at least a couple of people focusing on returns, you can really make a difference.”

CLS has found that strategy and organizational culture play a role in determining where reverse logistics is located. The area that has the most influence on other areas typically takes on the program and then integrates it with other parts of the organization. For example, Client D listed in Figure 10 houses reverse logistics in its quality department because the organization’s focus is on manufacturing excellence.

<table>
<thead>
<tr>
<th>Best Practice Example</th>
<th>Process Owner Department</th>
<th>Entire Business or By Bus Unit</th>
<th>Full Time or Part Time</th>
<th># of People Dedicated to RL</th>
<th>Executive Sponsorship Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client A</td>
<td>Director Distribution</td>
<td>Cross Entire Business</td>
<td>Full Time</td>
<td>1</td>
<td>VP Supply Chain</td>
</tr>
<tr>
<td>Client B</td>
<td>Senior Manager Customer Logistics</td>
<td>Cross Entire Business</td>
<td>Full Time</td>
<td>2</td>
<td>Director Supply Chain &amp; Customer Logistics</td>
</tr>
<tr>
<td>Client C</td>
<td>Director, Returns Management &amp; Remarketing</td>
<td>Cross Entire Business</td>
<td>Full Time</td>
<td>5</td>
<td>VP, Cross Channel Operations</td>
</tr>
<tr>
<td>Client D</td>
<td>Director Quality</td>
<td>Cross Entire Business</td>
<td>Full Time</td>
<td>3</td>
<td>VP Quality Assurance</td>
</tr>
<tr>
<td>Client E</td>
<td>Director Reverse Supply Chain</td>
<td>Cross Entire Business</td>
<td>Full Time</td>
<td>4</td>
<td>Senior VP Inventory Management</td>
</tr>
</tbody>
</table>
Tom Marcelleno, vice president of sales and client services, notes that organizations have focused increasing attention and resources on reverse logistics over the past few years. He says, “Three or four years ago, you would find the responsibility for returned goods and damaged products to be part of someone’s responsibility—a small part. In recent years, we have seen people on the director level and above committed full time to resolving these issues.” Bodenheimer agrees, saying, “It [i.e., increased responsibility for reverse logistics] has had a huge impact not only on [clients’] programs but also on our ability to work with them as clients. Pioneers in reverse logistics dedicated high-level personnel to the task. As they began to speak at industry conferences about the monetary benefits of their programs, others began to re-think their positions and adopt best practices because the results spoke for themselves.”

Typically, the environmental groups reside outside reverse logistics, but they are almost always brought in for consultation. Organizations that fail to comply with environmental regulations suffer greatly, and the impact of noncompliance has risen since 2005. Therefore, cooperation and collaboration between reverse logistics and environmental groups has increased. Given the focus on environmental sustainability, CLS anticipates that the environmental and regulatory groups will become an integral part of the reverse logistics team.

Integrated Training and Education Programs

CLS’ training program for its own employees has three components: warehouse facilities, client services operations, and client-specific. Warehouse-facilities training includes modules such as powered industrial truck operations, hazardous communications, hazardous waste generator facility, hazardous materials, federal OSHA, production/scanner, emergency condition, fire safety, back protection, and client-specific standard operating procedures. Client-services-operations training includes modules such as production claims, processing/electronic data, downloads/claims exporting, file set-up and maintenance, system uploads and downloads, credit/check processing, recall/return authorization, and call-center scripts. Client-specific training includes modules such as client-specific standard operation procedures and Web-based business-intelligence tools.

Because clients’ reverse logistics programs are customized, employees trained for one client must be re-trained in operating procedures, customer service, field operations, and facilities management in order to serve another. Each program has a unique, client-specific “language” associated with it. Marcellino says, “You have to speak to the client in a way that is understood and accepted in their organization.”

Because only a few clients have a department dedicated to reverse logistics, CLS trains employees throughout client organizations regarding the importance of the reverse logistics process and how to manage returns.

CLS client teams consist of cross functional teams. Each team is supported by IT, regulatory, liquidation, and management personnel. To facilitate communication, the teams work with their clients’ manufacturing and sales departments to develop scorecards that measure reverse logistics’ impact. The scorecards are reviewed by both CLS and the client on a quarterly basis. In annual top-to-top meetings, executives from CLS and the client discuss the project.

IV. ENABLING PROCESSES AND OPERATING SYSTEMS

CLS embraces the Lean philosophy, an enterprise-wide continuous improvement initiative focused on achieving a culture of operational excellence. The organization’s warehouses use the Lean philosophy as a network management tool to facilitate the maintenance of consistent processes, procedures, and results. By eliminating waste and focusing on value, Lean processes help CLS shorten the timeline between the beginning of the process flow and outbound shipment.
Integration with Clients

Depending on specifications, CLS shares data with its clients daily, weekly, or monthly. It has the ability to share files in many standardized and customized formats.

Figure 11 illustrates a typical retailer-information data-integration solution. Files from the client enable CLS to manage the client’s reverse logistics program. In many cases, CLS receives data feeds from the stores that inform it of the product that will be sent. The process is Web-based; information, including invoices, is online for the vendors to see.

Figure 12 demonstrates a manufacturer-information data-integration solution. CLS accepts data feeds from retail trading partners and accesses the return authorization files. In some cases, when CLS intends to send product back to be restocked in inventory, it sends an advance ship notice (ASN) file to the manufacturer’s distribution center.

All CLS processing systems are proprietary and developed in-house. The organization’s liquidation auction site and business-intelligence-tools software packages are flexible and scalable: Working from a foundational toolset, CLS adapts the software to provide the deliverables that best serve the client. According to Bodenheimer, CLS must “balance between being standardized enough to be efficient in a Lean environment and having the flexibility to customize an application to meet a specific client’s needs.”

Information is grouped into subsets that reflect how the client views and manages its programs. Clients can access the information in various formats, such as dashboards, chart
data views, or EDI direct feeds. Categories of intelligence include vendor intelligence, store intelligence, inventory management intelligence, event management intelligence, and supply-chain management intelligence. CLS also feeds sales information into business-intelligence software to capture return rates (returns as a percent of sales for manufacturers and returns as a percent of purchases for retailers).

### Manufacturer-Information Data-Integration Solution

The system tools are Web-based. Clients use them to research deductions and invoices, manage inventory, prepare for their own account reviews, and analyze reason codes. Client operations and services use the tools for file maintenance and research; the warehouse uses them for receiving, processing, and shipping.

CLS has a system of checks and balances to ensure data accuracy. It relies on its system-driven decisions using computer-aided sorting based on UPC, date codes, and lot codes. It controls its returns by cross-checking them with information sent by the returning party. The operations group edits the database for accuracy. As previously noted, CLS automates as much as it can, receiving electronic data feeds from its clients and their trading partners.

### V. Measurement, Results, and Continuous Improvement

“As a Lean enterprise, our goal is to apply these principles to all facets of our organization and our external value chains to drive continuous improvement.”

—Rich Fanning, executive vice president of operations

The Lean philosophy at CLS benefits clients because the organization uses it to implement change rapidly, reduce costs, improve value-added operations, train motivated and quality-minded employees, and create same-day service capability.

CLS reverse logistics facilities are measured on various criteria, including:
- processing throughput management;
- processing units and dollars per day and month;
- quality assurance scores (which include UPC scan);
- accuracy, sort accuracy, and facility cleanliness;
- security practices and regulatory compliance;
- safety achievement;
- inventory achievement; and
- outbound inventory management (turns).

**Client Key Performance Indicators**

Typical key performance indicators used by clients are unsaleable product/returns as a percent of sales, compliance of returned product, and policy compliance and variances.

Clients also employ metrics to evaluate the reverse logistics provider. Key performance indicators for these assessments include processing throughput management; processing rates per hour, day, and month; quality assurance scores (UPC scan accuracy, sort accuracy, facility cleanliness, security practices, and regulatory compliance); safety achievement; inventory achievement; and outbound inventory management (turns).

Key performance indicators for client manufacturing plants and distribution centers include case strength, shipping platform, and shelf life. The client’s marketing and sales teams are measured on whether they meet performance targets.

In Figure 13, CLS assesses the effectiveness of the KPIs in enforcing processes and procedures, measuring progress, and driving continuous improvement. The organization has determined that most of its KPIs are successful in helping it achieve its goals.
### The Effectiveness of Key Performance Metrics

#### KPI Effectiveness - Client

<table>
<thead>
<tr>
<th>KPI</th>
<th>Enforcing Processes &amp; Procedures</th>
<th>Measuring &amp; Benchmarking Progress</th>
<th>Continuously Improving Performance &amp; Capabilities</th>
<th>Identifying when enhancements needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsaleables as a % of sales</td>
<td>Moderate</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Compliance of returned Product</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Policy acceptance &amp; variances</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

#### KPI Effectiveness - RL Provider

<table>
<thead>
<tr>
<th>KPI</th>
<th>Enforcing Processes &amp; Procedures</th>
<th>Measuring &amp; Benchmarking Progress</th>
<th>Continuously Improving Performance &amp; Capabilities</th>
<th>Identifying when enhancements needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing throughput management</td>
<td>Moderate</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Processing rates per hour, day and month</td>
<td>Moderate</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Quality Assurance scores which include UPC scan accuracy, sort accuracy, facility cleanliness, security practices, and regulatory compliance</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Safety achievement</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Inventory achievement</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Outbound inventory management (turns)</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>
CLS measures productivity, but the formula is dependent on the client-specific product mix. Productivity is tracked at the associate (employee) level, and performance on the productivity metric is the basis for targeted training.

In addition to productivity, employees are evaluated on how well they meet safety, quality, and compliance standards. Performance data on key measures is used to determine employee feedback, compensation, and incentives. CLS also hires full-time employees and promotes from within based on performance levels. Every quarter, CLS ranks its facilities and awards top performers.

The practice of including all of the component costs of returns into the total cost calculation is not widespread, but leading organizations are beginning to look at it. Carrying costs include not only the cost of goods sold, the operating costs, and the investment in inventory, but also how many more units must be sold to offset the loss of profitability for the returns volume. For example, an organization may have to sell $1 million in products to overcome $100 thousand in returns.

CLS provides web-based dashboards and analysis to clients to help them assess sales and marketing practices. One example involves the speed with which sales is pushing a product with an expiration date. Using this tool, sales managers can see at a glance the days to product expiration and the quantities that consumers are using.

Another type of analysis is supply-chain performance measures for a plant. By displaying a red, yellow, and green color-coding system clients can recognize immediately when a measurement is out of acceptable range and will not meet the targeted key performance indicator.

**VI. Lessons Learned and Looking Forward**

Many consumer-product and grocery returns involve expired products. To avoid product expiration, retailers set standards based on the movement velocity at each point in the supply chain. They work with their manufacturers and suppliers to determine the amount of shelf life required for the product to sell through once they receive it at their distribution centers. They have driven the information down to the retail level so that, from the distribution center to the store, they know how much shelf life is required on the product once it is delivered to the store to minimize expiration risk.

CLS has identified several general best practices that retailers can use to avoid returns:

- Implement minimum-shelf-life standards at receiving,
- Implement a first-in/first-out (FIFO) process in retail distribution centers that is based on actual product dates as opposed to receiving dates (some manufacturers have poor shipping practices and ship their older products later),
- Establish remaining-shelf-life standards for delivered product to minimize the risk of expiration,
- Balance retail-replenishment order quantities to sales velocity and consumption to avoid excess inventory, and
- Implement category-based rotation schedules to reduce product expiration.

**Lessons Learned by Best-Practice Clients**

The CLS team has learned that best-practice clients:

- understand their numbers and set measurable objectives based on them;
- assign reverse logistics managers;
Reverse Logistics: Backwards Practices That Matter

- include all functional areas on reverse logistics teams (because, without organization-wide buy-in, most projects will fail);
- communicate frequently internally and with third parties and trading partners;
- establish standard operating procedures; and
- use and share data across the organization and with trading partners.

Key to success are:

- the proper organizational fit for the reverse logistics function—it should be located in an influential area so that other departments will buy into its programs,
- consistency of purpose—the team must know what it wants to accomplish,
- discipline—the team must stay with the program until it succeeds, and
- a strong partner—an advantage of doing business with an outsource provider is access to expertise and best-practice information.

Success Factors

Using the best practices that CLS describes, its clients are minimizing cost, minimizing liability, maximizing reverse velocity, improving profitability, improving value recovery, and maximizing customer loyalty.

Future Plans and Trends in Reverse Logistics

Many current trends in reverse logistics revolve around increased access to timely data. Now that better data-collection systems and analysis tools are in place, companies are seeing information faster than ever before. This is enabling retailers to recognize shrink at the store level. In addition, leading-edge organizations are working with vendors to identify inventory levels that represent “disasters waiting to happen.” These organizations are able to address problems before they occur by redirecting products from one retailer to another.

In this environment, CLS is taking on more tasks for each of its clients. Although some clients only use CLS software and manage their reverse logistics facilities in-house, their numbers are shrinking. Most clients are realizing that reverse logistics is not a core competency and are turning increased responsibility over to CLS.

CLS’ specific future plans include moving forward with its single-location processing strategy in order to reduce touch points. Trading partners will co-locate (single location) to collaborate, agree to accept first touch count and cut down on transportation costs.

CLS is also creating a comprehensive database that houses information from its clientele; the organization plans to use the system for benchmarking. It continues to engage in collaborative studies, root-cause analyses, and analyses of supply-chain issues.
Appendix A—Client List

Partial CLS retailer clients include
Walmart, Kroger, CVS, Rite Aid, Super Valu
Toys’ R Us, NAPA

Partial CLS manufacturer clients include