Recovering Lost Profits by Improving REVERSE LOGISTICS

By Curtis Greve and Jerry Davis, Commissioned by UPS
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About This Report

— By Carla Huang, UPS Director of Corporate Marketing for the High-Tech Industry

As a global leader in supply chain logistics, UPS has a long history of working with high-tech companies, from small component suppliers to global finished-goods powerhouses. With so much visibility into this market, we’ve noticed that companies have varying degrees of success managing reverse logistics—as well as varying degrees of missed opportunities when not paying attention to this part of the total supply chain.

In our experiences, reverse logistics is one of the most often overlooked elements of the complete operations cycle. These experiences and observations are precisely why we commissioned this paper: we want to highlight how high-tech companies can realize near- and long-term benefits by taking control of their reverse logistics supply chain and making improvements – no matter how small.

We realize the perception that returns are a necessary evil to be avoided at all costs. Yet they present vast opportunity. Companies adept at reverse logistics treat returns as another form of inbound shipping, with processes and plans that allow them to drive top-line sales and bottom-line profits from savings. In other words, they understand that returns are always going to be a part of their business and look for every possible way to leverage reverse logistics to extract the hidden value.

Because high-tech companies have multiple opportunities for reverse logistics to impact the supply chain, they do not have to re-engineer their entire process to achieve tangible results. We’ve helped customers achieve greater sales through resale, and we’ve seen customers realize savings by reclaiming parts for their operations. While a greater investment in reverse logistics will yield more benefits, we’re confident that many companies can experience significant improvements if they take just a few of the steps outlined in this paper.

If you are still skeptical about the role reverse logistics can play, think about your own experiences as a consumer and a customer. Would you prefer to do business with a company that has an efficient returns process with established policies? Would you rather buy from vendors that give you flexibility to return products without penalties and provide a quick replacement or refund? If you recognize that your organization could improve in these areas, we encourage you to review the reverse logistics self-analysis featured in this paper. Determining the current state of your reverse logistics capabilities is the first step on your way to creating better business processes, more satisfied customers and future success.
Executive Summary

It is no surprise that almost every company is looking for ways to increase sales, decrease costs and reduce risks. But in such tough economic times, the easy cuts have been made and all of the simple process improvements have been put in place. Enter reverse logistics, an often overlooked process that can help companies reduce waste and improve profits.

Reverse logistics is defined as the processes of receiving returned components or products for the purpose of recapturing value or proper disposal. Reverse logistics processes and plans rely heavily on reversing the supply chain so that companies can correctly identify and categorize returned products for disposition, an area that offers many opportunities for additional revenue. It is much more than simply counting defective items returned by customers. Also, it is much more complex than outbound shipping in that customers and/or consumers initiate a return, making it an inbound shipment process that is less predictable. The science of reverse logistics includes return policy administration, product recall protocols, repairs processing, product repackaging, parts management, recycling, product disposition management, maximizing liquidation values and much more.

And yet reverse logistics seldom receive much attention — that is, until something goes wrong. Many executives go out of their way to avoid dealing with returns because it can be ugly and is thought of as nothing more than a cost of doing business. What many fail to realize is that the average manufacturer will spend 9% to 15% of total revenue on returns, according to a 2010 Aberdeen Group study. They are often unaware of the impact returns management can have on their customers, their resources or their bottom line. In fact, improving reverse logistics can help a company increase revenue up to 5% of total sales.

If ignored, critical reverse logistics functions can cost companies millions in lost profits due to damaged customer relationships and external liabilities that could have an enormous impact on their business. Effectively managed, however, reverse logistics can enable organizations to find hidden profits, improve customer satisfaction and minimize liabilities.
Impacting the Bottom Line

Many executives compare the amount of money spent processing returns to other supply chain activities and conclude that investing resources elsewhere would yield greater results. Therefore, they just focus on trying to reduce the cost of returns processing.

In reality, reverse logistics costs are less than 4% of total supply chain costs for most companies. And while maximizing efficiency is always important, reverse logistics can also provide a wide variety of opportunities for improvements, from customer service and returns processing to supplier relations and an unexpected revenue source. Broadly speaking, there are several key areas where companies can positively impact revenue with reverse logistics activities:

» Returns-to-Revenue: Companies that ensure timely delivery and processing of returns position themselves to save more or earn more from the returned product. From refurbishing, repackaging and reselling to parts reclamation and recycling, returned products are often untapped sources for revenue. With the secondary, discount market for products continuing to grow, there are even more reasons to think about returns as revenue opportunities.

» Protecting Profits: Handling returns properly and tracking all activities are critical to help companies avoid fines and penalties from various government regulatory agencies such as the FDA, the Consumer Product Safety Commission and other state and federal agencies. In fact, the largest fine to date was issued by the EPA against one of the largest e-waste handlers in New Jersey, totaling nearly $500,000.¹⁶

» Customer Loyalty: According to a nation-wide survey conducted in 2005, 95% of customers will not buy from a company if they have a bad returns experience.¹ This, in part, explains why companies considered best-in-class in reverse logistics enjoy a 12% advantage in overall customer satisfaction over their competition.⁴

» Disposal Benefits: Knowing what is returned and where it ends up makes it easier for companies to deal with regulatory issues and evaluate returned stock for possible secondary sales channels. There are also other beneficial byproducts to disposing of products, such as avoiding excess inventory carrying costs, minimizing taxes and insurance, and managing staff levels.

» Maximize Recovery Rates: Mishandled or completely misplaced returns affect the efficiency of any reverse logistics process, but also means that products could end up being a total loss for a company instead of an opportunity for resale or a spare parts resource.
The Reverse Logistics Spectrum

It may surprise many executives, but truly defective returns are often less than 20% of the products processed through a returns center. The rest of returns fall into several categories that also must transverse the reverse logistic pipeline, each with their own unique challenges and opportunities. These include recalled products, end-of-life products, seasonal returns and parts. The volume of some of these categories, such as recalled products, can be significantly larger than the number of units returned by customers and often has significantly greater potential liability associated with it.

Recalls

For manufacturers in today’s world, it is not a matter of if they will have a product recalled; it is only a matter of when they will have a product recalled. In 2010 there were more than 1,000 different items recalled from the marketplace by various U.S. government regulatory agencies. Among others, these included recalls for toys, pharmaceuticals, consumer electronics, medical devices and automotive parts. The reasons for the recalls ranged from issues with packaging and warning labels to hazardous conditions created by the products. Common recall issues in the electronics industry range from batteries that pose health risks for consumers to potential fire hazards due to faulty electronics and construction.

In addition to fines and penalties from regulatory agencies, there can be even greater potential liabilities from lawsuits and the impact on company sales from bad press. Minimizing all of these potential risks from recalled products is a major driver behind the need to develop a comprehensive reverse logistics program.
End-of-Life Products
End-of-life programs are used to pull older, outdated products from the primary sales channel in order to make way for new models. This is often the case for product categories such as consumer electronics, household goods, software, security equipment and electronic accessories. End-of-life programs provide a process that will enable the manufacturer to keep the latest products on the market while ensuring older models are removed from the market in a controlled fashion. This helps maintain a company’s brand image and provides a measure of control over obsolete goods and their final disposition. This category also offers an excellent opportunity for companies to reclaim spare parts or resell in secondary channels.

Seasonal Products
There are many organizations that depend on a particular season to drive sales. They often provide special packaging to promote their products and plan on repackaging any unsold inventories for sale the following season. Unsold items are recalled by either the original manufacturer (OEM/ODM) or the wholesaler as stipulated in the original sales agreement.

Some product categories, such as soft lines, are sold on the secondary market immediately following the prime selling season. Other products, such as consumer electronics, powered equipment and fragrances, are repackaged and sold in the primary target market within days of being returned. OEM’s of all sizes rely on seasonal recall programs to maximize sales, often providing their customers with guaranteed sales options that drive margin to both the buyer and seller.

Parts
Parts fall into the last category of assets that depends on a company’s reverse logistics program. Companies with significant field repair operations can expect 16% of all parts to be returned. Of the parts that are returned, studies have found that roughly 25% are inspected, repaired, and/or repackaged and quickly sent back out to the field for use. Reverse logistics programs enable OEMs and ODMs to reduce their overall investment in parts while maintaining the highest level of service, especially in repair networks that depend on the availability of parts. Providing a way to return unused, reclaimed, overstocked or defective parts streamlines the repair process and minimizes the investment by both manufacturers and field service companies.

In all of these categories, reverse logistics is much larger and includes a broad range of assets that, taken together, can have a significant impact on a company’s bottom line. It is worth repeating that while the cost of processing returns is less than 4% of total logistics costs, high-tech companies can average a recovery value of 28% on returned assets and enjoy a 12% competitive advantage in overall customer satisfaction with best-in-class reverse logistics.
Opportunities and Risks for High-Tech Companies

For high-tech companies, reverse logistics offers a wealth of revenue opportunities in addition to processes that can help them be more efficient and avoid fines. As a whole, the electronics industry spends over $14 billion on returns every year.⁸ High-tech manufacturers without a well-managed reverse logistics process could be losing over 50% of the returned inventory value since the majority of returned products can be sold in secondary channels. This lost opportunity could add up to millions for a medium to large company. As noted by Best Buy CMO Barry Judge, “secondary market electronics sales represent an estimated $15B market in the United States.”¹⁵ In addition to missing revenue opportunities, high-tech companies could also face significant fines and penalties if they do not have a reliable reverse logistics process in place when it comes to regulations.

When high-tech manufacturers examine the total value of goods returned, the sheer size of the opportunity to tap into hidden profits can be staggering. For instance, 400 million units of e-waste are discarded in the U.S. alone every year.¹³ According to the same source, of this amount, only about 13.6% of consumer electronics products were recycled. This includes both customer returns as well as old, obsolete goods that the consumer never returned but simply threw away.

Reselling in the Secondary Market

One of the starkest examples of secondary market opportunities lies in the mobile phone industry. Every year, there are about 1.2 billion cell phones sold worldwide.¹³ The return rate for mobile phones in 2010 was 8% or 96 million phones that weigh about 16,000 tons.¹¹ The average secondary market value for refurbished mobile phones ranges between 35% and 75% of the original value. The average retail value per phone is approximately $150. If liquidated on the secondary market, the manufacturer would recover on average $82.50 per phone. If a single manufacturer were able to resell only 250,000 of the phones returned to them, it could equal over $20M in additional revenue.

The opportunity to develop reverse logistics programs that take advantage of secondary markets and reclaimed materials is significant. Combined, these programs could provide manufacturers with ways to reduce the overall cost of manufacturing their products, increase revenue from new sources and improve customer service at the same time.
Rare Materials Reclamation

One of the fastest growing costs of manufacturing electronics is the cost of rare earth metals, subcomponents, and parts. Manufacturers who develop processes to harvest parts, components and metals from the millions of units discarded every year could have a distinct advantage in the market.

For example, mobile phone manufacturers could extract and reclaim the gold, silver, palladium and copper from discarded units. According to the Environmental Protection Agency, for every million cell phones we recycle, 35,274 pounds of copper, 772 pounds of silver, 75 pounds of gold, and 33 pounds of palladium can be recovered. For these one million cell phones, the reclaimed metals alone would be worth over $2.8 million at 2011 metal prices. And all of these materials can be reused or resold to other companies in the manufacturing of other products.

Avoiding the Risks of Regulation

While increasing revenue is always welcomed, protecting profits can be just as critical for growth. For the past number of years, state and federal legislation that impacts returns processing has grown significantly. More than 35 states have legislation on the books that impacts returns management and disposition. In addition, there are eleven states that have banned disposal of laptop and desktop computers in their landfills. Many of these states have forced manufacturers, if their products are identified in landfills, to pay hefty fines to clean up product that was thrown away by their customers, even if it was without the manufacturer’s knowledge. For manufacturers and retailers alike, this kind of legislation increases government control, reporting requirements, monitoring capabilities and potential financial risks.

Taken in its entirety, the growing financial threat of fines and other penalties is significantly greater than the cost of proper returns processing or even the value of all returned inventory. In one example, a Fortune 500 company saw the value of their stock drop by over 13% due to government action taken in reaction to their poor reverse logistics processes, so the potential risks to smaller businesses could threaten their very survival. These increased risks, along with ever-growing processing costs and the rising value of returns, require that manufacturers and retailers examine their existing reverse logistics processes to ensure that they have full control over the process and the subsequent product disposition.
A Balanced Returns Policy Can Grow Revenue

Companies often view returns as a cost of doing business and ignore the potential revenue opportunity. In the electronics industry, the average return rate on sales is 8% but the return rate within subcategories can range from 4% to 15%.\textsuperscript{11} This equates to $14 billion in annual returns, and many of these products are not defective.\textsuperscript{8} Years of testing returned consumer electronics have established that the non-defective rate for consumer electronics hovers around 65% of total goods returned, meaning only 35% are actually defective.\textsuperscript{2} The non-defective product may be in perfect working order or damaged by the customer but still repairable.

Returns policies establish guidelines that govern when a product is to be returned and under what conditions it will be accepted. High-tech companies need to develop their warranty and return policies in an effort to strike a balance between providing an acceptable level of customer service and protecting the company. The policy provides some basis for protecting the maker of the product from fraudulent claims and unethical customers. On the other hand, return policies reduce the customer’s risk when purchasing the goods. Because of this, many companies in less competitive environments maintain stricter returns policies that place more of the burden on their customer. However, companies in highly competitive markets, such as the high-tech industry, have much more liberal return policies that reduce their customer’s risks, which will in turn drive sales and customer loyalty.
**Exchanges and Repairs in the Reverse Logistics Pipeline**

Other reverse logistics areas that impact the high-tech industry are warranties and repairs. These items may go back to the retailer, but more likely end up back with the manufacturer. In each case, there is an opportunity to provide a quality customer experience that may lead to customer loyalty and positive word-of-mouth exposure. There is also an opportunity for the manufacturer to gain cost- and time-efficiencies in their operations.

Products returned for repairs are often treated as inbound shipments, but they are not the same as receiving raw materials or components. Repairs often go into a completely separate workflow, requiring parts, personnel and processes that differ from new products. Without a reverse logistics process and plans in place to manage returns, which are often an unpredictable inbound shipment, companies lack visibility into the volume and the nature of returns. This can result in excessive spending on repair parts and staffing levels. Visibility and tracking are also key for sending repaired product back to customers to ensure efficiency and customer satisfaction.

On the consumer front, customers expect repairs and warranty claims to be addressed quickly and accurately. Therefore, how well a company receives, tracks, processes, addresses the repair or warranty claim and then delivers the product back to the customer has value even if money does not change hands. Many electronics companies address these types of returns on some level, but the most competitive implement robust aftermarket services that rely heavily on reverse logistics excellence. In fact, to handle the number of repairs created by the high-tech market, an entirely new sub-industry of third-party repair companies has emerged. These companies are another cog in the reverse logistics wheel and represent about $19 billion in annual revenue according to Hoovers.

Progressive manufacturers who want to gain market share will also adopt advanced exchange programs, which extend the returns policy one step further. With an advanced exchange program, the customer can call their manufacturer for service parts or item replacement and the returns provider will send them the replacement overnight, prior to receiving the original defective item. The defective item will be returned after the customer receives the replacement item. This minimizes downtime for the customer and gives the manufacturer a way to provide shipping containers and instructions that can help minimize additional damage to the product during the return. Advanced exchange programs are extremely valuable for manufacturers of high-tech products, medical equipment, and industrial equipment, and companies with significant field service programs that provide on-site customer support.
Developing a Reverse Logistics Program

Getting Started with the Essentials

Once an organization has determined that it is worth investing in its reverse logistics capabilities, the question becomes whether reverse logistics should be developed internally or outsourced. Today, a majority of retailers and manufacturers outsource some or all of their reverse logistics processes. How much of their reverse logistics process to outsource depends on the experience and capabilities of their internal management team. There are four distinct parts that make up a comprehensive reverse logistics process. Most companies outsource one or more of these:

1. Product processing, which includes transportation
2. Repair and refurbishment
3. Liquidation
4. Returns management systems

Regardless of whether a company is going to outsource all or part of their reverse logistics program, a critical best practice is to setup reverse logistics operations separate from forward distribution activities, with dedicated executive oversight. This dedicated autonomy will help ensure reverse logistics gets the attention that is required while empowering an executive to oversee the process to ensure success.

“...a critical best practice is to set up reverse logistics operations separate from forward distribution activities.”
Tapping into 3rd Party Logistics Benefits

Reverse logistics is often outsourced to third party logistics providers (3PLs), even by companies that have best-in-class supply chain functions and complex global networks. The core reasons for this outsourcing are: obtaining reverse logistics expertise quickly; achieving greater flexibility and faster speed to market; and creating a protective barrier against outside forces to limit potential liabilities.

Many companies outsource reverse logistics because they do not have the expertise within their management ranks to run the area, or they would rather put their resources toward manufacturing or customer service. Manufacturers often dedicate their top talent to running manufacturing plants, working with customers or managing imports — not focusing on returns. With a 3PL provider, manufacturers receive the focus, motivation, experience, existing technology, capital resources and staff to hit the ground running.

A qualified 3PL can have an immediate and significant positive impact on the outsourcing company simply because of its experience in developing returns operations and start-up processes. These service providers can also help leapfrog the competition by leveraging their existing facility networks, returns management systems and liquidation partners while sharing best practices that will minimize processing costs. A quality 3PL will be able to implement new reverse logistics operations within six months, while most internally-implemented programs will take at least twice that long.

Companies also outsource to cap and control other risks and liabilities such as inventory shrinkage, workers compensation expenses, medical benefit costs and other “non-controllable” expenses. Companies protect themselves by either negotiating a fixed fee arrangement for multiple years or with some form of variable pricing. This enables companies to limit risks by negotiating cost caps as a part of their outsourcing agreement.

When selecting a 3PL, it is important that companies do their homework and select a provider that has real experience providing reverse logistics services in their market.

- Do they have a network of facilities that can be leveraged to optimize transportation expenses while improving customer response times?
- Can they provide inbound and outbound transportation support?
- Can they help improve the product flow upstream so companies can process more efficiently and maximize the value of the returned assets downstream?
- Do they understand the impact of returns on customers, suppliers, stores, distribution centers (DCs) and the financials of the company?
- Do they have existing operations repairing product that is similar to returned items?
- Do they provide other services that can be leveraged to reduce overall operations costs?
Key Recommendations

Reverse logistics can increase profits and customer satisfaction. Conversely, a weak reverse logistics program can drive customers away and increase costs and liabilities. Reverse logistics is a critical part of the supply chain that is worth developing, and the bottom-line impact could be worth as much as 5% of sales. Though often overlooked, there are few processes left that have as much potential to positively impact earnings as reverse logistics. Some key recommendations for those considering improving reverse logistics processes should be:

- **Know Your Returns** – Discuss what kind of returns your company commonly receives and discover what typically happens to each item in the returns process.

- **Place a Value on Returns** – Learn what potential materials can be reclaimed or how the returned product can be resold in secondary channels. Also, discuss how an improved logistics process for repairs can boost customer satisfaction in your business. How much is one loyal customer worth to your business? And finally, do not ignore recycling or final disposition issues. All of these considerations can lead to direct financial benefits.

- **Assess Your Infrastructure** – From the location of your returns processing center and necessary transportation support to the staff you have assigned to execute your reverse logistics plan, consider what strengths and weaknesses might exist. Getting value out of any reverse logistics program relies on being efficient and taking advantage of every opportunity to squeeze more revenue from all returned products.

- **Identify Success** – Depending on the value opportunities that exist for returned product, set a goal that helps you recognize success. After all, a successful reverse logistics program may lead to increased revenue that you can measure, or success may be protecting revenue from potential risks.

- **Commit to Success** – Whether employing a 3PL or developing internal processes, companies must realize that reverse logistics is an ongoing process that requires vigilance. Transportation costs, returns processing, staffing needs and company culture changes may seem costly until weighed against the long-term financial benefits that can result from a comprehensive reverse logistics plan.

“...the bottom line impact could be worth as much as 5% of sales”
# Reverse Logistics: A Self Analysis for Your Company

The first step to improving a company’s reverse logistics process is to examine the current state of the process in place. There are a number of questions that should be addressed when determining the current state of an organization’s reverse logistics capabilities. Some of those questions include:

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<tr>
<td>1</td>
<td>How many units/devices do customers return every year?</td>
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<td>2</td>
<td>What are the causes of the product returns and what percent fits into the following categories?</td>
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<tr>
<td></td>
<td>a. Defective</td>
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<td>b. Recalls (internally or regulation driven)</td>
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<td></td>
<td>c. Seasonal returns</td>
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<td></td>
<td>d. End-of-life</td>
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<td></td>
<td>e. Parts</td>
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<td>3</td>
<td>Are there certain seasons when you have a spike in returns?</td>
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<td>4</td>
<td>What physically happens to the product when it is returned (who handles it, what systems and reporting are in place, in what facility are they processed, etc.)?</td>
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<tr>
<td>5</td>
<td>What percentage of products is covered under warranty?</td>
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<tr>
<td>6</td>
<td>What are the terms and conditions for both customer returns and recalls?</td>
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<tr>
<td>7</td>
<td>What was the overall recovery value on customer returns and recalls for the previous year?</td>
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**Repairing**

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<td>8</td>
<td>What percentage of product is repaired?</td>
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<td>9</td>
<td>What is the product yield rate on products that are repaired?</td>
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<td>10</td>
<td>What is the scrap rate of repairs?</td>
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Recovering Lost Profits by Improving Reverse Logistics

If your company can answer these questions accurately and conclusively, then you have an opportunity to evaluate every area for hidden profits and process improvements.

For example, you can examine the percent of initial value that you are recovering from returned products and parts. Aberdeen Group estimated that high-tech companies recaptured, on average, 28% of initial value, so this can serve as a starting benchmark to measure against your company’s performance.3

On the other hand, if you cannot answer the majority of these questions accurately and with confidence, then your company is definitely leaving untapped profits from reverse logistics on the table. This self-analysis can be your guide to discussing next steps, evaluating 3PL solutions and identifying process improvements that can grow your profits.

<table>
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<th>Recycling</th>
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<td>11 What percentage of returned product is recycled?</td>
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<td>12 What percentage of product is disposed of in a landfill?</td>
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<th>OEM and Parts</th>
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<tr>
<td>13 What percentage of product was returned to the original OEM/ODM?</td>
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<tr>
<td>14 What was the average recovery rate for product sent to the OEM/ODM?</td>
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<tr>
<td>15 What percentage of parts is processed and returned to the field?</td>
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<tr>
<td>16 What percent of materials or parts from returned products can be reclaimed for manufacturing new products?</td>
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<th>Liquidating</th>
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<td>17 What percentage of returned product is liquidated on the secondary market?</td>
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<tr>
<td>18 What was the average recovery rate for liquidated products?</td>
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</table>

If your company can answer these questions accurately and conclusively, then you have an opportunity to evaluate every area for hidden profits and process improvements.
Appendix


2. Personal interview with Curtis Greve, Principal, Greve-Davis, Pittsburgh, PA, 29 July 2010.


6. Personal interview with Jerry Davis, Principal, Greve-Davis, Savannah, GA, 29 July 2010.


