A product begins its life with maximum profit potential during the manufacturing process. But as that product moves through an increasingly complex, global supply chain, excess time and handling costs erode its profit.

Ironically, the corporate structures set up to manage this complexity can actually contribute to the problem. The average supply chain has become segmented, with different groups managing different phases of the product lifecycle in isolation. While this may add functional efficiency in specific areas, the lack of a coordinated approach creates a less efficient supply chain overall. What’s needed is a more holistic, synchronized approach to managing logistics and related supply chain services throughout a product’s lifecycle.

Product Lifecycle Logistics is a game-changing approach to treating the supply chain as a continuous whole and, in the process, lowering supply chain costs an average of 10%-20%. Making the most of this substantial savings opportunity requires a change in the way companies view and manage their supply chains – a genuine shift in perspective.
The Problem
Supply Chains Today Are Compartmentalized
Running an efficient supply chain is like being a general contractor on a major construction project, where the efforts of multiple professionals must be tightly coordinated. A decision to shift a new highway a few feet in one small section due to wetlands concerns may seem trivial, but it has a major impact on the plans of drainage, lighting, road construction and other contractors. Unless those plans are clearly communicated, the decision can wreak havoc on the overall project.

Today’s supply chains often lack this general contractor role, with individual departments operating in isolation. When daily decisions are made in so many areas – purchasing, transportation, packaging, inventory management, repair, recycling – it’s hard for everyone involved to stay aware of each other’s activities and how they impact total supply chain costs. For example, a reduction in protective packaging in order to save money at the procurement end may result in a significant increase in damage, driving up returns and call center activity. Without an effort to connect and coordinate these activities, there’s no awareness that saving a few pennies per item at one end is driving many dollars of added cost at the other.

The Profit-draining Impact of Segmented Supply Chains
Supply chain functions that operate independently can unwittingly optimize their own operations at the expense of the whole. This wider inefficiency, often invisible to C-level executives, results from a number of factors.

Poor coordination between purchasing and logistics leads to inefficient inbound logistics. The meter on product lifecycle costs starts running before the product is made, as components are delivered to the factory. Sourcing agreements often call for suppliers to manage and pass on the cost of inbound freight. When this happens, manufacturers lose since suppliers typically lack the transportation expertise and buying power of the customers they supply. In addition, lack of visibility to inbound materials can increase work-in-progress inventory and overtime costs linked to an inability to schedule manpower to receive shipments.

For a Midwest manufacturer, suppliers managed their own inbound shipments. The company had no control of carriers and no upstream visibility to inbound materials. In-transit delays were known only after delivery dates were missed, leading to increased expedites and, on several occasions, line stoppages. A cross-functional team of purchasing and logistics staff, formed to address the problem, recommended that the manufacturer’s logistics team assume control of all inbound freight moves. Working with an outside transportation management partner, the company integrated with supplier and carrier systems to enable complete visibility to shipment status and inbound freight spend. This visibility, combined with new rates with new carriers, resulted in a $2 million reduction in annual freight, labor and inventory costs, reversing years of overspending and lost profit.

Too much specialization obscures the big picture. Distinct distribution and reverse logistics functions are often managed by different departments with different requirements. These departments may use outside specialists – co-packers, test and repair vendors, remarketers and recyclers – that drive functional efficiency, but add more touch points and data integration challenges. While individually optimized, they’re collectively out of sync. It’s important to be able to get an overall sense of what’s going on throughout the supply chain without getting caught up exclusively on questions of sourcing, transportation costs, or marketing.

A Fortune 100 technology company found that a new product was producing unusually high returns and calls to its service centers. An investigation discovered that installation instructions were incomplete and unclear. When the returns department and its 3PL provider were able to communicate effectively with marketing, they realized they could save millions of dollars in
returns processing and call center costs by improving packaging and developing clearer, color-coded installation instructions. The recommendation, which came with a $17 million price tag in extra packaging costs, was dismissed by the packaging group, which was rewarded for controlling expenses exclusively in its own cost center. It took the intervention of a senior executive to move the project forward and realize a $5 million net savings and increased customer satisfaction. Often, it takes a high-level manager to bang heads in order to get the new thinking adopted.

Large amounts of data yield little insight. Most companies have plenty of data sloshing around in their internal databases. But extracting the right information from all that data, and translating it into actionable intelligence, is another matter altogether. In a segmented supply chain, the most useful data often is not accessible. Or, if it is, those reviewing it lack the broad experience to recognize how events in one area of the supply chain impact others, either positively or negatively.

A consumer electronics company wanted to maximize recovery value on its returned products by refurbishing and selling them in the secondary market. Sales designed a liquidation plan and the logistics and repair departments developed a streamlined process to ready products for resale. The products were resold and each department reported it as a win. It took a logistics partner to point out that 50% of the product had a retail value of around $40 and, for these lower-value products, the company just spent $32 in additional freight and refurbishing costs, per unit, to make an $8 “profit.” Had the company employed a liquidation strategy where lower value units were sold “as-is” from the retail returns center, they could have avoided $4 million in unwarranted labor and freight costs.

Silo structures breed misaligned KPIs. Because of the compartmentalized mentality that handicaps most companies, the key performance indicators used to measure success in individual departments can actually conflict with overall company objectives.

A major electronics manufacturer had the opportunity to reclaim batteries in returned units, at a cost of $500,000, in order to save $2 million on the cost of new batteries. The logistics leader rejected the initiative because it put him over budget, resulting in a $1.5 million profit opportunity being left on the table.

Changing mindsets is not an easy task. Most people who work in different parts of a supply chain are rewarded according to performance indicators that are way too narrow. It’s often a zero-sum game, with one department boosting its own performance at the expense of another. But the cost of doing business using outdated practices can be the difference between thriving in an increasingly competitive world or being driven out of business altogether.

The Solution: Product Lifecycle Logistics

Treat Products As One Inventory Stream – From Cradle to Grave

The solution to simplifying and streamlining complex, compartmentalized supply chains is to treat products as one inventory stream, instead of separate streams of raw materials, finished goods, returns, repairs and liquidation products. Using a Product Lifecycle Logistics approach, companies manage a product’s journey through the forward and reverse supply chains, recognizing how events in one stage of the journey provide clues for better managing other stages. The goal: optimize the whole, not the parts. It’s a new mindset that involves breaking through the barriers of a segmented supply chain in order to incur the least cost and extract the maximum value from the product.
It's Groundhog Day All Over Again

Hollywood offers a useful metaphor for understanding Product Lifecycle Logistics. In the movie “Groundhog Day,” the lead character is trapped in the same day over and over. As he repeats the same series of events, he learns to change his behavior based on the experience and foreknowledge his weird adventure affords him.

In the real world, we don’t get the chance at a “do-over” of all or parts of our lives, but supply chains are different. They often involve a repeated series of more or less the same manufacturing, packaging, distribution and reverse logistics processes, day after day, week after week. Manufacturers have the ability to run the process in slightly different ways, learning from each run-through, until they’ve tuned it just right. But few supply chain managers even realize they have this near-magical power. Product Lifecycle Logistics enables continuous “do-overs.” It’s about monitoring and adapting to the supply chain’s ongoing signals in order to make smarter, more profitable decisions.

You Might Need Help

Shifting to a Product Lifecycle Logistics approach can be done exclusively with internal resources, but a third-party logistics (3PL) provider can make the journey smoother and faster. Of course it has to be the right kind of 3PL provider. Many suffer from the same problems as the typical manufacturer in that they focus on optimizing individual supply chain functions, such as parcel, ocean freight, packaging or repair. As a result, product continues to get handed off from one enclosed function to another like a baton in a relay race, without much regard for what’s happening up and down the line.

A new class of 3PL providers is emerging, however, that allows companies to outsource logistics and related services for the entire product lifecycle. These providers have broad expertise across all forward and reverse logistics supply chain functions.

They bring the specialized expertise needed, without the administrative complexity of having to manage multiple providers. Because they execute the vast majority of required services – postponement, transportation, packaging, distribution, returns processing, repair, and liquidation – their customers avoid the costly management layer associated with a 4PL model of outsourced logistics management.

The Benefits of a Holistic Approach to Supply Chain Management

By synchronizing the operation of discreet supply chain functions, Product Lifecycle Logistics has the potential to reduce supply chain costs an average of 10%-20%. These cost savings are a factor of several key benefits:
• Smarter operations
• Faster cycle times
• Greater agility
• Greener, energy-efficient business processes

Data Makes Supply Chains Smarter. With many different contributors, there’s often no central or standardized reporting in large, segmented supply chains. The end result is tribal knowledge. Often, different people draw different conclusions from the same data. Product Lifecycle Logistics encourages the centralization of useful data so that it can reflect what’s going throughout the supply chain in a timely fashion. It also emphasizes proactive sharing of data between supply chain functions.

A technology company was seeing higher-than-normal failure rates on a particular device. Through a QA process in its 3PL-run repair operation, they found problems with a capacitor that had held up in test environments, but was failing in the field. The finding was immediately communicated to the design team. The problem, identified during routine data analysis within the repair operation, led to a product recall and a change in the product’s design to avoid millions in returns processing costs and lost business.
**Darwin and the Adaptive Supply Chain**

In the natural world, living things adapt in response to their environments. Colder temperatures result in increased fat and fur. Taller trees lead to longer necks or more nimble paws. Supply chains have the same need and ability to adapt, but often corporate structures and increasing supply chain complexity get in the way. It takes a concerted management effort and inherent understanding to create an adaptive supply chain.

What lies at the heart of Product Lifecycle Logistics’ ability to encourage continuous, smart adaptation is the idea that data can be captured at various stages of a product’s supply chain journey and made available to a central supply chain “knowledge management” function. This central authority could be a corporate team or a 3PL partner whose job is to turn data into insights and feed it back to relevant departments, such as product design, packaging, marketing or distribution. They, in turn, use the insights from other supply chain functions to make informed decisions in their own areas.

Product Lifecycle Logistics is really just a means to take an individual supply chain’s signals and feed them back into the system, with profound results. It unearths intelligence now buried behind thick departmental walls or hiding within non-integrated software applications and makes it part of one, centralized data network. Monitoring signals from all supply chain functions leads to a more natural adaptation process.
Integration of Functions Makes Supply Chains Faster.
Segmented supply chains suffer from too many touch points, increasing the freight and labor costs, damage, devaluation, carbon footprint and cash cycle time associated with a product. Product Lifecycle Logistics encourages creative thinking about how to combine supply chain functions to reduce touch points.

A large consumer electronics company operated a reverse logistics cycle that reflected segmented ownership of returns processing, repair and liquidation functions. Products moved from the Midwest returns center of the manufacturer’s largest retail customer to the manufacturer’s own returns center in Texas, where pallets were broken down. Retailer credits were then issued and products were re-palletized for shipment to a repair facility in Mexico. Workers there sorted products by condition. Some were sent back to the U.S. with no action, others were destroyed, and the rest were repaired and shipped back to a fulfillment center in Texas or Georgia.

As shown in the above illustration, an alternate process was recommended by the 3PL provider that operated the retailer’s returns center. By programming the manufacturer’s business rules for product disposition into the returns management software, the 3PL provider could manage credit reconciliation, testing, refurbishment and liquidation – all from the retail returns center – avoiding millions of dollars in freight and labor costs and shaving 18 days from the reverse logistics cash cycle.
Having One Partner for Product Lifecycle Logistics Makes Supply Chains More Agile.

Achieving that agility requires visibility up and down the supply chain, in as much detail as possible – genuinely actionable intelligence. Product Lifecycle Logistics promotes horizontal integration and data access that increases the ability to adapt and respond to changing business strategies and unplanned events.

Shortly after an electronic device manufacturer shipped millions of units of a hot new model, a software glitch was identified in some of the units. Because the manufacturer partnered with a 3PL provider with bundled forward, reverse and repair capabilities, they were able to immediately install new software on unshipped units – right at the distribution center. The 3PL provider was also able to recall, re-program and re-distribute units that had already been shipped to stores. This rapid response would have been impossible if the 3PL provider’s systems were not integrated with store systems in a Product Lifecycle Logistics approach. Using data it had on all units shipped, down to the serial number, the 3PL provider was able to quickly identify which stores had which faulty units. The entire recall and re-distribution process happened within two weeks, enabling the manufacturer to continue to roll out the new product without any supply chain disruption.

A Cradle-To-Grave Approach Makes Supply Chains Greener.

Product Lifecycle Logistics promotes the integration of segmented supply chain functions to reduce the number of times a product is moved and touched during its journey. This streamlining reduces cycle time, inventory, freight runs and, ultimately, the supply chain's overall carbon footprint. Other green benefits of Product Lifecycle Logistics result from aggressive management of end-of-life liquidation, recycling and disposal.

- Extend the life of products. There is a huge secondary market for returns and excess inventory that can not only avoid landfills but generate revenue on what may have been considered “dead” assets.
- Maximize reuse. There is enormous value in harvesting parts and materials, such as good batteries in a returned device.
- Manage the e-waste stream. As consumers discard mobile phones, laptops and other electronic products for new ones with alarming frequency, companies need a plan for destruction and recycling that meets all environmental regulations.

Ideally, these end-of-life supply chain activities feed right back into product design. For example, at one high-tech firm those responsible for harvesting and recycling materials advise the product design team on how to make it easier for parts to be removed or extracted when the product reaches the end of its life. Being able to simply pop out a battery or a component made from rare metals, rather than having to dismantle the entire unit in order to get at it, makes good sense.
Why You Need Product Lifecycle Logistics Now

The term “lifecycle logistics” originated in the military, where a focus on reducing the total cost of ownership of equipment put a spotlight on logistics efficiency. Product Lifecycle Logistics applies this same holistic view to consumer products. Instead of optimizing discreet supply chain functions, the approach looks across these functions and seeks ways to optimize the whole. It encourages valuable information and insight from one supply chain function to be fed back into another, enabling the organization to profitably respond to its own signals.

Product Lifecycle Logistics is a scalable strategy. The best way to quickly realize its cost-saving benefits is to start small. Identify two currently segmented but complementary functions and discuss how you can integrate both organizations’ strategies and operations. This kind of thinking is already generating millions in added profit for companies who, for instance, have integrated packaging into distribution center operations or have relocated repair operations to the returns processing center.

The future of supply chain management will be less about optimizing individual supply chain functions and more about managing across functions. Your competitors are already embracing this holistic approach. The time to adapt is now.

Product lifecycle logistics in action -

one large technology company uses a product lifecycle logistics approach to link functional teams and make smarter decisions.

MANUFACTURING/REPAIR - Repair engineers quickly traced high return rates on modems to failure of an internal component. This led to an immediate recall and redesign, avoiding millions in continued returns and customer dissatisfaction.

RETURNS/REPAIR/LIQUIDATION - A consumer electronics product had a poorly integrated, 11-step disposition process for store returns. By integrating returns processing, repair, liquidation and redistribution with one 3PL partner, the company reduced processing costs by $15 per unit and shortened the returns cycle by 18 days.

PACKAGING/RETURNS PROCESSING - Excess returns on a popular unit were linked to product packaging and inadequate instructions. The returns team suggested a complete packaging overhaul with color-coded, user-friendly installation instructions. The change was implemented for a net savings of $5 million.

MANUFACTURING/PACKAGING - Shipping fully packaged units from China made it difficult to quickly respond to last-minute changes/problems. The company now ships units to a U.S.-based 3PL provider, which does final packaging and software changes in the distribution center. The strategy cut annual ocean freight costs by $10 million and created a more agile, responsive supply chain.

MANUFACTURING/DISTRIBUTION - The company shipped products in economical configurations of 12 to a box. Distribution staff recognized that most store orders were for less than 12, requiring extra costs to break open cases and ship parcel. Distribution analyzed the ordering pattern of each store and suggested that the Sales team change the order management system to require stores to order in full cases when orders approach case quantity, saving $2 million in annual labor and transportation costs.