The hidden value in Reverse Logistics
Point of view
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Introduction

In today’s business context, companies can no longer afford to neglect reverse logistics as an integral part of their supply chain strategy and operations. A recent survey of Deloitte & Arvato shows that reverse logistics represents a significant part of a company’s cost structure, ranging from 0.1 to 1% of the sales value of a product and averaging 0.5%, leading to an annual cost in the U.S. of 200 billion USD. Compared to the cost of goods sold, an average of 7 to 10% is directly or indirectly attributable to reverse logistics. Next to that, a properly managed reverse logistics flow on average has the potential to reclaim 32% of the original product value. And the significance of the reverse supply chain is growing! Exponentially increasing return volumes due to more complex devices and changing shopping patterns (e.g. online sales), pressure on process efficiency to reduce costs per incident, the impact of environment-consciousness on brand perception and reputation are just a couple of challenges that companies need to deal with in today’s business reality. A key milestone in successfully mastering these challenges is the transformation of what used to be a solely cost-driven reverse logistics function into a strategic differentiator and profit center. Current business reality demands an increased managerial focus (cfr. figure 1) on the return flow as the final piece of the supply chain puzzle. However, the road to get there is very likely to be dotted with internal and external obstacles (cfr. figure 2). This document provides a first insight in how you can unleash the full hidden potential within your reverse logistics flow.

Figure 1: Today’s managerial awareness of the importance of reverse logistics
Source: Deloitte & Arvato, 2013

Figure 2: Top 10 obstacles to properly manage reverse logistics
Source: Deloitte & Arvato, 2013

- Financial resources: 31%
- Customs, tax and legal issues across countries: 13%
- Controlling approach (cost-center): 13%
- Lack of internal awareness: 13%
- Dependence on parent company: 13%
- Low product price (repair not justified): 13%
- Country difference: 6%
- Complex supply chain (because of outsourcing, growth): 6%
- Interaction between call-center and repair: 6%
- Complex market structure (number of players): 6%
Reverse logistics can be defined as “the process of planning, implementing and controlling backward flows of raw materials, in process inventory, packaging and finished goods, from a manufacturing, distribution or use point, to a point of recovery or point of proper disposal” (source: Reverse Logistics Executive Council, www.rlec.org).

In other words, it entails moving goods from their place of use, back to their place of manufacturing for re-processing, re-filling, repairs or recycling / waste disposal, as depicted in the supply chain map below. Typical terms used to denote reverse logistics network nodes range from downstream collection centers to consolidation centers and upstream recovery facilities.

In general, 5 return types can be distinguished:
• recalls
• commercial returns
• repairable returns
• end-of-use returns
• end-of-life returns

Notwithstanding these 5 types seem similar at first sight, dynamics tend to be quite different. It is fairly simple to say that the loop should be closed and the products should flow back into the supply chain, be it as a product to be repaired, as a raw material component or as a source of energy. But is it as simple as that? How can these words be put into action while maintaining a healthy cost-benefit balance?

### Figure 3: Reverse logistics flow
Source: Deloitte, 2013

### Figure 4: Return types
Source: “Reverse logistics – a framework” (De Brito & Dekker)

<table>
<thead>
<tr>
<th>Recalls</th>
<th>Commercial returns</th>
<th>Repairable returns</th>
<th>End-of-use returns</th>
<th>End-of-life returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products recalled by the manufacturer due to a condition or defect that could affect its safe operation. Work on a recall is completed at no cost to the product owner.</td>
<td>Returns for which there is an immediate demand at another market location or segment. Possible causes: customer dissatisfaction, catalogue sales, overstocks etc. Commercial returns occur in the sales phase or shortly after.</td>
<td>Defects and suspect components (modules/parts) from field (exchange) repair activities or products under warranty. Customer is entitled to a replacement product.</td>
<td>Returned products / components which are of no longer use to the original owner, but for which new customers can be found. Reasons: end-of-season, end-of-lease, trade-in, product replacements etc.</td>
<td>Items of no remaining use, which are processed due to contractual or legislative obligations. These returns are often collected and processed according to legislative obligations.</td>
</tr>
</tbody>
</table>
What are your drivers?

Throughout the past 15 years, a growing number of companies in a variety of industries has started to engage in reverse logistics activities, for a whole range of different reasons. Without any doubt, compliance is the main driver, characterized by a tsunami of directives, legislations and policies implemented across the globe. From a waste management perspective, concepts such as Cradle to Grave, Cradle to Cradle and Extended Producer Responsibility have been widely adopted in an attempt to push companies to a greener way of coping with the waste that originates from the products they put in the marketplace, and make them responsible for organizing and/or financing the take-back of their product as it reaches the end of its lifetime. In a European context, the Waste Electrical and Electronic Equipment (WEEE) Directive (cfr. case outlook) as such had a significant impact on producers of electronics. Furthermore, an increasing number of commercial legislations have been voted with an eye on protecting the customer by safeguarding the ability to return products free of charge or under warranty.

But is legislation the only factor for companies to embrace reverse logistics as a core competency? The answer is obviously no. Next to the compliance rationale, there may be a clear economic driver for investing in the reverse supply chain:

- **Customer Responsibility:**
  - *A way to enhance customer experience:* Customers more and more perceive a responsive and smooth reverse logistics process as a buying differentiator and determinant for next purchases.

- **Margin:**
  - *A source of additional revenue:* The flow of returned products can hold significant revenue in terms of valorization opportunities. Revenue can be reclaimed by repairing, remanufacturing or reconfiguring product returns. Revenue can also be gained by recycling end-of-life returns and marketing the output materials.
  - *A means to reduce operational costs:* If well-established and properly customized, the reverse logistics flow can bring along efficiencies in production and logistics & distribution costs (e.g. by combining the forward logistics product drop-off with the reverse logistics pick-up).

- **Procurement:**
  - *Your own raw material supplier:* Emerging scarcity and even unavailability of raw materials has been identified as one of the key challenges for manufacturers to remain in business in a sustainable way. Companies are looking for new ways of sourcing through recuperating and recycling end-of-use or even waste products.

- **Corporate Social Responsibility:**
  - *A driver for brand reputation:* Preserving a customer-focused, green image as part of a thought set of corporate social responsibility initiatives has been recognized as one of the most influential enablers of a good brand.
What is your strategy?

Laying out a thought supply chain strategy aligned with a company’s business objectives is equally important in steering reverse logistics operations as it is for driving the forward supply chain. A company needs to be able to take a step back and critically look at its business model from the perspective of an environmentally-sound management of resources and preservation of society as a whole. Gaining a thorough understanding of internal and external elements enabling and constraining the reverse supply chain is crucial to make the right strategic choices. Questions that need to be asked are:

- What is the size, breadth and evolution of the reverse logistics market a company intends to serve and how do customers act when it comes to returning products?
- Which set of rules and regulations need to be considered as companies look into reverse logistics?
- How do government objectives and the political situation in general align with a company’s reverse logistics vision?
- What socio-economic indicators need to be accounted for?
- Do specialized service providers exist that operate best-of-breed technologies to support the environmental and economic objectives of a reverse logistics system?

Answering these questions will enable a company to take position on the reverse logistics strategic quadrant. This framework consists of 2 axes representing the high-level drivers of a reverse logistics strategy: economics (what is my cost/benefit balance?) and compliance (what is my legal obligation?). Balancing the economic and compliance rationale provides as such strategic direction for a company in laying out the best-fit reverse logistics strategy.

- **Opportunists (High E, Low C)** – You have an opportunity to create value by properly managing your reverse logistics stream. Valorizing this opportunity drives competitive advantage. Companies in this position traditionally invest in developing private assets and processes and focus efforts on operational efficiencies and marketing. Once the economic rationale decreases, these companies tend to look for other opportunities.

- **Leaders (High E, High C)** – You benefit from developing reverse logistics as a core competency. Continuous legislative pressure combined with a positive economic balance creates a requirement to embed and sustain the reverse supply chain in a company’s operating model. These companies traditionally invest heavily in R&D and treat the cradle-to-grave principle as a pillar to their organization (already during the earliest design stages of a product, reverse logistics aspects are accounted for). In most cases, these companies define the standards driven by future legislation.
• **Followers (Low E, High C)** – You are not inclined to look into reverse logistics from a cost/benefit perspective, though are required to in order to become/remain legally-compliant. These companies generally join forces to benefit from economies of scale and drive compliance at the lowest possible cost. The focus of these companies lies in carefully monitoring their compliance and reporting liabilities, and maintaining a level playing field amongst the different participants of the network.

• **Evaders (Low E, Low C)** – You have no economic nor compliance rationale to engage in reverse logistics activities. These companies generally adopt an evasive behavior towards the matter and are only concerned not to be negatively impacted.

*Figure: 5 Reverse logistics strategic quadrant*  
*Source: Deloitte, 2013*
Once a company knows its position in the reverse logistics strategic quadrant and has committed to a high-level reverse logistics strategy, decisions need to be taken on the tactical level as to realize the value identified. The strategy defines which focus areas a company needs to tackle to reach the objectives set forth. Nevertheless, several alternatives remain available on how to put the strategy into practice. The framework below provides tactical guidelines in terms of organization and process that a company needs to carefully look after and focus on as soon as their strategic position is known.

What does this mean in practice?

Once a company knows its position in the reverse logistics strategic quadrant and has committed to a high-level reverse logistics strategy, decisions need to be taken on the tactical level as to realize the value identified. The strategy defines which focus areas a company needs to tackle to reach the objectives set forth. Nevertheless, several alternatives remain available on how to put the strategy into practice. The framework below provides tactical guidelines in terms of organization and process that a company needs to carefully look after and focus on as soon as their strategic position is known.

Figure 6: Tactical framework
Source: Deloitte, 2013

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Leaders</th>
<th>Opportunists</th>
<th>Followers</th>
<th>Evaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>A private governance structure with dedicated reverse logistics function, aligned with existing organizational charts</td>
<td>A private governance structure with flexible resources to take advantage of emerging opportunities</td>
<td>Collective governance across industry players with level playing field as key criterion</td>
<td>Ad-hoc effort in reverse logistics, no formal governance structure defined</td>
</tr>
<tr>
<td>Finance</td>
<td>Private financing and continuous monitoring and control of financial sustainability</td>
<td>Private financing and ad-hoc monitoring and control of profit to drive go / no-go decisions</td>
<td>Private or public (e.g. tax) finance means to guarantee compliance (subordinate to other functions)</td>
<td>No finance focus except for ad-hoc cost avoidance measures</td>
</tr>
<tr>
<td>Operations</td>
<td>Design of optimal reverse network based on legal requirements, customer take-back behaviour and operational effectiveness</td>
<td>Design of optimal reverse network based on operational effectiveness</td>
<td>Design of reverse network primarily based on legal requirements at lowest cost</td>
<td>No reverse network, only ad-hoc operational handling of returns</td>
</tr>
<tr>
<td>Marketing</td>
<td>Marketing strategy supports reverse logistics to ensure compliance and end-user awareness &amp; buy-in. Key stakeholders are government, end-user and shareholders</td>
<td>Marketing strategy supports reverse logistics to ensure buy-in. Key stakeholders are shareholders</td>
<td>Marketing strategy required to prove effort to government in reaching legal targets. Key stakeholders is government</td>
<td>Marketing strategy for reverse logistics does not exist, except for ad-hoc measures to prevent brand damage</td>
</tr>
<tr>
<td>Legal</td>
<td>Strong legal office to monitor balance between economics and compliance, and to take care of legal responsibilities</td>
<td>Limited legal function: engagement in reverse logistics for profit reasons rather than compliance</td>
<td>Strong legal office to monitor compliance to legal accountabilities, performance targets, and to ensure proper reporting &amp; control</td>
<td>Legal function limited to avoiding compliance breaches by not looking into reverse logistics</td>
</tr>
</tbody>
</table>

Strong focus Weak focus
Common pitfalls and Key Success Factors

Some common pitfalls

• Narrow scope – Within a reverse logistics context, companies tend to focus on ad-hoc transportation and storage of returned products. Often, the broader aspects of a reverse supply chain are left untouched, such as designing an effective collection network balancing cost-efficiency (minimal transport expenses and returns inventory) with market proximity (to lower the consumers’ barrier to return products) and availability of valorization options (e.g. recyclers, repair centers, etc.); supply chain cooperation and relationship management; and business process design.

• Uncertainty in reverse flow forecasting & planning – The trigger for the reverse flow comes from far downstream the supply chain. Reverse logistics happens in response to an action of a customer or supply chain actor and as such is extremely difficult to anticipate or plan for by a company. Amongst others following product parameters may need to be taken into account: average lifetime of the product, product sales versus expected return areas, capacity of collection infrastructure, etc.

• Reverse logistics budgeting – A financially sustainable business needs to account for future reverse logistics expenses. Companies face the difficulty to estimate today what the impact will be on their margin, budgeting, liabilities, and short to long term financial planning. Transport and valorization costs, sales volume, customer take-back behavior, government incentives, reverse technologies, and so forth need to be considered in this exercise.

Some key success factors

• Optimize forward logistics – Although it sounds contradictory, minimizing customer returns by implementing the correct strategy within the forward logistics will limit the impact on resources needed to support the reverse flow. Often a reverse logistics process is set up as a necessity in response to hidden mistakes in the forward product flow, such as inadequate packaging, inferior raw materials, poor delivery performance.

• Synergies – Merging forward and reverse flows efficiently allows to fully benefit from synergies between both flows.

• Product return policy – In a highly competitive environment, companies sometimes tend to encourage the return behavior of their customers by granting e.g. extended warranty time or after warranty service. Equally so, in times of increasing internet sales, companies are sometimes forced into a return culture when the government for example extends the right of return for internet retailing. Product return policies should not only be looked at from a commercial perspective though should be considered from a logistics and operational point of view as well.

• Shorter product life cycle – While return rates vary per industry, common to almost all industries are the shorter product life cycles, resulting in faster returns. A successful reverse logistics is agile and allows for a speedy response.

• Consolidation of three flows – Similar to the forward flow, the success of a reverse flow depends on the degree of convergence between the financial flow, operational flow as well as the information flow.
Conclusion

Looking beyond returns throughout the lifecycle of a product, the management of products at end-of-life has been gaining significant attention in the marketplace over the past decade. Different drivers – whether it is cost reduction, customer e-experience, greener waste, scarcity of raw materials or a true competitive advantage – are forcing companies to have a closer look at their waste management process, and reverse logistics in a broader sense. Nevertheless, reverse logistics entails some specific challenges in comparison to the forward logistics process.

Its increasing importance is forcing companies to (re-)assess their strategic options in the field of reverse logistics. Based on the basic trade-off between economics and compliance, Deloitte has developed different strategies to tackle the reverse logistics challenge. As soon as it boils down to implementing the strategy, our experienced team is able to assist in establishing a balance between required governance, finance, operations, marketing and legal aspects. Important to note is that it is not only about achieving cost efficiencies! More and more businesses are starting to reveal the profit potential inherent to the reverse supply chain. But this requires embedding flexibility into the reverse supply chain in order to be able to respond to internal (e.g. strategic choices) and external changes (e.g. emerging markets, changes in legislation, etc.) in an agile way.

The Case of Lamps

Faced with the Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC, and the subsequent transposition thereof in national European legislation, producers of electrical and electronic equipment were held responsible for taking back and recycling their end-of-life products. Out of the 10 categories in scope of the directive, mercury-containing lamps were classified in category 5 ‘lighting equipment’, next to large and small household appliances, IT & telecommunications equipment, consumer equipment, electrical and electronic tools, toys, leisure and sport equipment, medical devices, monitoring and control instruments and automatic dispensers.

As one can imagine, recycling lamps is somewhat different from recycling a refrigerator. A grasp out of some lamp specifics:

- The cost of collecting and recycling a lamp comes close to the actual production cost of a lamp, making lamp waste management very expensive compared to other waste streams;
- Lamps have a negative residual value at end-of-life, as the valorization options are limited;
- Lamps are very small, low-weight and hence easily forgotten or thrown away, making it very difficult to get back the end-of-life lamps from the customer;
- Lamps are fragile which limits co-transportation with other waste;
- Lamps are hazardous waste and need to be treated accordingly.

Looking at the strategic quadrant, it is obvious that the economics were very much against investing in lamp waste management activities, but the pressure to comply with the Directive necessitated actions to be taken. As a result, lamp producers in many European countries joined forces in an attempt to comply at the lowest cost possible by establishing collection and recycling service organizations. These non-profit organizations are commissioned by lamp producers to manage day-to-day reverse logistics flows through outsourcing contracts with third party collection points, collectors and recyclers. Their financing base is provided by the producers who pay a fixed fee per lamp put-on-market. Next to that, these organizations are also responsible for marketing & communication in order to create consumer awareness, to report out to authorities on certain performance indicators, and to monitor non-compliant producers.

As these organizations were set up, the external environment obviously evolved. The main challenges for the lamp producers today consist of regulatory changes (e.g. the amendments to the WEEE Directive last year imposing more strict collection and recycling targets), the shift of sales towards new technologies with longer lifetimes (e.g. the shift to LED lighting with lifetimes of 20+ years decreases the financing basis – fee times lamps put-on-market – of collection and recycling service organizations), the massive investments required to incentivize end-users to return their lamp waste, and last but not least the increasing scarcity of rare earth metals as raw materials for their production process.
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