Governance of Supply Chains

Reverse Logistics Networks and Governance Structures

Over the last few years, the management of reverse logistics has become increasingly important for organizations and a field of interest for researchers. We observe that the implementation and coordination of reverse logistics networks call for original responses with regard to their governance structure. In this context, the research question for this article is which factors explain the existence and contribution of different governance structures in reverse logistics. Our research is exploratory in nature, and we look at the following reverse logistics networks: recycling of used tires, empty beer bottles, used paint, and paper products. Some of our case studies feature original arrangements where additional stakeholders, such as government organizations and dedicated third parties, become involved in the governance of reverse logistics networks and modify the natural relationships normally observed in traditional supply chains.

Introduction

Over the last few years, the management of reverse logistics has become not only a growing reality for organizations (Rogers, Lambert, Croston & Garcia-Dastugue, 2002) but also a vector of competitiveness used by an increasing number of managers (Dowlatshahi, 2000). However, Daugherty, Richey, Hudgens, and Autry (2003), remind us that “reverse logistics has been described as going the wrong way on a one-way street” (p. 49); that is, it is far from being a natural direction for most organizations. Jayaraman, Patterson, and Rolland (2003) and Praehinski and Kocabasoglu (2006) provide help in understanding why this is the case: (a) traditional distribution channels are not structured and equipped to take back returned items and (b) transportation usually is the largest component of reverse logistics costs.

Reverse logistics has also become a field of growing interest for researchers, who have pursued a variety of goals. Some studies are of a descriptive nature, seeking to define the field of reverse logistics and its implications (for example, Carter and Ellram, 1998; Dowlatshahi, 2000). Others are case studies of specific companies or sectors of activity (for example, Blackburns, Guide, Sonza, and Wassenhove, 2004; Daugherty, Richey, Hudgens & Autry, 2003). Still others seek to apply traditional logistics management tools to reverse logistics supply chains (see Minner, 2001).

For Reyes and Meade (2006), the challenges associated with reverse supply chains make network design a critical component for dealing with a number of managerial issues. The implementation and coordination of reverse logistics networks also seem to call for original responses with regard to their governance structure. In

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Germany, for example, producers and importers of batteries can form a joint company to recover and recycle batteries in compliance with government directives (Schultmann, Engels, & Renzt, 2003); in the United States, Noranda and Hewlett-Packard work together to recycle electronic waste (Heinzi, 2001). Other companies prefer to outsource this task to a third-party provider (Albright, 2005). These examples point out some unusual governance structures that experts would call “hybrid structures.” More research is now being performed on these structures in a context of supply chain (Gereffi, Humphrey, & Sturgeon, 2005; Grover & Malhotra, 2003; Réviron & Chappuis, 2005; Verwaal & Hesselmans, 2004). We believe that using specific examples in the context of reverse supply chains would help in understanding better the nature of hybrid structures and the governance structures associated with them. It is within this context that we propose the research question for this article: Which factors explain the existence and contribution of different governance structures in reverse logistics?

The first two sections discuss the issues of reverse logistics and governance structures. The third section describes the research methodology used, and the fourth section presents four cases of reverse logistics networks. We note that these cases are of an exploratory nature and are used to illustrate different contexts, in order to provide some insight into the organizational implications for these supply chains. The fifth section analyzes the results, and the last section discusses the implications of the theoretical foundations stemming from the cases studied.

Reverse Logistics Networks

Among the various processes in a supply chain, Bechtel and Jayaram (1997) introduce recycling. They suggest the idea of a closed-loop supply chain in which the products used can be reintroduced to provide a useful second life to the resources. Although this is the most obvious application of reverse logistics, there are many others. In fact, Rogers and Tibben-Lembke (1999) define reverse logistics this way: “the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal” (p. 2). Reverse logistics can thus imply the management of waste (a product at the end of its useful life or losses resulting from the production process), defective products (for products under warranty), returned goods (customer mistake, error in the delivery, etc.), or a product recall, such as those that occur in the automobile industry.

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Different tasks are associated with reverse logistics: encouraging or requiring a user to return the items, then collecting, sorting, storing, transporting, and reprocessing the recovered material. Because a single organization rarely can carry out all of these tasks efficiently (and neither can most organizations accomplish all traditional logistics operations), networks become an efficient way to address this situation.

As for traditional network supply chains, the design of reverse networks aims at organizing resources for optimal system performance while determining who will own the assets and handle the day-to-day management. These decisions are complicated by logistical issues specific to the flip side of the usual transaction: For instance, the quantities recovered cannot be forecasted easily, the recovered material is not always easy to handle because it has often lost its original packaging, and operating costs make the profitability of this service uncertain, to say the least. Based on a literature review, French and LaForge (2006) identified numerous research issues related to the concept of reverse networks. Based on the various types of reverse logistics networks mentioned above, we believe that the design and management of networks have
direct implications on governance structure, a theme that, in our opinion, has not been researched adequately.

**Governance Structure**

Through his theory about transaction cost economics (TCE), Williamson has been one of the first to point out to the importance of governance structure. Scott (1987, pp. 148-149) believes that the contribution of TCE to the understanding of organizations is based on the perspective that “not the production but the exchange of goods and services is critical, and it emphasizes the importance of structures that govern these exchanges.” As Williamson (2002) puts it, “Governance is the means by which to infuse order, thereby to mitigate conflict and to realize "the most fundamental of all understandings in economics," mutual gain from voluntary exchange” (p. 180). Heide (1994) mentions that this term is an expression for the institutional framework within which contracts (or exchanges) are initiated, negotiated, monitored, adapted, and terminated. Therefore, governance structures are mechanisms for coordinating and controlling the flow of materials and services through steps in the value chain (Grover & Malhotra, 2003; Williamson, 2002).

Markets and hierarchy are the two structures that could be considered at the opposite ends of the spectrum. In between are hybrid structures (Williamson, 1985) such as long-term contracts and licensing agreements or partnerships. Referring to the works by Aubert, Rivard, and Patry (2004) and van Hoek (2000), the following three criteria can be used to determine the choice of a structure: (a) asset specificity, (b) frequency of transactions, and (c) uncertainty.

Asset specificity refers to the transferability of assets to support a given transaction (Grover & Malhotra, 2003). These assets could be physical (equipment) or intangible (expertise). Buvik (2002) provides examples:

- Time and resources dedicated to adapting to the technical standards of a supplier’s products or a customer’s specifications.
- Specific investments in storage and transportation equipment dedicated to dealing effectively with supplier deliveries or customer requests.
- Investment in production equipment adapted to processing the products delivered by the supplier.

The second criterion, frequency of transactions, also affects the relative cost of these transactions. Cost reduction is possible when the cost of the structure is amortized over a large number of transactions. Obviously, this situation is more likely to happen when the partners remain the same. The third criterion, uncertainty, refers to the unanticipated changes in the circumstances associated to a transaction. This uncertainty could be related to the environment, to technology, or to demand volume and variety (Grover & Malhotra, 2003). Figure 1 illustrates the positions of the different structures with respect to the three criteria. TCE also includes such variables as coordination costs, that is, the cost of exchanging information and incorporating that information into the decision process (Grover & Malhotra, 2003).

Although the TCE concept has been applied to several situations (Grover & Malhotra, 2003), only recently has research dealt with governance structures in a supply chain or a network context. Whipple, Frankel, and Anselmi (1999) use the three criteria above to show that the implementation of Efficient Consumer Response (ECR) in the grocery chain industry leads to a form of hybrid structure. More specifically, with respect to the supply chain, both Réviron and Chappuis (2005) and Verwaal and Hesselmans (2004) emphasize that interdependency among actors in the grocery sector might be a major factor influencing the creation of a hybrid structure.
Other researchers claim that TCE oversimplifies and somehow distorts reality (Ghoshal & Moran, 1996). Chen and Chang (2004) mention that transaction cost logic focuses on cost minimization. Bello, Dant, and Lohtia (1997) question this focus on cost reduction, stressing that an organization might decide to increase costs over the short term for a long-term gain. Therefore, it appears to be difficult to integrate strategic considerations into TCE. This is where it is useful to introduce the resource-based view theory, which suggests that a company should focus on a few core competencies, resulting in the outsourcing of many others, namely the activities deemed less strategic to its development and to improving its performance (Quinn, 1992). Fundamentally, the resource-based view theory states that an organization’s competitiveness resides in its ability to integrate internal resources (equipment, information technologies, abilities, and knowledge of personnel) (Sanchez & Heene, 1997). A combination of resources that competitors would have difficulty imitating and that would correspond to what customers want would become a core competence (Reed & DeFilippi, 1990). Because an organization can’t develop an extensive number of core competencies, it must concentrate on some of its competencies (Hamel, 1994).

**Methodology**

Following the observations about reverse logistics networks presented earlier, our purpose is to understand the factors supporting the existence and contributions of the various governance structures with respect to various network types. Because reverse networks are structured with several tasks that cannot be completed by a single actor, we will also determine how tasks are shared and coordinated among the various actors in a network. Considering the exploratory nature of our study, we used the case study approach for data collection, as suggested by Voss, Tsikritktsis, and Frohlich (2002), because it makes it possible to gain a better understanding of a phenomenon (Yin, 2002). This case study approach has been used in other studies about governance structures (for instance, Aubert, Rivard, and Patry, 1996; Whipple, Frankel & Anselmi, 1999).

As noted by Voss et al. (2002), site selection is a major consideration when conducting case study research. To ensure a variety of experiences, two criteria guided our choice of cases: (a) the circular nature of the network (Fleischmann, Bloemohof-Rouward, Dekker, Van der Loan, Van Numan & Van Wassenhove, 1997); that is, in closed-loop networks, the recovered material returns to its original network, thereby reducing the number of new relationships to be developed; and (b) the initiator of the network (either a governmental or a private organization), because it affects the objectives pursued.

Another methodological consideration is the number of case studies. Eisenhardt (1989) determined that between 4 and 10 cases would be suitable for formulating a theory. Because our primary objective was to come up with a better understanding of the phenomenon and in considering the exploratory nature of our research, we opted for four cases. Table 1 positions the four cases, based on the selection criteria. All the cases studied concern Canadian organizations, more specifically from the province of Quebec. In our efforts related to this research, we have not yet been able to identify a case where the open-loop network would have been initiated by a private organization. At this stage, we do not believe this to be a major roadblock to our research, but we will discuss this issue subsequently.

Halinen and Tornroos (2005) specify that defining the boundaries of a network is important in writing up a case. To resolve this issue, we primarily centered our descriptions on each network’s key player. Data collection was done through semistructured interviews with decision-makers in the various networks studied. This stage was completed with a media review and the consultation of documents and public reports.

After interview transcription, answers were codified according to the matrix system suggested by Miles and Huberman (1994). This approach makes it possible to quickly compare answers given to each question by the respondents. Through increasingly sophisticated classifications, it is then possible to determine if there is a pattern. To determine how strong a pattern appeared to be, as well as to provide specific examples, we went back numerous times to the notes.

<table>
<thead>
<tr>
<th>Table 1</th>
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<td><strong>Network Classification</strong></td>
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<table>
<thead>
<tr>
<th>Circular nature of the network</th>
<th>Initiator of the network</th>
</tr>
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<tbody>
<tr>
<td>Closed-loop</td>
<td>Recycled paint</td>
</tr>
<tr>
<td>Open-loop</td>
<td>Used tires</td>
</tr>
<tr>
<td></td>
<td>Recycled paper Beer bottles</td>
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</table>

<table>
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<th>Initiator of the network</th>
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<tr>
<td>Governmental organization</td>
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<tr>
<td>Private organization</td>
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related to each specific interview. This analytical approach was applied successfully in the past by Nollet and Beaulieu (2003).

Presentation of the Cases

In the Canadian federal system, the provinces have jurisdiction over environmental protection (aside from issues of cross-border pollution). In the early 1990s, the Quebec ministry of environment created Recyc-Québec—a state owned company—with a mandate to promote and develop the recovery and recycling of packaging and materials. In the case of used tires, Recyc-Québec directly manages the relationships among network members, whereas in the case of recycled paint, it ensures that regulations are respected. In both cases, initiatives to collect these waste products were already in place. The legislation simply extended these networks to cover the entire province.

Recycled Paint

In early 2000, the MEQ adopted a regulation requiring paint manufacturers to recover and reclaim waste paint. Éco-Peinture, an organization established a few years earlier by most paint manufacturers in the province, became the vehicle used to meet the government’s requirements. Éco-Peinture has some 40 members who are manufacturers and has developed a network for collecting waste paint in Quebec municipalities. The company Peintures récupérées du Québec was chosen by Éco-Peinture to process the waste paint collected. This company also looks after the collection and transport of waste paint from the municipalities to its processing center. The program is funded by eco-fees paid by the members of Éco-Peinture, based on the sale of their products in Quebec. For Eco-Peinture, the main issue is how to develop a collection network covering the entire province while providing an incentive for consumers to return their old paint cans. At the same time, however, paint manufacturers want to ensure that the recycled paint will not compete with their regular products.

Used Tires

In 1996, the MEQ mandated Recyc-Québec to create an integrated management program for used tires in the province. Recyc-Québec now links the used tire collection points, the carriers mandated to collect the tires, and the processing centers. In order to do so, it developed a plan to allocate the used tires from the various Quebec regions to the processing centers. The collection points contact the carriers selected by Recyc-Québec to inform them they have tires to be collected. These tires must be sorted, because recycling companies cannot process all types of tire. Therefore, some tires sent to one recycling company have to be redirected to another company. Recyc-Québec offers a subsidy to carriers and recycling companies for the tires they handle. Subsidies are funded from a fee paid by consumers on every tire purchased in Quebec. The subsidy system has stimulated the creation of several processing companies. Currently, because the number of tires collected is lower than the processing capacity, we can say that the subsidy system has generated a demand for used tires that exceeds supply.

Recycled Paper

This case deals with Cascades, a company active in producing, converting, and marketing packaging products—boxboard, carton board, and fine specialty papers and tissue papers composed primarily of recycled fibers. Cascades operates 140 production units in North America, Europe, and Asia. In the late 1960s, Cascades began to collect and recycle waste paper to produce packaging material. This strategy enabled the company to realize savings on the purchase of virgin pulp. In the early 1990s, the management of Cascades mandated its procurement division to find waste paper for all plants in the group. Previously, each plant had been responsible for finding its own waste paper, leading to a competition for waste paper among the different plants. The procurement division obtains waste paper from brokers or from the Cascades Recovery division, which recovers waste paper from office towers. Each plant determines the quantity of waste paper it needs and looks after transportation. It may use the services of the Cascades transportation division or contact any other carrier that offers a better price. In this case, two major issues must be managed properly. First, sorting is essential to direct the right grades of waste paper to the right plants to ensure the quality of the final product. Second, there is stiff competition among paper producers needing waste paper for their plants.

Beer Bottles

The case involving beer bottles deals with Labatt Breweries, which operates eight plants in Canada and markets 60 different brands. The Canadian beer market is controlled by two breweries that generate almost 90% of the revenues with the remaining 10% belonging to regional producers. Labatt Breweries is one of the two large breweries. Since 1984, a system of returnable beer bottles has been in operation in Quebec. Each beer producer looks after the recovery of bottles returned to the points of sale. When cases of beer are delivered to retailers, Labatt’s own fleet of trucks can pick up an equal number of cases of empty bottles (due to truck space limitations). Retailers are paid 2 cents out of the 10-cent deposit to offset storage costs. Standardizing the dimension of beer bottles was the main issue, so that all producers could pick up any bottle returned to the retailer, regardless of the brand. A beer industry committee was in charge of beer bottle standardization.

Results

For our case analysis, we are adapting somewhat the three criteria identified in transaction cost theory. We keep the criterion
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Table 2
Level of Application for Each TCE Criterion

<table>
<thead>
<tr>
<th>Frequency</th>
<th>None (low)</th>
<th>Moderate</th>
<th>High</th>
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<tbody>
<tr>
<td>It is relatively easy to forecast the quantities and specifications of the items collected</td>
<td>It is difficult to forecast the quantities and specifications of the items collected</td>
<td>It is impossible to forecast the quantities and specifications of the items collected</td>
<td></td>
</tr>
<tr>
<td>Supply uncertainty</td>
<td>The same assets can be used for reverse logistics as for traditional logistics</td>
<td>The assets used for reverse logistics must be adapted</td>
<td>Assets are used specifically for reverse logistics operations</td>
</tr>
<tr>
<td>Assets specificity</td>
<td></td>
<td></td>
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For the strategic dimension, there is a direct relationship between the strategic value of the asset and the strategic intent: meet demand (paper) or reduce costs (beer). For
paint producers, the strategic value is moderate, having mostly to do with satisfying legal requirements. Finally, the recycling of tires brings no value to tire manufacturers. Government intervention was not aimed at internalizing environmental costs for tire manufacturers but rather at finding a solution to a major ecological crisis and, at the same time, contributing to the development of used tire recycling as a new industrial sector. By providing financial assistance to recycling firms, Recyc-Québec is perverting manufacturers' strategic intent in enticing them to take advantage of the subsidies available for recycling used tires. This shows that strategic intent is not always aimed at competitiveness or market needs.

Discussion

Table 3 shows that there are two relatively pure governance structures: one for recycled paper and another for recycled beer bottles. In the latter case, the producer has chosen to integrate recycling activities (hierarchy). This goes against what would be expected based on TCE because low asset specificity, high frequency, and low uncertainty should correspond a market structure (see figure 1). We do not, however, consider the observed low asset specificity and low uncertainty characteristics to be natural. Efforts have been made to reduce asset specificity, notably with respect to beer bottles. In this case, beer bottles have common characteristics because beer makers have standardized them in order to meet industry needs, leading to the commonality of the assets used for recycling. Frequency is high, however, and uncertainty is low. Although these considerations should have led to a market structure, the company has opted for an integrated structure. It seems that the strategic perspective played a significant role in choosing this structure. By investing in processes to clean the used bottles collected, Labatt can reuse a given bottle up to 14 times, which reduces the purchase of new bottles. This number could be even higher if it was not limited by government regulation.

In the case of recycled paper, Table 3 indicates that the appropriate governance structure is a market type. TCE theory instead would suggest a hierarchy type of governance, based on the relatively high “values” of the main three criteria. The reality is more complex, however, because Cascades can get recycled paper through external suppliers or through an internal division dedicated to this activity. Because there is a high demand for recycled paper, and therefore a higher risk of a shortage of used paper, Cascades prefers to use a variety of supply sources for strategic reasons, which also explains the market structure. The internal division at Cascades simply provides one supply source among others, a situation that explains our use of the word “hierarchy” to characterize this reverse network.

The other two cases exemplify more unusual structures. The cases of recycled paint and used tires should lead to integrated structures because the assets are specialized and because both uncertainty and frequency are high. Instead, however, we observe in each case a hybrid structure built around a third party that coordinates the networks. Williamson (1985) discusses this type of situation, proposing the idea that two players could turn to a third party to settle potential conflicts among them. The experience of Éco-Peinture follows this logic. The paint producers decided to work together and to create a new intermediary to supervise the reverse network operations. This explains why we call this structure a “coopeting” network: Traditional competitors choose to put resources in common in order to offer a product that will compete with their own.
This concept of coopetition in a network has been discussed by Bengtsson and Kock (2000). Recently, we have learned that the recycling plant was acquired by one of the members. This raises the question of the willingness of the other members to continue to collaborate, knowing that they will thereby help a direct competitor. We postulate that as long as recycled paint represents a marginal market share, the network members will agree to collaborate. The case of used tires is substantially different because the third party (Recyc-Québec) was imposed on the network members. This case shows that the government agency is not only an environmental regulator governing decisions made by the participants in the reverse logistics network but also a stakeholder in the reverse network. In this case, the members of the reverse network must not only respect general conditions established by the government agency but also comply with operational guidelines coming from Recyc-Québec. Also, because the nature of the interactions among the network members is mostly structured by governmental intervention rather than strategic or financial reasons, we have called this structure an “artificial network.” From an environmental standpoint, an artificial network can counterbalance “natural” market conditions where used tires were piling up, with the well-known hazardous implications. In this case, however, lawmakers do not define general conditions but rather become a stakeholder in the network. Such a high level of involvement distorts the network because other network members are more tempted to preserve the status quo rather than invest in R&D to develop recycling further.

Conclusion

Although reverse logistics is just one dimension of supply chain management, we consider that the challenges associated with its implementation often call for the development of original solutions that may challenge some conceptual foundations. The case studies that we have described clearly indicate that these solutions can be of interest to the study of governance structures. Our results comfort us in our decision to integrate concepts from both TCE and a resource-based view.

Our research question concerned which factors explain the existence and contribution of different governance structures in reverse logistics. Our analysis shows the importance of strategic factors in the selection of governance structures. In the two cases where there is a clear strategic value (recycled paper and bottles), the determination of the appropriate governance structure is also clear. In both situations, the uncertainty level makes the selection of an appropriate structure easier. In the other two situations (paint and tires), the absence of a strong economic consideration (cost reduction or market expectations) paved the way to hybrid structures.

We have illustrated how third parties can intervene in different ways in the buyer-supplier relationship. An unusual example is the involvement of lawmakers as third parties in reverse networks. This involvement has major consequences with respect to the study of governance structures. In the late 1980s, Russo (1992a, 1992b) studied some similar situations, namely the interactions between electricity producers and the energy commissions of some American states. These studies led to two observations relevant to our work. First, the level of supervision exercised by government agencies over an industry can vary over time and from one location to another. The Quebec experience shows that the degree of involvement also can vary depending on the network. In the case of used tires, Recyc-Québec is directly involved, whereas in other situations, the level of involvement is lower or even nonexistent, as in the case of paper. Second, Russo (1992b) shows that government intervention distorts the process of strategy formulation: Organizations no longer seek to meet market needs but instead attempt to satisfy legal requirements. Our discussions with the managers of firms processing used tires tend to confirm this observation: The processing companies made technological choices based on the subsidies provided and asked Recyc-Québec to restrict new entrants into their industry to limit competition. This is why, in the reverse network for used tires, we characterize the subsidies granted by Recyc-Québec as strategic resources.

The intervention of government agencies as participants in reverse logistics networks leads us to question some well-accepted theoretical concepts. There is a significant body of research indicating that TCE adopts a dyadic (pairwise) perspective (Ritter, Wilkinson, & Johnston, 2004), whereas the reality of the supply chain is closer to the dynamic nature of a network, with many interactions among members. Our cases clearly show that transportation is central to the wide-scale deployment of reverse networks, especially in an area with a low demographic density such as Quebec. Moreover, we have already seen that a network can be organized and even managed by a third party (i.e., used tires). The case of beer bottles offers another example of a third-party intervention: an industrial association aiming to harmonize bottle size in order to simplify the management of reverse logistics activities (reduction of both the uncertainty and the reprocessing assets specificity). As for the paint reverse network, Éco-Peinture acts as a third party, allowing cost sharing among paint producers. In fact, business rivalry is set aside in order to satisfy legal requirements.

Considering the exploratory nature of our research, we cannot claim that TCE does not apply to the selection of a governance structure in reverse logistics networks. Of course, more studies will be necessary to clarify the relative importance of the variables depicted in this article. First, it would be necessary to test our preliminary findings against other cases, as well as to examine the
behaviour of organizations in the quadrant that we have not studied (see Table 1) and in other regions or countries. Second, further research would be required to gain a better understanding of the behaviour of participants in the context of multiple relations in a single network.

Third, our study focused on a limited portion of the reverse logistics chain, namely collection points and reprocessing activities. It would be interesting for subsequent research to integrate the entire chain in order to have a more holistic view. Experiences with paper recycling (evolving from a market structure to a hierarchy governance structure), paint (long-term survival of a coopeetition structure), and tires (how the state can reduce its intervention level) all present interesting issues. Finally, it would be useful to conduct longitudinal studies in order to gain insight into the evolution of logistics networks and their governance structures.

Even though our case studies deal exclusively with reverse logistics networks, we believe that our findings also could be applied to other industrial settings because today's business context requires firms to collaborate in global networks. These networks call for new management practices that both practitioners and researchers are only beginning to understand.

References


Anonymous. (2002). Returns are products too. Chain Store Age, 78(2), 2B-3B.


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