

Logistics Pooling in the French Food Retailing Supply Chains: An Exploratory Study

Hicham ABBAD

Assistant Professor HDR in Logistics and SCM
University of Nantes, LEMNA, France

Sonia MAHJOUB

Assistant Professor in Logistics and SCM
ONIRIS Nantes, LARGE CIA, France

Abstract

Faced with the increased performance requirements of large food retailers, suppliers are continually seeking solutions to improve their logistical performance. To achieve this, for the last few years manufacturers have turned to pooling. This practice requires the mutualization of logistical means (warehouses, distribution centers, transport tools, information systems) and to have the managed by another company, logistics service providers. Despite the interest of numerous companies in pooling, horizontal mutualization experiences between suppliers and large food retailers, remain limited. The main objective of this paper is to identify the obstacles slowing down recourse to horizontal mutualization solutions. Documentary research in specialized professional reviews backed up with interviews with three experts has enabled us to identify and analyze the reasons stopping suppliers to adopt this collaborative approach in greater numbers.

Key words: logistics pooling, suppliers, retailers, logistics service providers, France.

Introduction

In a market where the commercial offer adjusts itself to consumers' purchasing levels, efficient management of the supply chain has become crucial for large French retailers (Paché, 2006; Abbad, 2014). To respond to the needs of their clients and to ensure real development of their activity, retailers have put in place new procurement management methods that aim to optimize the routing of physical flux linked to these transactions. Furthermore, collaborative vertical processes have been started, such as Collaborative Managed Inventory (CMI). They involve close and iterative relationships between suppliers, retailers and Logistics Service Providers (LSPs). This is a type of collaborative organization through which the retailer partially or wholly hands over the resupply management of its warehouses to some of its suppliers. Despite its advantages (reduction in stock levels, resupply time, etc.), CMI has a few limits the most important of which, depending on retailers' strategies for greater availability of products on the shelves, remains the non-eligibility in this organization of small agri-food manufacturers. Furthermore, the volumes involved in the transactions do not always enable the optimum filling of vehicles. The consequence of these realities is an increase in the cost of transporting goods (Camman & Livolsi, 2007; Abbad *et al.*, 2016).

Faced with these CMI limits and the increased performance requirements of large food retailers (shortened delivery times, more fragmented and more frequent deliveries), in an economic context when transport is more expensive (durable increase in fuel prices and voluntary reduction in the transport offer by the players in this activity sector), suppliers, notably SMEs, are continually seeking solutions to improve their logistical performance. To achieve this, for the last few years manufacturers have turned to pooling. This practice requires the pooling of logistical means (warehouses, distribution centers, transport tools, information systems) and to have the managed by another company, LSPs. These LSPs themselves can be assisted by companies specialized in Information and Communication Systems (ICS). Despite the interest of numerous companies in pooling, horizontal mutualization experiences between suppliers and large food retailers, remain limited (Chanut *et al.*, 2010).

The main objective of this article is to identify the obstacles slowing down recourse to horizontal mutualization solutions. Providing answers to this issue has led us to survey the reasons for choosing these solutions. Documentary research in specialized professional reviews backed up with interviews with three experts has enabled us to identify and analyze the reasons stopping suppliers, notably in the agri-food industry (AFI) and major consumer goods (drugstores, perfumes, hygiene) to adopt this collaborative approach in greater numbers.

This article is in two parts. The first covers the conditions that led to the emergence of pooling in the French large retail industry and underlines its advantages for the main players in the supply chain. The second section identifies the hindrances and obstacles that enable understanding of why this type of horizontal cooperation aiming to mutualize tools and resources has not met with the success expected at the beginning of the 21st-century.

1. Pooling: how it emerged and its advantages

In this section we will look at the conditions that led to the emergence of pooling in the French large retail industry and will cover its advantages for major players in distribution, large retailers and manufacturers.

1.1. Pooling in large retail: A tool for a new logistics model?

Since its appearance in the 1960s, French large retail has developed quickly with commercial regulations being the only obstacle. Since the 1960s it has become one of the key figures in the French economy.

Relationships between producers and retailers have very often been considered as conflictual (Messeghem, 2003; Bonet & Paché, 2005; Abbad *et al.*, 2012; Abbad *et al.*, 2016). Following the increase in hypermarkets in supermarkets under considerable concentration of large retailers, suppliers have seen their negotiating power crumble over the years to the benefit of their retailer clients. To increase their commercial negotiating power, they have created five purchasing centers that are predominantly food related (Agenor, Coopernic, Provera, Galec and Opéra). Together they account for a little more than 80% of food products sold in France. Their strategy is to buy as cheap as possible to sell as cheap as possible. In other words, they enable the trade of "large retailer" according to the definition of Edouard Leclerc, the founder of Leclerc, to be carried out: "*Trading*

means buying at the lowest possible price to sell at the highest possible price. Distributing means buying at the lowest possible price and also selling at the lowest possible price". In this context the AFI sectors, but also consumer goods, are obliged to take all the strategies of large retail (price, quality, logistics, etc.) into consideration to be able to continue working sustainably with it.

By tracing the evolution of distribution structures over the last 40 years, Chanut *et al.* (2010) have discerned four logistics models. The first model (*logistics model 1*) was used during the large retail "launch" period, in the 1960s and 1970s. Manufacturers delivered to retailers' stores, or their factories, or warehouses belonging to them.

During the 1980s, the first physical logistics means in the distribution channel appeared. This is *logistics model 2*. It created relationships between factories and warehouses and warehouses and points of sale. The recourse of retailers to warehouses-distribution centers can essentially be explained by the critical size reached in terms of the number of stores. Whilst certain distribution centers were managed by the retailers themselves, others were entrusted to LSPs. The latter have provided a certain expertise in the operational organization of logistics activities (Roques & Michrafy, 2003; Paché, 2006; Camman & Livolsi, 2007). This outsourcing strategy has also enabled retailers to concentrate on the core of their business. The first subcontracted operations concerned warehousing, the preparation of orders, and transport. Following this, LSPs increased their offer to other tasks such as packaging, *co-manufacturing* and *co-packing* (Fulconis *et al.*, 2010).

Logistics model 2 marks switching from a short circuit (the manufacturer's warehouse is the sole intermediary between the manufacturer and the store) to a long circuit (integration of numerous intermediaries such as national or regional retailer warehouses). It enabled more or less temporary storage in warehouses and thus facilitated the conversion of storage areas (storerooms) connected to the points of sale into sales areas (Chanut *et al.*, 2010). Therefore the range of the in-store commercial offer increased. This logistical organization contributed to the development of retailer turnover. It also contributed to maintaining profitability; this being closely dependent on the volumes sold with a low margin. In the 1990s there was an increased development in the number of warehouses retailers. Despite the costs that arose from the generalization of long circuit set

ups, retailers were successful in incorporating them into commercial contracts as they had control of their logistical chains. Financial compensation is systematically demanded of any supplier delivering products directly to warehouse retailers. Often, it exceeded the savings made through the optimization of physical flux, notably those inherent to transport because it was less expensive at that time than it is today.

In the middle of the noughties, a third logistics model appeared in the retailing industry. Model 3 integrates a new intermediary between manufacturers 'factories and retailers' regional distribution centers. These are warehouses that are shared by large retail suppliers. Since recently, these warehouses have been renamed as "mutualized upstream colocalization warehouses". Suppliers adopted a new collaborative process, pooling.

Faces constraints link to sustainable development in large towns (reduction in greenhouse gas emissions, traffic fluidity, etc.), certain local authorities have given preference to the creation of shipment breakdown centers on the outskirts. These changes in logistics flows mark the evolution to a fourth model. It links up three levels of warehouse. Manufacturers deliver to a multi-supplier warehouse then they transport the products in a mutualized manner to retailer warehouses; these warehouses then delivered to the stores of shipment breakdown centers if they are going to be supply "local" stores in town or city centers or built-up areas.

After having analyzed the different stages that preceded and conditioned the appearance of pooling in the food large retail industry in France, we will now turn our attention to the advantages gained from this collaborative process.

1.2. Pooling in practice: What are the benefits for the participants in the supply chain?

Few studies have looked at the wide scale application of horizontal cooperation for logistics activities (Cruijssen, 2006; Cruijssen *et al.*, 2007; Camman & Livolsi, 2007; Chanut *et al.*, 2010; Pan, 2010). One of the first definitions of pooling was put forward by Livolsi *et al.* (2012). These authors have defined pooling as a "*procurement management method in which several manufacturers undertake to deliver together, from the same logistics site (warehouse or distribution center), one or several retailers notably in order to optimize storage costs (reduction in the number of storage sites in the*

manufacturer-retailer chain) and transport costs (vehicle fill percentage and the number of rotations)".

The terms pooling, mutualized CMI or multi-supplier CMI eighth describe flow organizations that are sometimes a little different but serving the same objective; satisfying large retailers. Two types of pooling can be distinguished, namely multi-pick pooling and pooling, but there are also two modes of pooling in relation to truck filling rules, namely fixed share pooling variable share pooling.

With multi-pick pooling, the reality suggested is that manufacturers in the same region organize the availability of their products are produced on their production sites so that one truck carries out one around collecting as many goods as possible in relation to its transport capacity. Pooling is the most evolved form of mutualization. This is where partner manufacturers, having organized upstream multi-pick supplies, use or create a common logistics distribution center to organize mutualized delivery of the products to common clients, and retailer regional distribution centers.

Whether they use multi-pick pooling, or Pooling, manufacturers who want to put in place mutualized logistics have the choice between two methods. In the first case, fixed share pooling consists of making an estimation for each delivery point concerning the distribution of the number of pallets between manufacturers involved in the project. In the second case, variable share pooling allows the calculation of filling quotas for each company for each delivery depending on retailer requirements. The calculation of quotas and their validation by the different parties involved, sometimes with competing interests, is often entrusted to an LSP.

In France, the first pooling experience was started in 2004 by Sara Lee Coffee and Tea France and Cadbury. This multi-pick pooling is managed by the service provider Inflow Logistics Service. It is also responsible for organizing deliveries by hiring transporters on behalf of both manufacturers. This pooling has enabled the truck filling percentage to increase from 98.7% to 99.3%.

The first pooling site (shared logistical site for consolidating flux) became operational at the end of 2004. Started and developed by Bénédicta and Nutrimaine, managed by FM Logistic, pooling later caught the attention of other manufacturers with the inclusion of Lustucru in 2006. This organization has enabled the three manufacturers to improve truck filling percentages and to increase

their delivery service rates respecting the logistical "conditions" of their clients.

In 2005, the groups Henkel, Colgate-Palmolive and GlaxoSmithKline decided to mutualize their deliveries to large retail distribution centers with FM Logistic as their LSP. After having started using multi-picks (collection and then consolidation of deliveries) from three warehouses, in 2006 it was decided to group activities together into a single warehouse, created and managed by the same service provider. Three years after, results have highlighted daily deliveries, full trucks (33 pallets compared to 8 to 20 on average without pooling), a transport quality rate improved by 7 % thanks to the regularity of deliveries and the absence of load rupture, a 15 to 20% reduction in retailer warehouse stock levels and an even greater reduction in storage costs and financial costs for retailers, an improvement in the overall rate of service and a significant impact on greenhouse gas emissions. In 2008, Sara Lee integrated its beauty products into this pool. At the start of 2011, the capillary care specialist Eugène Perma joined this pooling (please refer to the positive effects of pooling, table 1).

Table 1: The positive effects of pooling

Overall	<ul style="list-style-type: none"> - Reduction in transport costs: - Reduction in greenhouse gas emissions - Standardization of processes and organization (possibility of finding and dealing with anomalies during daily operations) - Greater forecasting and reactivity: mutualization smoothes over peaks in procurement demand exchanges - Better service for clients (manufacturers and retailers)
Retailers	<ul style="list-style-type: none"> - Increase in delivery frequency without multiplying reception activities for retail distribution centers - Increase in service rates (more frequent deliveries to distribution centers on set days and set times) - Reduction of required stock levels
Manufacturers	<ul style="list-style-type: none"> - Competitive advantage due to the mutualization of logistics costs (multi-supplier order preparation, etc.), transport costs and as a consequence, improvement in operating margins with unchanged sales prices - Better management of new product launches, seasonal products, and promotions

2. Obstacles to the horizontal mutualization of resources and skills

In order to master the entirety of the upstream supply chain, depending on its suppliers, their locations, their products, their own storage and breakup sites (warehouse-distribution centers) and their points of sale and their formats, general large retail aims to link, through contracts, their performances with other companies with specific skills and tools. Quite logically, its logistics strategy should manage supply chains solely through sales forecasts coming from stores. In reality, it manages supplies in relation to stocks and orders that are centralized and consolidated regionally in its warehouses. One must underline that large retail has no other choice than to develop its sales *"distribution is a sector where sales growth is obligatory to improve margin."*¹

Bringing together different companies to achieve this economic goal, one that every food large retailer is faced with given its small margins (1 to 2% of annual turnover) is no mean feat. Developing turnover requires optimization of shelf supply in stores, but products are available in stores in suitable quantities in relation to consumption forecasts. To achieve this, manufacturers, LSPs, Communication and Information System service providers (CISSP) and transporters are contacted and required to provide good service through strict contracts. These contracts provide for heavy financial penalties for non-supply of the "correct" products under prescribed contractual conditions (Paché, 1995; Abbad & Paché, 2013). Without considerable pressure on their suppliers, whether they be manufacturers or service providers "under the threat of non-renewal of contract, or leaving the contract agreement before it has served its term), large retailers are faced with numerous constraints that makes their logistical performance more fragile and as a consequence have a negative effect on their commercial and financial performance.

If an obstacle or constraint can be defined as an impediment, a hindrance, or difficulty, what are the objective or subjective (human) factors that have stopped pooling from developing as a management and action model for supply chains in the large retailing industry?

¹ A. Riedmatten, LSA no 2211, 2012.

These constraints are relatively numerous and of different types. We will look at those that concern warehousing, transport, and the specificities of the context studied.

2.1. Obstacles to mutualisation for the warehousing of goods

Obstacles linked to the nature of products. The products in question are dry consumer-products manufactured by agri-food manufacturers and “DPH” (drugstore – perfume – hygiene) products. Being consumer products their rotation in stores is high. Furthermore, large retail requires that they be resupplied every working day, sometimes 3 to 5 times per week. A mutualization of "offers" for these products is inconceivable. Offers are dealt with via *cross-docking*, that is to say they are delivered to stores without being temporarily stored by the retailer's warehouse.

To be mutualized, products must not be directly in competition with each other. An example of possible mutualization is to store chocolates (Cadbury) and coffee (La Maison du café) in a multi-supplier warehouse. The seasonal requirements (Camman & Livolsi, 2007) of products that can be mutualized must be staggered, complementary rather than cumulative (peaks in consumption of Banania products in winter and Bénédicta products in summer). Despite an almost daily resupply, these resupplies must be in "large volumes" notably to be delivered to hypermarkets. A full, unfitted truck can transport 33 pallets; a double-load truck can carry the twice as much as long as the trailer does not exceed 16 t of goods. A double-load truck does however add another obstacle, that of the height of the pallets.

Obstacles linked to location. The locations of factories or warehouses of different suppliers must be relatively close to the multi-supplier warehouse. This geographical proximity gives preference to multi-pick supply at a reasonable cost. This cost cannot get rid of the benefit of supplying the primary warehouse enabled by multiple pickups during around by transporter. However, these pickups rarely enable trucks to be filled. Furthermore, the location of the multi-supplier warehouse cannot be too far away either from point of sale in the event of direct delivery of a full truck, or from the warehouse-distribution center of the retailer(s).

Technological obstacles linked to information to be shared. In configurations with multiple companies involved in supplying the chain's clients, it is necessary to set up a CIS that can handle all of the

data. It would allow selective and secure access to certain information depending on the role of each company in the chain.

Furthermore, to mutualize part of the distribution, companies must not have to invest in a new CIS. Each company must have easy and quick access with its current system, assuming that it is capable and above all technically compatible. Beyond this "tool" aspect to be shared and mastered by the human resource departments of the different companies and to be filled in on a daily basis, notably with logistics and transport information², the reticence of manufacturers' and retailers' management teams must be overcome.

Human obstacles linked to information sharing. Sharing information, notably information concerning sales between manufacturers (Camman & Livolsi, 2007³ ; Chanut *et al.*, 2010), even if their products are not in direct competition, is often considered as a risky practice that is best avoided. Manufacturers often consider the data linked to sales strategic and therefore to not be divulged.

If the LSP shares too much information on the gains that mutualization decisions have enabled, the sharing of these gains with manufacturers, or even with its transporters, could become very delicate and lead at least to some contradictions. Sharing a lot of information with retailers appears even more risky to manufacturers. They are concerned that retailers would use the information to demand even better services from them, services that the retailers would not want to pay for at their "real" cost.

Only the drawing up of extremely precise specifications can incite manufacturers to practice pooling. It must deal with minimum stocks thresholds; reception management; actions to be taken in the event of late delivery or excesses relating to the objective of carrying out deliveries with full loads; the role and responsibilities of each participant; the invoicing of transport costs with regard to arbitration

² Even if the information manufacturer's products may remain up-to-date for a long time, sales teams sometimes modified the sales units and their packing to facilitate sales without taking into consideration their effects on the make-up of pallets and modifications they then require.

³ "(...) *These confidentiality thresholds concerned the volume of pallets being sent and the details of references per pallet.*" This information would enable any company "to accurately know the sales per product, region, and brand of its competitors".

for the LSP responsibility in the optimization of transport costs with full trucks, etc.

Obstacles linked to logistics services. As underlined by Mevel & Morvan (2010), *"in an exacerbated competitive context that involves knowing how to deliver multiple references just-in-time with the constraint of reducing batch size and securing delivery time, notably in order to avoid late delivery penalties applied by retailers, today manufacturers in the AFI sector must be able to rely on a reactive and flexible logistics service provided by its service providers"*. Furthermore, the first obstacle linked to any development of a logistics service is the attitude of an LSP to ensure the "service rate" that its client(s) need(s). It is *"the measure of the availability of the LSP to promptly fulfill a request as well as its aptitude to provide quality services respecting flux, deadlines, and the price given"* (Mevel & Morvan, 2010). Amongst other things, it assumes that the LSP has an efficient service regionally, even nationally, regarding the distribution of products that can be mutualized.

The tariffs of any LSP cannot be very different from the others in the profession or those of the retailer who has kept a part of the warehousing activity for itself (Système U, Casino through the creation of an LSP that it controls) or even part of the transport activity (Système U, Intermarché if necessary in the event of peaks in activity levels). These services are standardized, with little difference in relation to the strategic choices of the profession, those of LSPs and, as a consequence, are subject to considerable competition. They have a market price to which retailers associate pertinent costs and as a result margins that they want to keep as low as possible. As a result, any LSP with the ambition of working for this supply chain knows that they must master the trade and that activity volumes must be sufficient to compensate for the low margins.

The stock levels demanded by the retailer in terms of days of consumption are also an obstacle to pooling. In order to avoid any product being out of stock in the store, retailers demand that manufacturers provide high stocks for which they do not want to cover the costs and risks of non-sale.

Another obstacle can be identified; it is linked to the excessive workload on human resources that must be mobilized by the LSP to manage the supply chain. In order to optimize warehousing and transport of goods, we have already underlined that is important to fill

in CIS data after any physical modification of products and/or their packaging and packing (weight, volumes, etc.). The objective is to make each participant of the chain take this new information into consideration to optimize its own services.

Furthermore, it is up to the LSP, in the event of pooling, to manage the resupply of retailer stores. Each manufacturer could be tempted, in the event of arbitration being necessary, to deliver the retailer with a full truck, to give preference to its own needs, those at the retailer makes on it. By contractually handing over, to the LSP, its capacity to decide on the quantity that could be delivered based on the sales history of the products of the manufacturers concerned, each manufacturer loses a little of its power by subjecting itself to a delivery compromise that respects its commercial commitments. This is extremely labor consuming. It can require the recruitment of a person whose assignment is to specifically manage the flow of goods taking into account the different economic and physical constraints and necessary arbitration between the requests from stores and the transport capacities of full trucks working on a regular and perennial delivery route.

The last obstacle linked to logistics is what Mevel & Morvan (2010) called the technical "capability" of the LSP; its ability to provide the services required. It is its "*ability to meet heterogeneous demands (pickup, warehousing, breakup, transport, etc.)*". Meeting this demand requires the mobilization of different capacities. Setting up pooling requires prior negotiation with the retailer, potentially the point of sales managers, concerning delivery times and days, and the conditions for access to stores in the event of delivery outside working hours.

As we specified previously, it involves another "capacity", that of being able to arbitrate between the goods of different suppliers. It is up to the LSP manager to be particularly attentive to the arbitration they have to carry out to ensure a correct service level to stores, without penalizing manufacturers' sales. This point is even more important in the event of regular overloading of pallets in the truck.

2.2. Obstacles to the mutualization of goods transport

Less trucks for the same activity level and fuller trucks are the two objectives that logically lead to a minimization of transport costs. Other gains can be linked to an increase in delivery frequency (Paché, 2006), notably better availability of products in the points of sale: no

delayed purchasing, minimization of the risk of seeing a client go to a competitor, etc.

The compatibility of goods to be transported by the same vehicle. Certain products cannot be put in the same truck as, for example, one gives off an odor that could impregnate the other and as a result alter its physical integrity. Certain products must be transported at negative temperatures, other at positive temperatures. Certain products can be dangerous. Numerous rules exist, and they must be respected. As far as pooling is concerned, the nature of products that can be handled by this logistical organization and above all their packing means that they cannot be a physical obstacle, or economic obstacle (dual or triple temperature trucks required) to the mutualization of their transport.

The delivery volumes and distances of goods to be transported. So that pooling is profitable to all of the organization's clients, manufacturers (retailers being clients of clients in this organization), mutualized goods volumes must be sufficiently high to economically allow a higher delivery frequency for retail point of sale. Also, insufficient delivery volumes and too great a distance between delivery points are obstacles real for the mutualization of goods. This geographical proximity was calculated by professional to be 50 km.

A new double requirement: being delivered more frequently without any increase in reception activity. Faced with this double requirement: being delivered more frequently and not having to multiply reception activities in regional warehouses managed by large retail, the grouping together of manufacturers goods, and particularly those of small manufacturers, would appear to be the solution. Grouping together deliveries means, if possible, loading full trucks with various and compatible goods from different suppliers, notably by organizing regular delivery flux, 3 to 6 times a week. However, this rational organization of flux keeps coming up against the difficulty inherent to delivering products of different manufacturers on the same date, at the same time, to the same recipient on the recipient's specified site and the organization's own constraints arising from its desire to master its own costs.

2.3 Cultural obstacles linked to certain business practices in France

Other than obstacles linked to logistical activities (warehousing and transport), pooling is faced with difficult is specific to French business contexts.

To become good practice, pooling requires cooperation between certain suppliers but also with large retailers, and therefore the involvement of the client. Yet, in France, as we have underlined previously, relationships between manufacturers and large retailers are often conflictual. In fact, the power relationships that occur due to the commercial and price conditions imposed by large retailer purchasing units have created a climate of mistrust. This commercial reality specific to France sometimes makes the setting up of practices requiring cooperation, such as pooling, difficult. This obstacle, that we could consider cultural, is more active when suppliers perceived pooling as an "innovative" process but above all as a process imposed by large retail clients to reduce their stock levels on their own distribution centers. Especially when these new levels must be compensated by an increase in those that supplier manufacturers must maintain in primary warehouses to secure this new supply method. This transfer of stock levels to upstream participants, suppliers, results in a transfer of logistics and transport costs. The only beneficiaries of this transfer are large retailers who refuse to take them into consideration during price negotiations.

Other participants could sometimes become an obstacle to the setting up of pooling project. Local authorities are rarely enthusiastic about the delocalization of a warehouse to another department or region (Chanut *et al.*, 2010).

Conclusion :

To better control its costs, notably logistics costs, large retailers are trying to organize the supply of their points of sale as economically as possible by conceiving logistics chains that are different depending on the products that they sell, the outlets (hypermarkets and supermarkets, "local" stores), and their location (in towns, suburbs, city centers, or small built-up areas in the countryside).

In doing so, they no longer want to bear the upstream logistical costs of the supply chain. However, they want to impose the organization of their goods (Carrefour and its "Centers de Consolidation et de Collaboration" as do all the other large retailers, with organizations and practices also aiming to mutualize upstream and downstream transport and the warehousing of the products to be sold. These organizations want to reduce the costs that they cannot transfer to manufacturers (de Corbières *et al.*, 2012), notably those linked to transport to their regional collection and breakup distribution centers. Furthermore, in the event of problems (supply not complying with the contracted performance requirements) responsibility lies with the manufacturers and possibly other service providers of the chain, those having been "mandated" by the manufacturers, without any dispute possible.

Notably, in the case of pooling, the LSP manages the flux of goods between clients, manufacturers, and the clients of its clients; large retailers. This management requires prior bilateral and multiple arbitration by the LSP using a collaborative portal enabling the fully secure bilateral exchange of information (LSPs – retailers; LSPs – suppliers). Through these concrete examples of pooling that have been put in place at the beginning of the first decade of the 21st century in France, the responsibility of the LSP has widened due to the fact that they are responsible for the organization, synchronization, and optimization of transport activities with full trucks whilst with CMI, the manufacturer took on this management function and outsourced transport activities to companies in this sector.

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