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The 3PL as catalyst of coopetitive strategies –An exploratory study

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The subject of coopetitive strategies has been increasingly studied since the end of the 1990s in academic literature on strategic management, offering an in-depth renewal of the way of looking at the evolution of exchange relations between firms, and emphasizing that neither pure cooperation nor pure competition are satisfying explanatory models of the reality of business. In fact, cooperation and competition blend to give rise to a novel model of value creation: coopetition. The paper makes use of this conceptual framework to study the role of third party logistics (3PL) in the operation of modern supply chains. 3PLs appear to be the catalysts of coopetitive strategies, particularly when they manage modular platforms. An exploratory field study conducted in France has identified three 3PL archetypes in the dynamics of coopetitive supply chains: 3PL as caretaker, 3PL as lead operator and 3PL as architect.

Keywords: Coopetition, France, Interorganizational relationships, Logistics industry, Modular platform, Network organization, Supply chain management, 3PL.

Introduction

One bleak and hazy morning, a group of lecturers and students were visiting a warehouse located near Marseilles, in the South of France, specialized in the stock management of convenience goods for hypermarkets and supermarkets. A common event since large retailers decided to have full control of the stocking up of their stores, rather than leaving the task to manufacturers and/or wholesalers. But a *surprise* was awaiting the visitors when the warehouse manager explained that the major two French large retailers, Alpha and Beta, in direct competition on the market

for thirty years, had decided to share the logistical resources on the site to improve the performance of their respective supply chains. Aware of the difficulties of implementing this strategy of pooling, the two large retailers called in a third party logistics (3PL) who plays the role of third party player, and developed particularly sophisticated technical solutions in order management and picking operations. In brief, Alpha and Beta remain fierce competitors in attracting consumers in their stores; they conduct a commercial war where every marketing trick is allowed, but they cooperate strongly in matters of construction and management of supply chains. Two years after the beginning of the pooling process, the warehouse manager concluded that delivery costs have decreased by nearly 12 per cent and customer service increased by 20 per cent for both firms! Despite its apparently paradoxical aspect, a situation mixing competition and cooperation has become quite common, and undoubtedly opens renewed outlooks for logistical thought.

The dynamics of supply chain development have been increasingly analyzed over the past fifteen years. At first, the operating procedures of logistical systems associating a set of stakeholders (manufacturers, large retailers, suppliers, etc.) were studied, as well as the collaborative monitoring tools used to increase their reactivity. Now, questions of a more strategic nature about value creation and distribution are taking over. Most research papers, following Christopher (2010), agree in stating that the dominant competitive process is based on a confrontation between supply chains; it is however necessary to point out that business facts lead to a coexistence between competition and cooperation within supply chains, as the example of Alpha and Beta shows. They correspond to the notion of *coopetition* as defined by Brandenburger & Nalebuff (1996), *i.e.* that competitors in a market, be they suppliers, manufacturers or large retailers, are sometimes well advised to adopt cooperative strategies to improve their respective positions, in matters of procurement or logistics management for example. In many industrial sectors, it is frequently noted that companies cooperate in the assembling activity by implementing shared modular platforms while competition rages in the marketing activities. On the logistics side, collaboration (as a cooperative strategy) appears to be a pooling of resources, a must for reducing the operating costs of supply chains.

We deal with the subject from the assumption that 3PL play the role of cooperative strategy catalysts in supply chains, relying on their expertise in flow management for manufacturers and/or large retailers. As early as the 1980s, 3PL positioned themselves at the interface of several rival supply chains to better manage the required resources and competences according to a pooling pattern. Gradually, French companies such as the Geodis Group and Norbert Dentressangle Group became supply chain lead operators by implementing collective solutions improving each of their customers' logistical performance. The most significant illustration of this phenomenon lies in the organization of physical distribution activities, with a sharing of stock, transport and even co-packing management resources. These activities are particularly sensitive to scale and learning economies. 3PL enabled some of their customers who were in direct competition to reach the required critical size to develop a sustainable competitive advantage (the case of small canned food manufacturers at the beginning of the 1980s). The paper examines this research subject in reference to an exploratory field study conducted in France, seeming to

prove that in the end, 3PL can play three different roles in the management of cooperative supply chains*.

Logistics industry—A cooperative view

Coopetition has not produced an in-depth theoretical reflection in matters of management of supply chains. Analyses remain based on inter-firm cooperation or on inter-firm competition and assess the advantages and drawbacks of each option. Of course, there are some studies under way as illustrated by Kotzab & Teller's (2003) contribution on value-adding partnerships in the grocery sector, Lee & Song's (2007) contribution on the strategies of port operators, or Spens & Kovács's (2007) contribution on humanitarian relief supply chains, but no real research agenda on the subject has emerged. And yet, it seems particularly pertinent to refer to the notion of coopetition for a better understanding of the behaviours of 3PL developing efficient solutions for a number of directly competitive customers, while pooling logistical resources for them. The case of modular platforms, implemented by some 3PL, highlights the relevance of approaching supply chain dynamics through coopetition.

An enlarged services approach

In the last fifteen years, a significant academic literature on marketing, supply chain management and strategy has been trying to define the profile of the logistics industry in reference to operations carried out by 3PL, with various degrees of complexity depending on the outsourcing agreements signed with manufacturers and/or large retailers (Andersson & Norrman, 2002; Roques & Michrafy, 2003; Marasco, 2008; Fabbe-Costes *et al.*, 2009; Fulconis *et al.*, 2011; Large, 2011). Although the 3PL trade is generally defined as exercising logistical activities on behalf of manufacturers or large retailers, it varies greatly both in terms of size and the services provided. Dornier & Fender (2007:356) mentioned that a large number of 3PL are "*characterized by a bipolar structure including micro-enterprises with a few employees and major firms with sales turnovers amounting to several billions of euros*". As to the diversity of services offered, the Accenture consultancy registered "appellations" to identify the different types of 3PL on this criterion.

In addition to the activity of 1PL (*first party logistics*) exclusively involving transport or warehousing contracting, and the activity of 2PL (*second party logistics*) involving transport and warehousing outsourcing only, there are two other categories of now common activities: 3PL (*third party logistics*) and 4PL (*fourth party logistics*). Most 3PL come from the road haulage sector and ensure the simple execution of physical operations associated with product transport, handling and storage, and even the management of industrial or commercial operations (mass customization), administrative operations (invoicing) and information operations (tracking-tracing) (Selviaridis & Spring, 2007). Unlike 3PL who own their transport and warehousing means, the objective of 4PL is to design and sell tailored logistical solutions (particularly information systems) by creating a network of competences associating for example hauliers, warehouseers and sub-contractors (see Figure 1).

* The authors would like to express their gratitude to two anonymous reviewers of *Supply Chain Forum: An International Journal* for their valuable comments on a preliminary draft of this article.

Figure 1 From transport company to 4PL

[insert here Figure 1]

While the French case shows an obvious widening of the service offers, it is far from being isolated and unrepresentative of the global trend. Many 3PL in Northern Europe, the United States and Asia have followed the same reasoning. Originally oriented toward transport and warehousing activities, the scope of their service offers now focuses on the management of many complex interfaces with the customers in the manufacturing and retailing industry. What is then essential for 3PL is to act as “go-betweens”, in other words establishing contacts between supply chain members, without 3PL necessarily owning material assets (Saglietto *et al.*, 2007). The mediator function of 3PL is clearly illustrated by Carbone (2004). Drawing his inspiration from Chow & Gritta’s (2002) contribution, Carbone (2004) showed how some 3PL adopt a *non asset based* model that privileges flow coordination competencies rather than heavy investments in transport and logistics assets as per the *asset based* model. Interface management takes precedence over the control of the different elements in the offer. Of course, 3PL ensuring a mediator function remained a minority in Carbone’s (2004) sample, but they represent an emerging group not to be neglected by researchers. All the more so as other works present converging results in the reconfiguration of value chains by 3PL. For example, Lai (2004) conducted a survey of 3PL in Hong-Kong to assess their service capabilities in two types of logistical services, in complement to conventional freight forwarding service (FFD):

- Value-added logistical services (VAL): assembling, packaging & labelling, purchasing & procurement, cross-docking, customer-specific label printing, warehousing, etc.
- Technology-enabled logistical services (TEL): information systems management, tracking and tracing.

The field study concluded, from a cluster analysis, that there were four types of 3PL, with 27.1 per cent labelled as “*Full service providers*”, because their level of capability is high in each logistical service (FFD, VAL and TEL). The study also emphasizes the presence of an unusual group of 3PL, called “*Nichers*”, who as a priority have developed capabilities in the value-added and technology-enabled logistical services (VAL and TEL), to the detriment of conventional freight forward service (FFD). Finally, 3PL centered on basic transport operations now only account for a quarter of the sector. The large number of 3PL who have developed new value-added services, as shown in Lai’s (2004) field study, shows the magnitude of logistical mutations in some South-Eastern Asian countries, that are probably occurring at a greater speed than in Northern Europe. This type of mutation is not due to chance. It simply corresponds to the fact that 3PL have known how to progressively widen their service offer to answer the expectations of manufacturers and large retailers who have also progressively abandoned many logistical activities to better dedicate themselves to the management of their core business.

The case study of Jager *et al.* (2009) on the Swedish furniture industry revealed that the case company has evolved from being a standard 3PL provider to a service developer; in addition to traditional services, it provides more value-added services.

These services involve a set of more standardized activities that can be combined according to each customer's wishes and requirements. Among the most radical developments, we should mention that this 3PL took over modular platform operation activities. Such activities raise formidable challenges to the way of considering value creation and distribution modes within supply chains (Fulconis & Paché, 2005). A 3PL operating a modular platform mobilizes increasingly sophisticated resources and competences naturally leading it to offer its services to a growing number of customers. Customers also find it interesting as the 3PL produces such significant economies of scale and scope that its offer is far more attractive than an internal management of operations. The history of the logistics industry shows how activities of promotional packs then of co-packing were transferred from manufacturers and large retailers to 3PL warehouses.

In addition, to remain and/or to grow in an already highly competitive market, 3PL now have to pay significant attention to their development strategy. To better define the phenomenon, Hertz & Alfredsson (2003) determine four categories of 3PL, depending on their general problem solving ability (relatively high, and high) and their adaptation to customers (relatively high, and high) (see Figure 2). For these authors, the distinction points out: (1) the "*Standard 3PL provider*" (example: a highly standardized modular system where customers are offered their own relatively simple combination of standardized services); (2) the "*Customer adapter*" (example: totally dedicated solutions involving the basic services for each, 3PL firm is seen as a part of the customer organization); (3) the "*Service developer*" (example: an advanced modular system of a large variety of services and a common IT-system used for all customers); (4) the "*Customer developer*" (example: the 3PL firms develops advanced customer solutions for each customer, enhancing of the knowledge in common, the role more of a consultant).

Figure 2

3PL classified according to abilities of general problem solving and customer adaptation (adapted from Hertz & Alfredsson, 2003)

[insert here Figure 2]

The "*Standard 3PL provider*" and the "*Customer adapter*" have a relatively high general problem solving ability. If their expertise, characterized by a basic service offer, remains very general, they stand out with an multi-customer offer (concerning "*Standard 3PL providers*") and with a dedicated mono-customer offer (concerning "*Customer adapters*"). The development strategies implemented here come close to a cost leadership strategy; 3PL combine low margins and significant volumes of activity. The "*Service developer*" and the "*Customer developer*" have a high general problem solving ability. They are considered as true experts in logistics industry. They stand out through the quality of their service offers, remaining standard quality for service developers (grouped into modules combined at request) and differentiated quality for customer developers (with high customer adaptation coming close to the 4PL trade). The selected development strategies rather correspond with differentiation strategies where 3PL favor specific offers, mass customization activities in their modular platforms for example, allowing them to be different from their competitors while achieving higher margins.

If we start from the principle that 3PL, through their modular platforms, are at the interface between several supply chains in ensuring high-value operations for each, essential for personalizing finished products, the question of which strategic dynamics are used becomes increasingly important: how to articulate cooperation and competition harmoniously? In modular platforms, 3PL share resources for several customers who are then in a situation of “indirect” cooperation in the assembling activity of modules for example. But these same customers will obviously be competitors in markets in capturing final customers with their offer of customized products. This is the specific configuration of the coopetition strategy, formalized for the first time by Brandenburger & Nalebuff (1996). But more recent research on SCM, particularly in the North American context, is unwilling to integrate the dualism of the cooperation/competition paradigms and defend a purely normative view: collaborative practices are the *only possible solution* for firms involved in the operation of a supply chain, the sole stable state to reach to bring maximum value to final customers (Fawcett *et al.*, 2008). So that reflection on an alternative paradigm close to the reality of the game between supply chain members is all the more stimulating.

Fundamentals of coopetition

Coopetition describes the fact that in our current business environment, firms can create more value and develop in markets if and only if they work together rather than on their own (Brandenburger & Nalebuff, 1996). They remain competitors in access to rare resources, but their interest lies in knowing how to cooperate judiciously for more efficient uses. The R&D process is an excellent case study as firms “*may display cooperative interest structures at the time of co-creating value through an R&D project, but they may also undergo competitive pressures at the time of capturing the value created*” (Cassiman *et al.*, 2009:217). The approach supplies a sort of diagnostic tool for clarifying situations. For example, it proves essential to know whether a firm will be confronted with a direct competitor or, in contrast, with a possible *complementor* who will bring additional resources, indispensable for enhancing the value of its offer. According to Brandenburger & Nalebuff (1996), to describe coopetition, the five following factors must be taken into account:

- the opposing players, by assessing their potential complementarities;
- the different added values created by each player;
- the rules of the game formalized between the players to organize the exchange;
- the tactics used by each party, particularly to change the rules of the game;
- the fields of tactics exercised within value networks (commercial, industrial, logistical, etc.).

The idea that cooperation and competition are finally two simultaneous and logical ways of acting rather than exclusive ones does not present any remarkable originality. The business world offers numerous examples in which competitors have managed to find a way to agree to develop a project or formalize a shared standard to facilitate the penetration of a new product onto the market. What is more original, on the other hand, is to consider the situation of coopetition in terms of a *sustainable strategic balance* creating competitive advantage: a balance in which players no longer fear the reappearance of an opportunistic behaviour from a partner skilled in taking advantage of cooperation by later starting hostilities once having garnered the benefits of the cooperation phase. This led Bengtsson & Kock (1999) to detail the

conditions required to implement a coopetition relation mode: competitors must both occupy a relatively strong position in the sector of activity (thus excluding any alliance of an asymmetric nature), and the requirement for outside resources must be high (thus excluding a structurally unbalanced situation of resource dependence).

Aren't alliances between competitors as part of a coooperative strategy hazardous, by forcing partners to disclose knowledge and competences to a competitor? This is a conventional position held in the literature, but Ritala (2009) emphasized that coopetition also offers significant value creation opportunities. These distinctive risks and benefits arise from the fact that the collaborating firms are rivals in the end-product and strategic resource markets. Analyzing the impact of market rivalry on the basis of value creation in interfirm alliances, Ritala's (2009) contribution showed that coopetition is not risky or beneficial by definition. In particular, the way that the competing firms design and manage the alliance with respect to market rivalry and their common and specialized knowledge and competences actually determine how the benefits and risks in such a relationship are structured. A coooperative strategy has to be studied in a given context, as a function of the structure of markets and relations between players; in some cases, when the benefits of coopetition are high, to choose cooperation or competition will be a major strategic mistake.

From the above reasoning, it appears that a coooperative strategy is not simply a transitory step in an evolutionary path between competition and cooperation, or between cooperation and competition. It must be in contrast considered as a real end objective for players, who accordingly formalize stable rules of the game. Without going as far as saying that coopetition is the new managerial paradigm, it is an organized system in which players "*interact on the basis of a partial congruence of interests and objectives*" (Dagnino *et al.*, 2007:95). For these authors, the key element of this strategy is the identification of interdependences in the process of value creation, in the distribution of mutual benefits and in the detailed identification of convergent interests between players. This naturally leads to a research programme exploring, among other subjects, the intrinsic performance of a coooperative relation mode in comparison with competition or cooperation. Questions on the pertinence of a coooperative strategy within supply chains are already being introduced by some firms. They oppose the dominant perspective in strategic management, an analysis of the supply chain environment mainly from the notion of hypercompetition (Kotzab *et al.*, 2009).

Coopetition, mass customization and modular platforms

Let us go back to the case of mass customization and of the operation of a system of modular platforms by 3PL. The framework proposed by Padula & Dagnino (2007) may be used with some relevance. 3PL offer an attractive solution, both operationally and economically, allowing manufacturers and large retailers to customize their offer at an attractive cost. They accept the cooperative game on the modular platform as far as their leeway remains intact in their commercial fight to capture customers, particularly through an aggressive marketing action. Coopetition here is structurally complementary and imposed by the imperative of a low price strategy, according to Depeyre & Dumez's (2009) analysis. But any asymmetry in terms of market power can threaten the survival of the coooperative network in the end. The dominated supply chain member will wonder whether it is in its interest to go on playing, in other words

to share resources in the modular platform (*via* the 3PL) with other supply chain members who gain more than it in terms of market power.

The debate is not new, it crops up from time to time in what Brandenburger & Nalebuff (1996) call the tactics exercise field (cooperative, competitive) within value networks built along cooperative reasoning. Baumard (2009) reminded us of the main issue: to what extent will competitors accept sharing the exploitation and/or exploration of critical assets with other firms? The cooperative dynamics raise the question of adapting the innovation strategies of individual players that can enable them to maintain their place in the cooperative game without losing their individual capacity for innovation as a source of competitive advantage. It is obvious that a modular platform is a place of convergence of competences for the different partners, particularly at the level of the layout of each module, in other words in the management of interfaces. When the management of interfaces is considered as a critical asset for each partner, the risk of dilution of their competitive advantage becomes a reality. This could lead them to brutally withdraw from the modular platform, even at the price of a loss of economies of scale.

If any system of players with cooperative views is threatened by the intrusion of competition, with the risk of unsettling it irreversibly, the part that a third party could hold in the perpetuation of a cooperative relation mode becomes a stimulating research path. Unsurprisingly, this subject is one of the major points in the research agenda suggested by Walley (2007). The advantage of a third party lies in not being involved in the organizational system, moves for power and culture of each player; in contrast, a third party is a “referee” capable of proposing original solutions to potential conflicts of interest. This is the function that a 3PL can fill in the operation of a modular platform and in the associated information exchange. This last point is crucial as the 3PL occupies the position of hub in an information network linked to the monitoring of materials and product flows in the supply chain. The capacity of data processing and memorization is a significant element for ensuring the adequate reactivity of firms faced with the high diversity of references required by consumers.

The recent development of 3PL is becoming widespread in the supply chain management. From three specific cases of third party logistics, Skjøtt-Larsen (2000) discusses the theoretical background for the development of 3PL arrangements, including both transaction cost theory and network theory. This author offers a theoretical framework to explain the role and motivation for this development. The transaction cost analysis lists the conditions under which third party agreements become preferable to the classical choice between market and hierarchy, while the network theory studies the dynamics in third party cooperations. Skjøtt-Larsen (2000:112) concludes that “*third party logistics are not merely a means to cost efficiency, but also as a strategic tool for creating competitive advantage through increased service and flexibility. Furthermore, the discussion points to the importance of investment in human resources and change in attitudes as part of the success of third party arrangements*”. Using the degree of commitment and the degree of integration, Skjøtt-Larsen (2000) shows the recent evolution of relationships between shippers and 3PL (see Figure 3). The resort to modular platforms at the “*third party agreement*” stage and at the “*integrated logistics service agreement*” stage becomes quite meaningful today.

Figure 3
Relationships between shipper and 3PL provider
(adapted from Skjøtt-Larsen, 2000)

[insert here Figure 3]

Coopetition finds a favoured field of application in the operation of current supply chains especially as the technical solutions for optimizing flow monitoring operations naturally require rapprochements between direct competitors. The improved management of delivery rounds, to avoid empty return trips for example, led manufacturers in the same sector to share their transport resources a long time ago; this issue is now even more topical in a context of sustainable development requiring a reasoned use of logistical resources (Monnet, 2007). Considering the central place of 3PL in supply chains, particularly when ensuring an assembling activity within modular platforms, they become key players in an extremely sophisticated logistical coordination at technological level. This fact is now acknowledged in the academic literature, but it must be admitted that the ability of 3PL to favor the implementation of a cooperative relation mode has not often been studied. An exploratory research conducted in France suggests a few paths for reflection in this direction.

Identification of three cooperative archetypes

For several years, manufacturers in direct competition in terms of developing consumer loyalty, but working for the same large retailer, have chosen a pooling of logistical resources. The experience conducted by the three direct competitors Henkel, Colgate and Reckitt-Benckiser is well-known: since 2005, the three manufacturers have shared the same warehouse to increase delivery frequency to stores without increasing transport costs. Basing themselves on an exploratory field study, we tried to determine whether other similar experiments were under way, and what place 3PL occupy in them. The exploratory field study led to a first assessment of cases of pooling between competitive manufacturers. They are finally far more numerous than those reported by the trade press, but mostly remain confidential.

A network approach of 3PL cooperative strategy

The network approach initiated by Snow *et al.* (1992) represents a pertinent conceptual framework for understanding developments in the logistics industry. This approach suggests a representation of inter-organizational relationship dynamics, which, while being sometimes simplistic, remains very instructive as to the part that 3PL can play in it. According to Snow *et al.* (1992), inter-organizational relations lead to the creation of network architectures with a decision centre, a firm at the heart of a relationship and information network, weaving close links with suppliers, customers, 3PL, competitors, etc. It becomes apparent that such organizational forms generally include two elements:

- the network core, usually occupied by a major firm, but not necessarily – a SME can fulfill the role –, with a variety of designations (broker, hub firm, or strategic centre);

- a relational area, including satellite firms, located around the network core, generally specialized in the manufacturing of one module, the physical distribution of one product, or the performance of logistical services.

This network organization approach is based on the acknowledgement that, during the 1970s, large companies, having strongly leaned toward vertical integrity, stopped acquiring additional assets. They focused on activities likely to give them a competitive advantage and simultaneously developed cooperation strategies leading to the emergence of dynamic networks (Snow *et al.*, 1992; Jarillo, 1993; Fréry, 1998). Dynamic network analysis identifies the role of players, particularly the role of hub firms, in a more dramatic manner than the activities-actors-resources model developed by the works of the Nordic school focusing on industrial marketing. This model prioritizes the stakes and contents of interfirm strategies (Håkansson, 1989; Håkansson & Snehota, 1995). Notably, more recent papers make use of both major approaches (*i.e.* the dynamic network analysis and the activities-actors-resources model), to take stock of the situation and give examples (Fulconis, 2004), or to review the role of resources in the dependence of hub firms within networks of innovation (Gardet & Mothe, 2010).

From the dynamic network approach initiated by Snow *et al.* (1992), the 3PL's job is to put at the disposal of the firm occupying the strategic centre a web of logistical modules (transport module, storage module, order preparation module), while suppliers and producers put at the disposal of the strategic centre components and sub-assemblies modules, and distributor, sales and marketing modules. The network architecture is monitored by the hub firm responsible for assembling the various modules. In this quality of satellite, the 3PL is here in a "peripheral" situation. But although the outsourcing phenomenon is now widely used by firms, its application in the field of logistics is more recent. New methods of flow management, new functions, but also new professions practised by value-added 3PL and increasingly by dematerialized 3PL (4PL), are implemented along the supply chains. 3PL integrate coordination competences and have warehouses increasingly looking like modular platforms. Eventually, they simply monitor the activities of the network members thanks to their efficient control of inter-organizational information systems.

3PL and 4PL appear to be key players in supply chains constructed between manufacturers on one side and large retailers on the other (Large, 2011). In reality, the planning of logistical activities is done essentially through a total control of information about physical flows of components, sub-assemblies and finished goods; this control enables 3PL to play a central role in the monitoring of network architectures. We can see that these new-generation 3PL are increasingly used in the USA in many sectors of activity, and they appear to be developing fast in Belgium, Germany and the Netherlands. This is an opportunity to try and better define the 3PL's change of role in the logistics industry, particularly as potential brokers within a network architecture. This function of potential broker is particularly interesting as it allows a 3PL to stand at the interconnection of several supply chains, by working simultaneously for firms in direct marketing competition, but that will cooperate logistically, in operational management.

Research methodology

The research program undertaken by the authors aims at setting up an original method of analysis of network organizations within a supply chain management (SCM) structure. It tries to describe and explain network governance through the interpretations given by the network members. The survey was carried out among firms belonging to the manufacturing, retailing, and logistics industry; in the present article, we will use only information obtained from firms within the logistics industry. The research program grants a special status to understanding the strategies involved; the foreseeable nature of the knowledge is subjective and contextual (Thiéart, 2001). The investigation is based on a qualitative approach, creating case studies that permit the gathering and collection of rich empirical data:

- *The qualitative approach.* Three reasons justify this choice. First, the research program is exploratory. It does not try to identify economic laws but instead tries to make a phenomenon intelligible. Second, the central question refers to the “how”, more specifically how network members cooperate on a day-to-day basis once they have decided to do so and have implemented coordination mechanisms to obtain a result. Third, in epistemological terms, the objective is to have a better understanding of the studied phenomenon; hence, it is essential to conduct fieldwork.
- *The research method.* According to Yin (1994:13), “a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. It is noteworthy that case studies are nowadays considered to be a particularly relevant research method in the analysis of inter-organizational issues in logistics and SCM.

Taking into account the novelty of the cooperation phenomenon in logistics and the lack of works on it, we opted for an exploratory field study conducted in two steps. First, a review of secondary data from the specialized professional press helped in identifying the existence of new logistical patterns in the French food retailing industry, and also in contractual networks. Since the 2000s, a number of initiatives for pooling resources and logistical activities have developed between manufacturers working for the food retailing industry; these initiatives lead 3PL to manage storage and transport means and also store supplying between direct competitors. Then, the exploratory field study was conducted in the convenience goods sector. It is based on fifteen semi-directed interviews, between May 2008 and January 2010, with 3PL and consultants involved in pooling approaches (see Table 1). The interviewed individuals were identified through the analysis of the secondary data, but for reasons associated with the confidential nature of the data collected, they did not wish their names, or the names of their companies to be quoted in the paper. Interviews were face-to-face, individual interviews, using an interview grid listing the following questions: the history of the pooling process, the general functioning of the logistical pattern implemented on the cooperation model, the nature of relationships between the different firms and the awareness of the pooling consequences.

Table 1

The individuals contacted during semi-directive interviews

[insert here Table 1]

Concerning interview preparation, we made the necessary checks to make sure of the way the main concepts were perceived by key informants interviewed so as to obtain their “critical feedback” on the conceptual analysis. The aim was to avoid any mix-up during the formulation and explanation of the logistical strategies currently implemented by their firm. As a basic requirement, we checked the exactness of the phenomenon studied (the 3PL as catalyst of cooperative strategies) with the concepts used to define it in the interview guide, in order to reach appropriate external validity. Each interview being synthesized, we continued with a conventional analysis of the subjects broached. Note that interviewees spoke rather freely of the organization methods and economic outlook of the new organizational architecture. But this was not the case when the strategic outlook was mentioned as the individuals we met are reticent to give information on prospective subjects. This is explained by the sensitive nature of numerous pooling situations between manufacturers, which can also look like anti-competition practices in the eyes of the EU antitrust rules. However, the exploratory field study leads to an early assessment of the identified cases.

Main results

We wish to present a summary of the major findings on the part now played by 3PL as catalysts of cooperative strategies in the supply chain. Using the Snow *et al.*'s (1992) terminology, our exploration identified three archetypes: 3PL as caretakers, 3PL as lead operators and 3PL as architects. Table 2 describes the processes and the major behavioural features. In most cases studied, the logistical resource pooling approach is designed by the competitive manufacturers in agreement with a large retailer; they look for an 3PL who will be able – thanks to its competences and know-how – to play the part of caretaker and/or lead operator of cooperative supply chains. More recently, 4PL type 3PL seem to have developed a new expertise enabling them to be the architects of cooperative supply chains, but monitoring cooperation relations between competitive manufacturers. One or several 3PL seem to be able to play one or several roles in the same cooperative network.

Table 2

3PL roles in cooperative strategies (adapted from Hiesse, 2009)

[Insert here Table 2]

▪ 3PL as caretaker

3PL ensure the operation of the cooperative network by helping the implementation of the supply chain members' strategy and the development and smooth course of exchanges between them. Conventional 3PL take charge of a support activity associated with the logistical pooling between competitors: warehouse management, transport management, etc. As such, 3PL may be called *operation links* in Zhang's (2006) sense. 3PL also create shared communication and exchange areas facilitating the implementation of cooperative strategies. They invite their customer

manufacturers to information meetings on innovative approaches. The fact of describing logistical pooling approaches implemented by other manufacturers and the associated results gives them some legitimacy and reduces the psychological barriers created by the fact of working with competitors. 3PL also conduct opportunity surveys for one or several manufacturers to determine with which competitors it would be pertinent to form a pool; 3PL organize their meeting and help them to agree. Their in-depth knowledge of the players, their needs, their products and logistical issues enable them to present themselves as experts in supply chains.

Finally, 3PL as caretakers act as third parties and favour the creation of trust relationships between competitive manufacturers. 3PL guarantee the adherence to rules fixed by competitors: organization (products stored in partitioned areas); confidentiality of strategic information; fair and equal treatment of partners. 3PL also play the part of filter in collecting all the information they need (strategic or not), and in presenting to each partner only the relevant corresponding logistical information. 3PL facilitate the issue and dissemination of some information and prevent access to other strategic information, a fact, according to Prévot (2007), representing a key factor in the successful monitoring of competition relations. 3PL can also ensure the management of conflicts between competitive partners as a kind of regulator. In their role of caretakers, 3PL seem to mobilize logistical competences and relationship competences, particularly in interface management.

- 3PL as lead operator

3PL as lead operators have to suggest practical paths for improving the operational management of the competitive network designed by the supply chain members. 3PL are first of all responsible for taking into account all the objectives defined by their customers. From there on, they coordinate flow management, the execution of logistical activities (transport, storage, procurement), the interoperability of the competitive manufacturers' information systems and technologies. They have to organize and optimize the sharing of the partners' resources. They are the key players of logistical pooling between manufacturers. 3PL serve as an interface between horizontal partners (manufacturers), at the same level in the supply chain, as well as at successive levels in the supply chain, between these manufacturers and large retailers.

Logistical competence relies upon the control of information systems feeding the supply and physical distribution networks. 3PL participate in the designing and implementation of innovative tools and approaches (integrated packages, dedicated information systems, shared logistical patterns). As lead operators, they also have relationship competences to ensure interface management. They conduct monthly meetings with the partner manufacturers, facilitate negotiations, and build internal project teams who work at organizational interfaces (with manufacturers, large retailers, etc.). Taking coordination in charge is all the more important if the level of logistical pooling between competitors is high. Through the cases studied, we found that the period required for all involved players to find an agreement varies from one to two years. Once the agreement is formalized, several contracts are signed between the parties, in order to pilot their actions for a period of three to five years.

- 3PL as architect

3PL as architects design the cooperative network (*i.e.* its potential members), ensure negotiations about shared strategies and the objectives to select, and formalize logistical patterns. 3PL conduct surveys to determine whether competitive manufacturers had better form a pool. In general, one or several of these companies are already the 3PL's customers, and are even grouped in multi-customers sites. By pointing out the advantages of a logistical pooling approach to each member of the future pool, 3PL will then organize meetings and propose a shared logistical pattern. They rely on their expertise accumulated in the course of cooperation experiences where they are caretakers or lead operators, and on their recognized expertise as third parties between manufacturers and large retailers. In their role of architects, 3PL launch and build networks, catalyze cooperation between the supply chain members, and may also be called on to manage the arrival or departure of supply chain members. Thus, 3PL mobilize logistical, relationship and architectural competences.

Modular platforms illustrate the role of architect played by 3PL. They are based on the management of logistical interfaces whose control allows 3PL to later transform themselves into supply chain "maestri" (Arroyo-López & Bitran, 2007). In other words, logistical competence is an indispensable prerequisite, but a prerequisite only, to be able to control product-architecture. As a reminder, a product-architect, in a context of mass customization, defines and adheres to explicit rules in matters of module building and of interface management so as to put modules together (Baldwin & Clark, 2000). The logistical dimension is but one of the components of product-architecture, essential to ensure market entry, but without intrinsic value if industrial and commercial dimensions are not integrated. Could 3PL assimilate them? According to Sturgeon (2002), the central know-how required from any product-architect is to be able to quickly reconfigure interfaces between modules depending on developments in demand. The expertise accumulated by some 3PL in the last twenty years in supply chain management tends to indicate they can adopt such an approach in areas as distinct as micro-computing and household appliances.

Conclusion

To speak of supply chains today is to refer to a relationship system "*through which organizations deliver goods and services to customers; this chain makes up a network of interconnected organizations with a shared purpose*" (Samii, 2001:6). Efforts to achieve the integrated management of supply chains, deemed more efficient for stakeholders, gave birth to an original approach whose purpose is to federate companies around joint objectives: SCM. SCM was widely advertised from the 1990s, and finds an obvious echo in applied research, as the hundreds of academic papers published every year on the subject show. Such a keen interest finds its origin in the desire of firms to react to customers' demands almost in real time, by being able to maintain a favourable competitive position by regularly introducing new products in satisfying conditions of cost and service quality. 3PL now play an essential part in the operation of supply chains, and take over increasingly large intermediation tasks, from the running of conventional logistical operations to the running of postponement operations, and above all facilitate the pooling of logistical resources to the benefit of a network of interconnected supply chains.

Competition and cooperation thus become the two indissociable faces of the *competitive value creation* process, and 3PL appear as key players as caretakers, lead operators or architects.

But as Luo (2007) pointed out, coopetition does not form a homogeneous relationship spectrum; its evolution is deeply influenced by the intensity of cooperation and competition at a given moment in the building, then the development of exchange relations between firms. Moreover, we can question whether coopetition itself should not be understood in a diachronic manner from the existence of *strategic sequences* (Dumez & Jeunemaître, 2006). In other words, competition and cooperation will sometimes follow each other in the same dimension for two firms A and B. If A and B use the same 3PL in the running of operations of differentiation reported at time t by playing on resource pooling patterns, nothing allows us to state that at time $t+1$, the situation will remain identical, for example in case of radical modification of customers' expectations, preferring A's products rather than B's products. 3PL will have to learn to manage such strategic switches by being able to rearrange postponement operations very quickly, or risk losing the accounts of both firms now in a competitive sequence after playing the cooperation game. We see that issues remain unexplored and justify continued research, by more closely associating strategic management and SCM. This effort is essential to achieve the universalistic objective of logistical thought: "*How can we design and manage a supply chain, controlling its assets and uncertainties, to best meet the needs of the customers in a cost-effective manner?*" (Ellram et al., 2004:21).

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Figure 1

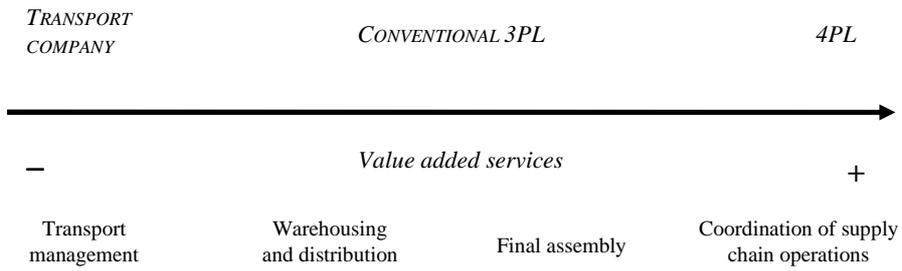


Figure 2

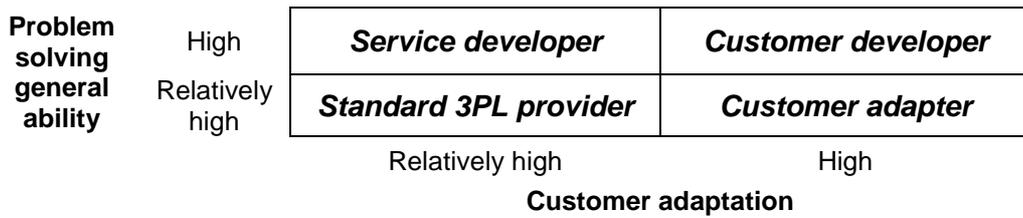


Figure 3

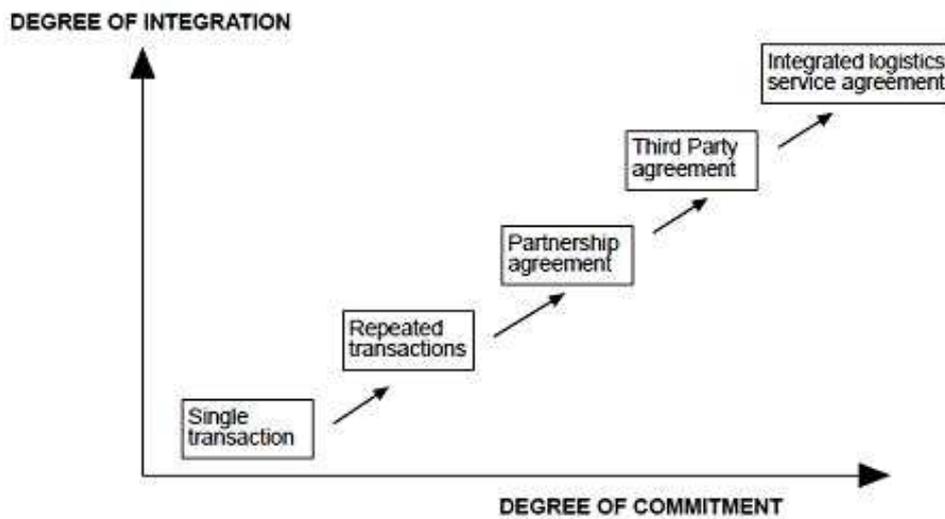


Table 1

Interview	Firm	Function
1	Consultancy firm	Consultant
2	3PL	Process supply chain manager
3	3PL	Process supply chain manager
4	3PL	Sales manager
5	3PL	Key account manager
6	3PL	Key account manager
7	3PL	Contract manager
8	Consultancy firm	Manager
9	3PL	Operations manager
10	Consultancy firm	Consultant
11	3PL	Sales manager
12	Consultancy firm	Partner consultant
13	Consultancy firm	Manager
14	3PL	Global operations director
15	3PL	Operations manager

Table 2

3PL role	Process	Features
<i>Caretaker</i>	Exploitation of coopepetition relations	<ul style="list-style-type: none"> - Performs a logistical activity - Creates communications and exchange areas - Advises, legitimizes the approach - Plays the part of third party and makes the network last
<i>Lead operator</i>	Coordination of coopepetition relations	<ul style="list-style-type: none"> - Coordinates objectives, processes, flows, systems and technologies - Implements dedicated tools and approaches - Optimizes logistical pooling
<i>Architect</i>	Formalization of coopepetition relations	<ul style="list-style-type: none"> - Starts and builds the value network - Catalyzes cooperation - Manages the arrival and departure of supply chain members