

Strategic Alignment as a Key Factor of Success for 4PL Development: A Research Program

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ABSTRACT

One of the most significant upheavals of the logistics industry is the emergence of a new generation of logistics service providers, called fourth party logistics (4PL). Their function is to provide the supply chain members with a customized service, based on a flawless coordination of logistical resources mobilized from the various firms. Considering the importance of IT, the paper suggests a research program on this subject referring to strategic alignment models. Its aim is to know whether the 4PL are able to combine their business strategy, IT deployment and organizational performance efficiently so as to manage interfaces between the supply chain members in the best conditions.

1. INTRODUCTION

The logistics industry has been undergoing profound changes for about ten years under the pressure of new entrants. Thus, the most dynamic logistics service providers (LSP) are changing their organization and strategy to become dematerialized operators. They are developing a customized service for their customers by mobilizing resources and resorting to different partners and by making sure of its consistency thanks to a total control of information flows. The consultancy company Accenture called these LSP without physical assets the "fourth party logistics" (4PL). Their trade is to design and sell global supply chain solutions by coordinating the activities of carriers, storage operators, subcontractors, packaging companies, etc. The objective of this paper is to propose a research program on the evolution of 4PL to know whether they are able to combine their business strategy, technological deployment and organizational performance efficiently in order to carry through their role of coordinator. The question is important in a context of confrontation between the supply chains in which coordinating the logistical operations perfectly has become a prerequisite for developing a competitive advantage.

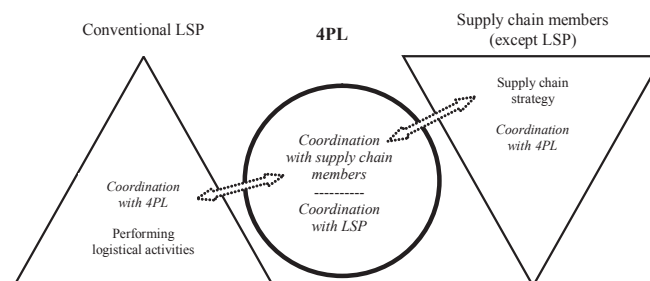
2. LOGISTICS INDUSTRY: THE RISE OF 4PL

Understanding where the logistics industry is headed requires a two level analysis. On the one hand, it is necessary to assess the role of outsourcing in the logistical process optimization (*supply side*) and, on the other hand, to study the evolution of LSP's activities (*demand side*). As time goes by, the number of manufacturing and retailing firms which no longer want to manage their logistics by themselves has kept on increasing in Europe and the United States. The reasons for this are widely known: restructuring the global supply chains to improve operations coordination; facing the fluctuations in the volumes and destinations of products to be dispatched; reducing costs and increasing service quality in terms of flexibility, deadlines and product customization, and adapting themselves to market globalization. LSP's supply has followed and in certain cases anticipated this new demand in three complementary ways: [1] a reorganization by sectors and customers at the European level; [2] the development of relationships with consultancy companies specialized in using management tools; [3] the development of innovative procedures ensuring a perfect traceability of flows in collaboration with customers.

What are the special features of 4PL compared with those of the transport companies and conventional LSP, which are themselves also involved in this radically changing logistics industry? The 4PL share an ability to carry out the activities of planning and coordination of information flows, designing both the logistical structure and the inter-organizational IS applied to the integrated processes along the global supply chains. By appropriating the new technological tools and combining them with conventional means, 4PL give a more informational orientation to their work. They aim at basing the string of logistical decisions on an electronic management of transactions, implementing interfaces to connect the management systems of the various members of the supply chains. As the services provided by 4PL are highly customized, they increase the interdependence between the partners thanks to common informational and organizational standards. So the 4PL are involved in a governance based both on the management of knowledge and on a "specialization of architectural competencies" which gives them a nodal position in supply chains and, to a larger extent, in the value creation process. In this aim, they position themselves at the interconnection between the supply chain members (except LSP) and the logistics operators, managing thereby their interfaces (Fig. 1).

In order to analyze and explain the key factors of success of 4PL, one refers traditionally to the current strategies of logistics outsourcing, which leads to more and more "dematerialized" supply chains. However, this approach is insufficient as it is only focused on the demand in logistical services. And it is also necessary to wonder about the way 4PL acquire the coordination and monitoring competencies step by step to facilitate the process which adjusts the conventional supply of LSP to meet this specific demand. Thus, if a few academic works are devoted to 4PL's performance, they do not sufficiently take into account all the determining factors of its evolution as a *transactional center* acting at the meeting point of a multiplicity of supply chains. The co-alignment models seem to be pertinent to highlight the part played by 4PL.

Figure 1. The management of interfaces by 4PL



Source: Adapted from Van Hoek [7].

3. MODELS OF STRATEGIC ALIGNMENT

There is a strong interaction between the structure of 4PL and their technological environment. Indeed, 4PL are nowadays the catalyst for the organizational change within the supply chains. Here, the concept of *fit*, i.e. the alignment of many contingent elements which affect the firm and inter-firm performance, comes into play. The strategic alignment (or co-alignment) models developed for the past twenty years are based on the essential idea that organizational performance is due to the co-alignment of several factors: strategy, technology, structure, etc. These issues interest a growing number of researchers in IS management, strategic management and SCM. Their conclusion is that companies cannot be competitive in the long run without aligning their generic strategy (including logistics) and their IT [2,4]. Some models also include people (culture, leadership) and processes (supply chain workflow) [4].

From a supply chain perspective, the strategic alignment is the result of two elements: on the one hand, a specific type of “business climate” (cooperation vs. arm’s-length competition) and of organizational structure; and on the other hand, the use of IS at a specific level in a given social and cultural context. Thus, the use of IS results not only from the need for operational efficiency in the commercial, industrial and logistical transactions of the supply chain members, but also from the search for synergies: risk-sharing and strategic gains. The academic literature gives several theoretical models of strategic alignment. It will be interesting to apply the seminal models of Venkatraman [9] and Henderson & Venkatraman [3] to the particular case of 4PL development. Other research followed but did not try very hard to assess them empirically and to make them operational except for Bergeron *et al.* [1]. Indeed, we can think that 4PL are the actors of a strategic alignment since the more the synergies and coordination are developed within a supply chain, the higher its performance level is likely to be. As the role of a 4PL is to build up, dismantle and rebuild supply chains, making logistical resources coincide with the needs of the supply chain members becomes a key point.

One should wonder about the relevance of applying co-alignment models to the particular case of 4PL. What are the benefits of studying simultaneously the links between business strategy, technological deployment and organizational performance? Does the impact of IT on 4PL result in a true revolution in flow monitoring, or is it merely a natural evolution of the logistics industry? To answer these questions, this paper intends to present a research program on the strategic evolution of 4PL in Europe, influenced by a significant development of the supply in value-added services (Fig. 2). In the wake of works integrating the network organization models to understand logistics industry trends, we intend to apply the dimensions of the strategic alignment of business and IT to assess the chances of success of the 4PL as a coordinator of supply chains. Following the example of Bergeron *et al.* [1], the objective is to adopt a holistic approach to examine the impact of the fit among alignment domains on the firm performance.

4. RESEARCH PROGRAM

The legitimacy of the research program suggested is reinforced by the publication of two recent studies. The first study is European. Carried out by TN Sofres Consulting for the European Commission, it studies the impact of IT on retail firm logistics. It deals with the current situation, transformation factors, changes in process and stakes. But after having emphasized the difficulties encountered in measuring the performance of logistical structures in general, nothing is said about the importance of the co-alignment of the supply chain members which support all the flows. The second study is American. It tries to answer the following issues: “Do supply chain IT alignment and supply chain inter-firm system integration impact upon brand equity and firm performance?” [5]. The study is based on an analysis of the managers listed by the Council of Supply Chain Management Professionals,

but it remains incomplete as the authors have ruled out the consultants, freight forwarders, conventional LSP and 4PL. Which amounts to ignoring the fact that 4PL are one of the most advanced forms of virtual organization logistics.

One of the possible leads to assess 4PL’s competitiveness consists in using the co-alignment process as a logistical monitoring tool. In this respect, the analysis of academic literature reveals unexplored fields regarding the 4PL’s monitoring mechanisms and processes, but also and above all regarding the structuring role of IT, i.e. with regard to the configuration of exchanges within the supply chain. So, having a co-alignment measure turns out to be essential to understanding the 4PL’s functioning as well as their performance levers and strategic and technological orientations. Compared with the classic approaches of performance measurement, co-alignment integrates a certain number of contextual, environmental and institutional variables. Thanks to adapted models, we can expect an answer to the following questions, which structure the research program in four complementary directions [3, 9]:

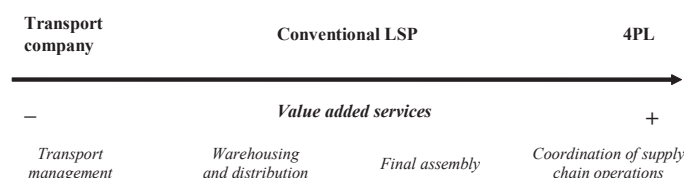
1. *Strategy execution.* What business strategy is chosen by 4PL top management to develop a sustainable competitive advantage? Is it based on a cost leadership or a differentiation strategy?
2. *Technology potential.* What kind of IS infrastructures is used, and on what IT tools are they based? How are the flow monitoring tasks carried out between the supply chain members at an operational level?
3. *Competitive potential.* Does the exploitation of emerging IT capabilities lead 4PL to develop distinctive competencies? If so, are these competencies recognized by the supply chain members? What kinds of supply chain governance result?
4. *Service level.* Does the use of IT resources enable 4PL to increase its level of responsiveness faced with fast changing supply chains? What are the procedures used to combine (and re-combine) logistical resources without being detrimental to the service level?

In a way, the research program is a logical result of the research being carried out currently on 4PL [6]. Its objective would be to describe in detail some cases of 4PL development in order to recommend actions able to improve their service supply. With this aim in view, it is necessary to resort to a conceptual framework referring to both IS management and SCM. Our ambition is thus to make progress in the formulation of a general model of the logistics virtual firm, which emergence seems to be a profound brake in the 1980s and 1990s’ supply chain dynamics. This is part of a more comprehensive and older project to better understand the foundations of logistics management based on an in-depth study of the organizational and technical means implemented in a given context.

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Figure 2. From transport company to 4PL



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