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How to establish and maintain outsourcing relationships between Logistics Service Providers and their clients?

101 – Complexity in Business: Insights and solutions

Abstract

Purpose: What influences collaboration between LSPs and their clients in the midst of uncertainty lies in the analysis of supply chain collaboration between logistics service providers (LSPs) and their clients, with a main focus set on communication, coordination, and technological issues, (i.e. rational measures to achieve defined goals), resulting interdependencies and complexity as well as organizational coordination principles and mechanisms. Qualitative interviews with experts from leading LSPs on how they establish and maintain outsourcing relationships operationally were conducted and analyzed by open, axial and selective coding, following a grounded theory approach methodology.

Coordination as a precondition for collaboration is based on communication between LSPs and their clients. The more complex and/or interdependent processes reveal themselves to be in an outsourcing relationship, the more intense coordination efforts have to be established and maintained for outsourcing operations to reduce uncertainty. Furthermore, collaboration level between LSPs and clients is influenced by several factors, such as strategic importance of the client, general contract size and transaction frequency, a common understanding of the mutual dependency arising from collaboration, trust, the depth of the comfort level in interpersonal relations and, finally, the degree of standardization of communication on the operational level. Moreover, it indicates that operational coordination efforts seem to be limited to standardization of input, output and work processes. Otherwise, coordination costs would rise considerably. This leads to the conclusion that the interdependency of outsourced processes is to be reduced, which goes hand-in-hand with lower and controllable uncertainty and subsequently lower risks.

Keywords:

supply chain collaboration, logistics service provider, coordination, interdependence, technology, complexity

Introduction

In today's business world, co-operative relationships within supply chains have become more and more important due to global competition and obstacles such as pressure in time and costs. Latest developments within the logistics sector have shown that close working relationships are indispensable for companies that aim to decrease costs but increase efficiency by coordinating processes inter-organizationally. Many studies within this field of supply chain collaboration have focused on the relationship between retailers and manufacturers and how their relations to each other can be improved. Up to now, the collaboration between logistics service providers (LSP) and their

clients has been of little interest. This paper analyzes coordination mechanisms between LSPs and their clients and its influencing factors. The following issues will be examined:

- **What forms of collaboration between LSP and other supply chain partners exist and how are these relationships influenced?** How do technology and resulting interdependencies influence the collaboration between LSP and their clients?
- **How do different forms of collaboration influence the communication between LSP and their clients?** How do LSP and their clients communicate and coordinate with each other?

In the following, we will approach these issues starting with the very basic configuration of organizations, their requirements on coordination within and among organizations, and how these configurations are shaped in practice.

Technology (as rational organization)

The term technology is defined in the literature in many different ways. In contrast to the common understanding as a “sense of machines or sophisticated devices” (Perrow 1986), we take it in its non-technical meaning as “*system of techniques*” (Thompson/Bates 1957). Accordingly, technology means actions forced by man’s belief of receiving a desired outcome, i.e. the rational organization of means to achieve a certain goal. Means comprise human resources with necessary knowledge and skills and assets for conducting activities and processes within a company in order to produce certain products or services (Harvey 1968). Thompson (1967) conceptualizes three forms of technology:

Long-linked technology stands for following a sequence of processes like in an assembly line, transforming standardized inputs into standardized outputs by terms of fixed processes (Thompson 2003). *Mediating technology* processes individual inputs or output requirements with standardized transformation processes (Thompson 2003). Moreover, “*bureaucratic techniques of categorization and impersonal application of rules have been most beneficial*“ (Weber/Parsons 1964, Merton 1957). It follows then that individual client requirements have to be analyzed, categorized and subjected to appropriate standardized solutions. *Intensive technology* indicates a range of various techniques that are used to achieve changes in a certain object while feedback is given by the object itself (Thompson 2003). Focus is set on the individual application and coordination of knowledge and skills for the creation of a unique outcome. “*Intensive technology is a custom technology*” (Thompson 2003)

Technology entails activities that represent the relationship between activities and the use of information in order to produce certain outcomes. All three mentioned forms of technology are interwoven in the sense that a higher form of technology e.g. intensive technology, encompasses aspects of mediating and long-linked technology in great detail. Particularly in terms of information processing, such varied technology becomes apparent. Frequency and amount of information shared influences the way in which certain tasks or transformation processes can be formed and fulfilled. Even in relation to the technology which allocates services, the information and the way it is processed serve together to play a decisive role in production processes. Frequently performed tasks lead to standardized processes, which as a consequence, result in predictable outcomes.

Interdependence

Interdependence results from technology as it describes how organizational technology relates and presupposes one another for the purpose of achieving desired outcomes. Interdependence describes the relation between organizational entities and their activities. (March/Simon 1958). The degree of interdependence is influenced by the type of specialization of tasks and goals between organizational units or even whole organizations. Such interdependence between companies can also be displayed as chains or networks (Stabell/Fjeldstad 1998, Lazzarini et al. 2001).

Analyzing activities in organizations, Thompson identified three different types of interdependence in order to describe types of interactions and behaviors within an organizational structure (Thompson 2003). *Pooled interdependence* represents a comparatively loose organizational model in which each business unit performs on its own and work is done separately. Progress in one unit is thus independent of progress in others. Thompson describes it as a situation where every participant administers to the whole whilst at the same time receiving backup and assistance from that whole. *Sequential interdependence* refers to “serially structured tasks” (Lazzarini et al. 2001). It exists when one unit in the overall process produces an output necessary for the performance by the next unit or several units. *Reciprocal interdependence* implies simultaneous as well as ongoing relationships that correlate to each other. In reference to Thompson, the outputs of each entity become inputs of the other and “vice-versa” (Lazzarini et al. 2001). Although all these three types of interdependence are described as individual models, they are closely related to each other. Thompson observes a hierarchical relationship among the three types of interdependences. Accordingly, he elaborates: “*all organizations have pooled interdependence; more complex organizations have sequential as well as pooled; and the most complex have reciprocal, sequential, and pooled*” (Thompson, 2003).

With an increasing number of tasks and processes that need to be coordinated not only within one company, but among several companies, the degree of interdependence rises in turn. Hence, interdependence of tasks and activities is another factor that needs to be kept in mind within the supply chain collaboration.

Complexity and uncertainty

A complex system can be determined by the number of elements, the interconnectedness of these elements, and finally, the variability of these elements to each other (Vasconcelos/Ramirez 2011). Such a complexity definition related to the concepts of interdependence shows that with an increasing level of interdependence, the degree of complexity likewise increases. Tasks, activities and relations amount to elements, interdependence corresponds to interconnections between the elements, and finally, rate of change of inputs/tasks correlates to variability. As a result, increasing interdependence - and therefore a rise in complexity – leads to uncertainty about the outcome, and finally about the “rationale” of the “technology” in and of itself. Supply chains represent complex systems, as, they operate in a dynamic and uncertain environment in which variety of relations, processes and interactions are involved and a high amount of information is needed to control the system

(Serdarasan 2013). However, complexity of networks can be reduced through shared information and knowledge (Christopher 2005). In fact, the coordination of task and knowledge plays an important role when organizing functions in a supply chain.

Coordination

Coordination is one of the key functions of management and can be defined as organization, synchronization and integration of activities, responsibilities, as well as command and control of structures that ensure the efficient use of organizations' resources on behalf of a specific object. Coordination is *"the act of managing interdependencies between activities performed to achieve a goal"*. Notably, without interdependence, coordination is not needed, as there will be *"nothing to coordinate"* (Malone/Crowston, 1990). It can also be seen as an act of organizing where actions are simplified to reduce unintentional modification and change in the interest of predetermining the outcome and achieving certain goals (Melin/Axelsson 2005). According to Mintzberg, coordination involves various coordination mechanisms (Mintzberg 1983). In a broad sense, it can be defined as actions which management can be held accountable for, in the pursuit of ensuring the effectiveness of collaborative work (Raposo/Fuks 2002). In relation to interdependencies, coordination mechanisms are used to organize interconnections relative to given context factors and a focus on achieving a predefined goal. Mintzberg suggests six coordination mechanisms on how organizations may coordinate their work, and defines them as *"basic elements (...) that hold organizations together"* (Mintzberg 1983).

Mutual adjustment is the alignment of work by the use of informal and direct communication (Mintzberg 1979). This mechanism is especially popular in very simple organizations, as well as in highly unstructured and uncertain organizational situations. Within *direct supervision*, coordination and organization are achieved by an individual person, who takes responsibility for the work of others while giving instructions and feedback to the persons carrying out the tasks at hand, (Mintzberg 1983). Furthermore, tasks and activities can also be formalized to achieve coordination. In this respect, Mintzberg has developed four basic ways to achieve standardization where coordination is achieved *"on the drawing board"*: *Standardization of work processes* coordination is created by indicating and predetermining guidelines and procedures that need to be considered, and therefore it takes place before the activity is started (Mintzberg 1979). *Standardization of outputs* formalizes the results of tasks. Outputs of work and products are communicated, predetermined and specified in order to achieve expected results (Mintzberg 1983). *Standardization of skills and knowledge* is coordination by specification and formalization of education and training. People who know what behavior to expect from each other, ultimately become coordinated in a behavioral way. *Standardization of norms* describes the determination of norms in order to create specific rules according to which everyone will start to work and abide by within an organization.

Related to technology and interdependence, Mintzberg's coordination mechanisms focus on the creation of a certain structure that helps to adjust and regulate work processes.

Supply chain integration and collaboration

Supply chain integration is the degree to which separate parties work together in a cooperative manner to arrive at mutually acceptable outcomes (O'Leary-Kelly/Flores 2002). The aim of integration is the improvement of total process efficiency and effectiveness beyond the members of the supply chain (Lambert et al. 1998, Flynn et al. 2010). The idea of supply chain integration is closely related to the effect of managing inter- and/or intra-organizational barriers (Romano, 2003). In other words, supply chain integration corresponds greatly with the intention of coordination having been expressed beforehand, however beyond institutional barriers. Supplementing integration, supply chain collaboration is working together with the focus on a joint intellectual effort and is characterized by the transfer of information, knowledge, risks and profits (Mentzner et al. 2002).

Simatupang and Sridharan state that “a *collaborative supply chain* simply means that two or more independent companies work jointly to plan and execute supply chain operations with greater success than when acting in isolation.” (Simatupang/Sridharan 2002). Furthermore, according to them, the concept of managing interdependence becomes a critical process in collaboration.

Types of collaboration

Literature knows of several different types of collaboration. A broad application of the supply chain collaboration concept may lead to the occurrence of various collaboration levels among supply chain members (Simatupang/Sridharan, 2005). In literature, the most often cited types of supply chain collaboration (Simatupang/Sridharan, 2004) are the following three. 1) *Information sharing* involves the act of accessing, monitoring, capturing and disseminating relevant data and information in the system of supply chain partners (Simatupang/Sridharan, 2004, 2005). 2) Visibility of activities reflected by information exchange is the key focus of this concept. 3) *Decision synchronization* comprises joint decision-making where members of the supply chain initiate coordinating their decisions in different contexts. It combines decisions about long-term planning or strategic measures like client service levels or products, together with operational decisions regarding delivery processes, shipping schedules or product replenishments. This type of collaboration requires coordination and modification between members in order to achieve “the common goal of optimizing the supply chain profitability” (Simatupang et al. 2002). *Incentive alignment* involves the degree to which collaborating members share their costs, risks as well as benefits that have accumulated due to collaboration (Simatupang/Sridharan 2005).

Prospect and implication

The success of collaboration depends upon the relationship between supply chain partners, how they share information as well as how well they coordinate processes. Generally, collaboration between supply chain members represents an incorporated way of outsourcing since members operate on their own but share relevant information, decisions or other activities. As stated by (Hätönen/Eriksson 2009), collaboration represents a “key issue” for the management of outsourcing relations.

Theoretical framework

Lastly, our theoretical framework in Figure 1 integrates five aspects as discussed before. It gives an overview of the theoretical and practical coherence of the introduced theory:

- *Technology forms* as a rationale behind any organization and organizational process structure, e.g. division of labor, configuration of resources, in order to achieve defined goals ①.
- Specific organizational characteristics result in varying forms of *interdependence* ②.
- Different states of interdependence confront organizations with varying *complexity* that in turn fosters uncertainty about organizational behavior ③.
- Uncertainty is compensated through appropriate *forms of coordination* ④.
- Finally, coordination of tasks, activities and processes are achieved through supply chain integration/collaboration with information sharing, joint decision-making or even incentive alignment among supply chain members ⑤.

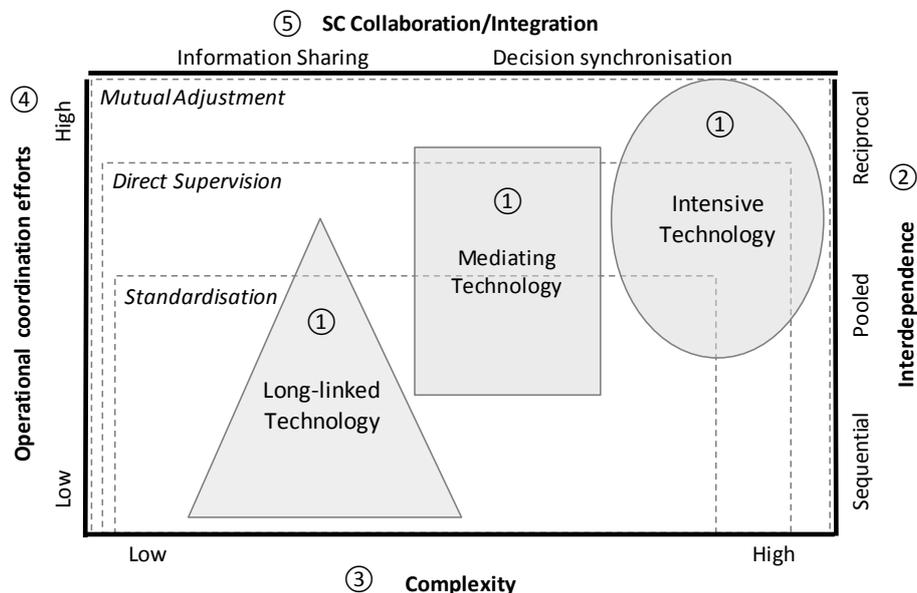


Figure 1: Theoretical framework

Empirical research – Generating Grounded Theory

In order to validate the established framework, we collected qualitative data about the collaboration between LSP and client via interviews with several people working in companies within the field of LSP as shown in Table 1. In line with Easterby-Smith et al. (2008), each interview was done individually, on a face-to-face basis with the aim of determining the interviewee's knowledge and opinion with regards to supply chain collaboration and communication. A total of five interviews were conducted due to the fact that some participants had been met and interviewed twice. All interviews were transcribed and further processed on an individual basis to create code lists and ascertain appropriate categories. Following Strauss and Corbin (1990), encoding of data was done in three

subsequent steps: open coding, followed by axial coding and selective coding. The major focus of this procedure, was to maintain compliance with the grounded theory method (Glaser and Strauss, 1967, 1998) by performing both open coding as well as axial coding, and finally to develop a provable theory with the aid of the selective coding approach.

With the *open coding* of all interviews, a first classification on behalf of all statements made by the interviewees' was conducted. Codes that could not be directly sorted into one of the main initial categories were sorted again and new categories were implemented. Afterwards, all codes were reorganized in order to avoid any duplicates or missing linkages. In total, 104 open codes were obtained on the basis of all statements made during the interviews. In the subsequent *axial coding* process, relationships and connections between these open codes were evaluated in order to present similarities as well as differences among them. Out of the previously developed code list, particularly important or central categories were selected as axis categories to be further analyzed by means of the coding paradigm by Strauss and Corbin (1996). They included basic categories like collaboration, standardization, communication, interdependency, size, trust, and information exchange as well as some evolving constructs containing insights on the part of the interview partners arising from their day-to-day work experience:

- *Intentional collaboration*: a conscious decision of both parties towards collective collaboration and proactive thinking in relation to systems and corporate structures, is always needed.
- *Standardization of information and processes*: frequent exchange of information demands for a standardization of processes allow for the achievement of economies of scale in daily operations.
- *Strategic importance influences communication*: whereas strategic communication is quite personal, daily business goes hand-in-hand with relatively impersonal data interchange and communication.
- *Guided and agreed mutual dependence*: the power of knowledge of a LSP can only benefit its clients if bilateral information flows are appropriate and timely. Otherwise, unwarranted frictions occur.
- *Focus on personal relationships*: as willingness to cooperate with each other is important, working on personal relationships significantly helps to foster trust and overcome cultural differences.
- *Size effects*: higher strategic importance and larger order quantities of key account clients result in closer cooperation in the offering of better service – smaller clients get commensurate standardized solutions.
- *Information processing*: closer collaboration and integration leads to higher frequency of information exchange, which is mastered by simplifying and standardizing tasks and data interchange.

During the axial coding process, the coherencies between these individual factors were elaborated. Here, the strong interrelation and correlation among all codes as well as the general complexity behind the collaboration becomes evident.

Within the last *selective coding* step, one core category is usually selected and related to all other categories. That is, this core category and its relations to the other categories are described by means

of a story–line, by which all other categories are related and connected to the core category and its ideas. As collaboration and communication were issues repeatedly mentioned and emphasized by the LSPs, the core category of “the significance of logistics service effects collaboration and correlated communication between logistics service provider and clients” is therefore further elaborated on.

Conclusions

Supply chain collaboration represents a complex and involved topic, while describing difficult coherencies and a wide range of interdependencies across collaborating partners in outsourcing relationships. The qualitative analysis of interview data has shown that collaboration between LSP and clients is influenced by several factors such as the complexity of task and the frequency of interactions or resulting interdependencies among them. Nevertheless, collaboration can be seen as part of coordination and is mainly based on communication and the exchange of information. This indicates that the first form of collaboration, namely information sharing, represents the most commonly used method in this industry.

In summary, it can be stated that with a focus on LSP, the success of strategic partnerships in relation to collaboration is essentially influenced by the way information is shared and the success in implementing these into company related processes. Although companies try to personalize their relationships and use collaboration in connection to it, most of the tasks nevertheless remain standardized.

However, the present paper has some limitations, as a much higher number of interviews would be needed to embody an illustrative theory that can be related to general collaborations between LSP and clients. Moreover, as single-sided interviews represent another major limitation of the analysis, further research should be based on the evaluation of the client’s point of view with respect to collaborative partnerships and how these are built.

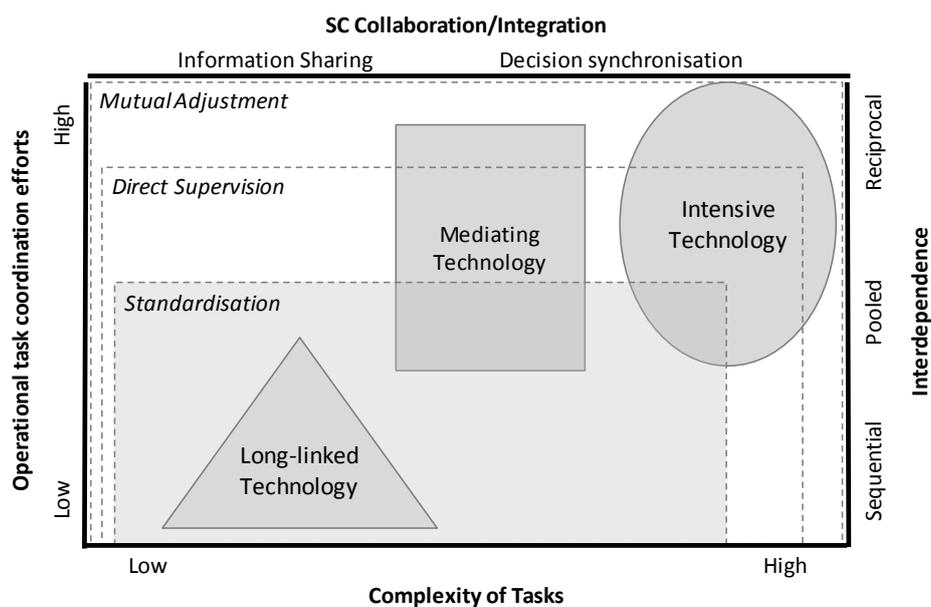


Figure 2: Framework conclusion

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