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Strategizing in horizons and verizons: Distinguishing between mediators and firms' mediating functions

Abstract

Purpose – The study has two related objectives. At the firm level of analysis, the author proposes that a clearer distinction between firms' mediating functions and mediators could enhance the understanding of business network strategizing. Whereas firms' mediating functions have received attention in IMP research, less focus has been given to organizations whose core business is mediation. At the system level of analysis, the study complements the perception of a network horizon with that of a network verizon. Whereas the horizon is closely associated with work on firms' mediating functions, the network verizon is of particular interest to mediators. The paper aims to discuss these issues.

Design/methodology/approach – This conceptual study combines IMP insights with strategic management theory.

Findings – The notion of a network horizon is important for business network strategizing, but also influences the perception of relevant network structures. These structures tend to be characterized by sequential interdependencies and a long-linked technology, often associated with physical products and production facilities. The notion of a network verizon highlights a network "depth" that has been unnoticed by previous work, which has focused on how narrow or wide a firm's network horizon should be. The network horizon and the network verizon add strategizing options in terms of connecting key actors in the network to create additional value.

Originality/value – This paper concerns how IMP scholars understand boundaries and firms, and how perceptions of these influence business network strategizing. The study articulates a distinction between firms' mediating functions and those organizations that fundamentally create value through mediating services. This distinction has system-level implications. In particular, the claim that the basis for a firm's strategizing is its network horizon is discussed.

The author proposes the notion of a “network Verizon,” providing a boundary perception of specific relevance to mediators. The network verizon portrays a network depth beyond both sequential tiers in a supply chain and links between different supply chains.

Keywords - Strategizing, Mediating firms, Mediating functions, Network boundaries, Network verizon

Introduction

Strategy is intimately related to perceptions of the boundaries of both organizations and their surroundings. The present study focuses on strategizing in a network context, specifically with regard to perceptions of mediation and network structures. Strategizing is understood as “identification of the scope of action, within existing and potential relationships and about operating effectively with others within the internal and external constraints that limit this scope” Håkansson and Ford (2002: 137).

The present study is conceptual and builds on the seminal work of Thompson (1967) and research following on his line of thinking from the IMP and strategy domains. Baraldi et al. (2007) claimed that there is an increasing degree of alignment with the assumptions and methods of IMP scholars as more recent strategy frameworks are considered. The present study follows their call, adding that a research agenda designed to bring the concepts of industrial network research to bear upon strategy and strategizing is justified. In particular, relationships and mediation are core to both IMP scholars and certain strategic management researchers (e.g., Stabell & Fjeldstad, 1998).

Gadde (2014) recently argued that firms should avoid becoming too loyal to the prescriptions of a specific recipe for boundary setting. According to Holmen and Pedersen (2003), managers should avoid myopia by using a number of different “glasses” to see the network in different ways. With these suggestions in mind, a basic IMP claim is that a firm’s strategy depends on its overview of the network; the notion of a ‘network horizon’ indicates how extended an actor’s view of the network is (Anderson et al. 1994). Holmen and Pedersen (2003) argued that the network horizon forms the basis for a firm’s strategizing; that the ability of a firm to strategize depends on how well it understands the network – where it is and in which directions it is moving. This line of reason is supposedly valid for all organizations.

The first problem that I have identified is that the different “glasses” that have been promoted seem to be placed in the same frame and cut in such a way that we primarily see sequential interdependencies and long-linked relations. These are characteristic of industrial buyer–supplier relationships, which are probably the most common empirical setting in IMP studies. In other words, it seems as if an industrial manufacturing logic has created a dedicated understanding of “the horizon” and its two-dimensional space.

The second issue of concern is the strategizing consequences that follow the association between the network horizon and firms’ mediating functions. Holmen and Pedersen (2003) suggested that in order to support a firm’s strategizing, managers must analyze and influence counterparts’ mediating functions and thereby the firm’s network horizon. The mediating functions of a firm, which are discussed further in the following section, are commonly tied to themes such as product adaptations and the synchronization of production plans. The mediating functions are performed with forward considerations (towards the customers’ customers) or backwards (towards the suppliers’ suppliers). A physical product focus is present in this line of reasoning, as is the sequential nature of the relationships, as previously emphasized.

While physical products and sequential chain relationships are certainly important in today’s economy, the core business of some organizations, such as post offices, banks, and telecom operators, is mediation (Thompson 1967, Stabell and Fjeldstad 1998). Although the notion of mediating functions is relevant and important, it does not provide a comprehensive understanding of how ‘organizations as mediators’ create value.

These two concerns provide the basis for the research questions of the present study. Firstly, does the notion of a network horizon give a sufficient comprehension of relevant network boundaries? Secondly, is a complementary understanding of mediation besides mediating functions justified in IMP research?

This conceptual work does not aim to refute the notion of a network horizon or to disregard the importance of mediating functions, but instead seeks to add a dimension to how we perceive business networks and mediation in these structures. Therefore, the aim of the paper is to explore the scope for action following on multifaceted network boundaries.

The study aims to contribute in two ways. As argued by Anderson et al. (1994), the network horizon is dependent on structural network features. However, the notion of a horizon also influences the network structures we perceive; there is an interdependence between the ‘glasses’ used and the structures that become visible. Therefore, the perception of a network horizon is

complemented with the notion of a network ‘verizon’.¹ The network verizon fulfills the same function as the network horizon; it provides a basis for firm strategizing. It also complements the network horizon by emphasizing another structural dimension of business networks.

The second contribution is the distinction between mediating functions and ‘organizations as mediators’. The latter category has mediation as its core source of value creation and firms in this category utilize the space made visible by the network verizon to co-produce value in parallel and layered structures, rather than in sequential relationships.

The following sections discuss the literature on network strategizing, boundaries, and mediation. The notion of network horizons is illustrated by supply chain and supply network research. Mediators are illustrated by banking, mobile communications, and the development of modern logistics service providers (LSPs). These examples are also used to exemplify the network verizon. The study then turns to the consequences that multi-faceted network boundaries have for organizational strategizing. The paper ends with some theoretical and managerial implications.

Strategizing in networks: the network horizon and firms’ mediating functions

Based on empirical work over several decades, the fundamental messages in IMP research have been organizational interdependence over independence and multilateral managerial action over unilateral action. Håkansson and Snehota (1989) made an important contribution by outlining business strategy consequences based on organizational interdependence rather than self-containment. As a result, IMP scholars have focused on strategizing rather than strategy, searching for an understanding of how to ‘manage in networks’ rather than being ‘the managers of networks.’

The IMP perspective on strategizing shifts the main attention from outperforming competitors to creating value together with interdependent business partners (Gadde et al., 2003), and it highlights the idea that managers frequently underestimate interconnectedness and try to manage single relationships in isolation (Ritter, 2000).

Strategizing through network development concerns how the firm perceives its network of interconnected relationships and how it interacts with other actors in relation to these perceptions (Aaboen et al. 2013). Network identification and the more common notion of

¹ The name of the corporation Verizon is based on a portmanteau of veritas (Latin for “truth”) and horizon.

network pictures are associated with such perceptions. Huemer et al. (2004) argued that a central ability for an actor is its capacity to shape the means that define its commitments and its forms of belonging. Drawing and redrawing boundaries affects with whom an actor identifies; that is, where actors' perceptions of 'us against them' or networked senses of 'us' emerge. 'Network identification' is an expression that also covers the capacity to influence how others perceive boundaries and identify with the network. Thereby, such identification processes influence the perception of network boundaries, such as the horizon. Similarly, the notion of network pictures and the network horizon are sometimes overlapping and interacting constructs (Henneberg et al. 2006; Kragh, Houman Andersen 2009).

The network horizon is important for network strategizing. It has been claimed that all firms can benefit from reflecting on their current network horizon and, furthermore, from discussing internally whether it would be beneficial to change the horizon (Holmen et al. 2013). One way of affecting the network horizon is by influencing the mediating functions of a firm's counterparts. In other words, strategizing occurs through influencing the mediating role of counterparts (Holmen and Pedersen 2003; Harrison and Prekert 2009).

Holmen and Pedersen (2003) emphasized three mediating functions of a firm's direct counterparts. Firstly, they stressed a joining function that enables direct coordination, such as product adaptations between the focal firm and a complementary supplier. Secondly, they proposed a relating function that enables coordination between the focal firm and a third party via the counterpart, such as the synchronizing production plans between the focal firm and the counterpart's customer. Finally, they stressed an insulating function, which enables coordination between the focal firm and the third party without either party having any knowledge of each other; an example could be handling inventory management between different sub-suppliers and the focal firm.

Network boundaries

A characteristic of industrial networks is their indeterminate nature, which is often described as "fuzzy," partly because actors may view the network, its boundaries, and the nature of its exchange relationships in different ways. The view of "reality" (Easton, 1992) that is proposed implies that any firm can be analyzed from a network perspective. Two implications of the indeterminate boundaries are the absence of any clear-cut distinction between the firm and its environment, and the fact that networks of connected relationships are endless (e.g., Snehota,

1990). IMP researchers have given attention to the boundaries of the firm (Araujo et al., 2003), as well as to the boundaries of the networks surrounding organizations. Gadde (2014) addressed the former dimension by focusing on strategizing in terms of the widening and narrowing of corporate boundaries.

The notion of the network horizon is one of several boundary-related concepts, including network context, network horizon, and the environment, which starts where the horizon ends (e.g., Håkansson & Snehota, 1989; Johanson & Mattsson, 1992; Anderson, Håkansson, & Johanson, 1994).

The network context comprises all firms and relationships that a focal firm “considers relevant” (Anderson et al., 1994). By using the criterion of relevance, it has been stressed that the network context is a matter of the firm’s “choice of perspective” (Snehota, 1990: 147). To some extent, contexts are supposed to be shared among the network actors, at least by those close to each other.

Anderson et al. (1994: 4) defined the network horizon of a firm as “how extended an actor’s view of the network is.” Hence, a network horizon comprises those other firms and relationships of which a focal firm is aware – regardless of whether it considers them relevant. The network horizon of an actor changes over time as business proceeds, which implies that any network boundary is arbitrary and dependent upon the current perspective. The debate has concerned whether the network horizon of a firm must be limited, since it cannot have substantial insight into a large amount of secondary functions for its direct counterparts.

According to Holmen et al. (2013), combining the concepts of network horizons and network pictures in relation to key suppliers may help a buying firm reflect on the boundary of its key supplier network. The following sections aim to illustrate network horizons in supply chain and supply network settings.

Supply chains: Keeping the horizon narrow

The number of tiers structured in various upstream-downstream positions portrays the typical supply chain. A firm’s engagement may, directly or indirectly, refer to different parts of the production process, such as extracting raw materials, manufacturing, transporting, marketing, and retailing. It is noteworthy that models of value-creation activities and their apportionment

across firms tend to reflect properties of the long-linked technology (e.g., Andersen & Fjeldstad, 2003). Figure 1 below portrays a classical supply chain and its sequential nature.

Please insert Figure 1 about here

An actor's view of the network may extend over few or many tiers. However, Gadde et al. (2010) suggested that although the supply chain perspective contributes substantially to our understanding of efficient flows, it may also give the impression that supply chains are independent of each other. Overemphasizing the independence of single chains – and seeing them in isolation from their wider network structure – obscures a full understanding of how value is created by firms interacting with each other, combining resources and integrating their activities (Gadde et al., 2010). This calls for a widening of the network horizon.

Widening the horizon: Supply networks

Handfields and Nichols (2002) presented one form of supply network. They emphasized that a focal firm is likely to be embedded in or linked to a wider set of organizations than the basic supply chain illustrates (Figure 2a, b).

Please insert Figure 2a, b about here

Figure 2a illustrates such a setting, where a series of linked organizations create – from the focal firm's viewpoint – an upstream supplier network and a downstream distribution network. There are many possible connections between different sequential chains, but the basic task of supply chain management is to position the firm within the supply network and to design and streamline the relationships of the supplier network and the distribution network.

Another example of a network approach was given by Pil and Holweg (2006), who advanced the 'value grid' framework (see Figure 2b). This grid consists of vertical, horizontal, and diagonal dimensions. Within the vertical dimension, the companies explore opportunities upstream and downstream from adjacent tiers in their value chain. In the horizontal dimension,

companies identify opportunities from spanning similar tiers in multiple chains (parallel chains). Within the diagonal dimension, “companies are supposed to take a more integrative approach when exploring more widely in other tiers and value chains for opportunities to create value” (p. 74). For example, when a firm explores new means of controlling the supply of critical components by “looking upstream and downstream in other value chains” (Pil & Holweg, 2006: 78), it is exploring the value grid diagonally.

While these illustrations are interesting, they belong to an increasing number of network metaphors that essentially maintain the sequential and long-linked boundary perceptions. They do not address the linearity that characterizes traditional chain models; a trait that conceals levels of complexity that deserve attention (Cox & Lamming, 1997; Rabinovich & Knemeyer, 2006).

IMP scholars have noted that a company’s position in a business network has traditionally been described in terms of its location in the marketing channel; for instance, as a producer, exporter, importer, wholesaler, or retailer. These relationships may be either forward towards the customers’ customers, or backwards to their suppliers’ suppliers. Some IMP work does correspond with this idea. Henneberg et al. (2006) considered the boundaries of a network picture to be defined by both ‘depth’ and ‘width’ – notions that overlap with Holmen and Pedersen’s (2003) network horizon. Depth is a measure of the number of relationships a focal company has that involve the direct supply of goods/services.

To acknowledge complexity, IMP researchers have consequently suggested that the position concept describes how an actor is connected to other actors within the surrounding network of actors (Easton, 1992; Johanson & Mattsson, 1992). More recently, Abrahamsen et al. (2012) suggested that a company’s network position is the sum of all its relationships, and Gadde (2014) proposed that the relevant borders are the features of the interfaces between resources, the interdependencies between activities, and the interaction between actors. These conditions determine the functioning and the performance of what is going on in the network.

The following sections aim to provide an alternative perception of network boundaries that explicitly addresses the traditional ‘linearity’. This perception involves another understanding of network ‘depth’ and provides a focus on ‘organizations as mediators’.

Strategizing in networks: the network verizon and mediating firms

Mediation, as portrayed by Stabell and Fjeldstad (1998), built on Thompson's (1967) work, with the explicit aim of understanding firms that connect sets of clients as their primary source of value creation. This approach does not invalidate the mediating functions stressed above, but it does highlight the fundamental value creation of a growing number of 'pure' mediators. As Thompson (1967) argued, the basic task of the post office is to link senders and receivers, which is fundamentally what logistics is about. Further illustrated by Stabell and Fjeldstad (1998), linking can be direct, as in a telephone service or between two or more parties in a call; or indirect, such as when one retail banking customer is not linked directly to another customer, but a group of customers is connected through a common pool of funds. Typically, logistics has been associated with indirect linkages, where supply chain clients share/pool resources such as warehouses and trucks in getting their products from A to B. Other mediators include insurance companies, auctions, and certain peer-to-peer service providers.

As Stabell and Fjeldstad (1998) contended, mediators create value by linking clients or customers who are or wish to be interdependent. Stabell and Fjeldstad explained how the mediating technology facilitates exchange relationships among customers distributed in space and time. Mediators are not suppliers and customers, as visualized in a traditional supply chain, but co-producers that simultaneously provide a mediation service. This view builds on the idea that modern society is characterized by a complex set of actual and potential relationships between people and organizations. Operating effectively with others requires attention to demand-side economies of scale resulting from positive network externalities (Katz & Shapiro, 1985). The value of the service to existing customers increases with each new customer added to the network.

This understanding of mediation differs from the mediating functions that have been presented previously. Relationships can be categorized in a means–end distinction. Relationships appear as means to influence the network horizon through a firm's mediating functions, whereas relationships are ends in themselves for mediators. That is, the other customers are the key part of the product, and the dependency among customers is the main product delivered (Stabell & Fjeldstad, 1998). A critical determinant of value to any particular customer is the set, or network, of connected customers. Adding one more customer to a network directly affects the value of the service to other customers (Katz & Shapiro, 1985).

The network verizon

The network structures associated with both supply chain and supply networks are two-dimensional and, arguably, the notion of a network horizon helps to capture these dimensions. Tiers in a supply chain, links between supply chains and the diagonal dimension described in Figure 3a are all captured by a two-dimensional space based on horizontal and the (traditional) understanding of vertical positions.

Please insert Figure 3a, b about here

The mediators described above activate a third network structure. The vertical scope of mediation exchange (Stabell & Fjeldstad, 1998) illustrates this boundary implication. According to Stabell and Fjeldstad (1998), the vertical scope describes multiple levels of coproduction in which the activities of one organization build on the activities of another. The authors exemplify their claim by referring to an electronic payment clearance service (see Figure 3b). Such a service builds on the operation of a communication infrastructure by which transactions can be carried and a transaction processing infrastructure by which transactions can be cleared. The choice of a vertical value system scope depends on the service provider's decision to either operate both services or to base its service on the communication service of, say, a telecommunication company.

The network verizon builds on this notion of vertical scope, but differs in its emphasis on control of the different network levels. Stabell and Fjeldstad (1998) used a mainstream strategic management approach by suggesting that the vertical scope in mediation industries describes the extent to which a firm *controls* all levels of coproducing activities required to complete mediation exchanges. The network verizon is a 'boundary tool' that is intended to visualize non-sequential actor bonds, resource ties, and activity links; it is not control-oriented.

Banking, telecom, and logistics/distribution are three examples of industries in which the network verizon highlights the network depth (Figure 3b). To perform its payment services, an electronic banking firm uses the internet network, which itself uses the general telecom networks infrastructure, within which network operators deliver the infrastructure for telecom service providers (Fjeldstad, 1999). Andersen and Fjeldstad (2003) illustrated the mobile communication industry in similar terms. Mobile virtual network operators provide services by linking their activities to the activities of mobile physical network operators both for origination of calls and termination. Network operators deliver the infrastructure for service providers in telecommunications, which in turn serve as the communication infrastructure for payment services. Exchange relationships offered by a mediation service can also extend beyond the service's immediate customers to customers of other mediation service providers, which gives rise to a structure of interconnected mediation networks.

The third illustration at the right of Figure 3b concerns the development of modern logistics networks. At the bottom of the figure, different "primary infrastructure providers" are highlighted. A number of organizations, which are increasingly privately operated in many countries due to deregulation, provide these basic mediating services. From a logistics standpoint, these organizations work with the operation and maintenance of roads, bridges, railways, tunnels, harbors, and airports. Telecom services, for instance, are dependent upon another set of basic communication infrastructures.

In addition to the resources provided by these organizations are so-called third-party logistics (3PL) firms, such as UPS and FedEx. These firms typically handle transportation and warehousing, in addition to many other services such as forecasting and inventory management, delivery planning, and track-and-trace functions (see e.g. Guercini and Runfola, 2009). These 3PLs are further distinguished by their extensive physical infrastructure assets. To illustrate, UPS has close to 100,000 package cars, vans, tractors, and motorcycles, and more than 200 planes for its Package Operations division, while the UPS Freight division has a delivery fleet including almost 20,000 trailers. FedEx has more than 47,000 motorized vehicles and more than 1000 operating facilities worldwide.

While the operation of their own physical infrastructures is a central activity for 3PLs, these firms stand in contrast with the so-called fourth-party logistics (4PL) firms portrayed at the top of Figure 3b. Such organizations, which are also called administrative logistics service providers, are information-based, and coordinate multiple asset-based organizations. A pure

4PL is an actor that works essentially without any tangible resource, focusing on information-based services. These organizations are, supposedly, independent of transporters and warehouse operators.

In logistics systems that do not involve 4PLs, 3PLs usually focus on two exchange streams: goods and information. When a 4PL enters a supply system, it does not create another tier in a sequential supply chain. The 4PL creates an additional network level where it focuses on its information-based exchange stream. Thus, the 4PL reduces the sophistication of 3PL services without creating another sequential tier. Similarly, consider the example of Lyft, the first transportation network company or on-demand ridesharing network for shorter trips within cities. Lyft's mobile phone application facilitates peer-to-peer ridesharing by connecting passengers who need a ride with drivers who provide a car. Like many other peer-to-peer services, Lyft relies on so-called independent contractors (who in reality are very interdependent) to perform the actual transportation service. In other words, Lyft is a 4PL using physical infrastructures (cars) provided by a large number of individual drivers.

The sequential and long-linked nature of the horizon needs to be complemented. For example, while a Heathrow Express train moves from the airport to Paddington station, other organizations conduct traffic monitoring and rail operations in parallel rather than in sequence. Transportation network operators responsible for managing the physical transportation network infrastructure, actors that deal with information about the traffic and infrastructure conditions, and actors that coordinate access to specific areas or transportation network resources do much of their work in parallel.

Implications

Table 1 highlights strategizing implications in the network horizon and the network verizon.

Please insert Table 1 about here

Mediators and firms' mediating functions

Table 1 aims to distinguish between mediating functions and mediation as a firm's fundamental value proposition. The network horizon and the network verizon are system-level implications of such a distinction. Another consequence is an explicit recognition of firms focusing on physical products and manufacturing processes and firms whose primary service is connectivity/mediation.

To illustrate further, consider Aaboen et al. (2013), who identified different patterns of network strategizing, one of which was knowledge sharing among customers. This pattern concerns the development of ideas about how customer relationships can be (directly) connected to enable customers to benefit from knowledge sharing in their use of a focal firm's product. This knowledge sharing may result in development of the customers' products and production facilities.

Another pattern concerns the interaction that results in the formation of strategies concerning how to work through other actors. According to Aaboen et al. (2013), this approach relies on mediation to gain access to additional customers, and thus on connecting the business relationships with 'partners' that have already developed relationships with customers or users of the products. Aaboen et al. (2013) argued that direct customer interaction is important in order to develop the product in interaction with the customers' production facilities and products.

My point here is not to criticize these strategizing patterns, but to contextualize the understanding of mediation they build on. None of the firms being studied in Aaboen et al. (2013) are mediators in the sense that Thompson (1967) or Stabell and Fjeldstad (1998) visualize them. A linkage/connection service is not at the core of their business; instead, the focus is 'traditional' in terms of emphasizing physical products and production facilities. Relationships are a means to an end, not in an opportunistic connotation, but they are typically seen as a 'tool' to develop products in interaction with the customers' production facilities. The relationships are sequential in terms of the emphasis on working through others to increase the use of a focal firm's products in relation to end-users.

Although these arguments are relevant, they do not capture the complementary notion of mediation. Moreover, the perception of a network verizon is not essential here. Aaboen et al. (2013) built on Holmen and Pedersen's (2003) emphasis on enabling coordination between the focal firm and its counterparts, which is different from enabling coordination between customer sets (that is, what the focal mediator does). Mediators connect different actors in

different ways: sellers and buyers, senders and receivers, lenders and borrowers, departures and arrivals, employees and employers, and so on. The work of such mediators differs in an important way from the mediating functions that Holmen and Pedersen (2003) described, in that the mediation is not targeted at the focal firm. Moreover, the utilization of relationships is not the means to an end (Holmen and Pedersen focused on improving production processes), but the relationships often become ends in themselves. As Stabell and Fjeldstad (1998) argued, other clients/actors are the main ‘products’.

At least three forms of support function can be identified when focusing on ‘organizations as mediators’: connecting, combining and extending. ‘Connecting’ illustrates that mediators work with both direct and indirect connections and also use relationships as means to an end (in improving their primary client connections). To illustrate, direct mediation between clients is a possible scope for action and one way for LSPs to strategize. Consider PostNord, a Nordic LSP that mediates by establishing direct relationships between its supply chain clients through the mechanisms of knowledge-sharing seminars and company visits. The firm exploits network externalities to set up client meetings in such a way that the participants themselves create value by sharing their knowledge with one another. Experiences with different loading and docking practices, warehouse routines, and supply chain designs are shared between the clients, thanks to the LSPs’ mediation efforts.

Lyft’s mediation between its drivers is an example of ‘combining’. For instance, one of Lyft’s web pages presented a driver named Ayanna (a single mother, preschool teacher, and graduate student) who used the Lyft platform to share her best tips for saving money – including shopping at thrift stores, exercising, and watching less television – with other Lyft drivers who are in a similar position. The value of being a Lyft driver is increased by the characteristics of other drivers (their willingness to share experiences) in combination with Lyft’s mediation among these drivers/contractors.

Huemer (2006) offered an illustration of ‘extending’. The focal firm LINC is a LSP that basically connects senders and receivers. LINC strategized through ‘extending’ by identifying that its scope for action was not restricted to the fundamental sender–receiver mediation (its basic supply chain service); the firm also leveraged its extended supply network to offer additional, non-logistical services such as accounting and IT services, via third parties. This

example thereby suggests that mediators also rely on counterparts to perform mediating functions for them.

Perceptions of the network horizon and network verizon

The network horizon extends boundaries in terms of broadness/wideness corresponding with the space given by the notions of 'upstream' and 'downstream'. Moving from a supply chain to a supply network boundary is informative in many ways, not least in terms of including the perspective of cross-linked and interdependent organizations. However, the fundamental structural characteristic of the network remains intact or is not explicitly addressed.

The classical perceptions of 'upstream' and 'downstream' are actually insufficient for explaining contemporary business developments, such as the emergence of 4PL firms. Is a 4PL upstream or downstream of a 3PL? This is not a meaningful question to begin with. Huemer (2006) suggested that we need to complement our sequential awareness of supply and distribution flows by including the notions of the 'undercurrent' and 'overcurrent' exchange streams that characterize mediation services based on synchronized network levels.

Moreover, the network verizon brings the importance of resource interfaces to the forefront of value creation. The logistics illustration in the previous section indicates that a focal firm's resources must be combined with those of external actors (cf. Baraldi, 2008). From a logistics viewpoint, a 4PL uses the physical network structures of its 3PL providers to perform its mediation exchanges. 3PL services involve physical movement of goods, which the 4PL complements with services that provide planning and coordination offerings "on top" of the 3PL's services. The 3PLs, in turn, utilize the resources provided by primary infrastructure operators, such as road and rail providers.

The interface between physical structures and organizing processes is also important to innovations in three-dimensional networks. In a conventional toll-road system, for example, a vehicle reaches the tollbooth and the driver must stop so that the operator can collect the money and send it to the proper recipient. This long-linked technology is being replaced by full-speed, nonstop electronic toll collection systems. Innovative mediation removes sequential frictions (drive/stop/pay/speed up/receive cash/store cash/transfer cash). It fundamentally changes the use of primary infrastructure resources, resource utilization in the physical level, and the need to synchronize both information and cash flows.

From a resource interaction perspective, 3PL and 4PL strategizing illustrates the importance of combining physical resources and organizational processes. Consider Uber's promotion to attract more drivers to its network: "*Got a car? Turn it into a money machine*" (<https://get.uber.com/drive/>). Potential value is developed in the interface between Uber's platform and privately owned vehicles. The same basic question is valid for most peer-to-peer services: Got an apartment? Turn it into a money machine (Airbnb); or Got a tool? Turn it into a money machine (Zilok). Accordingly, firms performing activities on different network levels have good reason to cooperate, because they jointly create a system good (Farrell and Katz, 2000) where the value of the services provided by firms at a particular network level is dependent on the availability and characteristics of the services offered by firms' operating network levels, below or above.

Managerial implications

The network both restricts and promotes a company's strategizing. The present study focuses on the latter aspect and opens up for direct and indirect interactions where a network can be leveraged in a number of ways, by connecting, combining, and extending relationships among both existing organizations and new actors. Managers may consider knowledge sharing among customers, and the development of relationships with mediating partners (cf. Aaboen et al. 2013), and they may, on a fundamental level, consider the very role they give to their relationships. Not least, managers of 'pure' mediators should acknowledge the particular role relationships have in their value creation.

The study aims to give 'new glasses' to managers. As argued by Håkansson and Snehota (1995: 282), "a company that only sees the network from its own perspective will fail to understand its dynamics and the interface between the well-being of others and itself." Similarly, reflecting on network horizons and network pictures, Geiger and Finch (2010, p. 388) proposed that "Network pictures help managers select salient elements in their business context, reject others and increase their awareness that there are still others that could be available for selection even if presently perceived as peripheral to or outside the established network boundaries."

Perceptions of boundaries are essential to firm strategizing and therefore to managers. The present study suggests that there is more to network boundaries than the notion of a horizon helps us to perceive. Networks do not only contract or expand in two dimensions. We have

handed metaphorical binoculars to managers, suggesting that they may look far or close, wide or narrow. We should also equip them with an underwater camera and a periscope. It is noteworthy that periscopes are valuable for viewing objects that “are above the level of direct sight or in an otherwise obstructed field of vision” (<http://www.dictionary.com/browse/periscope>). These metaphors are intended to illustrate the non-sequential, often parallel value-creating activities and resource constellations that appear to become increasingly present in today’s business; for instance, through the growth of the sharing economy. Understanding interactions between production oriented companies and mediators matters in this development.

Conclusion

This study is part of a stream of research that combines IMP thinking with strategic management research focusing on mediation. Dubois, Hulthén, and Pedersen (2004) and Håkansson and Persson (2004) briefly referred to both lines of research when broadening the scope of existing supply chain interdependencies. Huemer (2012) explicitly used both approaches to discuss alternative views of value creation and supply network structures, and Wang et al. (2016) further developed the HP model (Håkansson & Persson, 2004) by complementing it with an awareness of network externalities.

The results of this study are in line with Anderson et al.’s (1994) claim that a business network boundary is arbitrary and depends on the perspective taken. Their study has, at least partly, taken the perspective of mediators and visualized a network structure seen by such organizations. More multifaceted network structures promote the scope for action for firms; that is, alternative strategizing alternatives become visible.

I propose two main conclusions. Firstly, the notion of a network horizon promotes a particular comprehension of relevant boundaries, and it deserves to be supplemented. The network horizon provides for a two-dimensional network space that is particularly relevant for manufacturing industries and, importantly, any other organizations that serve this industry. Mediators such as LSPs do of course need to ‘manage’ sequential interdependencies. However, the horizon does not promote an understanding of ‘the depth’ that characterizes activities and resource interfaces between mediators; namely, organizations that create value by facilitating connections between other actors. In particular, it seems as if the metaphor of a horizon *translates awareness into relevance* in a particular way. To illustrate, by emphasizing

sequential supply chains, Rabinovich and Knemeyer (2006) claimed that we maintain a perception of LSPs and other mediators as non-value adding entities that perform routine functions only. We may be aware of them, but they are seldom perceived as relevant. Even the call for a broadening of supply chain management (e.g., Stock & Lambert, 2001) includes only manufacturers, wholesalers, and retailers, effectively ignoring LSPs.

Secondly, while the notion of a network verizon does not require a new definition of strategizing, it does show that the scope for action and the degree to which an actor's network is extended varies more than commonly perceived. This is interesting from a strategizing viewpoint since it offers managers additional leverage.

The notion of a network verizon is not simply "adding more" to the network horizon. Whereas insights about a firm's mediating functions place a focal firm at the center and regard relationships as means, mediating firms place their networks at the center and regard many of their relationships as ends in themselves. IMP brings an important boundary emphasis to firm strategizing, in addition to the emphasis on resource heterogeneity and resource combinations that are core to such network-oriented firms. Considering the importance of resource interfaces, strategy theory can contribute to network strategizing by adding a boundary dimension and by articulating an organizational-level idea structure that is explicitly geared towards mediation.

Further research may continue to combine IMP research with a strategic management notion of mediation. There are interesting complementarities in terms of resource interfaces and activity combinations that may help us better understand and eventually manage in complex networks. This includes novel strategizing scopes and combinations such as how also mediators rely on mediating functions performed by counterparts

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Figure 1: A typical supply chain horizon

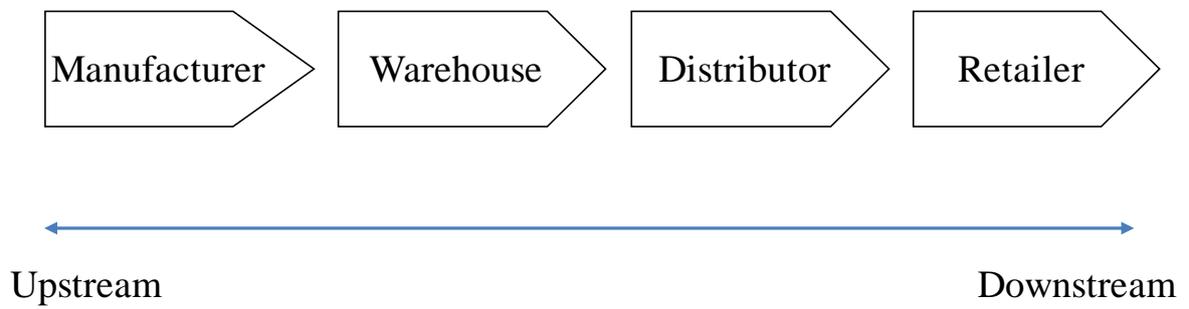
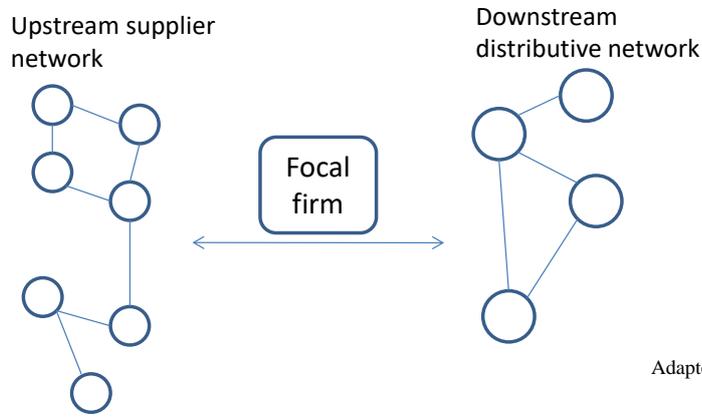


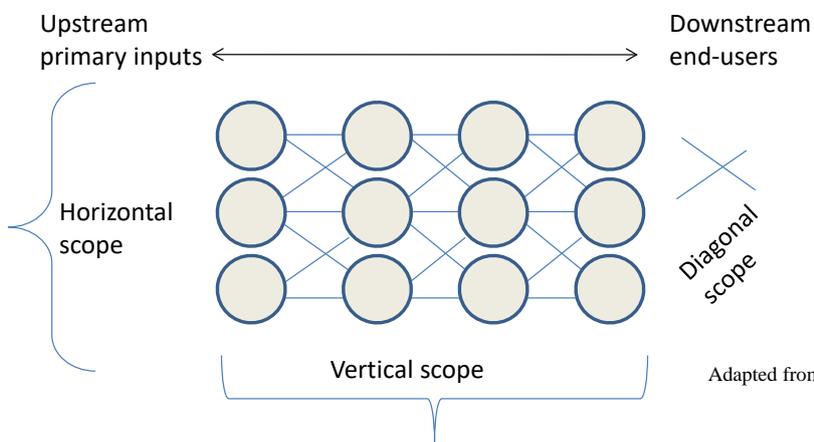
Figure 2a, b: Supply network horizons

Figure 2 a



Adapted from Handfield and Nichols (2002)

Figure 2 b:



Adapted from Pil and Holweg (2006)

Figure 3 a, b: The network verizon

Figure 3a: A conceptual illustration

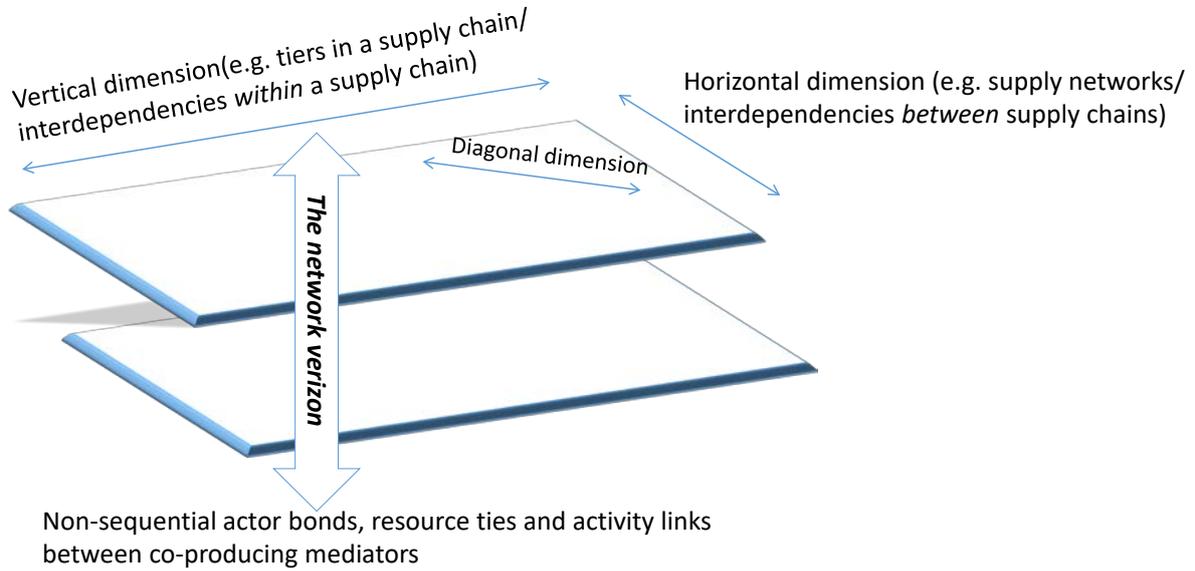


Figure 3b: Illustrations from three mediation industries

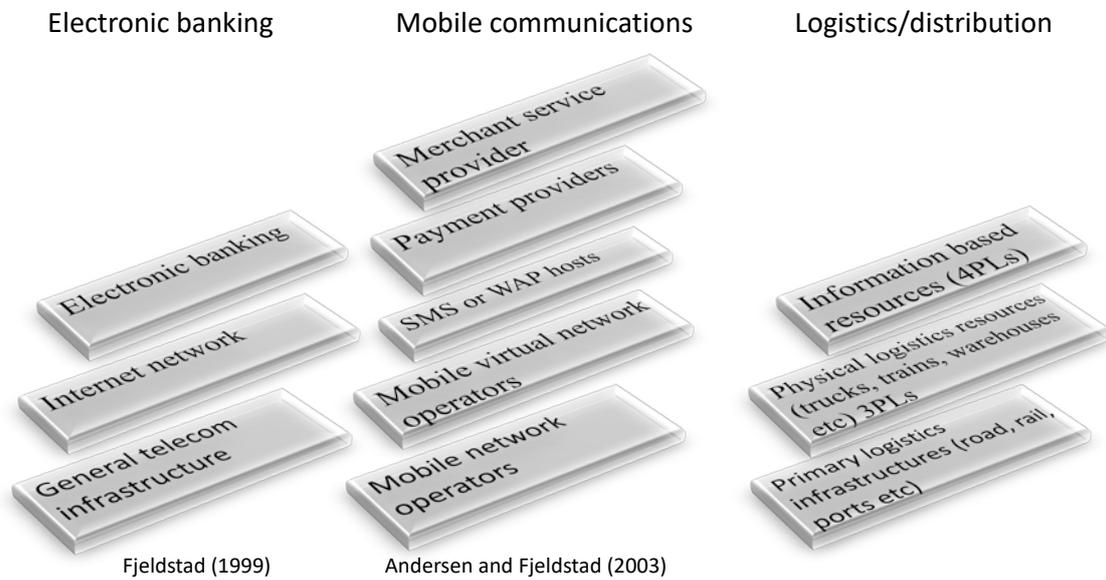


Table 1: Strategizing in the network horizon and the network verizon

Strategizing/boundary	Horizon (main characteristics)	Verizon (main characteristics)
	<ul style="list-style-type: none"> • Offers two dimensions: Breadth/width • Sequential interdependencies • Long-linked technology 	<ul style="list-style-type: none"> • Offers a third dimension: Depth • Pooled interdependencies • Mediating technology
Main actor category	Product-oriented, manufacturers	Mediator-oriented Logistics service providers Telecom Auctions Banking/insurance Employment agencies Peer-to-peer mediators (Airbnb, Uber, etc.)
Mediating scope	<u>Support functions</u> <ul style="list-style-type: none"> • Joining • Relating • Insulating 	<u>Primary value creation</u> Indirect and direct connections <ul style="list-style-type: none"> • Sender–receiver • Departure–arrival • Seller–buyer • Lender–borrower • Employee–employer • A–n <u>Support functions</u> Client <i>Connecting</i> Co-producer <i>Combining</i> 3 rd party <i>Extending</i>
Mediating direction	Geared towards the focal firm	Geared towards clients and co-producers
Relationships	Means	Ends/means