

NETWORK AS FUTURE, AND FUTURE, AND FUTURE: ORCHESTRATION AND CHANGE IN BUSINESS NETWORKS

Christopher John Medlin
University of Adelaide
AUSTRALIA

chris.medlin@adelaide.edu.au

Woonho Kim
Nihon University
JAPAN

kimu.unho@nihon-u.ac.jp

INTRODUCTION

The literature on network orchestration capabilities has progressed from hub firms (Webster, 1992), to firms orchestrating others to innovate (Dhanaraj and Parkhe, 2006, Nambisan and Sawhney, 2011), to orchestrating parts of a network for functional purposes (Hurmelinna-Laukkanen and Nätti, 2018, Nyström et al., 2014). Along this path the literature has developed orchestration capability according to a focus on a firm or functional or specific purpose. And yet a concert hall is apparent and also implied by each of the different researchers who are able to enumerate, categorize and describe many new forms of orchestration according to different innovation scenarios (e.g. Hurmelinna-Laukkanen and Nätti, 2018). There is in all of this literature a sense of the local net and network, within which the orchestration capability is undertaken, but not so clear is the form of the network. In this paper we explore the forms of the business network so as to develop concepts for elaborating a network orchestration capability.

We contend that the character of the network, its form and dynamics, are as important to conceptualizing orchestration, if not more important, than is the conceptualization of a capability. Many researchers have addressed the nature of capabilities and dynamic capabilities (Eisenhardt and Martin, 2000, O'Toole and McGrath, 2017, Teece, 2018, Teece et al., 1997). But orchestration capabilities are resolved according to the understanding of the network, not following only the functional needs of firms within the network. Of note is that the full symphony, concert hall and audience is missing in shaping the acoustics of the orchestration. Our understanding of orchestration remains a few notes from one or two instruments because the business relationships and the network remain only partly elaborated. Further, while parts of the musical score are being distinguished, the notations that provide the changes in tempo are often missed, and the acoustics found in different bounded contexts are only partly sensed.

More recently the concept of co-orchestration (Schepis et al., 2018) offers an opening for a broader frame by considering firm relational and net management capabilities within stages of net formation (Möller and Svahn, 2003). But the concept and practicality of net co-orchestration is not found only in different forms or aspects of orchestration. Rather to understand orchestration and explore co-orchestration requires delving into the understood character and form of business networks. Taken to a conceptual limit, co-orchestration might be presented as networking to seek new futures, by related firms whose changing relationships offer very high flexibility and adaptability, with firm resilience, and without firms directly in control.

The central argument of this paper is that orchestration possibilities depend on network understandings and on coherences to different futures. Adopted in making this statement is an ontology and epistemology, that accepts and views actors as constructionists changing their

social reality (Gergen, 1999). Thus, the actors, their network understandings and purposes, the resources and activities provide the form of the logics and the means for co-orchestration.

The remainder of the paper is structured in the following manner. First we briefly discuss the orchestration literature. Second, we present a themed understanding of the IMP business network literature. In the last part of section two we develop a temporal future frame for co-orchestration. In section three we present a conceptual model wherein co-orchestration aids in developing relationship and network capability. We complete the paper with implications.

ORCHESTRATION LITERATURE

The concept of orchestration raises the possibility of a multi-firm network capability. Dhanaraj and Parkhe (2006, 659) first introduce orchestration in an innovation network as a “hub firms ... activities to ensure the creation and extraction of value, without the benefit of hierarchical authority. Orchestration comprises knowledge mobility, innovation appropriability, and network stability.” Importantly, Dhanaraj and Parkhe (2006, 659) “reject the view of network members as inert entities ... [and] embrace the essential player-structure duality present in networks.” We interpret this to mean an ontology similar to that expounded in the industrial network literature (see, Möller and Halinen, 2018). That is the network is conceptualized according to connected relationships (Anderson et al., 1994). However, for Dhanaraj and Parkhe (2006) the connected relationships are innovation specific, and so what orchestration comprises is limited to technical functions, knowledge mobility and maintaining network stability to achieve innovation appropriability.

As orchestration research has developed authors have sought to encompass multiple collaborating firms focusing on network change to advance innovation. However, researcher approaches have differed, for example Nambisan and Sawhney (2011) seek to understand processes, while Ritala et al. (2012) look to realist coordination mechanisms. Nambisan and Sawhney (2011) find the processes of leveraging and managing coherence and appropriability, while Ritala et al. (2012) find orchestration involves communicating vision and building social capital. Ritala et al. (2012) also note a difference between management of a present network and orchestration for *the* future. One can say the findings in each of these studies follow from the ontological presumptions of the network accepted by the researcher.

Recently researchers have sought to develop conceptualizations for integrating the many means of influence that allow orchestration. Möller and Halinen (2017), for example, offer the NetFrame whereby influencing, orchestrating and managing amongst other firms is undertaken to achieve new network configurations. The implication by Möller and Halinen (2017) is that orchestration must vary contingently according to different strategic nets, industries and technological change.

More recently, Schepis et al. (2018) venture the co-orchestration concept and ask for research “to recognize the dynamic capabilities and practices of other smaller firms participating in nets.” (op.cit. 124) Schepis et al. (2018) discuss that strategic nets develop through relational capabilities and through many net managing capabilities (e.g. visioning, integrative, joint knowledge development, orchestrating, governance, coordination, sensing, mobilizing, and maneuvering) according to net formation stage. Schepis et al. (2018, 123) suggest that recognizing “more emergent processes and less deterministic perspectives of net formation clarifies the nature of control and links the net concept to management approaches at broader network levels”. In their conclusion the authors call for research on alternative

conceptualizations of nets. In our next section we discuss the themes of network understanding in IMP research, so as to follow the lead for including emergent process.

NETWORK LITERATURE

Business networks are described in the IMP literature with at least four themes. The first, termed here linked firms, is elaborated primarily from the perspective of a firm. From a focal managers perspective the network extends outwards through threads, and change arrives or depart as flow through nodes (Easton and Lundgren, 1991). In the linked firm theme, the network is flat with different bonds or tie types. The opportunity for considering change is thus limited to local relationships. The network structure, thus, seems to constrain the possibilities for action. Instead, the opportunities for change are found within business relationships, where adaptation occurs incessantly, almost unowned, and adaptations are incremental (Hallén et al., 1991). At the same time the network structure provides a stability which is needed for investment and adaptation of activities and resources (Håkansson and Johanson, 1992). However, the stability of the linked firms theme leads researchers to the paradoxes of managing in a business network (Håkansson and Ford, 2002). The solution is given by stepping out of the flat and undifferentiated network, and the ‘managing’ is undertaken within business relationships (Håkansson and Ford, 2002).

The second theme is elaborated in a different way, by highlighting a multi-firm set of interactions (Ford et al., 1986b). According to Ford et al. (1986a, 78) a “company can be viewed as a node in an ever-widening pattern of interactions, in some of which it is a direct participant, some of which affect it indirectly and some of which occur independently of it.” The interactions are composed of “intentions and interpretations from at least two sides” (Ford et al., 1986a, 79) and the ‘managing’ of interaction is given as ambiguous (Ford et al., 1986a). Even more difficult is that a firm’s situation in the network is made complicated by memories and intentions (Ford et al., 1986a). Further, the equivocality and ambiguity of different perspectives regarding which interactions are in a business network is strong, as Håkansson (1989, 34) notes, “a unique network can be identified in relation to every specific problem situation. In other words there are as many networks as there are situations.” Thus the perspective, and logic, of how activities and resources are working within a multi-firm set of interactions affects the understanding of business networks.

In the third theme, termed connected relationships, each business relationship is connected in rather unique ways to every other. The perspective is now from the point of view of business relationships and how they are connected: “our interest is in managers' perceptions and imputed meanings of the connectedness of a focal relationship to other relationships, the *connectedness* of relationships matters” (Anderson et al., 1994, 1, see footnote, added italics). In this theme the topography of the network includes the idiosyncracities of each business relationship and how there is a connectedness. The connections of relationships are unique, either direct or through another. No longer is the network flat and relationships are definitely not generic. Managing network change is found in co-managing business relationship (Håkansson and Snehota, 1995), but stability and continuity are seen as vital for development and change (Håkansson and Johanson, 1992). Stability and change co-exist (Håkansson and Snehota, 1995), although how that is understood is necessarily ambiguous.

This third theme is well elaborated by the Actor-Resource-Activity (ARA) framework (Håkansson and Johanson, 1992). The uniqueness of each business relationship rests on resource heterogeneity and connecting through business relationships gives unique ties and links (Håkansson and Snehota, 1995). The resource interaction approach (Baraldi et al., 2012), in which resource interfaces are a key, might be considered a sub-theme.

Concerning change the third theme has elements of temporality and process throughout, but these concepts play a background role. More to the front are the entity concepts: resources, activities, ties, links, interfaces, etc, and explanations rely upon the stability-change frame (Gadde and Mattsson, 1987). Thus, the 'network structure' is brought strongly into view. However, there is also "a 'continuity of change' in business relation-ships" (Håkansson and Snehota, 1995, 269). But the way that temporalities are considered remains at "continuity of change", just continuous, and how the change is differentiated is lost. Rather than bring forward the temporal frame this theme turns change and process into activity links, resource ties, and relationships and so directs attention to stability. Håkansson and Snehota (1995, 269) exemplify this seeming contradiction: "The existing pattern of relationships in the network is a result of experimenting with various connections and combinations of activities, resources and actors. While the different elements can be connected, combined and developed in many different ways, a huge number of hours have already been invested in the existing connections that form the network structure. The existing structure is thus a result of 'solutions' adopted in the past and in this way the base ground for future developments." The stability is found because of a history, a past, of previous changes and any new solutions are re-arrangements of the past.

The fourth theme, termed here temporal futures, requires a slight perspective change that brings temporality and processes to the fore. The shift in perspective is away from connection between concept entities, towards a relatedness of events according to an observer (e.g. actors, resources and activities relate to each other according more to a future). This theme has an observer seeing the temporality inside the business relationship, and also seeing the parts of the network inside a temporal frame that is enacted. The ontology is processual (Langley and Tsoukas, 2016), and the researcher perspective is constructivist (Gergen, 1999).

Very early IMP literature has the hints of the fourth theme. Building from the interaction theme and activity chains Håkansson and Johanson (1988, 373) note that "Interaction takes place over time. ... Interaction between two parties is a stream of acts." The conceptual leap from a stream of acts to Pettigrew's (1997) process definition is small. Pettigrew's (1997, 338) definition of a process as, "a sequence of individual and collective events, actions, and activities unfolding over time in a context" matches: (i) interaction as a stream of actions and activities, and (ii) the context as an unique network (Håkansson, 1989) for each managerial problem. The process concept is thus found in Håkansson and Johanson's (1988) ideas that streams of interaction can be steady, turbulent, part from each other or join, or be separated and weakly or strongly connected. "Firms are engaged in a great number of streams of interaction of different character with different parties." (Håkansson and Johanson, 1988, 372) Focusing on activities and their sequential and synchronous nature brings the network into focus (Dubois, 1998). But now the network, in contrast to the connected theme, is found in the ways events actions and activities, either individual or collective, are linked in the temporal frame. Instead of the 'continuity of change', there is the continuity of change *and* 'differentiated changes' (e.g. phases, periods, planned project periods, etc.) according to disruption/s between events, or acts or activities.

Early IMP research implies temporalities in network understandings. For example, regarding economic efficiency Håkansson and Johanson (1993, 48) assert "no such optimality can be assumed regarding networks. First, no equilibrium can be expected. The networks are, by their very nature, in imbalance." Similarly Håkansson and Johanson (1993, 41-42) emphasize that "actors' network perceptions - or theories, which may comprise not only the present relations but also expectations and intentions, regarding the future relations – have a bearing ...". Network structuring is found, not from past solutions as in the connected theme, but from different expected futures. The streams of processes are future oriented. When there are

blockages the managers find paths by reconfiguring relationships and parts of the network so as to move towards intended futures. Thus, multiple “openings are created. ... [and] Because of different network perceptions and delimitations by the dominant actors, other actors can exploit such openings by developing activity and resources structures that compete with the dominant structure. The other actors can also form alliances with actors who are not included in the network perceptions of the dominant actors, thus restructuring the network, breaking it up, or extending it in new directions.” (Håkansson and Johanson, 1993, 43) Evident is that with temporality to the fore, network re-configuring precedes the goal for a constructionist.

The ideas of interaction and connected relationships are not disregarded in the temporal futures theme, rather a new shape and differently nuanced meanings are given to the ARA concepts. Interaction processes appear as streams directed by powerful actors who have a large timescape (Adam, 2000, Adam, 2008), and so have shaped the network topography of different futures as understood by other managers. To apply the stream metaphor, the planned timescape of the powerful actors places a dam in that stream, upon which smaller actors rely to craft a smaller stream inside or beside. But if the dam is broken the powerful and other actors re-configure and the streams must fall into new futures. Here then is the opening for co-orchestrations of parts of a temporally differentiated future business network.

CONCEPTUAL MODEL

Orchestration is a process relative to a broader and a narrower frame of understanding and practical activities. The thought that one might orchestrate a net sits within a cultural understanding of a broader network. Orchestration of a net implies activating, re-activating, changing, and closing relationships (i.e. a relationship capability (RC)) according to a broader network understanding. Equally orchestration is narrower in re-positioning firms within business relationships. These relativities, and the essential element of business relationships in managing inside a network (Håkansson and Snehota, 1995, Schepis et al., 2018) link RC, orchestrating and network capability (NC).

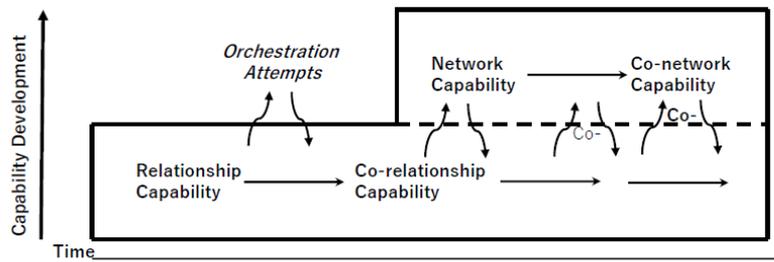
A further issue in the above is the understanding of economic activity, whether in markets or networks. Many managers do not understand the concept of business networks (Czakon and Kawa, 2018), thus orchestration of broader and local net structuring is for these people impossible. Also there are managers who learn, even over decades of experience, how to intuitively orchestrate networks (e.g. McGrath et al., In press). These thoughts point out that the effects of influencing and orchestrating attempts by highly expert orchestrators must often fall on deaf ears. Since co-orchestration is a process of playing together to achieve a common and greater goal, the influence means appear to rely on nuanced understandings.

However, if we define the distinction between orchestration being focused on the net, while NC is a broader understanding given by the temporal future network then a way forward is presented in Figure 1. However, the distinction between net and network is only possible in a specific context, because just as there are multiple boundaries around a firm (Araujo et al., 2003) there are many possible boundaries for a strategic net according to which relationships are relevant. The dashed line in Fig.1 shows an unclear conceptual distinction between RC and NC, as each seems to be involved in the other in a social and interpretative manner.

In Fig.1 development is shown on both axis. The left vertical axis represents the conceptual and activity associated processes, whereby relationship capability develops to network capability for a firm in a business network. On the horizontal axis is shown the development of the co-orchestrating, co-relating and co-networking associated activities leading to a firms’

co-relationship capability and a co-network capability. We have presumed that co-orchestration develops along both axes. Necessarily the limitations of a two-dimensional representation of these concepts means that the reversions, the dis-continuous learning and changes from new events, and the ever needed new understandings are not presented.

Fig.1 Capabilities and orchestration in a business network setting



NB. Here development is idealised, whereas events lead to ever new developments, reversions, etc.

Also not shown in Figure 1 is the ontology presumed for the business network. If interaction in a business network is always future oriented (Medlin, 2004), then the practicality of each re-configuration of a network is an open question. This openness and potential for emergence in a temporal future themed network suggests streams of processes, made up of different interactions, finding their way into different and collective futures. How process streams formed by interaction between firms are reliant on each other, exist one within another, join or part from each other, or are waylaid and bounded by powerful actors, become interesting research topics. Presumed is that the structuring of the business network relies upon managers' abilities to co-orchestrate and co-network, from within their business relationships.

CONCLUSION

That there are at least four themes for business networks suggests that IMP researchers must be unambiguous about ontology and epistemology. That differences in ontology are skirted or left implied is leading to considerable confusion, not only in IMP research but also in the capability literature.

For the future, how RC and NC articulate remains a research issue. For example, Mitrega et al. (2012) proposed that different RCs combine in some different but non-specific ways to present as an overall firm NC. Presumably, NC is conceptually or managerially of higher order and is a more complex capability. If managers undertake purposeful changes and reconfigurations in business relationships so as to gain and maintain a network position, rather than simply incrementally adjust without foresight, how does a developed NC change the ways managers (plural) organize relationships?

Further research is called for regarding the business network as a strongly future oriented social construction. The boundaries of different futures, both temporal and spatial, offer market spaces of stability that smaller firms might rely upon. Equally, how boundaries are amenable to change is, in a temporal future network, a matter of adjusting future placed boundaries by degrees. Small changes over time can open large boundary changes in a future. These issues indicate substantial new research on conceptualizations of boundaries in business networks.

In terms of managerial implications the distinctions drawn in this paper suggest care is needed in interpreting current research on RC, NC, orchestration and co-orchestration. Our present conceptualizations of these ideas is at an early stage, with more care needed in understanding the ontological distinctions being drawn by our research constructs.

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