Networks of mind and networks of organizations: The map metaphor in business network research

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ABSTRACT

This paper examines the definitions and uses of the network picture metaphor in industrial marketing research. Conceptually, the paper extends our understanding of networks and of representations of networks among researchers and practitioners as pictures or maps. A threefold interpretation is proposed of network pictures as representationalist, mentalist and situated. The representationalist use has dominated business-to-business network research while the mentalist use is prominent in strategic management and has recently made an entrance into industrial marketing research. The representationalist version of pictures, despite its apparent innocence, can either imply or leave unexamined the mentalist version, but mentalism stands in contradiction to much network thinking. This paper seeks to resolve the emerging contradiction of representationalist and mentalist versions of network pictures by advocating a situated version. Seeing network pictures as situated in use is helpful in grasping cognitions and actions in a manner consistent with networks. The paper concludes by developing the situated version of network pictures as 'actants' and sketches the benefits and implications for business researchers and practitioners.

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1. Introduction

Researchers and practitioners agree that a thorough understanding of a firm's position in its business setting is vital for its survival and success, with the question of position gaining amplification where business settings are understood to be of network form (for example Wilkinson & Young, 2002; Ford, Gadde, Håkansson, & Snehota, 2003; Mouzas, Henneberg, & Naudé, 2008). Pictures and maps are seductive metaphors for researchers and business practitioners because they offer the prospect of simplified representations of complex business settings by selecting and categorizing important entities (as nodes) and connections between these entities. Drawing pictures or maps offers the further advantage of opening up representations of the spatial and temporal dimensions of relationships, rather than closing them down with linear measures of time and distance. Pictures and maps seem especially salient when researchers have other good reasons to understand industrial settings as networks, as is the case among many of those working within the Industrial Marketing and Purchasing (IMP) group (Håkansson & Snehota, 1989; Axelsson & Easton, 1992; Anderson, Håkansson, & Johanson, 1995).

However, research is divided over the most beneficial mechanisms to arrive at and work with an understanding of a firm's network. Some researchers have adopted a bird's eye view of the firm in developing graphical representations, especially in explaining historical developments (Ford & Redwood, 2005). Others have sought value in exploring individual managers' perceptions of their firm's relationships and interactions (Ottesen, Foss, & Grønhaug, 2004). Indeed, a "cognitive turn" can be detected in industrial marketing research, which poses a radical challenge to the more established objectivist approaches to understanding industrial settings as networks (Henneberg, Mouzas, & Naudé, 2006; Mouzas, 2006; Mouzas et al., 2008).

Cognitive mapping has been adopted in the strategic management literature as a popular method of capturing managers' perceptions of a firm's environment (Fiol & Huff, 1992). Despite the popularity and apparent ease of use of cognitive mapping in management research and practice, network researchers associated with the IMP Group have only recently started to consider related techniques for researching actors' "network pictures" (Henneberg, Mouzas, & Naudé, 2006). This research stream has generally eschewed "map" or "cognitive map" in favor of "network picture" (Ford et al., 2003). IMP researchers have cogent reasons to utilize "network pictures" instead of "network maps" or "cognitive maps" as pictures imply a temporary "snapshot" of the inherently dynamic network setting.

This paper critically evaluates two currently prevalent versions of network pictures. It identifies managerial action and network objectivity as characteristics that are common to both representationalist and mentalist versions of network pictures and proposes that a third, situated, version be adopted in which the focus is very much on interaction and practice rather than prediction and control. The paper contrasts and evaluates the usefulness for researchers of the

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three versions of the "picture" metaphor and attendant tools by considering their ontological and epistemological underpinnings in relation to the network tradition in industrial marketing research. Advocating the situated version of network pictures, this paper broadens the notion of network pictures in an industrial context by proposing an interpretation of them as *actants* in the tradition of the Actor-network theory (Latour, 1987). The paper concludes by arguing that, only when cast as *actants*, network pictures provide a constructive tool to negotiate network meanings in and around firms for practitioners and researchers alike. Table 1 includes definitions of key terms used throughout this paper.

2. Networks of organizations

IMP researchers have been early adopters and developers of network thinking (for example, Håkansson & Snehota 1989; Axelsson & Easton 1992; Anderson et al., 1995), which is also gaining influence in other disciplines (for example, Granovetter, 1973, 1985; Latour, 1987; Gabher, 1993; Kauffmann, 1993; Wassermann & Faust, 1995; Uzzi, 1997; Potts, 2000). The continuing stream of papers about aspects of industrial networks highlights that IMP researchers are continuing to come to terms with the implications of their great insight (for example, Håkansson & Ford, 2002; Håkansson & Waluszewski, 2002; Wilkinson & Young, 2002; Araujo, Dubois, & Gadde, 2003; Holmen & Pedersen, 2003; Mouzas, 2006). Researchers have adopted the network metaphor since the late 1980s as a device to represent organizations' interactions in an industrial space characterized by actors, resources and activities. While the extensive use of the network metaphor in this research tradition has received some criticism (Alajoutsijärvi, Eriksson, & Tikkanen, 2001), researchers have often presented graphical representations to illustrate the forms and functions of industrial networks.

It was not until recently that researchers explicitly considered network pictures or maps as a means to researching manager's perceptions of their business contexts (Johnson, Daniels, & Asch, 1998; Ford et al., 2003). In the past years, network researchers have broadened their interests and begun to investigate how managerial actors perceive the industrial space and how these perceptions influence managerial actions (Henneberg et al., 2006; Mouzas, 2006; Mouzas et al., 2008). In this exploration, researchers' interests in network pictures stem from a desire to understand how managers perceive their firm's spatial relations with other firms given an embedding in an industrial context. More aspirationally, researchers have also attempted to analyze business managers' decision making and strategic actions within their business contexts. Hence, recent developments may be described as a "cognitive turn" within industrial marketing and industrial marketing research.

Many pictures of industrial contexts are representations developed from the researcher's perspective, indicating that a context's purported

Table 1
Key terms defined.

Term	Definition
Network	Understanding of action space characterized by selective connectivity across critical elements and events
Actor	Entity with capacity of action, or making a difference, in a given action space
Environment	Entities and spaces that are excluded from the action space
Representationalist network pictures	Snapshot drawings of industrial contexts developed from a bird's eye perspective and informed by network understandings
Mentalist network pictures	Drawings of industrial contexts that seek to capture actors' understandings of their environments with a view to improving action upon these environments
Situated network pictures	Drawings of industrial contexts in which the focus is on the social process of interaction

network form has itself through considerable and elaborate field work been transformed into an object for researchers and practitioners. The recent attempts to represent industrial actors' perspectives and understandings, as mentalist or normative approaches, contrast with researchers' objectivist or representationalist uses of network pictures. The argument in this section is that neither representationalist network pictures nor mentalist cognitive pictures are particularly helpful to business practitioners and researchers. Notwithstanding researchers' intentions of presenting "snapshots", representationalist network pictures distract attention from dynamics and from the multiple perspectives implied in an industrial context. Mentalist cognitive pictures recognize multiple perspectives explicitly, but simplify the connections between cognition and action. Any stability in industrial contexts in the face of actors' strategic actions tends to be assumed rather than investigated as an empirical proposition.

2.1. Networks, stability and action in IMP research

The tensions of action and interaction, and of durable contexts and strategizing, are germane to settings considered as networks. On the one hand, researchers depict actors as embedded in networks such that their actions are also interactions and come to be dominated by interaction. On the other, actors necessarily possess agency. Notwithstanding actors' embeddedness, they are expected to formulate and pursue their own plans and goals, which is essentially strategic behavior (Håkansson & Snehota, 1989). These tensions were less pressing when IMP researchers framed relationships in industrial settings as dyads (Håkansson, 1982). Two actors can be placed into a dyadic setting, interact with one another strategically and for the most part maintain the dyad's stability and durability. By translating the industrial setting from the dyad to the network, researchers and actors both encounter greater complexity.

Håkansson and Snehota (1989) establish three structural characteristics through which the greater complexity of network settings is manifest. First, interaction remains, but is continually a source of instability as actions and interactions in a focal relationship potentially spill over into other relationships. Second, actors establish their identities through their relationships, extending to the continuation of identities through their ability to form and sustain relationships. Third, the network setting envisages actors that are embedded in relationships, the essence of which is interaction. Hence, Håkansson and Snehota argue that researchers and actors should refer to an industrial context within which embedded actors interact, which has a network horizon (rather than boundary), and thereafter a necessarily poorly specified environment. Indeed, 'the context itself is conceived not as given beforehand or predetermined, but as enacted; it cannot be assessed' (Håkansson & Snehota, 1989, p. 197).

Given networks, agency is necessary but the precise nature of action remains a matter of contention (Håkansson & Ford, 2002; Mouzas, 2006). Håkansson and Snehota (1989, p. 198) argue that 'interaction takes place between actors who are pursuing their own goals and acting purposefully', having already explained that the industrial context is 'enacted', so 'cannot be assessed'. 'Pursuing goals' and 'acting purposefully' requires stability so that goals may be formulated and pursued purposefully through the potentially unsettling episodes of action, reaction and interaction. Stability emerges for Håkansson and Snehota (1989) in the guise of 'norms and values based on past experience, possibly in the form of organizational routines', such that the 'pattern of activities … can thus be directed and managed by values and norms of behavior, not by prescriptions about the pattern' (Håkansson & Snehota, 1989). By implication, radical entrepreneurial, innovative or experimental actions risk the "creative destruction" of an established industrial network, and with it some important bases of pursuing goals and acting purposefully.

Actors' reacting and interacting can have inter-subjective consequences, tending towards objectivity and also stabilizing the