

**NETWORKING UNDER UNCERTAINTY:
CONCEPTS AND RESEARCH AGENDA**

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ABSTRACT

This paper is concerned with ‘networking under uncertainty’ and has two aims: Firstly, the paper aims to further develop the interpretation of business management as ‘networking’ by relating it to previously developed concepts on managerial uncertainties and abilities in interaction. Secondly, the paper suggests some areas of potential research that arise from the view of managerial activities in business networks as networking under uncertainty.

Keywords: Interaction; Networks; Uncertainty, Coping

INTRODUCTION

The IMP Group of researchers (impgroup.org) has long been associated with an ‘interaction approach’ to the study of business marketing and purchasing (Håkansson ed, 1982). This approach is based on the idea that a business sale or purchase is not an isolated event. Each of these events is the culmination of previous interactions between two active counterparts and forms part of a process of interaction that may be complex, long-term and involve multiple purchases and sales between the counterparts and others. More significantly, this approach to interaction has emphasised that interaction has *substance*: It affects the activities and resources of companies and the companies themselves³. IMP research has taken these processes of dyadic interaction or ‘relationships’⁴ as its unit of analysis (Håkansson and Snehota, 1995; Ford *et al.*, 2003) and has also been concerned with the connections between dyadic processes as part of a wider ‘network of interdependencies’ (Granovetter 1985; Powell 1990; Burt 1992; Powell *et al.*, 1996; Castells, 1996; Uzzi, 1997; Podolny, 1994, 2001; Halinen *et al.*, 1999; Möller & Svahn, 2006). More recently, IMP research has attempted to develop a model to examine the role of managers in business interaction or ‘networking’ (Håkansson *et al.*, 2009).

³ This approach contrasts with idea that economic interaction is limited to communication or is circumscribed by or generalisable within the context of a market (Wilk 1996, Marglin 2008).

⁴ The term “relationship” is used as a shorthand here to refer to the wide range of interaction processes, both complex and simple (Håkansson *et al.*, 2009)

Understanding the the managerial challenge of 'networking' requires a further development of the model of business interaction by relating it to previously developed ideas on managerial uncertainties and abilities. We then use the conceptual underpinnings of 'networking under uncertainty' to suggest some areas of potential research.

A MODEL OF BUSINESS INTERACTION

The starting point for the model of business interaction is the three layers of a business relationship; *Activities, Actors⁵ and Resources* (ARA) as suggested by Håkansson and Snehota (1995). In turn, each of these layers form part of a larger *Pattern of Activities, Constellation of Resources and Web of Actors* that stretch across the business network. These patterns, constellations and webs provide actors with indirect access to the resources and activities of many others and also mean that each relationship and its constituents will be subject to multiple influences from across the network.

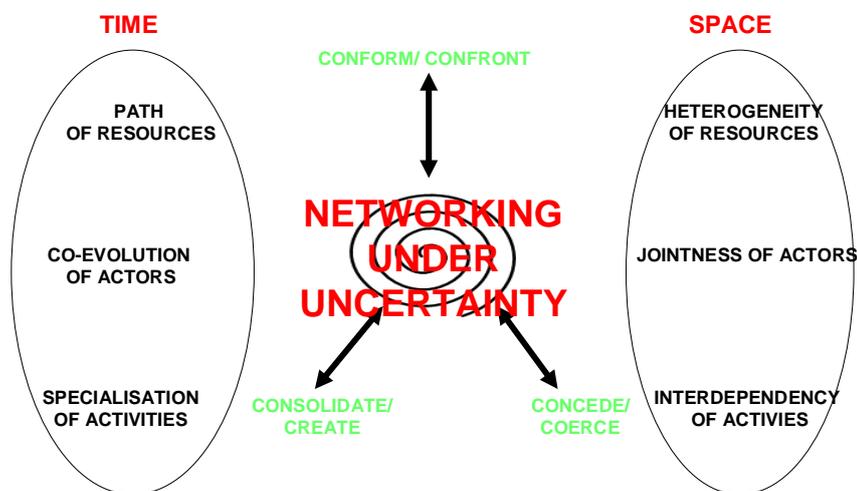


FIGURE 1
A MODEL OF BUSINESS INTERACTION

⁵ Throughout this paper will use “actor” as a generic term to refer to those involved in interaction, except where it is appropriate to distinguish between companies, sub-groups or individuals.

Uniqueness in Space and Time

These multiple influences and the adaptive nature of business interaction mean that each relationship and its associated activities, resources and actors will have unique characteristics when compared with all others in network *space*. Similarly, the continuity of business relationships also means that each will have a unique form at any point in *time*. The model uses the variables of space and time to describe activities, resources and actors as follows:

Space and Resources: The form, usefulness and value of a business resource depends on its context, the resources with which it is combined and the ways that they are adapted within a particular relationship (Krugman, 1991; Håkansson & Snehota, 1995; Lundvall, 1988, 1992; Leonard-Barton, 1992; Lundgren, 1994; Laage-Hellman, 1997; Malmberg & Maskell, 2002; North 2005). The model describes the extent of resource adaptation and combining within a particular relationship in terms of its *heterogeneity*.

Space and Activities: The activities involved in a relationship will be adapted towards each other to a greater or lesser extent so they are more or less *interdependent* (Thomson, 1967; Richardson, 1972; Gadde & Håkansson, 2001).

Space and Actors: The adapted characteristics of the actors within a particular relationship are referred to as their *jointness* (Ford & Håkansson, 2006). Each actor acquires its characteristics through interaction with others (Goffman, 1959, 1967; Blumer, 1969) and jointness provides a way of distinguishing a single relationship from others. For example, a particular relationship may be based on a 'joint' agreement. More generally, jointness is demonstrated in various organisational forms such as when actors are involved together in technological or logistical development. On another level, business interaction is never simply dyadic: When an actor interacts with a counterpart, it does so partly on the basis of the resources and activities of its suppliers or customers. In this way, it interacts with the counterpart on the basis of its 'jointness' with these others.

Time and Resources: The way that a resource interacts with others in its use and development may be observed over time along a particular *path* (Johanson & Wootz, 1986; Arthur, 1988; Hughes, 1987; David, 1985; Dosi, 1982; Dosi, Freeman, Nelson & Soete, 1988).

Time and Activities: The effects of interaction on interdependent activities over time may be described as a process of increasing or decreasing *specialisation* (Dubois, 1988; Hulthen 2002).

Time and Actors: Finally, the development of interacting actors over time can be described as one of *co-evolution* (Thibaut & Kelly, 1959;

Koza & Lewin, 2003; Volberda & Lewin, 2003). Co-evolution does not infer that business actors inevitably develop *towards* each other or into a 'close' relationship, simply that the direction of development of an actor will be affected by its interactions with each of its particular counterparts.

The two sets of descriptive variables are interconnected: The space dimensions describes the relative position of a relationship from which evolution may be tracked; the time dimensions describe provide an explanation of what has brought the network process to that position. However, the evolution of a relationship cannot be fully explained in terms of what happens within the process itself and without considering the effects of evolution within the wider activity patterns, resource constellations or actor webs. Nor can a relationship at any single point in time be completely analysed without considering the evolution of actors, activities and resources that have led it to that position.

NETWORKING AS MANAGERIAL COPING

The model in Figure 1 is based on the idea of business interaction as a continuing process of action, reaction and re-reaction involving multiple individuals (Turnbull, 1979; Belbin, 1993; Araujo, 1998; Dubois, 1998; Bowman and Narayandas, 2001; Dekker, 2004; Wilkinson & Young, 2002; Baraldi & Waluszkeski, 2007; Bocconcelli & Håkansson, 2008; Emsley & Kidon, 2007). In this way, the model is

concerned with the conscious attempts of individual actors to influence the relationship between their two companies. These attempts have been referred to as *networking* (Ford *et al.*, 2003). Networking is self-serving process for both of the counterparts in a relationship. It is concerned with coping⁶ with each actor's own problems through interaction between the activities and resources of the two actors and the actors themselves. But each actor's attempts to cope with its own problems through interaction with others will also involve the actors in simultaneous or sequential, reciprocal or joint problem-coping with others. Networking involves trade-offs for counterparts between the short and long-term and involves the costs of human and physical resource commitment and adaptation for both counterparts.

An understanding of networking as managerial coping requires a deeper understanding of how each individual will attribute meaning to its own and to the actions of the other and how these attributed meanings condition further actions and re-actions. The attribution of meaning to the actions of counterparts forms part of their conscious or unconscious sense-making'; the "set of ideas and outlooks we generally use in viewing things [...or the...] set of unspoken assumptions, expectations, and decision rules" (Zaltman, Lemasters & Heffring, 1982, p. 21) that forms the basis for interaction. Sense-

⁶ The paper refers to Problem Coping rather than Problem Solving to emphasise that business interaction is unlikely to only involve the "solving" a problem for a customer through a single purchase consists a process through which multiple and interrelated issues for both counterparts are addressed through successive adaptations and refinements.

making in business interaction has been further elaborated in ideas on 'network theories' (Johanson & Mattsson, 1985, 1992) and 'network pictures' (Ford *et al.*, 2002; Henneberg *et al.*, 2006). The process of inter-company interaction has been examined at the level of individuals, both to highlight differences between those individuals and subgroups in their views of interaction and using those individuals as representatives in interaction of organisations. Weick (1995) examined the transition of the sense-making concept from the subjective, individual and cognitive level of analysis into the social, organisational level. According to the author, the sense-making that begins at the individual level, will be visible to other individuals through action and events and influence those other actors' sense-making. Weick (1995) suggested that although sense-making frameworks were individual, subjective and cognitive, they were also a product of social interaction. Authors such as Walsh and Ungson (1991, p.60) seemed to be aware of this individual/social interconnection when they define an organisation as a 'network of inter-subjectively shared meanings that are sustained through the development and use of a common language and everyday interaction'. One important aspect of network pictures is in the understanding of how they are inter-subjectively generated (Henneberg *et al.*, 2006, 2010; Mattsson, 2003; Mouzas *et al.*, 2008). A shared view can be obtained by means of shared action or shared means and not necessarily shared goals (Weick, 1979). Shared actions lead to the collectivisation of sense-making. This statement is

coherent with Berger and Luckmann's (1966) notion of social construction of reality.

Each company contains distinct, individual, idiosyncratic, atomized, dispersed and probably contradictory network pictures, each corresponding to an individual or even to a function (Ford & Thomas, 1995; Ford *et al.*, 2002; Mattsson, 1987). However, by observing and analysing companies' actions, reactions and interactions, one may infer that one generalised organisational view, one 'apparent' network picture, underpins the company's interpretation of the situation. Nevertheless, this predominant network picture may simply be a reflection of the company's internal relationships of power and dependence among individuals or functions (Cook & Emerson, 1978). It is not possible to infer one network picture for an entire company by simply combining the distinct network pictures held by each of its key individuals⁷.

The ability of individual actors to attribute meaning to their own and to the actions of others implies that networking as coping would involve a number of non-exclusive choices for each involved actor, as follows:

⁷ This section builds on Ramos C, The Development of an Analysis of Network Pictures, Unpublished PhD, University of Bath, 2009.

Networking Choices within Single Relationships: The relative importance to business companies of a small number of relationships with their suppliers and customers has long been established (Håkansson 1989). This importance is seen in the work of key account managers, buyers and also in those involved in joint product development, technical service or installation. Networking for each actor within a continuing process of interaction involves choices about which of their problems to *confront* in a particular process and when to confront them and for which to *conform* to the existing way of interacting. These choices have been documented within Manufacturer-Retailer interactions as a process of agenda-setting or issue selection by counterparts for their regular review meetings⁸. Managers must also choose how to respond to the networking of counterparts and their attempts to confront particular problems or conform to current patterns of interaction.

Networking Choices between Different Relationships: Even those managers involved in only a few relationships face choices about whether to address particular problems by developing interaction with new counterparts and whether to seek to abandon existing ones. For others, their interactions take the form of attempting to manage a wider 'portfolio' of relationships. We refer to this choice as that between *consolidating* interactions within existing processes or

⁸ For example, a manufacture may decide to raise the issues of product display within the store or the scale of retrospective discounts at a particular time but consider it prudent to hold back on attempts to increase normal prices.

attempting to *change* the structure of those processes. Examples include the resource allocation choice between intensifying sales and development interaction with existing counterparts or prospecting for new customers or suppliers or choosing to alter or maintain the resource allocation between existing relationships. It has been suggested that developing new relationships and/or changing the nature of the problems addressed within them is problematic, so that companies seeking to change the structure of their relationships are likely to acquire more, but similar relationships to those already held (Håkansson & Ford 2002).

Networking Choices about How to Interact: Networking includes actors' own choices and their responses to the choices of others. Both of the counterparts in a relationship are also involved in choices about *how* particular problems should be addressed. These choices centre on whether to defer to the counterpart's leadership (*to concede*) or to attempt to influence the counterpart in a chosen direction (*to coerce*). Common examples include engineering choices such as whether a product should be produced according to the design of the supplier or whether the supplier should 'make-to-print'⁹. More generally, both of the actors in a business relationship will seek to develop that relationship to their advantage in relationship to their other relationships. This development is likely to involve both parties in

⁹ These particular choices amount to major issues of technology strategy about the technologies that a company will choose to develop and hold in-house and those for which it will depend on customers or suppliers. Radically divergent choices are sometimes apparent in the same industry and moves between these choices represent major strategic shifts (Lynn 1995, Ford *et al.*, 2006) .

teaching and learning, directing and following (Araujo 1998; Baraldi & Waluszkeski, 2007; Bygballe 2005; Gadde and Snehota, 2000;, Håkansson, Havila & Pedersen, 1999; Håkansson, Huysman & von Raesfeld Meijer 2001; Håkansson & Johanson, 2001)

These choices are not mutually exclusive of each other: They will be taken simultaneously by a number of individuals in both of the companies in a relationship as they address a number of their own problems and those of counterparts. Each of the choices in any one company is interdependent with the choices taken by counterparts.

NETWORKING UNDER UNCERTAINTY

The model in Figure 1 is based on the view of business interaction as a process through which the specific problems¹⁰ of actors are addressed (Webster, 1965). The model suggests that actors will experience different *uncertainties* in addressing particular problems under different circumstances. Their respective uncertainties and problem characteristics will affect the particular *abilities* that each actor will seek from and offer to their counterpart (Håkansson, Johanson and Wootz, 1976; Ford *et al.*, 2003). The symmetry between the uncertainties and abilities of counterpart companies, customers and suppliers is illustrated in Figure 2¹¹:

¹⁰ It is important to note that problems can be both positive and negative. Thus an actor may face a cash-flow problem because its business is successful and expanding rapidly. Conversely, an actor may face a cash-flow problem because its business is in deep decline and its relationship counterparts are deserting it.

¹¹ This section builds on Håkansson, Johanson and Wootz, 1976.

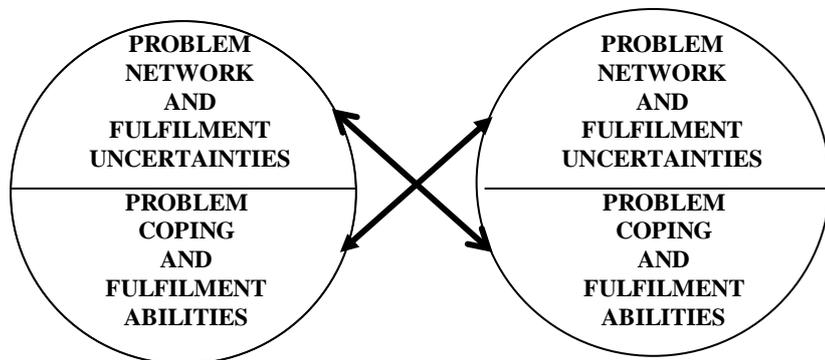


FIGURE 2: THE UNCERTAINTIES AND ABILITIES OF INTERACTING COUNTERPARTS

Previous research provided significant insights on the types of perceived uncertainty and the potential responses (Duncan, 1972; Downey *et al.*, 1975; Huff, 1978; Jauch & Kraft, 1986; Milliken, 1987). For business managers, the uncertainty with regard to problem, network and fulfilment can be formidable because of the high degree of degree of unpredictability of the of potential contributions of counterparts.

Problem Uncertainty: This exists when an actor is unsure of the best or most expedient way to cope with one of its own problems. An actor's problem-uncertainty may be increased or decreased either through experience, such as when supplying or buying a particular offering several times, or through attempts by a counterpart to manipulate its uncertainty.

An actor's problem uncertainty will affect the problems that it chooses to confront: It may lead an actor to avoid confronting a particular problem and choose instead to conform to existing interaction patterns. An actor experiencing problem-uncertainty is likely, at least initially to seek interaction within well-developed relationships with established counterparts (*to consolidate its relationships*). The problem-uncertain actor is likely to seek relatively intense interaction and to *concede* to the advice of the counterpart about how the problem should be coped with.

Network-Uncertainty: A business actor may face uncertainty about *where* in a network of current or potential relationships it should seek to cope with a particular problem. The extent of this uncertainty will be affected by the number, heterogeneity and rate of change of potential relationships as perceived by the actor.

Network-uncertainty is likely to lead to quite different interaction choices when compared with those associated with problem-uncertainty. For example, a network-uncertain actor, faced with heterogeneous or rapidly changing surroundings may be expected to invest heavily in scanning and evaluating the network. This actor is unlikely to commit to a single relationship at this time. Thus network-uncertainty may involve an actor in important choices between *consolidating* and *creating* new relationships.

Fulfilment Uncertainty: This occurs when an actor is uncertain about the outcome of interaction and that a counterpart will *actually* provide the means of coping with a particular problem that it seeks to confront. This uncertainty may exist whether the approach to the problem was determined by the actor (coerced), the counterpart (concede) or interactively between them. The approach may require different contributions from the activities, resources and individuals of both the actor and the counterpart and involve investment in service or product development or administrative restructuring. But for the problem to *actually* be coped with, the approach must be followed through to completion. In other words, fulfilment must take place.

The Evolution of Uncertainties: The uncertainties of business actors evolve over time. Thus, problem-uncertainty is likely to decrease with experience of coping with a problem. Further, when an actor has gained experience of coping with a particular problem then it is possible that it will place less emphasis on the way that the problem can be coped with and more emphasis on the cost or efficiency of coping. In this way, fulfilment-uncertainty may increase. Similarly, experience may lead an actor to consider other potential counterparts as a way of improving the way that the problem is coped with or achieving greater efficiency in coping. Both of these situations are reflected in an increase in the actor's network-uncertainty.

The Abilities of Actors

Problem coping in the business network is an interactive process involving multiple actors. The abilities of actors are rooted in their respective resources and activities, in how they are combined together and in how they relate to the resources and abilities of others to which they are linked through connecting relationships. Both of the actors in a dyad each contribute to coping with their counterpart's problems. We may analyse the potential contributions of actors towards problem coping in terms of two distinct abilities: *Problem-Coping Ability* and *Fulfilment-Ability*.

Problem-Coping Ability: The problem-coping ability of a single actor is manifested in its contribution to the *development* of an approach to a particular problem of a counterpart. Problem-Coping Ability is perhaps best interpreted as a *promise* by an actor to a counterpart to develop some aspect of a problem approach. For example, an actor (either 'customer' or 'supplier') may promise to take major or exclusive responsibility for the design of a product or of a service organisation. The Problem-Coping Ability of a counterpart is likely to be important to an actor when its problem is new or complex and when the actor has problem or network-uncertainty about how to approach the problem and with whom to do so. In these situations, an actor is likely to accept inadequacies in fulfilment by a counterpart manifested in such things as late deliveries or payments or consistency of supply or demand. Of course, if an actor has low problem or network

uncertainty then it is less likely to seek or to pay for the problem-coping abilities of a counterpart.

Developing and maintaining the ability to cope with a wide range of its own or others' problems is resource-intensive and abilities are prone to obsolescence. This often leads companies to increasingly rely on the problem-coping abilities of others for many of their continuing problems.

Fulfilment Ability: This refers to a counterpart's ability to fulfil its promise and to actually carry out what is required by the actor on time, at the agreed cost and specification. The fulfilment-ability of a counterpart is likely to be more important to an actor when that actor has little or no problem-uncertainty about the best approach to cope with the problem or network-uncertainty about where to look for an approach. However in this situation an actor may have significant fulfilment-uncertainty about the counterpart's achieved performance, its efficiency, reliability or the cost of actually coping with the problem. Fulfilment ability can take a variety of forms:

Fulfilment-ability may require high levels of investment in staff and facilities. Examples of this situation include the ability to install complex business software for a customer as in the case of a systems integrator or value-added reseller in the information industries, or the ability to absorb and successfully use innovative equipment from a

supplier or to provide regular, trouble-free logistics to multiple locations. In contrast, the fulfilment-ability of their counterparts is often important to actors when seeking to cope with mundane problems centring on convenience or acquisition-cost. In this situation effective fulfilment will depend on the low-cost of operations as in the case of a discount supplier or computer 'box-shifter'.

Heterogeneity

The roles of problem-coping and fulfilment-abilities in business interaction emphasise that nothing is fixed or predetermined in the heterogeneous business landscape: The relationships between different companies cannot be generalised on the basis their membership of a particular 'product market'. Depending on their network position, resources and activities and their uncertainties, both 'suppliers' and 'customers' will seek different combinations of the problem-coping or fulfilment abilities of counterparts.

Any actor in the network may develop products and services. Some may also produce offerings based on those designs whilst others simply sell their designs to other producers. Some actors only produce, whilst others neither produce nor design but rely on the abilities of others. Either or both of the actors in a dyad may coerce or concede in particular aspects of their interaction. For example, either or both may determine price. Similarly, logistics may be designed or undertaken by manufacturers or by retailers.

Superficially similar actors may seek widely different network positions ranging from a small number of stable, high-intensity relationships to a larger number of short-term opportunistic interactions.

All actors face problems and all seek counterparts to help them cope with these. All actors face uncertainties and these affect their choice of counterparts, their interactions and the coercion and conceding between them. Customers choose suppliers to help them address a specific problem or range of problems and often have to compete with other customers for the problem coping or fulfilment abilities of those suppliers. Similarly, suppliers choose and compete for the customers that will help them cope with particular problems. All actors conform and confront aspects of their relationships. All face choices about their position in the network and all must choose when, where and how to consolidate or create, to coerce or concede.

RESEARCHING MANAGERIAL INTERACTION

The model that we have described suggests an interaction process involving a range of continuing managerial choices within relationships, between relationships and about how to interact with a counterpart. Business interaction takes place within an evolving structure comprised of the connections between the evolving activities, resources and individual actors of the counterparts. This view of business interaction suggests a number of areas for further analysis:

Studies of the Structure of Business Interaction: The first aspect of structural analysis would be concerned with describing and explaining variations in resource heterogeneity, activity interdependence and actor-jointness in specific relationships at particular times. Key areas requiring explanation are the connections between previous interaction patterns and current structure; similarities and differences between the structures in adjacent or supposedly 'similar' relationships. The second aspect of this work would be to examine and account for the evolution of the structure of interaction, the path followed by resources, the specialisation of activities and the co-evolution of actors. The scale and detail required in structural analysis and the uniqueness of each business relationship is likely to lead to the use of case-study methodology and there have already been many examples of IMP case studies of both the current situation and evolution of interaction studies. Recent examples of this structural analysis include Baraldi and Strömsten (2006), Baraldi & Waluszkeski (2007), Baraldi & Stromsten (2009), Gadde, Håkansson, Jahre & Persson (2002), Gadde & Håkansson (2008).

Studies of the Process of Business Interaction: These studies would build on research in a wide range of areas: There have been many attempts to study the process of interaction between individual actors within the sales management and negotiation areas (Schelling,

1960; Fisher and Ury, 1981; Raiffa, 1982; Sebenius, 1992)_whilst others have been concerned with the effects on interaction of the interplay between trust and control (Blois, 1999; Child & Mollering, 2003; Das & Teng, 1998; Fryxell, Doley & Vryza, 2002; Harrison 2004; Heide, Wathne & Rokkan, 2007; Inkpen & Currall, 2004; Li, Zhou, Lam & Tse, 2006; Nooteboom, 1996; Woolthuis, Hillebrand & Nooteboom, 2005). More recently, there have been a number of attempts to examine the 'network pictures' of individuals as the basis for their interaction (see, e.g. Leek & Mason 2009; Ford & Redwood, 2005). An important development would be further studies of the evolution of 'network pictures' as a basis for interaction over time (Easton & Araujo 1994; Anderson & Mattsson, 2010) or in the light of specific events (Oberg, Henneberg & Mouzas, 2007). These could provide a starting point for studies of relationship 'strategising' (Gadde, Huemer & Håkansson, 2003, Holmen & Pedersen, 2003) and particularly into the analysis of managerial choices within and between particular relationships. These studies would be concerned with how managers order their problems and plan and implement their approach. They would also include studies into the actual process of interaction that is involved in conforming or confronting. Secondly, studies into the choices between their relationships that managers make and their attempts to change their *position* in the network (to consolidate or create). Thirdly, studies of the approaches taken by actors to different aspects of their relationships with others (to coerce or concede). The studies on the effects of asymmetry in

relationships are examples of early approaches to this (for an outline see, Johnsen & Ford, 2008). Finally, another important area of process study is into the uncertainties faced by actors in particular situations and how those uncertainties evolve over time. There appear to have been no organised studies of this area since the original studies of Håkansson *et al.*, (1975).

CONCLUSIONS

This paper discussed a conceptualisation of what managers do in business networks as ‘networking under uncertainty’ which may form a basis for the further research into business interaction. Viewing ‘networking under uncertainty’ as coping, the proposed conceptualisation draws from earlier research within the IMP Group and more widely and has its roots in ideas on sense-making and social interaction. The outline envisages business interaction between any two actors as a substantive and evolutionary process that is unique in time and space, but which is related to other relationships in a wider network. Our analysis draws an analytical distinction between the structure within which an interaction takes place and the process itself. The structure of interaction can be described using the ARA (Actors, Activities, Resources) Model. Networking is described as managerial problem-coping process under circumstances of uncertainty. In this way, we firstly, emphasized the importance of approaching the managerial challenge; and secondly, we draw the attention to the relevance of uncertainties that managers face in their

surrounding networks. The implication of conceptualizing the role of managers as 'networking under uncertainty' is that we need to re-examine the whole array of managers' choices in networks. We elaborated three categories of networking choice: 1) choices within relationships, 2) choices between relationships and 3) choices about the approach to networking.

The paper was concerned with the study of managerial activity in the significant relationships of business companies and it stressed the uniqueness of each of these relationships in both network space and time. This uniqueness poses particular problems for the researcher. It precludes or at least severely restricts empirical generalisation between relationships and emphasises the necessity of multi-respondent research within dyadic and multi-lateral situations. However, the uniqueness of particular relationships does not preclude the development of multi-case studies and conceptual generalisation across relationships and companies into the nature of sense-making and its connections with networking (Yin, 1985; Eisenhardt, 1989; Easton, 2000).

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