

Inter-firm Interaction from a Human Perspective

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Abstract

Interaction has been a central construct of the Industrial Marketing and Purchasing (IMP) Group from the earliest research (Håkansson 1982). Empirical research derived a framework where interaction between firms within 'episodes' lead to the development of an 'atmosphere' that conditioned the nature of on-going cooperation. The IMP framework developed without a deep underlying theoretical base, although there was reliance on two streams of literature: institutional economics and social interaction theory and in addition influences can be traced from resource-dependence theory and the behavioural theory of the firm.

While the empirical perspective allowed researchers to focus more clearly on the nature of inter-firm exchanges and see the role of business relationships (Håkansson 1982), the lack of a deep theoretical structure has led to weaknesses in the interaction approach. These weaknesses include an implicitly static perspective of interaction trapped within episodes rather than being continuous and so a stability/change dichotomy has prevailed, and secondly, a lack of distinction between the firm and individuals as actors so that the role of humans has been underplayed. It is individuals who act for firms and so firms exchange and change, whereas the IMP framework often resorts to firms as actors, or mixes individuals and firms as actors in confusing ways so that it is hard to know what actors mean in many texts. This removes (or at least reduces) the human elements of business relationships that provide an understanding of atmosphere and how an understanding of firms, relationships and network structures allows and constrains new economic possibilities.

The humans also act through, and in connection with a number of material objects (e.g. fax-machines, E-mail and computers, telephones), and in diverse locations in interpersonal interaction and in specific places and spaces. These factors indirectly affect the interaction processes and vary the outcomes of these ongoing processes (e.g. products and services). Recent globalization processes have an impact on both the social interaction and exchange due to diversity in cultural backgrounds as well as noting the role of the enlarged spatial dimension in business.

This paper adds to the literature by discussing the limitations of an under-theorized construction of 'interaction' and then proposes a deeper theoretical framework based on human cognition and time. This theoretical framework develops an understanding of the environment as a temporal space structure created through social construction, in which firms are partially directed by individuals who are involved in dialogue. According to our view, this perspective allows a deeper understanding of the way that an 'atmosphere' develops between firms, through a more careful understanding (and description) of the 'in-between' that occurs when two individuals representing different firms interact.

In elaborating the 'in-between' an important distinction is made between interaction in the physical world and interactive processes in the cognitive domain. Further clarification of this distinction offers significant opportunity for future research. The final sections of the paper address the research implications and discuss the limitations of the proposed approach to inter-firm interaction based on human cognition through time.

Keywords: Time, cognition, interactive, business interaction, actors, actants, event networks

Introduction

The nature of interaction between firms in industrial markets, where product is exchanged and communication supports that exchange, shapes the very character of business relationships and their 'atmosphere' (Håkansson 1982). The concept of interaction is central to the research of the Industrial Marketing and Purchasing (IMP) Group (Gemünden et al. 1997; Håkansson 1982; Håkansson and Snehota 1995; Hallén et al. 1989; Möller and Wilson 1995; Naudé and Turnbull 1998), and has been so since the earliest cooperative empirical study in the early 1980's (Håkansson 1982).

By focusing on inter-firm interaction, the IMP Group has been able to develop a conceptual framework that begins to approach the dynamic nature of industrial markets. The challenges of the IMP-interaction approach to marketing are twofold: the interdependent nature and the processual nature of interaction. This framework, with a focus on the dual and complementary nature of customer and supplier, has stepped beyond the straightforward application of cause-and-effect managerial thinking found in a four "P" approach to Market Management. In addition, the IMP framework moves beyond the simple control of customers (Grönroos 1989) to a more dynamic process where the customer is as likely to influence the buyer, as the buyer is the customer. This approach saw the early shift of focus for IMP research to "relationships" as the unit of research (Gummesson 1987; Hallén et al. 1989), and then later to business networks (Ford 1990; Håkansson 1989). The network perspective was noted already in the early 1980s in Sweden (Hägg and Johanson 1982; Hammarkvist et al. 1982).

However, the term 'interaction' has rarely been defined in IMP literature, rather the concept is approached obliquely by enumerating the parties, the elements and processes of interaction, the resulting inter-firm atmosphere and the environment (Håkansson 1982). This is most likely a result of the empirical focus of interaction research, where researchers have been concerned to explain the reality of industrial markets using case studies. The cases and questionnaires were conducted in the late 1970s and early 1980s (IMP 1) and complemented in the late 1980s (IMP-2). Five European countries were included in the first study and in the second study U.S. and Japan were added.

Interaction is generally defined as "mutual or reciprocal action or influence" (Merriam Webster's Online dictionary, <http://www.m-w.com/dictionary/Interaction>). In sociology, social interaction is a dynamic, changing sequence of social actions between individuals (or groups), who modify their actions and reactions due to the actions by their interaction partner(s). Social interactions form the basis for social relations (<http://en.wikipedia.org/wiki/Interaction>).

This paper makes an addition to the literature by grounding interaction in a more substantial theoretical framework. We approach the issue by including ideas concerning interaction taken from the actor-network theory (see e.g. Callon 1999; Latour 1999; Law 1992) and from our reading of temporally inspired issues about interaction, relationships and networks in business marketing literature.

The interaction model was developed in the early 1980s, - that is almost thirty years ago. The world and not least the business environment have changed considerably since then. Interaction has become more global in character; new digital systems and technologies are in use. In addition, political dualism in the world has been removed and deregulation of trade has been materialized. There are still many issues that strongly favour a development of the interaction approach to business marketing. Recent notions concerning interaction also support this assertion. We quote: "But the idea of interaction in business is still not well understood. More importantly, the implications of ubiquitous interaction for the management of individual business and its wider regulation have received only limited attention in the literature" (Ford, 2006, 2).

The structure of the paper is as follows. First, a critical appraisal of the assumptions underlying the interaction approach uncovers some areas of weakness that stall current research. In a second section a discussion of a set on ontological assumptions regarding the 'in-between' of customer and supplier leads to a deeper theoretical approach concerning interaction. In the third section, elaboration of a theory of inter-firm interaction embedded in human cognition through time is undertaken. In the final sections, a discussion elaborates the research implications and limitations of this human-cognition-time theory of inter-firm interaction.

It is important to note that this paper does not explore interaction within the Actor, Resource, Activity (ARA) model, rather this elaboration remains for future research.

The Interaction Approach

Like most models and theories the interaction approach (INT) is based on certain theoretical antecedents and empirical observations and informed by the research group and their backgrounds. We are noting a number of limitations these issues give rise to. Two issues we find being problematic are the following:

1. Time is implied rather than included within the INT approach so that interaction seems to exist in a static perspective, trapped within episodes rather than being processual and continuous. This results in the stability/change dichotomy prevailing.

2. There is a lack of distinction between the firm and individuals as actors. Firms are economic and legal structures and can not make decisions or direct resources or activities. This lack of distinction between the firm and humans as actors leads to the role of humans being underplayed within interaction. The result is that dialogue is removed from interaction.

These issues exist as problematics in the thinking by many others dealing with interaction as a base for business marketing processes (see e.g. Dwyer et al. 1987; Håkansson 1982; Håkansson and Snehota 1995; Lambe et al. 2001). However, the INT approach reduces the roles of individuals within firms and networks to automates whose actions are guided by the function of the firm, the firms' relationships and the network within which the firm is embedded. This perspective results in a somewhat deterministic position for individual actors, whose range of actions is limited and result from position in the network. The free-will of the individual is over-ridden by the functional necessity of the network.

Ford and Håkansson (2006) present five issues where interaction in business relationships deserves greater attention in research, in order to develop a better understanding of the concept. These challenges to research concerning interaction include the following issues:

1. Time, 2. Interdependence, 3. Jointness, 4. Relativity, and 5. Subjective interpretation (op. cit. 7).

Within this perspective interaction takes both human and physical form through interpersonal communication. Companies also interact by delivering physical products and services and also through more one-sided observation (i.e. specific meaning for those involved in interaction) (op. cit., 8). In this view interaction is having both individual human beings as well as companies as actors.

It is fairly easy to agree that these five issues are important, and underdeveloped. But many of the issues have been approached in research already. Concerning time and process several contributions have already been made (Halinen 1998; Halinen and Törnroos 1995; Hedaa and Törnroos 2002; Medlin 2004). Here we approach the final point as well, that is human interpretation and subjective interpretation in interactive processes.

In contrast to the original INT framework we are here taking the viewpoint that individual human actors are playing a key role in interaction processes in business. Human actors make decisions (sometimes together in groups) and as representatives of companies (which in the end of the day are mainly legal entities). People trust each other, they commit themselves and they interact and communicate and sense the world around them. In the INT model the "atmosphere" concept deals most with these issues. Concerning interactive parties the actors have many characteristics and the environment is the outer context where interaction takes place. The interaction process lies at the heart of the INT model. Therefore and in contrast with INT we are focusing on human, individual actors, as processors of information, ideas, trust and other elements in interaction.

Ontological viewpoints

Interaction between business counterparts takes place in specific contexts and is characterized by a specific temporality. The IMP-studies have shown that business relationships are based on mutual investments of the interacting parties (Håkansson 1982, Håkansson & Snehota 1995). The Interaction approach of industrial marketing also assumes active interacting actors with specified objectives for their actions and reactions.

Interaction is defined as a communicative process between two business counterparts that takes place in a specific context or setting. What takes place in this often long-term interaction forms an ongoing dialogue between business counterparts. It is therefore of interest to try to explore in more detail what this dialogical element is all about. What is a business dialogue, as a part of interaction, and what takes place in-between humans actors in social exchange in business settings?

The 'in-between' and 'dialogue'

Dialogue has been defined as: "An exchange of ideas and opinions", and "a discussion between representatives of parties to a conflict that is aimed at resolution" (<http://www.m-w.com/dictionary/dialogue>). The dialogical perspective notes also a trajectory of past and forthcoming interactions where the past and future demands are developed together through the dialogue. Trust and commitment form a part of this dialogical process in space and time.

Inter-action deals also with what happens "in between" when actors (who represent their companies) interact. What takes place in-between is fluidly ongoing and constantly changing the relationship of those actors interacting in a business relationship. The notion that relationships are kept alive for long periods of time does not necessarily mean that they do not change. On the contrary, it seems that everything is changing more or less continuously and at a faster pace than previously. The change takes place also in-between, when the actors do not stay in contact with each other due to the fact that other mechanisms and other processes are constantly creating events that can directly or indirectly affect a specific relationship.

Therefore a deeper understanding about the 'in-between' and 'dialogue' is needed when attempting to wrap-up what makes relationships start and develop and change over time. In saying this we should also remember the notion from the network and interaction approach that relationships are characterized by "both stability and change" (Håkansson & Snehota 1995). We can understand the contextual factors as the "spatial" dimensions of actor-based networks. There should be certain stability between interacting partners because overly radical changes can lead to relationship termination and more adaptive processes than can be coped with.

A second characteristic concerning interaction and temporality is that it is forming a smaller and dynamic part of a relationship. Interaction also constitutes a process of ongoing communicative acts and reactions to stimuli and information.

A third dimension in interaction is that it is also temporally embedded in the past (past loadedness) and into the specific situation at hand (its contextual present) and expectations concerning the future (future loaded). This notion has been labeled the 'relational' notion of time (Halinen and Törnroos 1995; Hedaa and Törnroos 2002; Medlin 2004). The same notion has been later noted by Ford & Håkansson 2006, but with different linguistic expressions.

These are, according to our notion, some basic ontological viewpoints dealing with time and space of the interaction approach. We next contrast three network theories to elicit further distinctions of the 'in-between' and 'dialogue' within interaction.

Actor Network Theory (ANT) in sociology proposes a different view. It does not start by using any assumptions. "It is important not to start assuming whatever we wish to explain" (Law 1992, 380). "Instead we should start from a clean state" (op.cit). The theory argues that the "society and organization would not exist if they were simply social. Agents, texts, devices, architectures are all generated in, form a part of, and are essential to, the networks of the social" (Law 1992, 379). This general starting point resembles very much the grounded theory approach (Glaser and Strauss 1967).

Society is characterized by the heterogeneous network. The suggestion is that society, organizations, agents, machines are all effects generated in patterned networks of diverse (not simply human) materials. The ANT approach also treats knowledge as a social product.

What follows is that agents, social institutions, and organizations may be seen as a product or an effect of a network of heterogeneous materials. Science would mean that it is a process of “heterogeneous engineering” in which bits and pieces of the social, the technical, the conceptual and the textual are fitted together and so converted (or “translated”) into a set of equally heterogeneous scientific products” (Law 1992, 281).

A basic framework of the ANT is that human beings form a social network together with other human beings and endless other materials, so that “ ... almost all of our interactions with others are mediated through objects of one kind or another” (op.cit. 281-2).

Actants is a term that is used (together with the “actor” term as synonyms) in the ANT-framework. By actants the simultaneous process of heterogeneous engineering takes place. Actants are considered as being both human as well as material elements in the networking process, which are in a constant change of flux and change through struggle in the social and heterogeneous engineering processes.

These propositions concerning socially constructed realities that make up our world, take different viewpoints to the fore and pose challenges to the industrial network approach. We are here using some of the ideas posed by the ANT-approach, but would not swallow it as it is. In the INT-approach the role of human managers seems to be underdeveloped, and that is also the case concerning interaction and how it can be defined and developed in research. Here we are especially noting the role of human beings and their interaction as it takes place in the communication ‘in-between’ these human beings.

Observe that the ANT researchers (see Latour 1999) state that classical sociology is dealing with the relation between agency and structure, whereas the “embeddedness” approach by Granovetter (1985) is “oversocialising” and according to Latour is therefore over-emphasising the role of individuals when attempting to explain (or understand) social processes. The ANT-framework has some thought-provoking ideas but it is not very straightforward and precise, rather it is fairly elusive in character.

Granovetter on the other hand claims that most research in economics is atomizing individual action; “.. he or she can be atomized as any Homo Economicus” (Granovetter 1985, 486). The Granovetterian view is that embedded social relations play a crucial role in business and in contemporary society and that social relations are crucial in order to reveal what takes place in economics and business in general. The social and historical ties and contextual elements are also important, according to him. “Actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of the social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations (op. cit., 487). At the same time he wants to emphasize not to “under” or “over-socialize” social exchange mechanisms when dealing with economic life. Figure 1 contrasts the actor viewpoint according to three different theoretical approaches.

Figure 1: Three actor-viewpoints in business marketing and economic sociology

INT-view	ANT-view	Social Network view
Actors are: Individuals, and/or Groups/department and/or Companies/organisations	Actors (and actants) are: A combination of material and human objects and how they represent themselves in heterogeneous interactive processes at one point in time	Actors are: Human, embedded in a social structure, like a business organisation and a market structure with a specific historical development
“Mixed view” of actors in business interaction (Håkansson 1982, Ford 1990, Möller & Wilson 1995)	“Everything ‘enmeshed’ in a struggle and process of materials and people” (Law 1992, Latour, 1997 Callon, 1997)	“Human-based, individual, group dynamics, social-interaction and exchange” (Granovetter 1973, 1985)

We are emphasizing the interaction role in business settings, but want to pinpoint and add what happens in the “in-between” space of the interaction process. Certain material elements might play an important role within business buyer-seller interaction processes. In the contemporary digital and global business environment the “material elements” have undergone a fundamental change recently. In interaction in business markets we deal with material objects (e.g. products) and intangibles in relation to these (different types of services, know-how etc.). These form objects within value-creation processes between companies and are those material objects that are ‘interacted’ around.

To sum up, we propose some key issues that exist in reality between business partners when they interact and that deserve a closer theoretical examination:

1. Dialogue = what takes place between individuals when they interact in a specific situation and in a specific place with a specific problem at hand with specified counterparts. A dialogue is an ongoing interactive process between counterparts in order to exchange information, handle relationship-issues as well as social and business exchange. Dialogue is at the heart of interaction processes and business-making.
2. ‘In-between’ interaction = all those factors and material objects that are of interest and play a role for the outcome of interactive processes in interactive dialogues. The intervening factor, especially events from outside-the-relationship or from inside-the relationship.
3. Environment = a dyad is forming a part of (embedded in) other actors/actants and networks of relationships and different institutions and non-profit organisations (actor nets), all residing in a flow of events. This flow of connected events, caused by man or nature, is an event network that affects the process of interaction between business counterparts (see Hedaa and Törnroos 2002; Hedaa and Törnroos 1997). The environment is characterised by both temporal and spatial elements.
4. Actants v actors = Firms are actants (a firm and its infrastructure, logo, reputation and value and the groups of people that are involved as a whole) and are the “spatial” and legal unit of the relationship; whereas Actors are individual managers involved in interaction processes (representing her/himself as well as the firm to the other counterpart).
5. Atmosphere = the perceived (mental) outcome of dialogues and in-between aspects of interaction between individual actors, for example level of trust, commitment and reliance and their actant-organizations in event-networks.

These issues will be discussed further in the sections below

Inter-firm Interaction from a Human Perspective

This section elaborates a theory of inter-firm interaction that positions firms as economic actors under the partial direction and decisions of individuals. One can refer to this conceptualization of a firm as an actant, where participating individuals as actors define the firm (i.e. actant) as a collectively understood concept (cf Hawkes 1977). The firm, as an actant, operates through many individual actors to achieve the functional goals required by its collective existence: profit. In this approach individuals are the key to understanding firms as economic actants and individuals play vital roles in coordinating and enacting firm strategies, relationships and processes. This process of enactment is extended through time and is coordinated with other individuals and actants so as to achieve economic outcomes.

Importantly, individuals as the actors within firms, approach an understanding of the temporal-space structure through processes of social and individual construction. This formulation of individuals and their economic environment accepts that humans have limited cognitive ability and so undertake dialogue in social construction.

The theory is elaborated in parts, following the same format as the original ‘interaction’ framework (Håkansson 1982). First, the environment is formalized and then the elaboration proceeds to the roles and difference between firms as actants and humans as actors and partial directors of the resources and activities of firms. A final part shows how the theory provides an understanding of atmosphere and event networks in a dynamic portrayal of interaction inside business relationships.

Environment

Individuals live in time and space, with time forever moving (Luhmann 1979). This condition of an individual results in an environment that is changing on the one hand because of action by other individuals and firms and on the other hand as a result of changes within the understanding of the actor perceiving the environment. As an individual observes the strategy of a competitor firm they apply concepts provided by their social history, that is ideas socially understood and gained from past social and economic interactions. In this sense all knowledge of the environment is transitory, with concepts learnt in a past period and partially applied in a present period with regard to a future course of action.

The environment is naturally dynamic and composed of continuous streams of related and unrelated changes, with events observed as a result of difference against an expected background or past background. Related changes follow each other in chains of implied causation. However, unrelated changes also have effects on past, present or future events either directly or indirectly through a change in meaning. For example, the entrance of a competitor firm to a market brings a previously unrelated sequence of events into direct strategic play for a local firm and so influences present and future strategy. By contrast, an indirect effect is observed when an explicit change in advertising by a competitor firm causes a re-assessment of a past event and signals to an observer an earlier beginning of a change in competitor firm strategy. In this indirect case, the change in the environment requires a change in understanding of the observer as well as events within time and space. Further and worthy of note is that direct effects can only influence the present and future, while indirect effects may result in changing an understanding of the past.

This formulation of the environment maybe termed an “event network” (Hedaa and Törnroos 2002; Hedaa and Törnroos 1997), where the network of interactions is spread through time. An event network can only be partially comprehended, according to an individual’s cognitive ability, their location within the network and the ability of those with whom they interact. From this perspective the environment is composed of the remains of perceived/remembered past events, the present as a partial understanding of the dynamics of surrounding events based on past events and future expectations, and a future that is composed of partially expected events and the unknown. This perspective of an economic environment rests wholly on the premise that humans have bounded cognitive ability and many individuals socially construct the world of events over time and within space as they build an understanding of their surrounding event network spread through time.

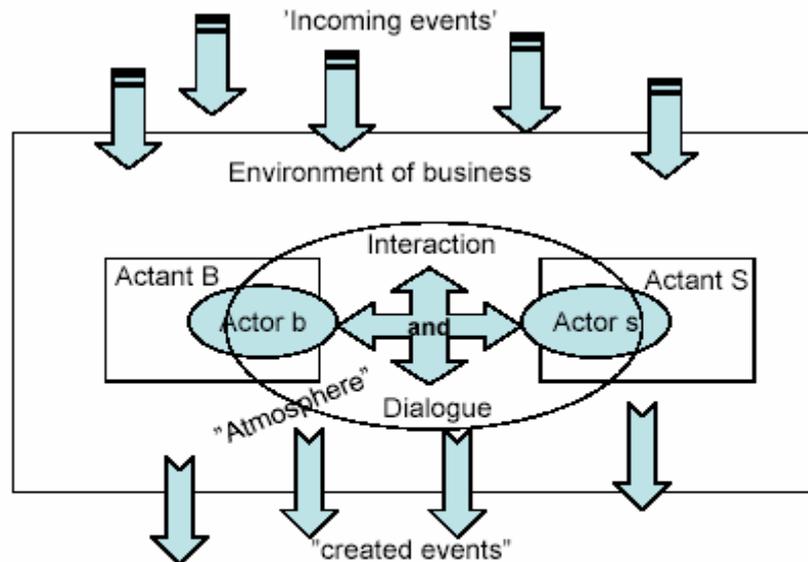
The event network perspective of the economic environment is not at odds with the concepts of ‘business relationships’ and ‘networks’ espoused within IMP research. However, it transforms these two concepts into dynamic constructs that exist through time and space, so that they are never ‘still’. While this dynamic aspect of business networks is always implied by the concept of a relationship, which naturally can only exist in time, the environment composed as event networks ensures that the dynamic nature of business relationships and networks is always evident. Here the notion of event networks (temporal environment) could be also added with the notion of actor networks (a notion of the networked ‘spatial’ environment) in the sense that many processes of change are not only taking place between humans but also in relation to and by the use of different material objects (in business e.g. faxes and emails, telephones, hotels and so forth as well as having different material objects as a key issue to handle in order to create value through interaction). In this sense the “products (and/or service)” becomes a matter “in-between” business counterparts and a reason for interaction processes to take place.

The in-between constitutes the situational and contextual factors as well as the communicative processes and those issues that are taken up in a communicative process as well as those devices through which interaction between human beings takes place. Some simple examples can include e.g.:

1. Buyer-seller negotiations
2. Handling relationships between a buyer and a seller in specific competitive situations
3. To develop better products, technological improvement and change
4. To improve logistics and transportation and packaging of products
5. Developing mutual information systems between corporations.

In all these situations the “in-between” becomes different and will be handled in a specific way in interaction between counterparts. The other key issue is the role of individuals (actors). The event networks also frame all processes of interaction between people in business markets and past and present as well as future anticipated events and these affect the process (see figure 2).

Figure 2: Interaction and the ‘In-between’



- The interaction (in-between) process is characterised and affected by:
- Cognitive (interactive) processes
 - Communication processes
 - Material objects affecting interaction (products, production systems etc.)
 - Intervening events and contextual elements

The next section elaborates the nature of the firm and the way humans act within firms that are interacting in an economic environment composed as event networks. What is the nature of the association between firm and individuals? And how can this inform a theoretical perspective on interaction between firms in a network environment?

Firm as Actant and the Role of Humans as Actors

The concept of a firm hides, behind a façade, the role of humans as enactors of economic activity. The firm is symbolic, with imprecise boundaries. Even a resource ownership view of the firm fails to provide definite boundaries, as the value of the resources is found through the connections with other firms (Håkansson and Snehota 1995; Håkansson and Snehota 1989) and through the place of firms in business networks (Awuah 2001; Goodman 1979; Ritter et al. 2002; Webster 1992). So the question arises of how to conceptualize a firm. There is no one answer, but it is important to note that firms exist from the perspective of an individual manager, who relates to other managers.

No firm can exist without humans, just as no environment fully exists for humans without past interaction between individuals. A firm cannot exist without at least one individual as an actor. A firm without an individual or group of individuals fulfilling decision-maker roles is not a true entity, rather such an entity is a special class of actant, a resource. An example of such an actant is a financial trading system operating on the basis of an artificial intelligence algorithm. Such an entity operates under the guidance of individuals and where the apparition is as a firm this is simply symbolic in the mind of the observer. However, in operating under the guidance of an individual the financial trading system exists as a resource of a firm.

The definition of a firm by a collective of actor individuals relies on the joint and at least partial agreement of each individual. The firm, whether composed of many organized individuals or only one, fulfils a functional role defined jointly by the actors. When the firm is viewed as a collection of individual actors it is evident that the functional and teleological goal of profit is organized through

hierarchical and cooperative collaborations between individuals according to functions within the firm and the relationships of the firms.

Noteworthy in this elaboration is the role of ‘functions’ within cognitively disposed structures spread through time as event networks. Collections of functions exist so the actors can achieve an economic outcome. These functions result in the description of a firm, with the firm having a role as customer or buyer within a business relationship. The role of the actant defines the roles and functions of the composite actors in a moving cognitive structure of relationships. It is through this mechanism that actors accept a relationship and network imperative for their combined actions.

Firms are defined as actants by individuals’ expectations in their roles as buyers, suppliers and employees. Here is evidence of the natural dualism inherent in human relations (Smith 1958), where the role of one party is defined relative to the role of the interacting parties. This presents a specific problem for analysis of economic activity and one which the interaction approach has assumed as important: duality dependent upon relative position. At issue is the relative position of an actor within an actant: whether inside or outside the actant. In the next section elaboration of this distinction shows how an understanding of the role of the actor in bringing about change within an event network.

This perspective of the firms, with their internal actors, and their relationships was envisaged, but not elaborated, in the original interaction model (Håkansson 1982). However later theory development involving business relationships has accepted the firm as actor within relationships and networks (Håkansson and Snehota 1995; Håkansson and Snehota 1989) and this has lead to the conceptual problems highlighted in the first section. In contrast this paper, presumes the firm is an actant, and so is open to change through the individual and collective intention of the human actors within the firm and the various networks.

Individual Actors and Sense Making in an Event Network

Viewing the firm as an actant highlights that the physical resources and service activities owned by a corporation are really the end result of a specific series of knowledge and activities embedded through time (cf Vargo and Lusch 2004). From this perspective, in which action is dominant, the character of a firm is a result of the cognitive resources of the actors and the ways these are linked through business relationships.

Actors are related to their firm and other actants and actors in specific ways, according to different orders of association. For example, products, industrial plants, infrastructure and systems are all actants of different domains. While each of these actants is given shape by the individual and collective cognitive requirements of participating individuals, there are important qualitative differences depending on the internal or external viewpoint of the observer and the role of individuals in changing the actant in time. These distinctions are elaborated in figure 3 from the perspective of a manager, where actant roles are attributed to four cells according to the external or internal location of the viewer and the degree of decision-making autonomy of the actant.

Figure 3: Industrial Actants by Domain

	Resource	Individual/s as decision-maker/s
<i>Viewer location External to actant</i>	Product, Raw materials Competitor’s Industrial Plant	Competitor firm
<i>Viewer location Internal to actant</i>	Employee with limited authority, Firm’s Industrial plant	Firm, Business Relationship

From a managers perspective the nature of the domain opens ways to think about the processes by which each actant changes in the event network. If the actor is within the actant, the change trajectory is determined by collaborative and hierarchical joint activity based on resource capability between the other internal and some external actors; whereas when the actor is external to the actant a more direct transaction approach based on power, resource capability and collaboration with other external actors determines change trajectory. By contrast resource actants have limited roles in change trajectories and they are at the disposal of actors, whereas actants composed of actors play supra-human roles in change trajectories.

However, the actors always continue to negotiate, implicitly or explicitly, the teleological purpose of the firm and their roles in the event network. This provides individuals with a degree of freedom, as they are not required to act according to an absolute expectation. The actors do not have to agree totally on the symbolic and teleological nature of the firm, they only need to agree as far as is required to fulfill their expectations and their own goals. Likewise agreement on the symbolic nature of a business relationship composed as buyer and supplier, need only extend as far as is necessary for an individual to achieve their own goals, which are a different and subsidiary set of the goals of the firms and in some way path dependent on their own firm's goals.

Achieving continuous negotiation requires the participating individuals to use a language, schema, network pictures and expectations so as to undertake the dialogue required to organize themselves and their actants to achieve collective goals. These functions are those required to achieve the agreed goals of the firm, and these goals and functions change as the firm competes for customers and resources.

These ongoing and constant enactment processes require continuous sensemaking-processes (Weick 1995) where the mental maps of actors in an interaction situation provide a way to understand unfolding business relationships. Sensemaking is an outcome of previous experiences and learning as actors interact. The mental maps are a result of cognitive processes and position the actors (especially the important ones) in the mindsets of those managers. These 'sensemaking maps' can relate to actors (who can we trust and commit ourselves with?) or to activities (what actant firms and actors are doing certain activities in our value network?) as well as in relation to resources (what actant firms and through what persons can heterogeneous resources be combined and activated?). These issues relate to past memory and experience, but they are also future directed and the mental maps are used in order to look into the future to relate to value-creation possibilities for future gains and profit-making.

Dialogical interaction between dyadic counterparts opens up sensemaking so that the opportunity-structures and possibilities can come to the fore through interaction and dialogue and by the use of the mental maps of those involved in a dialogue. In contrast to this view most management models talk about strategy from just one-company perspectives!

Of course timing remains an issue in opportunity structures, as managers must find the precise moment of action in relation to favourable potential future event trajectories. However, human cognition of time is subjective. How can we deal with time and temporality when we do not have the ability to tell about the future, even if we need to prepare for it in business? Global processes and new technological change process make this a considerably trickier issue than before. The answer seems to be in the relationship as an outcome of interaction with a partner in an environment of other actors and actants around the dyad. There exist both minor as well as more substantial changes and it is hard to build a relation through acts, sequences and so forth. Rather a relationship results from the way issues outside the actors are handled and how aspects like adaptation; problems and hardships are dealt with conjointly so that there is a history and atmosphere.

Atmosphere

In the original INT approach atmosphere was described "in terms of the power-dependence relationship which exists between the companies, the state of conflict or co-operation and overall closeness or distance of the relationship as well as ... the companies' mutual expectations" (Håkansson 1982). Atmosphere describes the nature and characteristics of the feeling and ambience of a business relationship, however when the firm is considered the actor the nature of atmosphere is hidden from the researcher. This contrasts with the present approach where the firm is an actant, and individuals are fully involved in creating the actants in a business relationship. Now, with individuals as the focus interaction processes can take on and develop an atmosphere. The process of atmosphere creation evidently has important economic outcomes and deserves greater research, for whether cooperation or competition is more efficient in different networks is not known (cp. also the notion of social exchange in business by Granovetter 1985 and the 'social capital' discussion). We now consider atmosphere creation.

An additional element in any dialogue is the interactive processes that occur within each actors' cognitive domain, where generalizations are formed through aggregation of ideas and events as the interaction processes happen. This 'interactive' effect, which occurs in the cognitive domain rather than the interaction domain between the actors, but clearly influences the interaction domain, can have a strong influence on the formation of atmosphere. Consider the formation of beliefs concerning cooperation; these occur in the cognitive domain as a result of sense-making and attribution concerning events based on expectations by groups of individuals as actions are undertaken with the other firm. As beliefs that the actors of the other firm are cooperating and the functions and processes of the two firms are brought into complementary alignment spread through the management team an interactive effect leads to generalizations concerning the atmosphere of the relationship. The actors future responses are based on beliefs of a mutual relationship and this is accepted as an event series in the other firm, providing actors in the partner firm with attribution of cooperation and so atmosphere develops as two sets of interacting cognitive interactive effects.

This process never stands still and can be affected by events from-outside of the relationship and/or can be affected by changes in the internal relationship structure (e.g. when a manager leaves for other jobs or companies and the atmosphere has to be developed again from a "lower level"). Atmosphere is a crucial issue, as an investment through social exchange in business. In addition, atmosphere is the basic building block for trust and commitment, and these are especially important for formal relations at the actant level.

Further, we can say that when an atmosphere of long-term mutual support develops the generalized relationship takes dominance over the interaction episodes. This means the very attribution given to any action or event is shaped and conceived within a wider perspective of an atmosphere developed within an on-going and stable relationship. This conceptualization of atmosphere explains why business relationships between firms are seen as so important in the empirical world.

Future Research Avenues

What is the effect of this theory on the definition of interaction, which concerns exchange; and interactivity, due to change of meaning?

1. We should look more closely at interaction and what it is all about in order to develop an understanding of the forces at play when managers interact as individuals and how they are affected through cognitive interactive processes by being a part of the actant-firms they represent in an interplay with other actors and actants.
2. The IMP interaction model might look different today due to environmental changes and developments in business life since the first interaction model was presented.
3. The temporal element and continuous flow of change is pinpointed in developing an improved understanding of business interaction.

Focusing on social relationships and individuals interacting in business markets gives opportunities for many new avenues for further research.

Power and relationships

The role of power in economic interactions has been downplayed, partly as the concept is difficult to define and also because research of the construct is inherently difficult. The approach advocated here of bringing the human actor into interaction process highlights the importance of power, through the ways expectations of the future come to be accepted in the eye of the other. This approach allows research of the mutual notion of power and power relationships (and its mutual nature). How a person exerts her/his power, and his/her firm's power through personal representational roles in business contexts and networks is an interesting question.

Another issue is how mutual win-win situations can come into being and what processes drive this development? What are the role of individual actors and their acts and what role does environmental change (i.e. event networks and event trajectories) have on specific relationships?

A further issue is the role of culture and power in international business relationships. Exploring the role of power in business in general – e.g. in Russia or in Asian markets and what role personal relationships and networks play forms one notable research for further research. According to the ANT-approach everything in society deals more or less with power. What is achieved is the result of a “battle” or struggle between humans and connected material objects. This notion can be used as part of interactive development processes.

Embeddedness

By developing an understanding of the key role of individual managers and their roles in representing actant firms, the notion of network embeddedness becomes an issue for further studies. It is obvious that a re-examination of the ARA model of the IMP-group from this point of view is required. The task becomes more complex and multi-faceted when the individual interactive elements and embeddedness in social relations are studied through the lenses of actor, resources, and activities in business networks.

Dialogue in interaction

As previously indicated, interaction takes place as a dialogue between business counterparts, constituting a specific situation and affected by the past and present and future temporal and spatial elements as well as the insider-outsider actors and actants affecting the process of interaction. Being able to study business-dialogues more closely we might develop better understanding of the ongoing process and change in relationships between business counterparts in different business encounters and contexts. The concepts of trust and commitment and social bonding mechanisms might be more elaborate and adequate. Also the subjective element of human cognitive processes and interactive processes in specific situations as they develop over time can come to the surface in unfolding interaction/interactive processes over time.

Limitations

The paper explores the role played especially by human actors participating in the process of interaction, but also in relation to the actants and business environment (actor networks and event networks) and aims to develop a many-sided view of business interaction in B2B settings. However, the paper only examines the IMP-interaction model and especially the interaction and interactive elements in that model. The paper explores the possibility to include other issues and views concerning interaction between actors, and the paper is very conceptual in nature (even speculative and hopefully thought provoking).

Bibliography

Awuah, Gabriel Baffour (2001), "A Firm's Competence Development Through its Network of Exchange Relationships," *The Journal of Business and Industrial Marketing*, 16 (7), 574-99.

Callon, Michel (1999), "Actor-Network Theory - The Market Test," in *Actor Network Theory and After*, John Law and John Hassard, Eds. Oxford: Blackwell and Sociological Review.

Dwyer, Robert F., Paul H. Schurr, and Sejo Oh (1987), "Developing Buyer-Seller Relationships," *Journal of Marketing*, 51 (2), 11-27.

Ford, David Ed. (1990), *Understanding Business Markets: Interaction, Relationships and Networks*. London: Academic Press.

Gemünden, Hans Georg, Thomas Ritter, and Achim Walter Eds. (1997), *Relationships and Networks in International Markets*. London: Pergamon.

Glaser, B.G. and A.L. Strauss (1967), *The Discovery of Grounded Theory: Strategies for Qualitative Research*. London: Wreidenfelt and Nicholson.

- Goodman, Charles S. (1979), "Comment on "Toward a Concept of Domesticated Markets"," *Journal of Marketing*, 43 (4), 79-82.
- Granovetter, Mark (1985), "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology*, 91 (3), 481-510.
- Grönroos, Christian (1989), "Defining Marketing: A Market-Oriented Approach," *European Journal of Marketing*, 23 (1, 1989), 52-60.
- Gummesson, Evert (1987), "The New Marketing - Developing Long-term Interactive Relationships," *Long Range Planning*, 20 (4, 1987), 10-20.
- Hägg, Ingemund and Jan Johanson Eds. (1982), *Företag i Nätverk*. Stockholm: SNS-Förlag.
- Håkansson, Håkan (1989), *Corporate Technological Behaviour: Co-operation and Networks*. London: Routledge.
- Ed. (1982), *International Marketing and Purchasing of Industrial Goods*. Chichester: Wiley.
- Håkansson, Håkan and Ivan Snehota (1995), *Developing Relationships in Business Networks*. London: International Thomson Business Press.
- (1989), "No Business is an Island: The Network Concept of Business Strategy," *Scandinavian Journal of Management*, 5 (3), 187-200.
- Halinen, Aino (1998), "Time and Temporality in Research Design: A Review of Buyer-seller Relationship Models," in *Network Dynamics in International Marketing*, Peter Naudé and Peter W. Turnbull, Eds. Oxford: Elsevier Science.
- Halinen, Aino and Jan-Åke Törnroos (1995), "The Meaning of Time in the Study of Industrial Buyer-Seller Relationships," in *Business Marketing: An Interaction and Network Perspective*, Kristian Möller and David Wilson, Eds. Boston, Dordrecht and London: Kluwer Academic Publishers.
- Hallén, L., N.S. Mohamed, and J. Johanson (1989), "Relationships and Exchange in International Business," in *Networks of Relationships in International Industrial Marketing*, L. Hallén and J. Johanson, Eds. Vol. 3. London: JAI Press.
- Hammarkvist, Karl-Erik, Håkan Håkansson, and Lars-Gunnar Mattsson (1982), *Marknadsföring för konkurrenskraft*. Malmö: Liber.
- Hawkes, Terence (1977), *Structuralism and Semiotics*. Berkeley: University of California Press.
- Hedaa, Laurids and Jan-Åke Törnroos (2002), "Towards a Theory of Timing: Kairology in Business Networks," in *Making Time: Time and Management in Modern Organizations*, Richard Whipp and Barbara Adam and Ida Sabelis, Eds. Oxford: Oxford University Press.
- (1997), "Understanding Event-based Business Networks." Copenhagen Business School: Department of Management, Politics and Philosophy.
- Lambe, C. Jay, C. Michael Wittman, and Robert E. Spekman (2001), "Social Exchange Theory and Research on Business-to-Business Relational Exchange," *Journal of Business-to-Business Marketing*, 8 (3), 1-36.
- Latour, Bruno (1999), "On Recalling ANT," in *Actor Network Theory and After*, John Law and John Hassard, Eds. Oxford: Blackwell and Sociological Review.
- Law, John (1992), "Notes on the Actor-Network: Ordering, Strategy, and Heterogeneity," *Systems Practice*, 5 (4), 379-93.

Luhmann, Niklas (1979), *Trust and Power*. New York: John Wiley.

Medlin, Christopher J. (2004), "Interaction in Business Relationships: A Time Perspective," *Industrial Marketing Management*, 33 (3), 185-93.

Möller, Kristian and David Wilson Eds. (1995), *Business Marketing: An Interaction and Network Perspective*. Boston, Dordrecht and London: Kluwer Academic Publishers.

Naudé, Peter and Peter W. Turnbull Eds. (1998), *Network Dynamics in International Marketing*. Oxford: Elsevier.

Ritter, Thomas, Ian F. Wilkinson, and Wesley J. Johnston (2002), "Measuring Network Competence: Some International Evidence," *The Journal of Business and Industrial Marketing*, 17 (2), 119-38.

Smith, Ronald Gregory (Translated) (1958), *I and Thou: Martin Buber* (2 ed.). Edinburgh: T and T Clark.

Vargo, Stephen and Robert F. Lusch (2004), "Evolving to a New Dominant Logic for Marketing," *Journal of Marketing*, 68 (1), 1-17.

Webster, Frederick E. Jr. (1992), "The Changing Role of Marketing in the Corporation," *Journal of Marketing*, 56 (October 1992), 1-17.

Weick, Karl E. (1995), *Sensemaking in Organisations*. California: Sage.