

Time and Process in Business Networks: A Structuration Perspective

1. INTRODUCTION

“It is an interesting time to think about foundational issues.” (Ermarth, 2010)

The time referred to in this quote is based on a particular notion of a *moment*, in which *paradigmatic* change and “... the functional alignment of multiple systems undergoes a foundational shift that opens unexpected and uncharted opportunities for new enunciation” (Ermarth, 2010:149). It is precisely this *interesting time*, and how it relates to network processes, that we explore in this article. We propose to do this by examining how one of the most cited theories in sociology, structuration theory (Giddens, 1984; Bhaskar, 1979; Bourdieu, 1990; Archer, 1995), might enhance our understanding of time and process in business networks. Structuration theory deals with the creation and maintenance of ideas and structures as well as with change and continuity processes (Staber and Sydow, 2002). As noted by Meindl, Stubbart, and Porac (1994), there are few theoretical frameworks linking structure and process together in a meaningful and useful way, one theoretical framework that does precisely this is that of structuration theory (Giddens, 1984). Accordingly, this paper directly addresses the call by Halinen and Törnroos (2005) for better-informed theoretical and methodological tools to study industrial network processes.

Structuration theory defines a social system as any set of practices, patterns of interaction and social relationships that are relatively enduring (Parker, 2000). It is a general theory, whereby theoretical ideas are removed from any specific social setting, such as industrial networks. As a result, structuration theory is intentionally both broad and integrative. This broad scope of structuration theory means that it can be used to explain a larger number of phenomena, while its integrative nature means that it serves to unify less general theories (Brodie, Saren and Pels, 2009).

Well-established general sociological theories, such as structuration theory, have addressed both theoretical and methodological aspects of time and process in considerable detail (Hedaa and Törnroos, 2008). Halinen and Törnroos (1995) assert that understanding a process (commonly understood as a series of actions that are carried out in order to achieve a particular result, or alternatively are a series of unintentional developments that result in a change) rests on the dimension of time, and needs to be seen in a social context. Therefore, we do not make a distinction between our conceptualization of time and of process, as both time and process are inseparable issues which derive from a common ontological position ... “Most aspects of interaction are sedimented in time, and sense can be made of them only by considering their routinised, repetitive character” (Giddens, 1984:142).

In this paper we seek to build stronger theoretical linkages between industrial marketing literature and general structuration theory. Our use of structuration theory leads to three new lines of enquiry relating to process and time in B2B marketing and contributes to the development of theory, practice, and research methods.

- First, we provide a more precise sociological terminology to articulate key aspects of process and time. This not only helps to clarify the discussion on time and process, but in addition allows for a higher level of theoretical unity in future industrial marketing research by highlighted the subjectivist vs. objectivist ontological dichotomy which led to its development.

- Second, by applying Giddens structuration theory to the network contexts, we conceptualize the Network Structuration Process (NSP). We define NSP as the construction and reconstruction of network structure by the interaction of knowledgeable network actors. This leads to a new level of theoretical and ontological precision, and new theoretical insights regarding both time and process in a B2B marketing context.
- Third, we demonstrate how the dimension of time has a methodological significance in enabling the analysis of the interaction between network agents and structures (see Archer, 1995). This results in a more precise understanding of managerial agency in network processes.

We will begin the paper by examining the current state of extant conceptualizations of time and process in industrial marketing literature. We will then proceed to outline how Giddens' version of structuration theory contributes to this understanding. We will conclude the paper by examining more recent critiques of Giddens' structuration theory, and how these contemporary insights can inform the research of process and time in the domain of industrial marketing.

2. TIME AND PROCESS IN INDUSTRIAL MARKETING

2.1 CONCEPTUALIZING TIME AND PROCESS

In this section, we will review key conceptualizations of time and process in the extant industrial marketing literature to establish the starting point of our investigation. To begin with, in industrial marketing research it has been common to conceptualize time and process as sequential, progressive, unidirectional and cumulative in its affects. We can quite easily identify with the notion of time as a sequence in which action unfolds, stretching from the past through the present to the future. However, as Ermarth (2010) states, while the assumption of time as a neutral, homogenous, and universal medium has been with us since the Renaissance, there is also the more recent notion of time (arising over the last century) not as an envelope *for* events but as a dimension *of* events which – according to relativity theory – is finite, rhythmic, it begins and ends, and sets the tempo for events.

Yet, it is also possible to question these ontological conceptualizations of time by asking whether time is an immutable part of the external world or a subjective notion (Heath, 1956; Orlikowski and Yates, 2002). Is time an objective measurable thing (as realists would claim), or a subjective intellectual structure (as interpretivist would claim)? In industrial marketing research, Halinen (1998) has argued that the frequent and implicit use of the chronological time conception limits our possibilities for building relationship development theory, and states that time is, first and foremost, both a physical and social construct. This stance continues to be a feature of industrial marketing research on time (cf. Elo, Halinen, and Törnroos, 2010; Juho, Mainela and Pernu, 2010; Guercini, Ranfagni and Runfola, 2010).

The conceptual framework of time as presented by Halinen and Törnroos (1995) attempts to expand our understanding of time by identifying both the horizontal continuum of temporal modes (past, present and future) intersected with vertical notions of time as embedded in cultural and contextual situations. Thus, time is also conceptualised as a subjective experience, and related to the pace of change. The conceptualization of time as a subjective (and socially constructed) experience has formed the basis for much of the industrial marketing management research relating to time and process (cf. Abrahamsen, Henneberg, and Naude, 2010; Corsaro and Snehota, 2010; Skytte, 2010). As Abrahamsen et al. (2010:10) state: "...by following a social constructionist perspective, change cannot be observed, only respondents' representations of change can be interpreted." However, to focus so exclusively on the subjective construction of time, or indeed to focus exclusively on the

observable external forces that shape change, is to miss the role of human practices as shaped by, and as shaping, temporal structures (Orlikowski and Yates, 2002).

We therefore need to consider time as a multi-faceted phenomenon, in which both socially constructed subjectivist perspectives and objectivist views of time as a neutral medium have a place. Halinen and Tornroos (1995) suggest that time as a subjective experience and time as a sequential process intersect. The authors define physical or absolute time (days, hours, minutes, etc) as linear time, and natural time (day and night, the changing of the seasons, etc.) as cyclical. These objectivist notions of time relate to rational, concrete and metric notions of time as it passes through observable measurable stages. Such time is "... understood to exist independently of human actions, and is thus experienced as a powerful constraint on those actions" (Orlikowski and Yates, 2002:688). On the other hand, subjective and socially constructed aspects of time are experienced through the culturally relative interpretations of individuals (Orlikowski and Yates, 2002) and include cultural time (the time consciousness inherent in each culture), organisational time (acquired through membership of social organisations such as family, school, or workplace), and individual time (the subjective experience of time).

An important contribution in this conceptualization of time and process is the inclusion of different notions of time (drawing on the work of Van de Ven and Pool, 1995), which recognizes progression as constructed and emergent from the change process. In particular, they discuss teleological process theory in which purposeful social construction and enactment of reality are viewed as primary engines for development. This argument extends our view of time, in particular in relation to understanding the future. In other words, past, present, and future temporal modes are not necessarily chronologically ordered because time may be experienced subjectively by individuals (Plakoyiannaki and Saren, 2006). Teleological theory emphasizes the social construction of reality, and thus provides a way of linking the present (as a perceptual reality) with the future (as an enacted reality). However, to understand temporal change as flowing from changes in the cultural meanings and norms as perceived by individuals does not help us understand the way in which their actions are shaped by structural conditions outside their immediate control (Orlikowski and Yates, 2002).

In examining the development of inter-organisational relationship development, Halinen and Törnroos (1995) identify several different approaches to conceptualizing time as a proxy variable. These include event-structure analysis, which uses absolute time as a proxy variable. However, this approach is unable to examine the processes that happen in time. In contrast, phase models use life cycle time as a proxy variable. However, this overlooks the fact that length of time and relationship development is not necessarily causally or linearly related. Finally, bonding and process models examine the development of relationships in terms of dynamic and changing relational content (e.g. commitment, trust, exchange) in terms of past, present, future. Although this conceptualization uses relational rather than absolute time, relational time is only implied and defined in a narrow sense (Halinen and Törnroos, 1995:507).

These conceptualizations of time have methodological implications. Halinen and Tornroos (1995) propose three distinctive forms of longitudinal research, which address the ontological differences between past, present, and future chronological dependencies. The first form, historical studies, looks at the past and past events. Here we can examine the role of evidence, as the research focus will be firmly on the resulting structural changes. However, it may be difficult to capture the relationship of these structural changes to agent reflexivity. We can know what happened, but can we know the real "why" embedded in that moment? For example, Medlin (2004) recognizes that it is selective interpretations of past events that shape all understanding of present activity and future possibilities, a view echoed by Ermarth

(2010) who notes that the past only exists as a function of a present moment of memory, and so the relationship between the remembered past and the enacted present as distinct and separate events is a spurious one. In discussing theory building in the field of archaeology (a necessarily past-focused field of research), Raab and Goodyear (1984:263) state that "...when we cease to ask merely what kinds of behaviors can be linked to certain records and start to ask why the behaviors in question came into existence, changed, or remained stable, we approach meaningful theory-building." In historical studies, we are often forced to consider changes to the structural properties and social practices of a social system in isolation from the individuals and their motivations in those moments of change.

The second form, follow-up studies looking at the "here and now" and current events, must address the issue of methodological conflation and the structure/agency relationship. While the concepts of structure and agency may be considered distinct, methodologically they may become so interlinked as to form a single identity (or duality: Giddens, 1984). This means that the duality of structure and agency may prohibit meaningful examination of their interplay (Archer, 1995). This question relates to Medlin's (2004) theorizing regarding the properties of time in the present moment, such as; how long is the present, what are the boundaries of the present, and when does it begin and when does it end? We will address this problem in more detail in the latter part of this article.

The third form, future studies, looks at the coming time and future expectations and alternatives. Medlin (2004:188) suggests that: "...future time is composed of many possibilities, each of which shapes the present to some degree and in turn the new possible futures. That is, future time is unbounded and forever changing as present time streams past." Future time is an elusive creature that changes even as we attempt to understand it. We also have the issue of agent projection, as future structures are yet unknown and so may not be able to be imagined or anticipated. Thus, we are forced to consider only the possible agency of reflective and reflexive actors, at the expense of its relationship to future structural properties. Once the future happens, it happens in a different context than the one anticipated. This is why the future surprises us; once we get there, the structures we had anticipated would be present are not, and thus the structure/agency interplay will have changed.

Our review of time as conceptualized by different researchers highlights a number of problematical issues. Firstly, neither the objectivist nor the subjectivist conceptualizations of time alone can fully address time as a dimension of events. Secondly, chronological conceptualizations of time limit our ability to understand deeper and more complex inter-relationships in processes and over simplifies causal relations, often ignoring the subjectivity inherent in what is understood as the past, present, or future. Finally, although attempts have been made to link perceptual and enacted realities – most notably Teleological theory- this does not include the (often powerful) influence of structural conditions which are outside the control of the individual. These issues cause us to consider a more holistic and embedded consideration of time and temporal structuring, which we now explore.

2.2 THEORETICAL AND PRACTICAL CHALLENGES

In this paper, we argue for the benefits and urgency for (industrial) marketing research to engage in a more in-depth sociological theorizing based on several inter-related arguments. In particular, we will outline how and why the extant research on time and process can benefit from stronger linkages to structuration theory.

First, despite its central importance to industrial marketing, research on time and process has lagged behind theoretical developments in the general sociological literature (Hedaa and Törnroos, 2008). This is to say that some aspects of process and time are already well-theorized in general sociological theory, which may provide a pathway for more comprehensive and more expedient theoretical development in comparison to field-specific

empiricist research and mid-range theorizing. In this situation, the industrial marketing literature can draw theoretical influences from general sociological theories, such as structuration theory, as the following observation supports: *“Time and temporality have been more extensively studied within sociology and other social sciences that could enrich the understanding of change and evolution of business networks (see Gurvitch, 1964; Clark, 1985; Adam, 1995). Developing models about the processual dimensions of business networks may benefit from taking an excursion into social sciences explicitly focusing on time”* (Hedaa and Törnroos, 2008: 320).

Second, time and process are central to the way structuration theory addresses the interaction between agency and structure (see Archer, 1995). Accordingly, stronger theoretical linkages to structuration theory will help industrial marketing research understand better the relationship between the ability of network actors to act, and the coercive powers of network structure. This is significant to the practice of marketing management, as a well-informed articulation of managerial agency allows for a more meaningful calibration of strategic action, such as understanding the extent to which we can expect to manage or control focal nets and broader networks (e.g. Möller & Halinen, 1999; Ritter, Wilkinson and Johnston, 2004). In the past, this key question has also been conceptualized as a paradox (Hakansson and Ford 2002: 135): *“...companies within a network are not free to act according to their own aims, or to circumstances as they arise. They do not operate in isolation from others, or in response to some generalized environment as ‘one-against-all’. Instead, each company’s considerations and actions can only be fully understood within a structure of individually significant counterparts and relationships.”*

Yet, as we will demonstrate, structuration theory can improve the ontological transparency and methodological precision in the empirical examination of network processes and interactions, and allows an even more precise analysis of the relative power between network agents and network structures in time and process research. We now explore how Structuration Theory may lend theoretical coherence to industrial marketing research in time and process.

3. STRUCTURATION THEORY

While there are many different approaches to the nuances of structuration theory, the most well known formulation is that proposed by Anthony Giddens. His Structuration Theory is based upon a clearly defined understanding of social structure, which builds upon two key components, namely *rules* and *resources*. These basic building blocks can be also applied to how we theorize industrial networks, i.e. an industrial network can be seen as constituted by rules and resources. Rules may be either interpretive or normative. Accordingly, interpretive rules govern the way actors interpret industrial networks. This is hence the cognitive aspect of industrial networks and their component relationships, such as the cognitive aspects of a B2B network’s actor bonds, resources ties and activity links (Hakansson and Johansson, 1992).

In contrast, normative rules regulate the legitimization of network interaction. In industrial network interactions, actors need to use appropriate rules and resources to give form to situations. Industrial network interaction thus interweaves interpretive meaning, normative sanctioning, and network power. However, by themselves rules and resources do not do anything. Instead, they exert their network effect through being known and used by actors exercising their agency within a network context (see Parker, 2000).

According to structuration theory, resources in a B2B network may be either authoritative or allocative. Allocative network resources relate to capabilities that generate command over objects, goods, or material phenomena. In contrast, authoritative network resources involve the organisation of social time-space and the production and reproduction

of relations between human beings in mutual association, and the organisation of chances for self-development and self-expression (see Fuchs, 2003). Accordingly, structuration theory seeks to use this conceptualization of resources to explain how actors exert power over other network participants and objects.

To elaborate, power in a B2B network is seen as stemming from a network actors' ability to act using authoritative or allocative resources (see Callahan, 2004). Network power, therefore accompanies action, implying that both the actor and structures of an industrial network are integral aspects in power analysis and are mutually dependent network parties (see Hardcastle, Usher and Holmes, 2005). For example, some network actors (because of network position or network relationships) might be considered to have high allocative resources, while others might be considered to have greater control over authoritative resources. However, what they do with this power may be a result of their reflexive self-monitored action. The controller of authoritative resources may decide to use rewards rather than coercion, and the controller of allocative resources may decide to devolve some responsibility for their allocation to others. Structuration theory thus views network power as allowing things to 'get done', and so may not necessarily be a negative force. Power can be seen in a positive way, as non-competitive and shared by many people (Chiasson and Saunders, 2005). Power in structuration theory is understood not as a commodity or as being exploitative, but as a productive resource which has to be seen within an overall context and which leads to a dialectic of control as power balances change (Hardcastle, Usher and Holmes, 2005).

As one of its main contributions, structuration theory allows us to position industrial marketing and industrial networks in relation to the subjectivist (where voluntarism, interactionism, and phenomenological views dominate) and objectivist (where structural causation and social determinism dominate) positions in explaining change processes (Parker, 2000). This allows us to be specific regarding the nature of managerial agency in an industrial network context. This is a central question in industrial network research, addressing the extent to which an industrial network can be controlled by managers. From a subjectivist point of view, managerial action in industrial network is unconstrained by the structure of an industrial network. This understanding is often combined with the perspective of methodological individualism, which argues for the possibility and importance of reducing industrial network research to the level of individuals, discarding causality at the level of a network. In contrast, the objectivist point of view denies the existence of managerial agency to influence industrial networks. This perspective is again often combined with the methodological holists' position, which reifies industrial networks as real entities independent of managerial activity. Structuration theory rejects both of these extreme positions. Structuration theorizing emerged from the combatitive tension of these two extremes, and "*...began to sort out the genuine novelties from what now appeared as overstatement, building a synthesis of ideas drawn from both sides of these two divides*" (Parker, 2000:27).

Overall, we maintain that conceptualizations of process and time in industrial marketing research are often theoretically indebted to general sociological theories far more than can be meaningfully indicated by referencing alone. For example, some aspects of structuration theory have already become part of the general sociological consciousness of marketing scholars, asserting a tacit influence upon their work (e.g. Ford, Gadde, Hakansson & Snehota, 2003). In Table 1 we see how industrial marketing theory, in the form of propositions relating to actors, activities, and recourses (Hakansson et al., 2009) is related to structuration theory.

Table 1
Industrial Marketing Theory and Structuration Theory compared

<p style="text-align: center;">AAR Model (taken from Hakansson et al., 2009)</p>	<p style="text-align: center;">Structuration Theory</p>	<p style="text-align: center;">Implications for understanding Time and Process</p>
<p>Resources Ties: How two actors' resources may become more or less adapted and more or less mutually tied together as their interaction develops.</p> <p>This could be tangible resources (i.e. plant and equipment) or intangible (i.e. knowledge) and can lead to more efficient utilization of resources and the development of new or unique resource combinations.</p> <ol style="list-style-type: none"> 1. The value of a resource is dependent on its connections to other resources. 2. A resource changes and develops characteristics over time. 3. A resource is embedded in a multidimensional context. 4. All changes of a resource create tensions. 5. Interaction intensity influences the effects of a change in a resource. 6. Interaction breadth influences the number of resources that are affected by a resource. 	<p>In the structurationist lexicon, resources may be either authoritative or allocative.</p> <p>Allocative network resources relate to capabilities that generate command over objects, goods, or material phenomena.</p> <p>In contrast, authoritative network resources involve the organisation of social time-space and the production and reproduction of relations between human beings in mutual association, and the organisation of chances for self-development and self-expression.</p>	<p>In relation to time and space, organisations (or business networks) are seen as a way of concentrating allocative and authoritative resources, and thus a way of 'storing' power (Fuchs, 2003).</p>
<p>Actors Bonds: The interpersonal links developed between individuals through interaction. They may be stronger or weaker, and help learning in relationships.</p> <ol style="list-style-type: none"> 7. The role of a company, what it can achieve and, thus, its economic value is determined by how it relates to specific other companies, both directly in its immediate context and indirectly with those that are more distant and also by how it is seen by these others to match their operations, ambitions, beliefs behaviours and problems. 8. The identity and attributes of an actor are the outcomes of the way that it is viewed by each of its counterparts. An actor's identity is always multifaceted because any actor is involved in multiple interactions. The identity attributed to it in each interaction is but one facet of what an actor represents in the web of actors to which it is connected. The varying perceived identities of an actor explain the behaviours of different 	<p>Structuration recognizes that the position of actors in the larger social group is important, and that in the "...concrete embodied, interest-laden disposition which flows from being formed in a position, individuals become historical actors." (Parker, 2000:44).</p> <p>In addition to the position of actors in a social setting, the role that an actor plays allows them to 'make a difference' (Archer, 1995). Unlike positions, roles can be chosen and the way in which roles are enacted and expectations satisfied is framed by social agency but not determined by it (Parker, 2000). Thus according to Archer (1995) knowledgeable actors may be seen as agents acting within social systems in which they assume roles. These roles are related to the knowledgeable individual through their assessment of the costs and benefits of assuming such roles, and therefore they may assume and enact a role and make it central to their social self, or not. Occupancy of a role does not</p>	<p>Subjectivism's view that agency flows from the creative, rational, calculating, self-directing and self-interested individual is rejected, as is the objectivist view of structural mechanisms that function more or less autonomously.</p> <p>Instead, powers of individual agency accrue from being positioned and socialized within historical structures of competing interests, and structures are historically maintained because agents know how to act practically in ever-changing situations (Parker, 2000).</p> <p>By linking the practical consciousness of the actor with the creation and maintenance of routines of action in structuration theory we understand that often activity may be the result of regularized and</p>

<p>companies towards it and are factors in its evolution.</p> <p>9. An actor's attributes and identity in each of its business relationships is continuously changing. Actors do not evolve autonomously; they co-evolve with specific others. Each actor is unique and each has unique requirements for success. Success for a business actor is time dependent, relationship specific and determined by the way that the actor co-evolves with others.</p> <p>10. Every actor is uniquely associated and forms bonds with a limited number of others. These bonds enable an actor but, at the same time, limit what the actor can achieve.</p> <p>11. The actions and reaction of business actors in interaction are based on partial knowledge and on interpretation of the counterpart actors on which actors construct their expectations.</p> <p>12. The ways that actors interact and become mutually and selectively associated with each other has substantial consequences for those actors, for the actor web and also for the relevant resource constellations and activity patterns.</p>	<p>necessarily imply that it is in sync with their personal identity (Parker, 2000).</p> <p>Hakansson et al.'s (2009) propositions 8 and 9 highlight this relationship between actor identity and attributes, the normative expectations of others in the network, and the evolutionary nature of the structuration process. Structures of legitimation help us to see how these processes result in certain social practices and structural features rather than others.</p>	<p>routine action rather than a conscious flow of pre-meditated action.</p>
<p>Activity Links: the links between the activities of two actors (i.e. production, logistics, administration, deliveries, and information handling).</p> <p>Activity structures can become more or less tightly linked, and it is the interaction between activities (their configuration and their activity patterns) that brings life to a business network and which characterizes the actors that perform them.</p> <p>13. The execution and outcome of any activity is dependent on other activities.</p> <p>14. Adjustments between activities improve their joint performance.</p> <p>15. Adjustments between activities create interdependencies.</p> <p>16. A single activity is an integral part of several activity configurations.</p> <p>17. As two activities become adjusted to each other, the better they function together in the larger activity pattern in which they are involved.</p>	<p>Social and System Integration: Giddens (1984) characterized social integration by the co-presence of actors in their integration activities, and where such social integration was maintained across space and time then system integration may result.</p> <p>These five propositions relating to business network activities express key features of this system integration, and alude to its bases in social integration practices.</p> <p>They also alude to the tension inherent in activities as means of adjustment in systems, and as dependent on other actor and system characteristics, in particular reflexivity.</p>	<p>Archer (1995) sees structures as the outcomes of past agency, and that they may emerge over time to become relatively autonomous and durable conditions of action, in other words they become established social practices.</p> <p>At the institutional level, organisations are not seen simply as information processing machines which solve problems, but are actively engaged in dynamic processes of problem creation and definition, and are able to apply knowledge and develop new knowledge through the action of problem solving (Nonaka and Toyama, 2003).</p>

Firstly, we consider resources. In structuration theory the time-space dimension of business network interactions acts in part as a locus for the relations that drive structuration processes (reflected in propositions 1 and 2). Agents using their structural positions and/or roles to influence interaction intensity and breadth (propositions 5 and 6), could well be seen as attempting to extend and redistribute their power over either allocative and/or authoritative resources through the organisation of social time-space and the production and reproduction of resource relations. For example, if interpretive rules (the way in which actors interpret the world) in relation to authoritative resources are strongly sanctioned and formal then the tensions that result from changes (proposition 4) made in how authoritative resources are used are likely to be much greater than if such interpretive rules are weakly sanctioned and informal. Similarly, if normative rules are strongly sanctioned and formal when applied to an allocative resource then its connections to other resources (proposition 1), and its embeddedness in a multidimensional context (proposition 3) may be considered far more significant than if such normative rules were weakly sanctioned and informal.

Secondly, we consider actors. In structuration theory, ordinary life is possible because actors experience ontological security based on the routinization of actions and the actors' reflexive monitoring of those actions (Fuchs, 2003). The routinization of actions takes place because actors are positioned within social frameworks and with respect to rules. Such positioning and rules help actors to feel secure in their evaluative judgement of conduct. In other words, the ontological security of an actor is in part related to the normative expectation of other actors, and the sanctioning of actions in relation to such norms. Hakansson et al.'s (2009) propositions 8 and 9 highlight this relationship between actor identity and attributes, the normative expectations of others in the network, and the evolutionary nature of the structuration process. By linking the practical consciousness of the actor with the creation and maintenance of routines of action in structuration theory we understand that often activity may be the result of regularized and routine action rather than a conscious flow of pre-meditated action. However, we also know that if interactions interrupt these routines then a critical situation may result in which a sense of insecurity is created which impacts on institutional time and ontological security. In Giddens' terminology time becomes reversible and what is normal and taken for granted can be stopped, challenged, and changed.

Hakansson et al.'s (2009) proposition 11 highlights the relationship between the interpretive schemes of actors and the structuration process. These psychological frames orientate the conduct of actors, and help them to cognitively structure their representations of the world. Thus we can see that structures are not fixed or rigid because individuals in interaction bring with them different interpretations and normative understandings which may enable or constrain cooperation and the exercise of power. Actors may exercise agency, and are not slaves to existing structures because they may choose to 'act otherwise' and challenge structural norms and constraints. The interaction of knowledgeable individuals often instigates change precisely because they are able to act with intention and purpose. However, change may also be the result of unacknowledged preconditions and unintended consequences of action. Therefore the results of interactions between actors can never be wholly predictable.

Hakansson et al.'s (2009) propositions 7 and 10 highlight the relationship between actors and the structural features of the network (its rules and resources). Proposition 7 relates to the institutional reflexivity of the organisation within the business network. Institutional reflexivity guides social system creation and recreation through the regular use of knowledge about the allocation of authoritative and allocative resources as embedded in social practices (McPhee, 2004). Proposition 10 relates more specifically to the individual actor. When actors use structures they enable certain social interactions and relations and constrain others. In addition, power may accrue to individuals because of their positions in hierarchies or their

membership of collectivities. Thus network linkages may reflect power dependencies in a network. Additionally, there may be some variability of agency between individuals, and power as a feature of position and connection allows for a collective basis of individual agency. Proposition 6 reflects a global statement of the structuration process as a whole, and the inter-relationship of both structure and agency. It places individuals within a social context and suggests that individual actions will be constrained by those contexts.

Thirdly, we consider activities. Giddens (1984) characterized social integration by the co-presence of actors in their integration activities, and where such social integration was maintained across space and time then system integration may result. These five propositions relating to business network activities express key features of this system integration, and allude to its bases in social integration practices. They also allude to the tension inherent in activities as means of adjustment in systems, and as dependent on other actor and system characteristics, in particular reflexivity.

Because the extent of actor reflexivity in the instant of agency may be limited, and the role of routines of practice (which stem from the practical consciousness of the actor) may be seen as the most common outcome of individual action, the role of social practices in governing how activities in business networks are manifested is key to their understanding. Propositions 13 and 16 highlight the embeddedness of activities within overall structuration processes. Propositions 14, 15 and 17 highlight the intended consequences of adjustments between activities. All of these propositions imply that structuration processes, and the social practices that help maintain them, can help define key aspects of activity interactions – the what, where, who, and how questions of interaction.

Our first line of enquiry relating to the development of theory, practice and research methods in time and process research was to provide a more precise sociological terminology to articulate key aspects of process and time. By comparing the structurationist perspective with more traditional approaches to industrial marketing research (based on actors, activities, and resources) we have exposed both a more precise sociological terminology, and have highlighted the subjectivist/objectivist dichotomy which led to its development. Maintaining this fundamental principle - that structuration focuses on the *interplay* between structure and agency rather than accepting a causal relationship between the two – allows us to understand time and process in a way which is ontologically precise. Maintaining this fundamental principle is not necessarily easy. For example, in relation to industrial marketing research on time and process, Skytte (2010:8) does avow a structurationist perspective. However, his focus is firmly on a constructivist epistemology in which “the focus is not on subject-object relations but on subject-subject relations.” His describes structuration as “... a question of to what degree a company’s meaning constructions and actions ... are linked as recursive patterns.” This focus, however, limits the recognition that enablement and constraint are actual features (not simply socially constructed features) of social systems. As Orlikowski and Yates (2002:684) contend: “Temporal structures here are understood as both shaping and being shaped by ongoing human action, and thus as neither independent of human action (because shaped in action), not fully determined by human action (because shaping that action.)

4. THE NETWORK STRUCTURATION PROCESS

We now address our second line of enquiry relating to the development of theory, practice and research methods in time and process research – the conceptualization of the Network Structuration Process. Based on the basic building blocks presented in the previous section, we can now progress to the use of structuration theory to provide a precise description of the processes that govern network interaction, which we will call the Network Structuration Process (NSP). NSP is the combined functioning of (1) the available resources,

and (2) the rules governing access to those resources that are embedded within a particular industrial network context. NSP concerns the construction and reconstruction of network structure by the interaction of knowledgeable network actors. An industrial network, as both an outcome and a resource for action, is a dynamic property of social practices and is produced and reproduced by interactions. Industrial networks, therefore, are not fixed or rigid frameworks, in that individuals bring different interpretations and normative understandings to the process that may enable or constrain co-operation and the exercise of power.

Time and space are important features of the structuration process providing the context, or situated character, of interactions (Hardcastle, Usher and Holmes, 2005; Chou and Zolkiewski, 2010), while both Callahan (2004) and Fuchs (2003) conclude that time is central to Giddens' thesis. Callahan states that: "*The very essence of Giddens' approach is that it is a time-bound process of interaction between agent and structure*" (2004:1445), while Fuchs asserts that: "*Actors are situated and positioned in space-time and have social identities that carry with them certain prerogatives and obligations. ... The positioning of actors within certain social frameworks and with respect to rules allows the routinization of actions*" (2003:141).

This means that industrial networks persist not only because those operating within them consent to create and re-create routines, but because of the adherence to routines across space and time. This process of linking agency and structure to the development of social systems, such as industrial networks, is what Giddens (1984) termed *distanciation*. Thus, when actors use structures they enable certain network interactions and relations and constrain others. Based on this Giddens' conceptualization, actors are seen to 'stretch' network situations using rules and resources, and thus to dissolve the restraints of time and space (see Parker, 2000). As a result, industrial networks can be seen as a duality (or dualism; Archer, 1995) of agency and structure which results in practices which 'stretch' over time-space distances in the reproduction of social systems (Giddens, 1984). For Giddens, history is hence in the now. Also in each moment, anything is equally possible. This, however, presents a dilemma in relation to structuration and the concept of history for which Giddens has been criticized. According to Giddens history does not have agency, and cannot pull or direct events in the present to influence outcomes in the future. Only actors have purposiveness and can activate and maintain structures. Giddens (1991) attributes this to the fact that all agents, no matter what their social position, have an irreducible power of agency, that their actions are situated in the (largely) unintended consequences of past action, and that through reflexivity they may change the knowledge that they use to guide their action (Parker, 2000:60).

While time may be seen on the one hand as irreversible (termed by Giddens as life-span time), it may also be seen to have some reversible qualities. By this Giddens refers to the way normally routinised practices that are habitual and taken for granted can be stopped or changed, "... the events and routines of daily life do not have a one-way flow to them. The terms 'social reproduction', 'recursiveness' and so on indicate the repetitive character of day-to-day life, the routines of which are formed in terms of the intersection of the passing (but continually returning) days and seasons" (Giddens, 1984:35). However, Giddens notes that these events and routines are subject to the sustaining of an individual's ontological security. Where the intelligibility of discourse (and thus ontological security) is radically broken or challenged, this causes a *critical incident or situation* in which a sense of insecurity is created. This has an impact on institutional time and ontological security (Hardcastle, Usher and Holmes, 2005). Reversible time thus not only refers to the continuous but also repetitive character of social life in which network structures are manifested, diffused, and potentially challenged through repeated actions (see Heracleous and Barrett, 2001).

Simon, Snow and Read (2004) posit that actions may reform individuals' (or network agents') beliefs and attitudes, which may recursively alter further actions. They named this coherence-driven processing, and state that it enables confidence in decision-making by reaching out to bring the various pieces of the cognitive field into consonance (Simon and Holyoak, 2002). This same internal conversation in which we consider ourselves in relation to our network contexts and vice versa is what Archer (1995, 2000, 2007) terms 'reflexivity'. She states that "*The subjective powers of reflexivity mediate the role that objective structural or cultural powers play in influencing social action and are thus indispensable to explaining social outcomes*" (Archer, 2007:5). The reflexivity of network agents hence enables them to design and determine their strategic responses to the structured circumstances in which they find themselves according to what they value the most. This deliberative process is not just a 'cost-benefit' analysis driven by rationality, but also an emotionally charged process in which our emotions and desires spur us into action (Archer, 2007). However, this may not be something that network agents are able to express discursively, but may be carried in what Giddens termed the practical consciousness. Thus, the interpretive schemes used may not in fact be explicitly understood or recognized by the individual even if they exert quite a powerful influence over their coherence-driven cognitive processes.

5. MOVING BEYOND GIDDENS: METHODOLOGICAL IMPLICATIONS

Our third line of enquiry relating to the development of theory, practice and research methods in time and process research was to show how time has a methodological significance in enabling the analysis of the interaction between network agents and structures. It has been suggested by Medlin (2004) that a new methodology for examining time and interaction is needed, one that is founded on the over-lapping of present, past and future and in which time and interaction are considered parts or sections: with process inside process, or process following process. In addition, Havila and Wilkinson (2002) have recognized the importance of processual analysis in B2B relationships over time, which is captured in their three-stage model of relationship change. This model includes (1.) previous and pre-existing relationships, (2.) the present focal relationship, and (3.) subsequent relationships. In particular, the authors emphasized how previous relationships may "import" energy that feeds the present focal relationship, and how this energy may in turn be exported to subsequent relationships. Thus, social bonds and feedback effects help link relationship context and history with the present and the future in subsequent relationships.

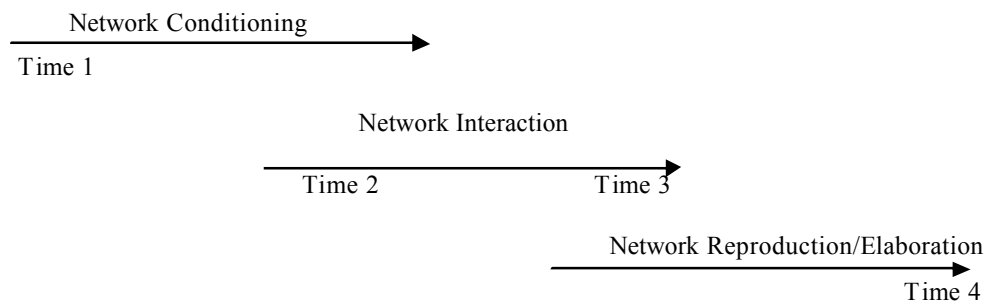
The way in which structuration theory can contribute methodologically to this processual understanding is by clarifying the powers of agency and structure, i.e. how are network agents both empowered and restricted in their interactions in industrial networks. Hence, in network process research it is not enough to simply recognize the various paradoxes regarding an agents' power to manage B2B network interactions (Hakansson and Ford, 2002). In addition, what is required is a methodological means to analyze the qualities of interaction between network agents and network structures over time: How do network structures assert their influence, or condition, network agents; how do network agents respond to this conditioning; and how are B2B network structures and practices shaped by this network interaction? Problematically, however, Giddens' version of structuration theory has a fundamental methodological weakness, as it does not allow for the analytical separation of agency and structure, which he maintains are inextricably linked as a duality (Giddens, 1984; Archer, 1995, Parker, 2000). Thus, by using Giddens' conceptualizations alone, we may struggle to meaningfully analyze how network structures restrict network actors in imposing their will upon network interactions, and how managerial agency nevertheless contributes to the shaping of industrial networks. This may explain why there has been relatively little direct application of Giddens' structuration theory in industrial marketing

research, despite its significance to the general sociological consciousness of many prominent marketing scholars.

However, Archer (1995) has addressed this methodological weakness in her critique of Giddens. Archer’s theorizing draws upon the critical realist ontology (e.g. Bhaskar 1979), which has been extensively applied to industrial marketing research (e.g. Easton, 2002). Additionally, some non-realist philosophers have also acknowledged the methodological benefits of Archers’ theorizing; hence, the methodological application of Archer may not require a strict adherence to social realism (Sawyer 2003).

Archer’s (1995) inter-temporal model (also known as the morphogenetic/static-model) has three stages that share some conceptual similarities to those of Havila & Wilkinson (2002) and Medlin (2004). The first stage of Archer’s model takes into consideration pre-existing conditions in any given episode of social interaction. In the industrial network context, we will call this as “Network Conditioning” (Figure I). Network conditioning recognizes that there are significant path-dependencies in all network contexts that influence what can and cannot be done by network actors. Examples of this include a supplier’s or buyer’s current network position, access to resources, pre-established activity linkages, and contractual arrangements. Network Conditioning hence refers to the way these pre-existing network structures, practices, and actor positions within these structures limits the network actors’ ability to freely impose their will upon the industrial network, while also in-part enabling network interactions. This also means that network interaction never starts from an entirely new situation, but instead network actors are forced to work with pre-existing network conditions (Figure I). This is the case even for start-up companies in new industries.

Figure I
Agency and structure in a network episode
 (adopted from Archer, 1995: 160)



The second stage in Archer’s model recognizes a manager’s agency to change their network environment. In the industrial network context, we call this as “Network Interaction” (Figure I). This encompasses the various industrial marketing activities that are deployed to handle the current situation, and to advance desired strategic directions. This means that firms and managers are not powerless to manage their focal net context (Möller and Halinen, 1999), even if these powers are restricted by pre-existing network conditioning (Hakansson and Ford, 2002). Hence, network actors always have irreducible agency, which influences the focal network context.

In the third stage of her model, Archer recognizes that social interaction leads to the reproduction or transformation of past structures as the outcomes of social interaction. In a network context, we call this “Network Reproduction/Elaboration” (Figure I). Network interaction, through network reproduction or elaboration, may lead to network structures

and the actions of actors themselves being transformed. These reproduced or elaborated structures are then passed on to the next cycle of interaction, where they contribute to the next phase of Network Conditioning. Overall, this means that Archer's approach to structuration theory is not a static model, but a dynamic conceptualization of change which takes into consideration the processual nature of network interaction and which allows the interaction between structure and agency itself to 'do real work' connecting the logically distinct identities of structure and agency (Parker, 2000).

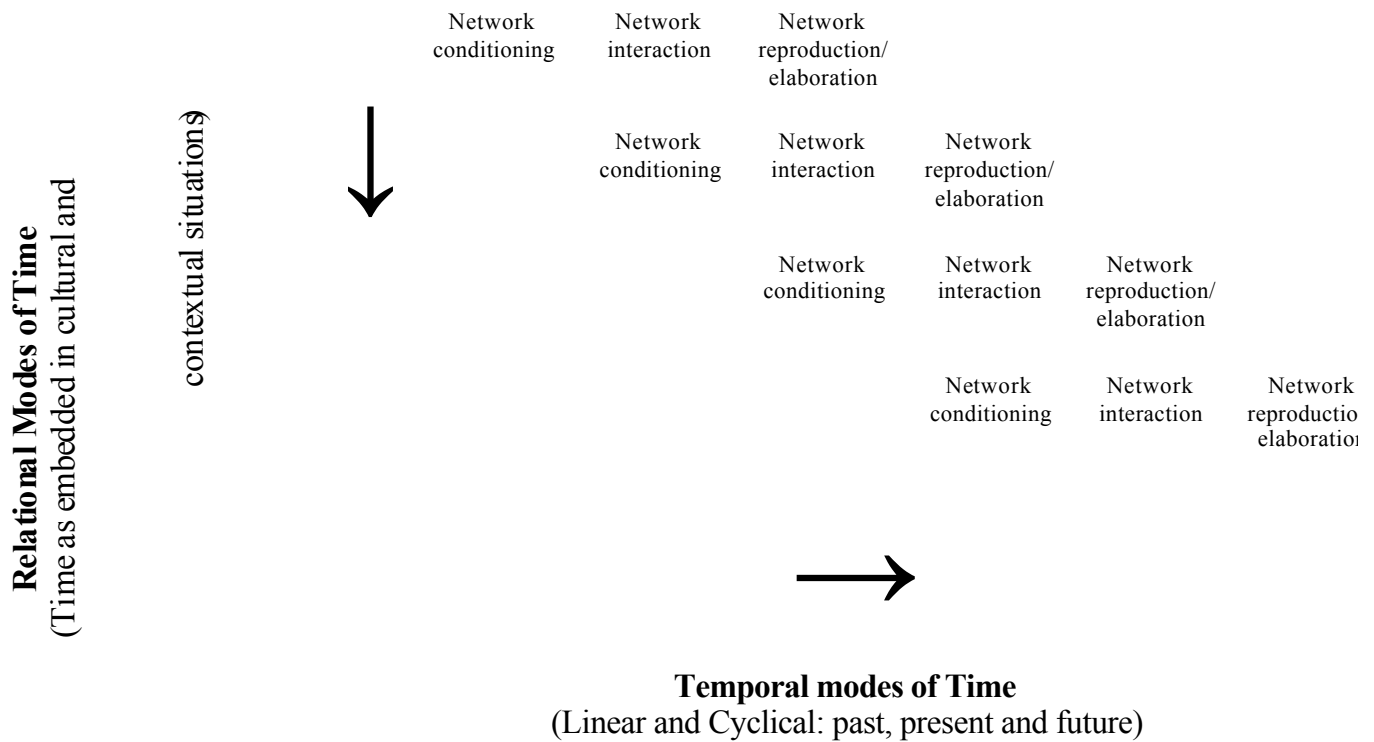
While the model illustrated in Figure I is limited to just one interaction episode, we can extend this model to include more comprehensive network processes. This can be done by recognizing the way in which different network interaction episodes are linked together. As an example of a possible cascade of interaction episodes, we have combined several overlapping episodes together in Figure II. We hence recognize that as one episode of network conditioning, network interaction, and network reproduction/elaboration has ended, there is already another interaction episode taking place, which may be a direct or intended (or an indirect or unintended) result of the previous interaction episode.

This allows a nuanced understanding of how agency and structure conjointly shape B2B relationships by building a more comprehensive picture of network processes over time, as suggested by Havila & Wilkinson, and Medlin (2004). As Orlikowski and Yates (2002:696) state: "By examining when people do what they do in their practices, we can identify what temporal structures shape and are shaped (often concurrently) by members of a community; how these interact; whether they are interrelated, overlapping and nested, or separate and distinct; and the extent to which they are compatible, complementary, or contradictory."

In addition, we have incorporated the two main dimensions of time as proposed by Halinen and Tornroos (1995), that of temporal modes and relational time in Figure II. Accordingly, we recognize that Network Conditioning, Network Interaction, and Network Elaboration may emerge over both temporal modes and relational aspects of time and process.

Temporally, conditioning, interaction and elaboration may be understood as consecutive stages (as in Figure I), each of which influences, enables and constrains the next stage in an ongoing process of structuration. Relationally, socially constructed aspects of time mean that reproduced or elaborated structures may facilitate unintended consequences, resulting in a critical incident that sparks fundamental uncertainty for the agent, culture, organisation, and/or industrial network. This may trigger a deeper questioning of prescribed norms, values, and social practices. In turn, this may radically alter network conditioning through coherence-driven cognitive processes in individuals and their resulting actions and interaction, and substantially altered social practices in cultures, organisations, and industrial networks.

Figure II
Inter-temporal Model of Structure and Agency: A Network Perspective



Our model in Figure II outlines an improved theoretical and methodological basis for industrial marketing research which specifically takes into consideration time and process. It draws upon a more precise sociological terminology than much of the prior research on time and process, and uses this terminology to demonstrate how the construction and reconstruction of network structure by the interaction of knowledgeable network actors (which we term NSP) may transpire. We conclude our paper by summarizing our main contribution to understanding time and process in industrial marketing research.

6. CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

This paper has delineated the concept of structuration theory and its application to understanding time and process in an industrial network context, in response to calls for better-informed theoretical and methodological tools to study industrial network processes. We contribute both theoretically and methodologically to studying time and process in industrial networks, and to the practice of B2B marketing management. Our theoretical and managerial contribution has several aspects.

First, by applying structuration theory to an industrial network context, we have conceptualized the Network Structuration Process (NSP). In accordance with Giddens' conceptualization of structuration theory, NSP is the combined functioning of the available resources, and the rules governing access to those resources, that are embedded within a particular industrial network context. NSP concerns the construction and reconstruction of network structure by the interaction of knowledgeable network actors. NSP provides a new framework for greater theoretical unity in our conceptualization of time and process in the network context, drawing upon the general and integrative qualities of structuration theory.

Second, structuration theory allows our existing understanding of process and time to be better conceptualized in relation to agency and structure. This is significant, as our ability to manage network interactions has remained a central question in the pursuit of more meaningful managerial implications in industrial marketing research. Indeed, the possibility of managing some subset or aspect of a B2B network is nothing less than a key existential question for strategic industrial marketing management. As a result, it is of central importance to attain a more precise understanding of how strategic choice can be found, enhanced, and exploited by network agents (cf. Mintzberg, Ahlstrand, and Lampel, 1998; Tsoukas and Knudsen, 2002).

In relation to the enhancement of managerial practice, structuration theory leads to a more articulated and balanced understanding of managers' powers to act strategically in B2B networks. In this regard, our managerial implications go beyond the notion of a paradox in the articulation of the relative powers of network agents and B2B networks (Hakansson and Ford, 2002). In particular, we have clearly demonstrated how to examine the relative powers and interaction between network agents and network structure. We proposed the network structuration process (NSP) to frame an understanding of process as the interplay of agency and structure. Thus, managerial action cannot simply be the outcome of managerial intention, but must be understood in the context of meaning creation, the exercise of power, and the evaluative judgement of conduct. Based on Archer's (1995) morphogenetic/static model (Figures I and II) we show how network structuration processes may relate over both relational and temporal modes of time. Both time and process are central to this new methodological understanding.

Third, NSP theory allows academics and managers to examine process and time with a more precise sociological terminology; namely, the network structuration processes as played out over temporal and relational modes of time. This is however not merely a new language, it is a more articulate means of conceptualizing and examining what is being managed, and how these managerial process evolve over time.

Fourth, we support greater ontological transparency by explicitly linking our conceptualization of time and process to the general sociological literature, specifically structuration theory. It is this ontological transparency and the integrative theoretical qualities of structuration theory, which allows a more unified theoretical understanding to emerge in future studies of time and process in B2B networks.

As a methodological contribution, we have demonstrated the new possibilities offered by applying Archer's nuanced approach to structuration theory to a network context, which takes network analysis beyond the earlier Giddens conceptualization. Thus, Archer's critical realist approach to structuration theory allows for a new methodological precision in the examination of how network structures assert their influence upon network agents, how network agents respond to this conditioning, and how B2B networks are shaped by this network interaction.

To sum up, our theorizing builds upon and enhances the conceptual framework of time as presented by Halinen and Törnroos (1995) by showing how conditioning, interaction, and elaboration may emerge over both temporal modes and relational aspects of time and process. We began this paper by refereeing to the notion of a *moment* in which paradigmatic change offers the chance to engage with the unexpected. We end it by observing that it is indeed an interesting time to think about foundational issues, and time that we consider well spent.

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