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# Que sera, sera? Conceptualizing business network foresight

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## ABSTRACT

Networks and relationships are not stable. Rather, they change and are transformed by the actors who take part in them. Change and transformation result from the actions and reactions of these actors. However, it is unclear why the actors choose some actions and reactions while refraining from others. We posit that the actors' expectations regarding the future of the network are formative for their actions and reactions and, furthermore, that the actors' expectations of the future are formed by the interactions among the actors that take part in the networks. Therefore, in this paper, we introduce the concept of business network foresight both as a distinct concept that enables us to understand change and transformation in networks and as a procedure for supporting actors' strategizing efforts in business networks. We depart from the existing foresight literature but align its ideas to fit with the core tenets of the IMP approach. Thus, our purpose is to explore and conceptualise network foresight phenomena as well as to contribute to the practice of collective foresight in business networks.

**Keywords**: Strategic foresight, strategizing, network pictures, strategic network foresight

## INTRODUCTION

This paper is concerned with the formation and development of foresight among actors in business networks. With this explicit focus, we seek to develop a research agenda from an IMP perspective. Following the IMP tradition of analysing networks in terms of actor bonds, resource ties and activity links, the present approach is actor-centric (Snehota & Håkansson, 1995). Our focus is understanding the cognitive aspects of interaction, concentrating specifically on the individual and the shared formations of expectations about the future among business network actors. In this sense, we ascribe to and extend on the notion of actors' network theories (Mattson & Johansson, 1992), network horizons (Holmen & Pedersen, 2003) and the research stream concerned with network pictures (Mouzas et al, 2008). Before stating what we exactly mean by foresight and actors in business networks and our reasons for studying them in more formal terms, we start off with a couple of examples from different business network settings that may help contextualize the phenomenon of business network foresighting.

Example 1: It is quite common among business actors involved in the offshore wind industry to meet and discuss a specific issue pertaining to the further development of offshore wind. Such issues can be technical such as calculating fatigue in steel structures or the interpretation of legal advancements but are often inseparable from commercial aspects and involve some form of considering the expected future and how to deal with it. These kinds of seminars abound among actors in the offshore industry; they may be called by an industry association, by business actors or by a third-party consultancy firm. Typically, these seminars are quite informal and by word-of-mouth invitation. The discussions in these seminars seldom lead to any conclusions, and it is not uncommon to hear managers say that "nothing new came out" or that "company x said exactly what they always say about this issue". Still, the same group of business actors repeatedly and frequently attend these seminars.

Example 2: Nordic Semiconductor is a fabless semiconductor company that specializes in ultra-low power wireless technology. Nordic Semiconductor outsources the capital-intensive processing of silicon wafers as well as packaging and testing to highly specialized subcontractors that are mainly located in South-East Asia. Nordic Semiconductor forges long-term relationships with a compact, strategic set of such subcontractors. It is a future-oriented company with 80% of its employees working in R&D. New products and technologies are developed on a constant basis, and Nordic Semiconductor management must ensure that suppliers' future plans and roadmaps for technologies, products and product improvements fit

those of Nordic Semiconductor. Consequently, Nordic Semiconductor includes discussions on roadmap alignment on the agenda in the dialogue with their suppliers.

In these examples, business network foresight — here initially understood as the interaction processes leading to the formation of individual and shared expectations about the future — is at the heart of interacting and making strategic commitments in business networks. Future expectations shape choices, and forming guesses about the future is essential for developing and preparing for that future (Heger & Rohrbeck, 2012). Business researchers have a foundational interest in understanding how expectations and choices are interlinked, as this is at the very core of understanding organizational processes within and across organizational boundaries. Foresight events, such as the ones described here, may be seen as an intervention that aims to improve the elaboration of strategic insights among business actors (Treyer, 2009). IMP research on business networks has only recently begun to discuss strategic practice, and, so far, few have discussed the formation of expectations and how it relates to the strategizing efforts of business network actors. In their discussion of the fallacy of managerial linearity in technological development, Håkansson & Waluszewski (2002) touch upon the relationship between interaction and futures, suggesting that while managers may be subjected to fallacies of linear thinking, they are unable to predict emerging reality in any form, as this depends upon the managers own actions and those interacting with them.

In this conceptual paper, we seek to address the formation of managers' expectations regarding business network futures. We ask the following question: How do business actors form expectations about the future in business networks? A business actor is a nebulous concept in the present context, as there is both an individual and a group side to interaction and the formation of expectations. When a business actor (or an individual actor) tries to form expectations regarding the future states of business networks, the business (or individual actor) seeks to make sense of what can expected from an exchange party. In this way, the formation of expectations involves individual and collective interactions where actors complement each other.

Expectations about the future behaviour of other actors may be conceived and developed on an individual level but become internalized and part of the belief structure among the actors that belong to a group, which may comprise a second type of actor. A group of actors in the form of managers in the same firm can be conceived as a business actor, which can be ascribed intentions, behaviours and possible actions by others. Likewise, within groups of individual actors, ideas about other actors and their likely intentions and behaviours are

processed, and intersubjective meanings are formed. This, we suggest, also influences the dynamics of business network foresight.

As we see it, business actors' expectations are generative in the sense that they both guide attention and activities as well as shape intentionality and the nature of commitments in interactions with other business actors (Borup et al., 2006). Furthermore, as business actors are uniquely positioned in business networks, expectations are generated from a heterogeneous vantage point. This suggests that differences in business network horizons and how those differences affect the strategizers' understandings of interconnectivity and its consequences for strategic actors' future behaviour are important (Thorelli, 1986).

Our paper serves several purposes. In more narrow terms, we believe that addressing the formation of expectations in business networks will help us to develop the IMP research agenda. Thus, we want to consider business network foresight to explore how expectations in business networks inform the strategic discourse in business networks. Although it involves data collection from an immediate network of firms, corporate foresight is typically discussed as an internal competence (Major & Cordey-Hayes, 2000). It is rooted in the notion that the firm must take stock of the evolving environment, seek to identify opportunities and threats in their fruition and plan for the long term. Successful foresight is linked to the ability to change covert data into insights and take action on that basis. Adequate foresight becomes a question of developing the right corporate sensors for detecting weak signals that are forming future trends (Rohrbeck & Gemünden, 2011). Introducing interaction to the foresight process suggests an alternative view, where the formation of issues becomes a process of collective sense making. We see this discussion between a linear and an interactive perspective on forecasting as relevant for managers, as the discussion provides ideas for how managers can engage in strategic foresight processes. Furthermore, taking a practice perspective, we seek to outline how business network foresight — not only as an analytical but also as a co-creative act — may be carried out among actors in business networks. Thus, the twofold aim of our research is to develop and re-conceptualize foresight phenomena in a business network perspective and to contribute to the ongoing discussions on how we may move the IMP tradition from its descriptive stance into engaging more strongly and prescriptively with managerial reality.

The paper proceeds as follows. First, we review the existing literature on foresight, and we link this to the IMP literature on strategizing. We contrast the underlying assumptions regarding business actors and their surroundings with the assumptions regarding firms'

strategic behaviour and business networks in the IMP approach and draw implications with respect to the nature of strategic foresight in a business network setting. In the final section of the paper, we develop conceptual building blocks and a research agenda for further exploring the role of expectations and foresight when strategizing in business networks. We use illustrative case examples (i.e., case vignettes) to warrant our claims and as a means of conveying and reflecting upon our key ideas (Miles, 1990). However, the paper is meant to be a conceptual rather than an empirical contribution, and, for this reason, we have not detailed the case research methodology.

## STRATEGIC FORESIGHT FROM AN IMP PERSPECTIVE

A thematic review of the strategic foresight literature must start with its precursor: forecasting, which dominated business literature and practice several decades ago. Forecasting has been defined as "the task of making a probabilistic statement on a relatively high confidence level about the future" (Wills, 1972). This notion was part of the strategy perspective offered by Igor Ansoff (1965; 1975), who was at the forefront of introducing long-range planning systems based on environmental forecasts[1]. In essence, the failure of predicting the 1973 oil shock led to considerable scepticism with respect to the validity of forecasting as an exercise in producing accurate predictions, casting the business actor in the role of a passive observer (Martin, 2010). Therefore, research focus has gradually shifted to anticipation or foresight, which involves an explicit recognition that the choices actors make today are actively shaping the future. The foresight perspective holds that futures are not singular but multiple, and we derive one future rather than another from the interactions among various actors (Godet & Roubelat, 1996).

According to Slaughter (1995, p. 1), foresight "is not the ability to predict the future…it is a human attribute that allow us to weigh the pros and cons, to evaluate different courses of action and to invent possible futures on every level with enough reality and meaning to use them as decision-making aids". Contrasting forecasting with foresight also helps in delineating the characteristics of the latter. First, foresight emphasizes the processes of expectation building in the meeting of different actors with different expectation and intended futures rather than the instrumental aspects of making deterministic predictions of the future task environment. Relatedly, foresight also emphasizes understanding what forces are likely

[1] Long range planning and forecasting lives on in parts of the strategic management literature with specific journals devoted to furthering research on these issue

to shape *possible and probable* future scenarios, rather than predicting a uniform future state or identifying one particular contingency (such as a technological advancement) as creating a particular future outcome. Underlying these differences are different ontological and epistemological assumptions about the future and how it can be understood. In a forecasting approach based on a linear understanding of reality and how it unfolds, epistemological choices concern the degree of accuracy and sophistication of predictions. The foresight approach, suggests that the future depends on actors' choices and mental framing of opportunities. In this perspective, the epistemological aim is to acquire as systematically as possible chances of development and options for action and portray alternative future outcomes. However, the foresight literature and the IMP perspective's understanding of strategizing and business contexts differ with respect to their understanding of their task environment and how business actors relate to it.

Most IMP scholars would agree with Håkansson & Snehota (1989) that business actors are interdependent rather than independent actors. It is difficult to point out exactly where the influence of one company ends and another begins, thus challenging the notion of a definable boundary between the firm and its environment (DeBoer & Andersen, 2016). As a consequence, firms act and interact in order to influence each other and seek to serve their own business interests in that respect. Interaction unfolds both in relation to those immediately connected to the strategizing actor, but interaction also influences and is influenced by the wider network stretching beyond the actor's business net. As pointed out by Baraldi et al. (2007, p. 881), "if one accepts that business networks are ineluctably enmeshed in relationships and networks then the elusive concept of a network view of strategy is clearly important". A similar notion is presented in a paper on innovation forecasts in interdependent business landscapes, suggesting that forecasts are context-dependent (Waluszewski, Ingemansson & Håkansson, 2014).

Central to strategic decision-making in business relationships and networks is the activity of *strategizing*, which concerns choices about the future regarding how to interact with and mobilize as well as influence other actors through business relationships (Gadde et al., 2003; Holmen and Pedersen, 2003). There are other approaches to strategic conduct in business networks, but the strategizing agenda reflects the role of actors as actively influencing strategic directions and reflects that such actors are embedded in an ongoing process of shaping network horizons (Cosaro & Snehota, 2011). This and other definitions underscores two aspects that shapes strategizing research in the IMP tradition: human cognition and

interaction. First, it is important to understand that although organizations are engaged as economic actors in strategizing processes, strategizing is carried out by managers (Ritter et al., 2004). Cognitive framing and representations of reality come to the fore. Some contributions have looked closer at how managers use their understanding of the network to analyse and make strategic decisions and have introduced the concept of network pictures (see e.g., Henneberg et al., 2010; Mouzas & Naudé, 2007; Mouzas et al., 2008; Öberg, Henneberg, & Mouzas, 2007; Ramos & Ford, 2011). Network pictures are defined as "the views of the network held by participants in that network" (Ford et al., 2002, p. 176). The participating actors act as representatives of an organization's interests and beliefs. According to Holmen et al., (2013, p. 141) "network pictures reveal companies' perceptions of what is happening in the network around them, and provide guidance for assessing the usefulness of various actions and reactions that they may undertake in the network". Abrahamsen et al. (2016) explain that network pictures are managers' theories-in-use about their business network, meaning how managers make sense of their networks of connected relationships, how managers perceive strategizing options and how managers evaluate these collectively.

In the last few years, some contributions have discussed the process of strategizing as an integral part of formulating network pictures. Colville & Pye (2010) refer to this sense making effort as *network picturing*. Colville & Pye (2010, p. 372) claim *"*... sensemaking is a dynamic process and if we translate this to network pictures we should be thinking not so much of snapshot/static network pictures as of dynamic network picturing". Furthermore, Abrahamsen et al. (2016) link network picturing to the process of strategizing, as the researchers are concerned with network picturing as the interplay between cognition and action, specifically relating to what managers perceive (their network picture) and what they do (their strategizing activities). Both understanding the network and strategizing the network are part of network picturing and are linked together through an evaluation of available strategic options.

The interactive element of strategizing and strategic behaviour is addressed early on by Håkansson & Snehota (1989, p. 197), as strategy is seen as developed through interactions maintained with other parties: "Interactions take place between actors who are pursuing their own goals and acting purposefully (and) in such a setting, reacting to other actors' actions can be more important than acting itself". Interaction links to both learning and ex post rationalizations as part of the strategizing activities in business networks (Araujo & Easton, 1996). Firms are embedded in networks of economic exchange that create restraints as well as

opportunities. Resource ties, actor bonds and activity links all contribute to the formation of commitments, which can be transformed into new opportunities as actors seize opportunities (Andersen & Medlin, 2016).

Following this understanding, building on interaction as a core aspect of strategizing, a business network approach stresses specific relationships as the vehicle through which networks change and unfold. The impact of change is channelled and dealt with through relationships, and the interlinkages between actors and relationships are critical for understanding how the impact of external forces disseminates and becomes influential for single actors (Dahlin et al., 2005).

This axiomatic belief in the importance of relationships and interactions as actively shaping the future differs fundamentally from the conventional view of foresight. At the core of the foresight literature is a faceless environment that organizations must react and adapt to. The foresight literature sees the ideas of the future as multiple and as essentially created from the meeting (if not confrontation) among various actors in the environment, belonging to an industry, a region or a set of stakeholders gathering around a technology, a solution to a problem or another issue of importance. For example, in order to channel their funding of research, a research council may develop foresight related to different industries such as energy, biotechnology, ICT or material technology. From a business network perspective in contrast, the future is seen as multiple and created among actors that engage strategically in networks and seek to influence each other through interactions. This is in alignment with more recent approaches to strategy and technology foresight, which seek to take a more processual perspective by suggesting that foresight events are more akin to future-oriented debates that may commit networks of actors to future collective action rather than roadmaps detailing strategic actions of companies (Treyer, 2009; Jørgensen et al, 2009). From a business network perspective, which sees interaction among business network actors as a core characteristic, network processes and formation of expectations are viable routes for further theoretical development. However, an IMP approach may outline specific assumptions about the business network which are likely to influence this stream of research on foresight. These insights can be summarized into four main points.

First, while all types of actors may be considered and play a role in IMP research, the main actors of interest are companies and organizations with whom companies do business. At different levels — from individuals to groups of companies — actors aim to increase their control (Håkansson 1987). Hence, the actors that a business actor involves in network

foresight might be more limited and less diverse than suggested in some of the more recent literatures on organizing foresight.

Second, relationships affect what the companies think and do. Many business actors have a limited number of counterparts with whom they interact in long-term relationships (Håkansson & Snehota, 1989). Over time, the actors have made mutual adaptations in various dimensions, and these adaptations can be seen as investments which have a bearing on future interactions in the relationship. In line with these adaptations, the actors in a relationship hold particular micro positions in relation to one another (Mattsson & Johanson, 1992). As a relationship proceeds, the involved actors develop expectations for how the parties will behave towards one another and expectations regarding for what and to what extent the parties can rely on each other.

Third, connections among relationships create business networks which are interlocking systems of exchange relationships. A single relationship may be positively or negatively connected to other relationships in which the involved actors are engaged, and a single relationship may be positively or negatively connected to the wider network. Depending on how a single relationship is connected to the other relationships of the involved actors, the actors hold particular macro positions towards one another (Mattsson & Johanson, 1992). Positions in business networks link to concepts such as access and control to insights from other actors as well as the ability to influence other business actors (Rowley, 1997).

Fourth, the business options which emerge to and are pursued by the actors depends on the interaction in their relationships and the past, present and envisioned future connections to other relationships. Thereby, all strategizing processes start from an understanding of the faculty and potential of the business network actors that are situated in and a part of the network — in short, the network horizon (Holmen & Pedersen, 2003). From the perspective of the focal actor, the future will derive from the interaction between the company, the actors to which it is directly or indirectly connected and the interactions in the connected relationships in the wider network of business actors.

## Interaction and expectation-building in business networks

In the interactive approach, the focus is on the (inter)actions as reactions in a network. From an interactive perspective, strategizing in business networks is more than everyday learning and interaction combined with private speculations and network pictures. First, the concept of network insight and the amalgamation that leads to network pictures being shared enable us to

overcome this limitation of individual pictures. As stated by Holmen et al. (2013), network pictures plus amalgamation equals network insight. Such amalgamation may take place among managers inside a company or among managers across organizational boundaries. Aimed at bringing about a collective and shared picture, this amalgamation takes away part of the network picture heterogeneity in a network and may resemble groupthink. Furthermore, network insight can consist of backward-looking, contemporary or forward-looking shared understanding, explanation and prediction of future states of actors in the business network. However, the concept of network insight does not capture the entire picture.

As shown in our examples in the introduction of this paper, business network actors also publicly, actively and intentionally seek to develop and influence expectations of others. They externalize ideas and seek support for their ideas, and, in this way, business network actors seek to influence the expectations of other actors or at least make them aware of their own expectations. In a business network setting, expectations are not only adaptive but are also future-generating, as they coordinate and guide activities, foster investments and attract attention and interest towards other actors. An expectation is fundamentally a belief that something will happen. From an individual business actor's perspective, expectations are typically directive in nature, meaning that they evoke not only an interpretation of the future but also a rationality of why this future is to emerge and a theory of possible actions that may or may not influence the realization of that future reality (Brunsson, 1982). According to Weick (1995), expectations are at the same time both rather weak definitions of reality and definitions with directive qualities with a tendency to anchor search for and filter out cues that do not fit with initial definitions. As Bruner (1986) puts it, "we store expectations in the form of models, that spins a little faster than the world goes" (cf. Weick, 1995, p. 145). They allow us to relax our attention to detail as long as we can convince ourselves that reality continues to conform to expectations. Expectations direct us as individuals and are linked to our behaviours. In this sense, expectations become shared with other network actors through interactions. As we interact we exchange and share beliefs. This process is also described as the dialectical interplay between externalizations and objectifications (Berger & Luckman, 1967). Externalizations may thus have self-fulfilling qualities, as they become experienced by others as established anchors for predictive activities. Particularly, in business networks, where relationships are built on mutual trust and commitment, externalizations are warranted by existing confidence in the merits of other actors.

The notion of future time as impacting on present-day interaction is not alien to IMP research (Medlin, 2004). We seek to extend the ideas of a future as a context for strategic interaction, by explicitly addressing the ongoing formation of and relation to inter-subjectively *shared expectations* as a strategic and intended endeavour. The formation of expectations among business actors is fundamentally a process of social construction. Shared expectations represent a form of objectification, where actors start treating social facts as objective. In this sense, shared expectations are interrelated and interactive and may socially construct disruptions, rhythms of stability and changes in a business network. For instance, Porac (1995) showed the creation of shared categorizations regarding market opportunities and business actors among Scottish Knitwear manufacturers. Similarly, Barnett et. al (2003) discussed the social constructivist underpinnings of Moore's law among producers of microprocessors, thus synchronizing the innovation efforts of industry actors.

Business actors' expectations do not necessarily provide a clear roadmap for the future. They may be weak and opaque but are starting points for interactions, and the issues raised by these expectations help to centre discussions and interactions among sets of actors. They result in some forms of shared noticing and interactive prodding, as pointed out by Weick (1995).

The behaviours of business actors signal certain intent and theories about possible actions. As others reflect upon and echo these actions, they may strengthen the conviction that the theory of reality held by the actor is correct or at least holds some core of truth to it. In this sense, expectations are starting points for the interactive behaviour that ultimately guides the formation of shared expectations in contexts such as business networks.

Through interactions in relationships, a partly shared understanding and imagination of the future (and the past) can come about, including the forming of common mental frames and shared expectations. Such processes may result in what has been coined network insight, suggesting a process of collective mind-building emerging through continuous and iterative interplay (Mouzas, Henneberg & Naude, 2008). Such interactions among actors in a network entail mutual attention drawing and processes of creating and aligning actor expectations, which actively perform in constructing the future (Kjellberg & Helgesson, 2006). Take as an example the emergence of the silver market crisis, which, rather than being seen as produced by the disorganized behaviour of an atomized mass of speculators subjected to some force of change, is rather the outcome of interaction and rivalry among competing coalitions seeking to promote their own interests (Abolafia & Kilduff, 1988). This and other studies of the unfolding of market events suggests that market actors together create the context that

impinges on their future activities. Hence, shared network insight may result in coordinated, matched or joint plans as well as actions aimed at creating an imagined future. In other words, more interaction leads to more similar joint thinking and joint action. However, this need not be the case. First, more interaction may reveal differences or incompatibilities among the involved parties due to the actors themselves or to their relationships. Furthermore, interaction in one relationship competes with interaction in other relationships, and the business options generated in some relationships may be evaluated against and prioritized above options generated in other relationships. In addition, network insights are multiple and differ across actors, as each actor engages in different relationships and networks. Therefore, actors may choose among, combine, question and even act contrary to the network insight in some of the networks in which they are involved, specifically when networks are being disrupted.

Network foresight also concerns the *structure* and *content* of the relationships in the networks that surround a company. While some relationships last for extended periods of time, this does not necessarily mean that they are static. In a relationship, there are infinite opportunities for joint value creation that can be discovered and pursued by the involved parties. If different opportunities are pursued over time in a relationship, we should not confuse longevity and durability with stability but realise that continuity can result from the pursuit of a series of temporary opportunities for joint value creation, as shown in the case study by Loohuis, von Raesfeld, & Groen (2010). Not all relationships endure, however, and some hibernate or end (Ford, 1980; Batonda & Perry, 2003). Furthermore, new relationships are initiated (Holmen et al., 2005; Aaboen et al., 2017). In addition, and consequently, *connections* among relationship evolve over time due to positive and negative connections which emerge, are discovered or exacerbate. Thereby, the micro and macro positions (Mattsson & Johanson, 1992) actors hold in relationships and networks they engage in may change over time, thus influencing which changes the actors may and may not be able to bring about in their relationships and networks and which stabilities the actors may or may not be able to preserve.

To summarize, the multiple futures in a network pertain to the variety of imagined and discovered possibilities which the actors in the networks are able to imagine and discover through their interactions in connected, evolving relationships. The single realized future represents those network possibilities that are eventually pursued and the interdependent actions taken and choices made by the actors as to which ideas, plans and adaptations are to be made together and towards one another. However, the sharing of subjective expectations may not necessarily lead to collective expectations. One may be aware of what others are

expecting without necessarily expecting the same. Hence, we need to consider the possibility of interaction that does not lead to amalgamation but preserves a kind of enlightened heterogeneity among minds. This entails acknowledging others' expectations without adopting them.

To enable particular attention to the future and how networks may change and be transformed and to focus on the interactions related to expectations while taking into account the related concepts discussed above, we define network foresight as "the process of interacting on, and possibly amalgamating, managers' pictures of and expectations to future networks of relevance to the networks in which they are presently engaged", where the interaction between and among managers from different organizations is at the centre of attention from a business network perspective.



## EXPLORING AND DEVELOPING PRACTICES OF BUSINESS NETWORK FORESIGHT: SOME BUILDING BLOCKS

How should we proceed in order to promote processes that will help to generate business network foresight? As mentioned earlier, in this paper we mainly attend to the creation of business network foresight as a part of intentional strategizing. However, we are aware that the formation of expectations in business networks is a continuous and integral process of business interactions, which permeates continuous trust-building and re-assures adaptations etc. Our interest here, is however in the deliberate and committed attempts by the focal firm and/or its exchange partners to temporally "freeze" the flow of events in reality in order to create what Weick and Quinn (1999) refers to as making sequences visible for all relevant participants and showing patterns through maps, schemas and stories, thus convincing the participants about specific issues of concern. This is what we typically experience when powerful business actors, industry associations or others seek to externalize expectations of the future among other business network actors.

Deliberate attempts may also involve sets of organizations which are not necessarily engaged in substantial, collaborative buyer-supplier relationships but which may become so in the future. For example, a variety of organizations in a region may organize gatherings where the desired futures of the region are on the agenda and where the mutual exchange of plans and ideas may come about.

We are particularly interested in exploring the interactive shaping of expectations, which takes place when two or more parties meet with the deliberate intent to influence perspectives and form expectations about the future of the network or the relationships therein. We believe that such interventions are rather common and may unfold in meetings, such as the ones discussed in the introduction as well as in a range of other types of foras and events that are relevant to this particular kind of activity.

The expectation-shaping activities of any business actor is interpreted and understood by its exchange party. In this sense, (inter)actions in a set of exchange relationships influences the formation of expectations in at least two ways. They are unintended and intended acts of communication for other actors to decipher and understand based on their network horizon. We refer to these actions as *signalling*. Acts spark responses in the form of interacts, which may affirm, contrast or be interpreted in other ways by those initiating the communication process and trigger responses. We refer to this as *echoing*.

From the perspective of an individual actor, signalling and echoing have an individual and a group aspect. Individual actors such as managers signal their focus, interests and intentions in various ways that can help them create an idea of what future actions can be expected from this actor. Individual managers belong to a larger constituency of decision makers and may be seen as representative of the collective view, but the signals they convey are viewed as different and less formal than those conveyed by the actors in the group they are a part of. Furthermore, communication with these actors may echo responses that can influence collective sensemaking both in the receiving and sending company. Hence, the signals from individuals complement or nuance the signals provided more formally by business actors, thus adding to the complexity of the formation of expectations.

For the party seeking to build a consistent network foresight, sense making calls for complex processes. It stretches beyond the signals of an individual actor into forming an idea about the context in which this business actor operates and contrasting that idea with the signals of other actors. Deciphering signals and how they might affect future behaviour stretches beyond the dyadic understanding. Dyadic relationships do not unfold in a vacuum, and actors connected to any focal actor are likely to be connected to each other. These connections may influence not only the actor's signals but also the patterns of expected behaviour from that particular actor. Forming business network foresight also calls for a potential understanding of how business actors directly connected to the focal actor also might be directly interconnected (or connected through other intermediaries) and how their actions are

interdependent. In the same sense, how the echoes created from responses of any focal actor may be understood must take the relational properties of that actor into account. Hence, understanding signals and echoes calls for an examination of how patterns of relationships are interconnected. This is what Nohria (1992) refers to as the interaction of interactions.

From comparing and collectively interpreting cues, a collective conversation of another actor's intentions emerges among managers belonging to a specific constituent. A constituent is often defined by an organizational boundary, but constituents may also be a group of organizations seeking to exchange information and understand signals from a powerful customer. In accordance with the social construction perspective, we describe this process as a typification process, which serves as a common reference point for individually and collectively interpreting the future activities of this actor.

The bringing together of different parties to communicate and interact with one another in order to create business network foresight may take on many forms. However, we assume that some exchanges of signals and echoes have more impact that others with respect to actors' expectation-building. We assume that actors' attention and expectation building is shaped by some form of intentionality. By intentionality we mean that business actors focus on specific issues that capture their interest (and thus their interest in the signals of others) more than others and that they combine the means and ends of network theories to produce specific solutions to these issues.

We assume that this typification is vested both in the focal actor's current resources and activities as well as in the network horizon. For instance, in providing a scope for the investigation of expectation-forming activities, our interest might revolve around the actors, activities and resources involved in the development of a particular product or service, such as the construction of an offshore wind park or the provision of public bus transportation services in a municipality. In this case, our scope is the expectation-building efforts actors may be part of with respect to the future of this particular activity rather than the global range of activities they are involved in. Research on the formation and role of collective expectations around issues has developed in a number of research areas outside the business and strategy literature, which might be helpful to further our understanding of expectation building and foresight interventions in business networks. Research programmes concerned with the social construction of technology (SCOT) and actor-networks have both been occupied with understanding the progresses of technologies and how these have been jointly developed with actors' concerns. These programmes also focus on certain issues and solutions

deemed relevant by specific societal groups (Pinch & Bijker, 1987). In their research, problems experienced by social groups shape attention and mould collective expectations concerning what issues matter for the future development of a technology. Likewise, the literature on strategic foresight has focused on the role of expectation-building and offers a substantial discussion with possibilities for cross-pollination with the IMP approach with respect to both scrutinizing the role of expectations for strategizing efforts in networks but also for developing procedures towards understanding how collective expectations shape the unfolding of business networks.

In the remaining part of the paper, we will discuss this approach in more detail and outline how insights from this literature potentially may inspire the understanding of expectation formation processes in business networks. Taking inspiration from social construction approaches to understanding the social construction of technologies, we proceed by seeking to establish insights into the particular business network issues and solutions that capture individual actor's attention and are salient for the development of expectations regarding the future.

A business network issue is an important problem recognized and debated among several actors related to the business network in question. It represents an objectified social enactment, which is an issue worthy of attention for the future development of research and for strategizing efforts. In the context of an offshore wind turbine network, an example of such an issue might be the problem of insuring specialized vessels for the erection of towers and submarine structures, or it may the cost differential of offshore-based wind power as compared to other power sources. In any case, naming the issues gives rise to another pivotal social enactment, namely, the belief in specific solutions that may help render or transform the issue at hand. By an *issue,* we refer to those particular social constructs that capture the attention of business actors within a certain activity structure.

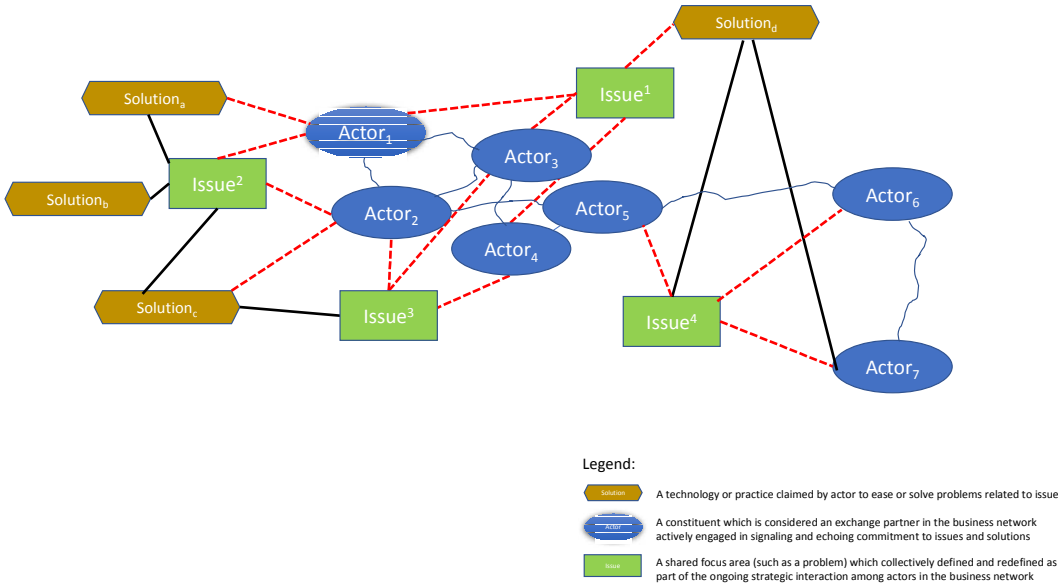



FIGURE 1 : A NETWORK PICTURE OF ACTORS, SOLUTIONS AND ISSUES

The enactment of issues can be set in motion or influenced by actors' strategic actions, which involve the mobilization of other actors to shape or redefine the existing definition of issues or create a novel one. It is both a collaborative and a competitive process, as actors who occupy different positions in the business network may have complementary but also different or opposing interests. We have illustrated the procedure in Figure 1.

In the example given in Figure 1, there are four different issues pertaining to the business network activity at hand, and each of these issues draws attention from different actors. Hence, issues are not simply there as part of a general, faceless context, but are co-created by actors as they engage in dialogue with other actors. This dialogue revolves around issues. The development and framing of issues related to the carrying out of (future) activities is an ongoing endeavour, but it is also clear that not all attempts to create an issue are successful. On the other hand, once established and acknowledged, issues may be constructed and reconstructed on an ongoing basis. From the outlook of any particular actor, the network horizon may look quite different. Furthermore, there are also several different *solutions* recognized by some or all actors with a particular interest in one of these issues. Not all actors are involved in dialogues around all issues. Moreover, some actors are engaged in multiple issues and seek to shape conversations by signalling and issuing specific issues and solutions.

Furthermore, solutions and issues may be connected in various ways. A solution may play a role in solving multiple issues, and several solutions may be offered for the same solution.

Hence, researchers as well as practitioners seeking to understand how expectations in business networks unfold may seek to build a similar overview and use this in order to better understand how expectations and strategizing interact with echoes and signals and perhaps also make actors better understand how processes of issue-building evolve and how these influence strategizing efforts.

A few illustrative examples from events with the purpose of framing issues and solutions may help ground the use of these potential building blocks. For instance, when Unilever summons critical *suppliers* for a two-day workshop in order to present Unilever's next strategic vision and mission, this company is making a deliberate attempt to influence expectation shaping and "talk the future into becoming realized". *Supplier days* have also become a quite common practice, where a buying firm presents the future path it intends to pursue and provides several issues in this respect. A major issue suggested by Unilever could be "how to end hunger," and solutions might be sought after in the area of prolonging food shelf life in order to reduce food waste. This elicits responses from a large group of invited suppliers as to whether they would like to contribute with solutions to this issue (Laursen & Andersen, 2016).

While supplier days and other similar assemblies involve a larger set of suppliers, the communication at such gatherings may be bilateral as well as multilateral and is characterized by different degrees of monologue or dialogue in aligning expectations and possible road maps. Communication may also involve two parties in a dyadic setting such as when a buyer and a supplier have *annual relationship reviews* where they present their respective technology roadmaps, future investment plans and prioritized product and service development portfolios as well as the plans the two parties have in relation to one another. Furthermore, the parties may not only discuss matters concerning their relationship per se but also discuss third parties such as their respective suppliers and customers. At such meetings, the parties may engage in the exchange of plans as well as interactions regarding mutual adaptations and plan matching, where the latter types of events are more akin to creating relationship and network foresight. A few other examples may help to illustrate this further:

Q-Free is a Norwegian intelligent transportation systems (ITS) company. It is actively engaged in bringing about foresight in its business network in several different ways. First, each year it organises "The Q-Free Day". In 2016, the theme was "the environment", and Q-

Free's intention was to show how ITS, smart technology and efficient services can be used for solving environmental transportation challenges in Norway. One external speaker was Trond Haukås from the Norwegian Road Authorities. He spoke on a "Future system solution for toll collection". Another external speaker was Trond Hovland, from ITS Norway, an association of organizations within transportation focusing on intelligent transportation solutions. Mr. Hovland's speech was called "ITS and the road ahead", and the session was announced in the following way: "We peek into the future ITS together with Trond Hovland, and run a plenary debate". In the invitation for the event, Q-Free stated that "We intend to have time between speeches for conversation and discussion between participants and speakers. In this way, we believe that Q-Free Day this year will be something everyone appreciates" (https://www.q-free.com/q-free-dagen, 23.05.16).

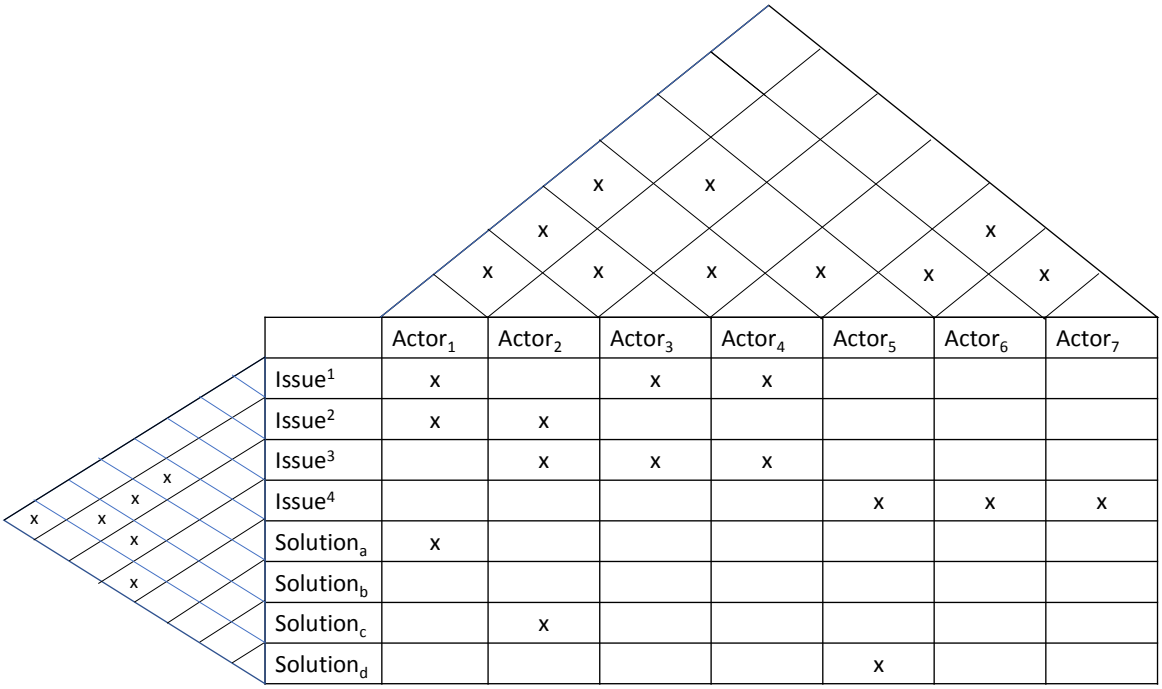
Second, Q-Free works within the field of "Cooperative ITS (C-ITS)", which the company sees as the foundation that all future ITS deployments will build on and which current ITS deployments will have to evolve into. Therefore, Q-Free have involved themselves in research projects, standardization work and pilot product designs focusing on C-ITS. Through such engagements, the intention is not only to embrace but also to influence and be at the centre of the future of C-ITS. Furthermore, to influence early applications, Q-Free offers C-ITS competence and products to emerging national pilot projects and trans-national corridors. (www.q-free.com) Third, in order to be aware but also actively influence the future direction of ITS in Europe, Q-Free takes part in national and international standardization bodies.

Previously, we mentioned Nordic Semiconductor. Similar to Q-Free, Nordic Semiconductor has been an active contributor to standardization bodies for many years. Nordic Semiconductor's business is mainly built on Bluetooth technology. Therefore, they have been particularly active in the development of Bluetooth core technology and have participated in, or been the chairman of, Bluetooth Special Interest Group's (SIG) working group and committees. Similarly, Nordic Semiconductor also involve themselves in other standardization part work such as the Rezence wireless charging standard developed by A4WP, NFC Forum and 3GPP. By combining their insights into ultra-low power wireless technology and customer needs, Nordic Semiconductor aims to develop and influence the standards as well as the specifications for products that will fit and observe the standards.

NCE-Maritime is a cluster initiative focused on the offshore maritime industry on the south-west coast of Norway. The research institute Møreforskning conducts an annual "Cluster analysis". This analysis captures both the present situation and recent developments among

the hundreds of companies that have joined the cluster initiative. However, the cluster analysis also contains a "Future outlook" section, stressing the coming trends, threats and opportunities which may affect the companies in the cluster initiative. The "Cluster analysis" is presented at the annual "Cluster Conference – Present Status and the Road Ahead", where time is set aside for discussing future issues and how they may be approached by the organization behind the cluster initiative and by the companies therein (http://www.aakp.no/?menu=4&id=1678).

In these illustrative cases, the elements of issues, solutions and interactions all come to the fore. What the framework seems to offer is a procedure for carto-graphing processes of issue building and how this connects to actors. By viewing these processes over time, it also becomes possible to view how issues, solutions and actors link to new events, mobilize new actors or attract new solutions. Importantly but less clear from these overviews is that each event is characterized by acts and interacts of signalling, echoing or gestating a series of moves or a discourse which eventually influences the realization of a certain version of the future for the actors directly and indirectly involved. A more systematic way of analysing the connections between actors, issues and solutions is provided in the three-dimensional diagram in Figure 2. This diagram builds on the previous example of connections between actors' issues and solutions shown in Figure 1.



| | Actor$_1$ | Actor$_2$ | Actor$_3$ | Actor$_4$ | Actor$_5$ | Actor$_6$ | Actor$_7$ |
|---|---|---|---|---|---|---|---|
| Issue$^1$ | x | | x | x | | | |
| Issue$^2$ | x | x | | | | | |
| Issue$^3$ | | x | x | x | | | |
| Issue$^4$ | | | | | x | x | x |
| Solution$_a$ | x | | | | | | |
| Solution$_b$ | | | | | | | |
| Solution$_c$ | | x | | | | | |
| Solution$_d$ | | | | | x | | |

FIGURE 2: A DIAGRAM OF CONNECTIONS AMONG BUSINESS NETWORK ACTORS, SOLUTIONS AND ISSUES

For managers, a systematic analysis of the interlinkages between actors, solutions and issues may provide insights into the signalling and echoing efforts and the interconnectedness of interconnections, which shape the future-oriented dialogues of business actors. As shown in Figure 2, there is a clustering of actors both with respect to existing relationships and to issues. Actors 1, 3 and 4 comprise a closed triad, which is suggested to have a strong impact on shared signalling and consensus-building with respect to expectations about the future. However, at the same time, the same triad of actors are connected to different issues and connect these issues with different solutions. This indicates that the actors have partial solutions and that issues overlap with other actors; this draws actors' focus towards other activities and resources. Furthermore, the diagram suggests that there are no real actor blocks and that solution b, although linked to a solution, does not have any constituents supporting it in the portrayed business network.

## DISCUSSION AND IMPLICATIONS FOR RESEARCH

In this contribution, we primarily focus on furthering the development of a research agenda. For this reason, we have downplayed managerial implications. However, a few managerial implications must be mentioned, as they may inspire others to think about these issues and how they might affect managerial practice. First, we need more research on how an actor (or individual manager) who would like to take an interactive approach to foresight can gather information about other relevant actors within the network horizon. To develop ways of doing systematic inquiry into other actors' views of the network horizon, their thoughts on potential developments and their strategizing processes are important but complex activities. Secondly, we need to develop methods and tools to assist mangers in preforming such systematic inquiries to be able to strategic network foresight. We posit that managers may benefit from considering a multitude of different dimensions before arranging episodes of foresight in networks.

In the following, we signal three issues, which we hope will influence the future empirical and conceptual research on business network foresight in the IMP community and beyond. We frame these as i) categorizing foresight episodes, ii) formation of expectations in business networks and iii) positional and structural impact on the creation of issues and solutions. These issues are further expanded below.



*Categorizing foresight episodes*

In order to categorize and discern among different types of foresight episodes, we need to identify dimensions on which categories can be build. We suggest a number of dimensions that aim to capture the variety among intentionally-planned foresight episodes and the considerations involved in forming the episodes.

Different types of foresight episodes may address different *types of issues* and *solutions*, which can be technological, business and/or social. There may also be differences in terms of *scope* in the sense of *how many* issues are being addressed from one or a few too many. Which issues to address may be wholly *pre-planned*, or some degree of *emergence* and attempt at issue *generation* may underlie the foresight episode. As such, the *agenda* may be rather closed or very open. In a similar vein, the foresight episode may comprise different mixes of monologues and dialogues and plenary and parallel sessions and may build on, encourage and foster logical reasoning and/or emotional resonance and gut feelings. There

may be variation as to the *degree of openness*, as the foresight episode may be publicly announced and open for everyone or reserved for a closed set of actors who receive an invitation.

Those who are invited may have *different roles* and entertain *different types of relationships* with the actor(s) hosting the foresight episode, as these may be existing business partners or new or potential business partners such as suppliers, customers and/or other types of partners, competitors, indirect suppliers or customers, policy actors, private or public actors and legal actors. The foresight episode may comprise only one type of actor, a small set of actors or a multitude of different actors. There may be an exclusively or primarily cooperative relationship among the participants, or there may be more or less pronounced elements of competition among (some of) the actors involved.

Episodes of foresight may also differ in terms of *scale*, from comprising only two actors to comprising hundreds of actors. The foresight episode may be a *one-off, single event*, or there may be some sort of *seriality* involved so that a single foresight event may be more or less frequently repeated or even be an institutionalized, periodically organized event.

While episodes of foresight always focus on the future, there may be differences as to the *time horizon* considered. The horizon may embrace the short-term future, comprising only a few years, or it may look farther ahead into the long-term. There may primarily be actors from *one industrial setting* who must deal with issues pertaining to avoiding collusion and lobbying, or the episode of foresight may cut across several or many different industrial settings, thus being more multidisciplinary. The episode of foresight may *aim at different outcomes*, such as developing understanding (cognition) or developing social ties or may aim at creating a commitment to joint action or making a concrete action plan.

Future empirical research that captures a multitude of intentionally-organized foresight episodes can enable us to identify subsets of episodes that bear resemblance to each other within each subset but differ across subsets and, hence, allow us to form categories which can be used for managerial as well as for research purposes. Such categorization would also enable us to identify mixes of foresight episodes used by different organizations in order to sense, shape and seize future opportunities in the networks in which they are engaged.

*Formation of expectations in business networks*

How do actors gain insight into the possible futures of a network and the main factors at play in the network? This would involve insight into factors shaping the other actors, the relationships in which they are involved, the interactions taking place within them, the emerging and evolving opportunities, and the directions in which the relationships of the involved actor are developing and new relationships are being initiated, the stability or change in the micro and macro positions, the connections across the relationships and if and how these relationships are changing.

For this reason, the dynamics of ideas and expectations must be empirically investigated: how ideas and expectations are formed and influenced through interactions is a key element for business network foresight, i.e., for understanding both stability and future transitions at the business network level. In the traditional forecasting literature, diverging observations can be found with respect to three underlining epistemologies: objectivist, subjectivist and pragmatic. Each has different consequences for the formation of what can be known by foresights — from predicting the future (assuming its deterministic nature) to creating realities with others (Piirainen & Gonzalez, 2015). It follows from the previous issue that from an IMP perspective, understanding how knowledgeable actors interact in creating the future of the network and influence other network actors in this respect is at the core of business network foresight. From a business actor's point of view, knowledge is contextually bound.

*Positional and structural impact on the creation of issues and solutions*

The most obvious starting point of a business network foresight research endeavour within the IMP approach is to scrutinize the network positions and horizons of their immediate counterparts, including whom they see as most influential co-creators of the future. Identifying and investigating these actors and their wider connections provides an emergent view of possible futures that may evolve as a consequence of the actors' pursuit of their own interests and their theories on how to serve these interests. Creating expectations about the future is an ongoing activity. Business actors interpret and act within the business network — where it currently is and along which trajectories it is moving (Holmen & Pedersen, 2003). While a single actor may rely on its direct counterparts performing various mediating functions, it can neither be rest assured that the counterpart will always understand how it may best play a mediating function nor that the counterpart will in effect play a mediating function in line with the interests of the single actor due to the counterpart's unwillingness or

inability to mediate, which can be caused by a lack of time, changed priorities, confidentiality, oversight and concealment. There may be secrets and lies in networks which distort the network horizons and pictures. Furthermore, interaction is non-linear, which may lead to network surprises, which disrupts the present network dynamics.

Finally, network horizons and pictures are only cognitive aspects of foresight. According to Abrahamsen et al. (2016), there is a need to move from network pictures to network picturing; we must focus on the interplay between cognition and action specifically relating to what managers perceive (their network picture) and what they do (their strategizing activities). The two aspects of network picturing, understanding the network and strategizing the network, are linked together through an evaluation of available strategic options likely to be pursued by other actors and those likely to be pursued by the single actor.

A second and continuing area of research concerns the dynamics and changes in the network horizon. Moving from mapping the network picture to doing network picturing is a large step which has implications for how we do research in the field of business network foresight. According to Medlin and Törnroos (2014), we need to pay more attention to dynamic network emergence and development, which includes understanding activities, processes and adaptations to establish constructs relative to different forms of time so as to capture dynamics. The time perspective is essential for conducting network foresight practices.



## REFERENCES

Aaboen, L., La Rocca, A., Lind, F., Perna, A. and Shih, T. (2017) *Starting Up in Business Networks Why Relationships Matter in Entrepreneurship*. Palgrave Macmillan. ISBN 978-1-137-52714-1.

Abolafia, M. Y., & Kilduff, M. (1988). Enacting market crisis: The social construction of a speculative bubble. *Administrative Science Quarterly*, 177-193.

Abrahamsen, M. H., Henneberg, S. C., Huemer, L., & Naudé, P. (2016). Network picturing: An action research study of strategizing in business networks. *Industrial Marketing Management*.

Andersen, P. H. & Medlin, C. (2016). Commitments in networks, *Industrial Marketing Management*, *58*, 11-19.

Ansoff, I. H. (1965). *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion*. McGraw-Hill.

Ansoff, H. I. (1975). Managing strategic surprise by response to weak signals. *California management review*, 18(2), 21-33.

Araujo, L., & Easton, G. (1996). Strategy: where is the pattern? *Organization*, *3*(3), 361-383.

Barnett, M. L., Starbuck, W. H., & Pant, P. N. (2003). Which dreams come true? Endogeneity, industry structure and forecasting accuracy. *Industrial and Corporate Change*, *12*(4), 653-672.

Baraldi, E., Brennan, R., Harrison, D., Tunisini, A., & Zolkiewski, J. (2007). Strategic thinking and the IMP approach: A comparative analysis. *Industrial Marketing Management*, *36*(7), 879-894.

Batonda, G., & Perry, C. (2003). Approaches to relationship development processes in inter-firm networks. *European Journal of Marketing*, *37*(10), 1457-1484.

Berger, P. & Luckmann, T. (1967/1991): *The social Construction of reality*, Penguin books, London

Borup, M., Brown, N., Konrad, K., & Van Lente, H. (2006). The sociology of expectations in science and technology. *Technology analysis & strategic management*, *18*(3-4), 285-298.

Bruner, J. (1986): *Actual minds, possible worlds*, Cambridge MA, Harvard University Press

Brunsson, N. (1982.: The irrationality of action and action irrationality: Decisions, ideologies and organizational Actions, *Journal of Management Studies*, 19, 29-44

Colville, I., & Pye, A. (2010). A sensemaking perspective on network pictures. *Industrial Marketing Management*, *39*(3), 372-380.

Snehota, I., & Hakansson, H. (Eds.). (1995). *Developing relationships in business networks*. London: Routledge.

Dahlin, P., Fors, J., Havila, V., & Thilenius, P. (2005). Netquakes–Describing effects of ending business relationships on business networks, working paper presented at *the 21st Annual IMP Conference.*

de Boer, L. & Andersen, P.H. (2016). Learning from intelligent conversation: how can insights from system theory contribute to advance IMP research? *IMP Journal*, forthcoming

Ford, D. (1980). The development of buyer-seller relationships in industrial markets. *European journal of marketing*, *14*(5/6), 339-353.

Ford, D., Gadde, L. E., Håkansson, H., & Snehota, I. (2002, December). Managing networks. In *18th IMP Conference, Perth, Australia,* 11-13.

Gadde, L. E., Huemer, L., & Håkansson, H. (2003). Strategizing in industrial networks. *Industrial marketing management*, *32*(5), 357-364.

Godet, M., Roubelat, F. (1996). Creating the future: the use and misuse of scenarios, *Long Range Planning*, 29 (April), 164–171

Heger, T., & Rohrbeck, R. (2012). Strategic foresight for collaborative exploration of new business fields. *Technological Forecasting and Social Change*, *79*(5), 819-831.

Henneberg, S. C., Naudé, P., & Mouzas, S. (2010). Sense-making and management in business networks—Some observations, considerations, and a research agenda. *Industrial Marketing Management*, *39*(3), 355-360.

Holmen, E., & Pedersen, A. C. (2003). Strategizing through analyzing and influencing the network horizon. *Industrial Marketing Management*, *32*(5), 409-418.

Holmen, E., Roos, K., Kallevåg, M., von Raesfeld, A., de Boer, L. and Pedersen, A.-C. (2005) How do relationships begin? In Proceedings from *the 21st IMP Conference*, Dealing with Dualities, 1-3 September, Rotterdam, The Netherlands.

Holmen, E., Aune, T. B., & Pedersen, A. C. (2013). Network pictures for managing key supplier relationships. *Industrial Marketing Management*, *42*(2), 139-151.

Håkansson, H. (1987). Product development in networks. *Industrial technological development: a network approach*, 84-127.

Håkansson, H., & Snehota, I. (1989). No business is an island: the network concept of business strategy. *Scandinavian journal of management*, *5*(3), 187-200.

Snehota, I., & Hakansson, H. (Eds.). (1995). *Developing relationships in business networks*. London: Routledge.

Hakansson, H., & Waluszewski, A. (2002). *Managing technological development*. Routledge.

Jørgensen, M. S., Jørgensen, U., & Clausen, C. (2009). The social shaping approach to technology foresight. *Futures*, *41*(2), 80-86.

Kjellberg, H., & Helgesson, C. F. (2006). Multiple versions of markets: Multiplicity and performativity in market practice. *Industrial Marketing Management*, *35*(7), 839-855.

Laursen, L. N. & Andersen, P. H. (2016). Is a problem well stated, a problem half solved? Quasi-experiments inside Unilever on Problem Framing and Buyer-Supplier Knowledge Exchange, *Industrial Marketing Management,* forthcoming.

Loohuis, R.P.A., von Raesfeld, A.M., and Groen, A.J. (2010) When is it the right time to change? A case study of implementing a new activity in an existing business relationship, Proceedings from *the 26th IMP Conference*, 2-4 September, Budapest, Hungary, Special Track: Time and process in business network research, pp.1-20.

Major, E. J., & Cordey-Hayes, M. (2000). Engaging the business support network to give SMEs the benefit of foresight. *Technovation*, *20*(11), 589-602.

Martin, B. R. (2010). The origins of the concept of 'foresight' in science and technology: an insider's perspective. *Technological Forecasting and Social Change*, *77*(9), 1438-1447.

Mattsson, L. G., & Johanson, J. (1992). *Network positions and strategic action: an analytical framework*. Univ.

Medlin, C. J. (2004). Interaction in business relationships: A time perspective. *Industrial marketing management*, *33*(3), 185-193.

Miles, M. B. (1990). New methods for qualitative data collection and analysis: vignettes and pre-structured cases. *International Journal of Qualitative Studies in Education*, *3*(1), 37-51.

Mouzas, S., & Naudé, P. (2007). Network mobilizer. *Journal of Business & Industrial Marketing*, *22*(1), 62-71.

Mouzas, S., Henneberg, S., & Naudé, P. (2008). Developing network insight. *Industrial marketing management*, *37*(2), 167-180.

Nohria, N. (1992): Is a network perspective a useful way to study organizations? In Nohria, N. & Eccles, R. G. (eds): Networks and Organizations: Structure form and action, Harvard Business School Press

Piirainen, K. A., & Gonzalez, R. A. (2015). Theory of and within foresight— "What does a theory of foresight even mean?". *Technological Forecasting and Social Change*, *96*, 191-201.

Pinch, T. J., & Bijker, W. E. (1987). The social construction of facts and artifacts: Or how the sociology of science and the sociology of technology might benefit each other. *The Social*

*Constructions of Technological Systems: New Directions in the Sociology and History of Technology*, *17*.

Porac, J. F., Thomas, H., Wilson, F., Paton, D., & Kanfer, A. (1995). Rivalry and the industry model of Scottish knitwear producers. *Administrative Science Quarterly*, 203-227.

Ramos, C., & Ford, I. D. (2011). Network pictures as a research device: Developing a tool to capture actors' perceptions in organizational networks. *Industrial Marketing Management*, *40*(3), 447-464.

Ritter, T., Wilkinson, I. & Johnston, W. J. (2004). Managing in complex business networks. *Industrial marketing management* 33 (3), 175-183.

Rohrbeck, R., & Gemünden, H. G. (2011). Corporate foresight: Its three roles in enhancing the innovation capacity of a firm. *Technological Forecasting and Social Change*, *78*(2), 231-243.

Rowley, T. J. (1997): Moving beyond dyadic ties: A network theory of stakeholder influence, *Academy of Management Review*, 22, 4, 887-910

Slaughter, R. A. (1995). *The Foresight Principle: Cultural Recovery in the 21st Century*, Adamantine, London (1995)

Thorelli, H. B. (1986). Networks: Between Markets and Organizations *Strategic management journal*, *7*(1), 37-51.

Treyer, S. (2009): Changing perspectives on foresight and strategy: from foresight project management to the management of change in collective strategic elaboration processes, *Technology Analysis & Strategic Management*, 21, 3, 353-362

Waluszewski, A., Ingemansson, M., & Håkansson, H. (2014). Innovation forecast: Un-avoidable and context dependent. *Industrial Marketing Management*, *43*(6), 1045-1052.

Weick, K. (1995). *Sensemaking in organizations*, Sage Publications

Weick, K. & Quinn, B. (1999). Organizational change and development, *Annual review of Psychology*, 50, 361-390

Wills, G. (1972). *Technological Forecasting: The art and its managerial implications*. Penguin books.

Öberg, C., Henneberg, S. C., & Mouzas, S. (2007). Changing network pictures: Evidence from mergers and acquisitions. *Industrial Marketing Management*, *36*(7), 926-940.