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ORGANIZATIONAL CULTURE AND NETWORK EMBEDDEDNESS

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ABSTRACT

A question that has been neglected in network research is where differences in network embeddedness come from. The network literature reveals that there are three key characteristics of embedded relationships: trust, open communication, and joint problem solving. On the basis of the sparse empirical studies of factors leading to network embeddedness, we identify organizational culture as a potentially important organizational-level factor. Building on empirical organizational culture studies we select ten dimensions of organizational culture that for theoretical and/or empirical reasons can be linked to network embeddedness, and formulate propositions concerning their effects.

Keywords : organizational culture, networks

JEL-Code : M14

ORGANIZATIONAL CULTURE AND NETWORK EMBEDDEDNESS

Successful external relationships are increasingly recognized to be critical to the survival and success of organizations. Being embedded in a network of interorganizational relationships provides an organization improved opportunities for learning, as well as access to technologies and resources, and increased legitimacy, and hence helps the organization to enhance its competitive position (Dyer and Singh, 1998 ; McEvily and Zaheer, 1999 ; Nohria and Eccles, 1992). Much effort has, therefore, been put in identifying the variables that could help to explain successful inter-firm relations. The network literature essentially points to the role of network configuration (Gemünden, Ritter, and Heydebreck, 1996; Vanhaverbeke and Noorderhaven, 2001), the position of a firm in the network (Gulati, 1999; Vanhaverbeke, Duysters and Noorderhaven, 2002), the type of interfirm ties (Powell, 1990; Uzzi, 1996), trust (Doney and Cannon, 1997; Morgan and Hunt, 1994), open communication (Brock Smith, 1997; Ritter, 1999), and joint problem solving arrangements (Larson, 1992; Takeishi, 2001) to account for successful performance through network relations.

However, the question what factors make some organizations more successful than others in forming network relationships has been largely neglected. Past work has tended to consider networks as given contexts for the organizations within them (Lorenzoni and Lipparini, 1999: 318). At the network level, a need has been identified for better theories of how these networks evolve and change over time (Madhavan, Koka and Prescott, 1998: 440; Nohria, 1992: 5). But also at the level of the individual organization within the network, important questions remain unanswered, like the factors that cause some organizations to become more strongly embedded than others. To a certain extent firms may be assumed to be able to shape and deliberately design their networks (Lorenzoni and Lipparini, 1999: 318). But it is plausible that there are also firm-level factors beyond managerial deliberation that cause differences in network embeddedness.

Building on the limited literature that has explored this issue, we theorize in this paper about the relationship between network embeddedness and what seems to us to be one particularly important category of factors causing differences in network embeddedness, viz., organizational culture. We define *network embeddedness* as a quality of the ties between a focal firm and its transaction partners (buyers, sellers, service providers, as well as competitors with whom the firm cooperates in the context of, e.g., research and development projects). As will be discussed in more detail below, an organization can be said to be strongly embedded if its relationships with suppliers, customers, and other organizations are recurring and characterized by trust, open communication, and joint problem solving.

Organizational culture, defined in this paper as the set of organizational practices that are seen as characteristic for an organization and that distinguish the organization from other organizations, is considered to capture the essence of what the organization is and how it operates as a social collectivity (Meek, 1988). Organizational culture is both specific to an organization and relatively constant, compared to other organizational traits (Leonard-Barton, 1992), which make it an attractive candidate if we want to identify organizational characteristics to be linked to network embeddedness. We propose that a number of dimensions of organizational culture identified in the literature may be hypothesized to promote or hinder the formation of strong network ties. The link between dimensions of organizational culture and network embeddedness leads to a number of theoretical propositions that can form the basis for testable hypotheses. In order to advance the usefulness of our work for empirical research, we will construct our model from concepts and constructs originating from empirical studies of networks and of organizational cultures.

In our analysis we focus on the organizational level, abstracting from effects on the network level and on the level of individuals within organizations. We do not deny that phenomena at these other levels of analysis do also influence network embeddedness, but we maintain that organizational level phenomena cannot be reduced to the individual or network level, and deserve to be investigated in their own right. Our

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theoretical framework linking organizational culture to network embeddedness aims to contribute to a fuller understanding of the factors influencing the embeddedness of individual organizations in networks.

CONSEQUENCES AND ANTECEDENTS OF NETWORK EMBEDDEDNESS

Mirroring the growing practical importance of interorganizational relationships, the management literature increasingly emphasizes strategic alliances and other interfirm relationships (Contractor and Lorange, 1988; Hagedoorn, 1993; Harrigan, 1988; Kogut, 1988; Osborn and Hagedoorn, 1997). In some parts of the literature the focus is on dyads of collaborating organizations, but in more and more contributions phenomena at the level of networks are studied (Gomes-Casseres 1996 ; Gulati, 1995 ; Uzzi, 1996). From this literature it is clear that the extent to and way in which an organization is embedded in a network has many consequences. For instance, firms are more likely to form new alliances with other firms with whom they have cooperated before, and the position of a firm in the network of previously formed alliances influences the likelihood that it will play an active role in acquisitions (Gulati, 1999 ; Vanhaverbeke, Duysters and Noorderhaven, 2002). Furthermore, the composition and structure of networks of alliance blocks influence the competitiveness of the incumbent firms (Nohria and Garcia-Pont, 1991 ; Vanhaverbeke and Noorderhaven, 2001 ; Uzzi, 1996). Hence theoretical reasoning, substantiated by empirical evidence, clearly points at the importance of network ties for the survival and growth of organizations.

At the same time, there has been limited attention to questions like how networks are formed and how they evolve over time. In this paper we look at a question that seems to us to be germane to all issues of network formation and structuration, viz., the question of what factors cause some organizations to assume more central positions in a network than others. If all organizations in a particular field come to be embedded to the same extent there would be no structural differentiation and network embeddedness would be inconsequential to the relative competitive positions of these organizations. As the available

evidence suggests that network embeddedness in fact does influence competitiveness, the issue of differences in network embeddedness needs to be addressed.

Network Embeddedness Defined

Before directing our attention to this question, we will provide a working definition of *network embeddedness*. The concept, as used in this paper, refers to the quality of relationships between organizations. Interorganizational relationships are said to be embedded if a social dimension exists that influences the economic behavior of the partners (Granovetter, 1985 ; Uzzi, 1996, 1997 Mohr and Spekman, 1994; Naudé and Buttle, 2000). As will be discussed below, compared to arm's length relationships embedded ties are characterized by stronger trust, rich information exchange, and joint problem-solving arrangements (Gulati and Gargiulo, 1999; Mohr and Spekman, 1994; Naudé and Buttle, 2000; Powell, 1990; Uzzi, 1996). Taking these three key characteristics of embedded ties, an organization can be said to be strongly embedded if it has recurring ties with suppliers, customers, and other organizations that are characterized by trust, open communication and joint problem solving. Conversely, an organization can be said to be weakly embedded if it has relatively few ties with these three characteristics. Network embeddedness has to be evaluated within a certain industry, and at a certain time and place, since there is no absolute yardstick of network embeddedness. An organization that would be seen as weakly embedded if compared with other firms in its industry, could seem strongly embedded if compared with firms in other industries, or firms in the same industry but at other times or geographical locations.

Uzzi (1996: 677) considers the level of embeddedness of a firm to vary from high to low, depending on the type of interfirm ties it maintains. We follow Uzzi's example in defining embeddedness at the level of the individual organization, but based on its relationships with a multitude of other organizations. Uzzi's (1996: 675) concept of 'structural embeddedness' refers to both the 'relational quality of interactor

exchanges and the architecture of network ties'. However, the second element of Uzzi's definition in our view can be better referred to as *network centrality*, i.e., the importance of a specific organization for the overall structure of a network (Freeman, 1979). A highly central organization is connected to more partners, which in turn also may have a relatively central position, than a less central organization. Notwithstanding the expected positive correlation between network centrality and network embeddedness (an organization that is capable to forge many strong relationships will often also assume a central position in the overall network) we think that there is a conceptual difference, and in principle an organization can be strongly embedded without acquiring a central position, as a firm can also build strong ties within a limited clique of peripheral orginizations (Vanhaverbeke and Noorderhaven, 2001). Hence we prefer to limit our concept of network embeddedness to only the relational quality aspect of Uzzi's structural embeddedness.

Where Does Network Embeddedness Come From ?

The network literature is largely focused on the consequences, rather than the antecedents of network embeddedness. Where the further development of the network is discussed, network researchers tend to point at existing network characteristics. For instance, Gulati (1999) explains the proclivity of firms to enter new alliances on the basis of their network positions. Uzzi (1996) points at third-party referral networks and previous personal relations as sources of embeddedness. In both cases, existing network characteristics (at the organizational or at the individual level) are posited as explanation of newly emerging network characteristics. These approaches, although illuminating path-dependencies in network development, fail to shed light on the factors causing the initial differentiation that drives further network evolvement. What makes one organization become initially more strongly embedded than another organization?

Scanning the network literature we found only a few studies that squarely focus on organizational characteristics inducive to network embeddedness. Studying interorganizational learning in three interfirm networks, Lorenzoni and Lipparini (1999) introduce the concept of the *relational capability* of a firm. This

concept contains three core elements: the ability to absorb competencies from others; the ability to combine and coordinate the technical dimensions of a large number of firms; and the ability to combine existing competencies or generate new knowledge (Lorenzoni and Lipparini 1999: 320). The most important antecedent of relational capability as distinguished in the case studies conducted by these authors is strategic intent: 'partnering at an early stage, with a vision into the future, appears to be an essential precondition for the rapid development of the relational capability necessary to efficiently steer the process of boundary redefinition' (Lorenzoni and Lipparini 1999: 335). This, however, leaves open the question whether strategic intent is not only a necessary, but also a sufficient condition for relational capability (and consequently network embeddedness) to start developing. Since Lorenzoni and Lipparini (1999) look at successful networks only, their study cannot illuminate this issue.

Sarkar, Echambadi and Harrison (2001) relate one aspect of entrepreneurship, proactiveness, to the proclivity of firms to engage in alliance activities. *Alliance proactiveness* is conceptualized as 'efforts to identify potentially valuable partnering opportunities, and to initiate preemptive actions in response to identified opportunities' (Sarkar, Echambadi and Harrison, 2001: 702). Studying a sample of 184 industrial firms, they find that alliance proactiveness leads to superior market performance, while the sheer number of alliances does not have a significant effect. However, the criticism leveled to Lorenzoni and Lipparini (1999) also applies to (Sarkar, Echambadi and Harrison, 2001). The question what enables some firms to behave in a more proactive manner than others is not answered, nor is the question whether alliance procativeness is a necessary *and* sufficient condition for successful network building.

Park and Luo (2001) study the use by Chinese firms of *guanxi*, webs of connections to secure favors in personal and organizational relations. They find that *guanxi* utilization is heterogenous across firms, and depends on institutional, strategic and organizational factors. Institutional factors are the ownership structure and location of the firm; the strategic orientation represents the innovativeness, adaptability, and proactiveness of the firm. Organizational factors are size, technological skills, management

skills, and the number of years the firm has been operating. All factors, except for length of operation, are significantly linked to the use of *guanxi* within the business community; institutional factors and strategic orientation are also significantly linked to the use of *guanxi* in dealing with government agencies. It is interesting to note that the organizational factor *size* is actually a proxy for organizational culture: 'as size increases, so do the bureacratic structures, making it difficult to have a personal, entrepreneurial style of management', and 'size affects organizational culture' (Park and Luo, 2001: 462-463). The same can be said of the length of operations: 'history shapes the organizational culture by affecting values and beliefs that have developed over time' Park and Luo, 2001: 464) Also the strategic orientation of the firm, measured as managerial perceptions of the decision behavior of the firm, are closely related to organizational culture.

The most promising contributions to the question of organizational factors related to network embeddedness are from the industrial marketing and purchasing literature. Takeishi (2001) adresses the question why some firms benefit more from outsourcing and collaborative supplier relations than others. Using data from buyer-supplier relations in the Japanese automobile industry, this author comes to the conclusion that, apart from the level of architectural knowledge of the automaker's engineers, an integrated problem-solving process of supplier and buyer and frequent face-to-face communication between the two firms has a positive effect on the outcomes of the collaboration. Interestingly, Takeishi (2001) also finds that integrated problem-solving by buyer and supplier firm is related to effective internal coordination inside the automaker's organization. This finding confirms earlier observations that units that deal with external organizations may face conflicts with other units in the organization (Adams 1980), and that in order to perform well in external cooperation, a firm has to be able to cooperate internally as well (Hillebrand 1996). Hence, Takeishi (2001) points at an organizational characteristic (internal coordination) as an important factor for success in interfirm collaboration. He also refers to the importance of organizational culture. An important mechanism for achieving cross-functional, intra-organizational and inter-organizational

coordination and problem-solving is the use of powerful project leaders. This worked at some automakers, but not at those with 'traditional values', where project leaders could not yield sufficient power (Takeishi 2001 : 418).

Brock Smith (1997) looks at *selling alliances*: collaborations in which complementary sales organizations join forces. Open communication, trust, and perceived interdependence are found to be important determinants of the effectiveness of selling alliances. The first two variables may be hypothesized to be strongly related to organizational-level phenomena, such as organizational culture. Factors like trust, cooperation, open communication, constructive conflict resolution, commitment and fairness were also emphasized in company interviews as important ingredients of a 'partnering culture' (Brock Smith, 1997: 155).

Organizational characteristics that lead to network embeddedness are the focus of Ritter's (1999) contribution. This author defines *network competence* as 'the degree of network management task execution and the degree of network management qualification possessed by the people handling a company's relationships'. Studying a sample of German companies operating in the mechanical and electrical engineering, measurement technology, and control engineering sectors, Ritter found that four organizational antecedents account for a company's network competence: the availability of (financial, physical, personnel and informational) resources, the network orientation of human resource management, the integration of intraorganizational communication, and the openness of the corporate culture. Three of the four antecedents of network competence distinguished by Ritter are related to organizational culture, broadly defined, and we will build on Ritter's work in developing our propositions regarding the relationship between organizational culture dimensions and network embeddedness.

Walter (1998) studies the role of *relationship promotors* in industrial buyer-seller relationships in Germany. A relationship promotor is an individual who is responsible for the promotion of the exchange process in a transaction relation (Walter, 1998: 101). Walter's study shows that in German industry

relationship promotors exist and that they do indeed help to increase the efficiency and effectiveness of buyer-seller relationships. The degree to which the relationship promotor can succesfully play his role depends on his hierarchical position, available resources, and internal communication network.

All in all the existing literature offers a number of important clues regarding factors that promote network embeddedness. Below we will make a case for concentrating one one particular kind of factors, viz., organizational culture. Recent research in the alliance tradition not only suggests that the success of interfirm collaborations may be a function of partner characteristics (Sarkar, Echambadi, Cavusgil and Aulakh, 2001; Hitt, Dacin, Levitas, Arregle, and Borza, 2000; Madhok, 1995, Saxton, 1997), it also points at "soft" factors such as trust, mutual commitment, and altruism as important for alliance success (Hoffmann and Schlosser, 2001; Heide and Miner, 1992). We contend that these soft factors can be linked to organizational culture.

The Importance of Organizational Culture

The literature discussed above offers us important indications regarding the role that organizational culture can play in explaining network embeddedness. Three key elements of successful interfirm relations that are mentioned in many contributions to the network literature (e.g., Gulati and Gargiulo, 1999 ; Powell, 1990 ; Uzzi, 1996), as well as to the marketing channel or relationship marketing literature (e.g., Mohr and Spekman, 1994; Naudé and Buttle, 2000; Wilson and Jantrania, 1996) are trust, open communication, and joint problem solving. Trust enables organizations to engage in uncertain exchanges of resources that are difficult to value and transfer over a market interface (Uzzi, 1996 : 678). Open communication helps align expectations, clarify roles, and avoid misunderstandings (Brock Smith, 1997 : 156). And joint problem solving allows organizations to respond to unforeseen circumstances without needing to renegotiate contracts, thus enabling them to concentrate more on adding, rather than redistributing value (Takeishi, 2001 : 416). Thus trust can be said to form the basis for effective interfirm relations, open communication

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helps to achieve smooth processes within the relationship, and joint problem solving allows the relationship to be adapted when necessary. Any theory of factors that influence network embeddedness should explain how these factors promote trust, open communication, and joint problem solving.

As stated earlier, we have chosen to focus on organizational culture as the principal explanatory factor. This choice evokes two questions : why focus on an organizational-level phenomenon, and why on organizational culture? While we chose to concentrate on organizational level factors to explain differences in network embeddedness, we do not deny that factors at other levels of analysis may also play a role. For instance, we may expect firms that conduct activities that are crucial to a particular production process to become more strongly embedded and to assume a more central position in networks than other firms. (Vanhaverbeke and Noorderhaven, 2001). Furthermore, firms may have scarce resources which make these firms so much sought-after that they become strongly embedded whether they dispose of networking capabilities or not. This is for instance the case with the national oil companies in many oil producing countries (van der Linde, 2000). A firm may also benefit from first-mover advantages, which bring it in a central position in the network developed subsequently. In this final case, however, the question would still have to be answered why this particular firm, and not another, was the first mover. The behavior of a first-mover can be characterized as 'alliance proactiveness' (Sarkar, Echambadi and Harrison, 2001), which in itself could be an aspect of organizational culture. Finally, a combination of chance events followed by path-dependency may cause certain firms to become more heavily embedded in a network than others. In this case there would be no organizational characteristics which can meaningfully be linked to network embeddedness. But in empirical research such cases would constitute the noise, rather than the signal to be interpreted.

In our view organizational-level phenomena in the final analysis cannot be completely reduced to either industry effects or incidents of history coupled to path-dependency. Organizations differ, and the question how these differences are related to outcomes (like network embeddedness) needs to be

addressed. Looking in the other direction, organizational-level phenomena can also not be completely reduced to the level of individual actors within the organization, as 'organization members interact not only as individuals, but also as actors performing organizational roles' (Lane and Lubatkin 1998, 465). In this vein Johnson and Sohi (2001) point to the necessity to examine organizational features that influence interfirm relationships. The development and management of an interfirm relationship depends not only on the situation within the interfirm relationship, but also to a great extent on firm-level characteristics or predispositions. Firm-level predispositions derive from phenomena at the collective level (Johnson and Sohi, 2001).

We argue that organizational culture is an important determinant at the collective level that can shape organizational predispositions. At the heart of the factors mentioned in the literature discussed above we find what can best be described as elements of organizational culture, conceptualized as organizational practices. As will be discussed in more detail below, this means that we propose a broad definition of organizational culture, encompassing not only values and beliefs shared by organization members, but also less value-laden perceptions of organizational processes typical of a given organization (Hofstede et al., 1990). Organizational culture (with little systematic evidence about the specific elements of culture being referred to) has been pointed to as a key reason for the successful outcomes of relationships (Ritter, 1999 ; Dyer, Kale, and Singh, 2001 ; Sarkar, Echambadi, Cavusgil, and Aulakh, 2001 ; Jemison and Sitkin, 1986 ; Hedlund, 1994 ; Teece, 1977), and of particular importance during the assessment of whether or not partnering companies will be able to work together effectively (Dyer, Kale and Singh, 2001).

Organizational culture has a number of qualities that make it an attractive candidate to focus on in an exploration of the link between organizational-level characteristics and network embeddedness. One is its relative constancy, organizational cultures change only very slowly. Hence, it does not only constitute a critical dimension of a firm's core capabilities, but is also a source of core rigidity (Leonard-Barton, 1992). If we want to explain a level of embeddedness grown over a number of years, this constancy is an important

feature. Secondly, organizational culture allows us to distinguish between organizations. Whereas organizational strategies and structures can be copied relatively easily, organizational culture captures the essence of what the organization is (Meek, 1988), and cannot be changed at will. Hence no two firms have identical cultures (Lane and Lubatkin, 1998), and there is sufficient variation in what we consider to be an important independent variable.

Research on organizational culture, on the other hand, has so far hardly made the link with external organizational phenomena such as interfirm co-operation (applications of network concepts in organizational culture research are also rare, for an example, see Kilduff and Corley, 1999). Whereas there are sufficient studies on the dimensions of organizational culture, there has been little effort to identify cultural dimensions that can be linked to the occurrence of specific organizational phenomena (an exception is Hofstede et al., 1990). Here we begin to address this gap by theorizing on the link between organizational culture and network embeddedness. First, in the next section, we will discuss dimensions of organizational culture identified in the empirical literature. Second, we link these organizational culture dimensions to what we have identified as key elements of network embeddedness, viz., trust relationships, open communication, and joint problem solving.

ORGANIZATIONAL CULTURE

The present state of the art in organizational culture research shows little convergence towards a commonly accepted conceptualization and operationalization. As a result, the research on organizational culture has been only limitedly cumulative. At present divergent approaches co-exist, with little cross-fertilization. A major contrast is that between studies that regard organizational culture to be a process phenomenon, and that tend to focus on the 'deep' levels of meanings, beliefs, and values, and studies that see organizational culture as a state, and focus on the more superficial levels of practices or patterns of behavior (Ashkanasy, Wilderom and Peterson, 2000; Schein, 2000). The first stream of literature is rooted in anthropology and

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ethnography, with Edgar Schein and Linda Smircich as important representatives. The preferred research methodologies are open interviews and (participatory) observations (see, e.g., Schein, 2000). The second stream of literature is rooted in organizational psychology and sociology, and emanates from the earlier organizational climate research (Ashkanasy et al., 2000). Important representatives are Geert Hofstede, Jennifer Chatman and Daniel Denison. Preferred research methods are written surveys and other highly structured data collection procedures like Q-sorts, often complemented by open interviews. In view of the purpose of this paper, an approach has to be chosen that allows for generalization over many different organizations. Consequently the second research stream is more applicable. Hence, the discussion of relevant literature will be restricted to this research tradition only.

Even within this more homogenous body of literature, there is limited convergence. Many studies are based on small samples, and only a few studies have employed rigorous testing and validation procedures. The most prominent examples are Cooke and Lafferty (1987), Hofstede et al. (1990), O'Reilly et al. (1991), and Christensen and Gordon (1999).

Cooke and others (see, e.g., Cooke and Rousseau, 1988; Cooke and Szumal, 2000) have developed and implemented the Organizational Culture Inventory. The items used in the instrument have not been publicly disclosed, but from what is published it is clear that the underlying model is rooted in American social theory from the fifties and the sixties of the previous century. Moreover, the measurement model is based on theoretical assumptions rather than on empirical data. This is problematic, as both theories, Maslow's hierarchy of needs (Maslow, 1954) and Blake and Mouton's managerial grid (Blake and Mouton, 1964) focus on individuals, and there is no a-priori reason to believe that they can also be applied at the level of organizations. In contrast, Hofstede et al. (1990) have published fairly detailed information about research method and questionnaire items, and their instrument has been reconstructed and tested on other data (e.g., Verbeke 2000). Likewise, the Organizational Culture Profile of O'Reilly et al. (1991) and the instrument developed by Christensen and Gordon (1999) have been disclosed, and their identification of

dimensions of organizational culture has been data-driven rather than guided by pre-conceived ideas. Therefore we will concentrate our discussion of organizational culture dimensions on the findings from Hofstede et al. (1990), O'Reilly et al. (1991) and Christensen and Gordon (1999).

Organizational Culture Surveys

In a Danish-Dutch study of twenty organizational units, Hofstede et al. (1990) surveyed values as well as organizational practices, but found the latter to differ significantly between organizational units, while values were more influenced by nationality. Organizational practices reflect the reality within an organization, "what is", rather than the "what should be" reflected in values. Six dimensions of organizational practices are empirically distinguished: process-oriented versus results-oriented, employee-oriented versus job-oriented, parochial versus professional, open system versus closed system, loose control versus tight control, and normative versus pragmatic. Hofstede et al. (1990) also found that four of the six dimensions were related to the type of market in which an organization operates, and the nature of the work it does.

Later studies, however, reported problems with the validation of Hofstede et al.'s instrument (Singh et al., 1996; Newman and Nollen, 1996), and even in Hofstede et al. (1990), the face validity of many items is questionable. Verbeke (2000) revised and validated the instrument of Hofstede et al. with a sample of Dutch firms, using a Dutch translation. Verbeke (2000) failed to identify the parochial versus professional dimension (called organizational-professional by him), and on the basis of focus interviews he added a seventh dimension: market versus internal orientation.

O'Reilly et al. (1991) developed the Organizational Culture Profile, which consists of seven factors: innovation, stability, respect for people, outcome orientation, attention to detail, team orientation, and aggressiveness. A problem with O'Reilly et al.'s (1991) analysis is that the factor analysis in which the dimensions were identified was done on the individual observations rather than on company averages.

Hence, it is impossible to tell whether the dimensions are only representative of individual respondents, or also of organizational cultures.

Chatman and Jehn (1994) tested the Organizational Culture Profile on data from 15 firms in four industries in the services sectors, and were able to replicate the seven dimensions, although there were considerable differences in the loadings of individual items. Again, the analysis was done on the level of individual observations, so drawing conclusions concerning dimensions of organizational cultures actually constitutes what Hofstede (2001: 16) calls a "reverse ecological fallacy". Chatman and Jehn also looked at industry membership as a determinant of organizational culture. They found that industry differences explain more variance than organization differences for six of the seven culture dimensions.

Christensen and Gordon (1999), like Hofstede et al. (1990), focus on organizational practices rather than values. They regard consistent and widespread practices to be reflections of organizational culture. Practices have as an advantage that they are more readily observable and measurable than values. Christensen and Gordon distinguished eight dimensions: aggressiveness/action orientation, innovation, confrontation, planning orientation, results orientation, people orientation, team orientation, and communication. Using crude distinctions between six industry groups, Christensen and Gorden (1999) found that seven of the eight dimensions of organizational practices showed significant differences between industries. In particular aggressiveness, innovation, and results orientation differed between industry groups. Christensen and Gordon's work has so far not been replicated.

Organizational Culture Dimensions

We will first briefly describe the dimensions distinguished by Hofstede et al. (1990), O'Reilly et al. (1991), and Christensen and Gordon (1999). After the discussion of the dimension sets from the various studies, the dimensions will be compared and checked for possible overlaps.

The first dimension identified by Hofstede et al. (1990) is *process-oriented versus results-oriented*. This dimension opposes a concern with means (process-oriented) to a concern with goals (results-oriented). In Verbeke's (2000) description, a process orientation reflects employees' strict and rigid adherence to their own responsibilities. The second dimension, *employee-oriented versus job-oriented*, opposes a concern for people to a concern for getting the job done. Employee-orientation reflects an organization's commitment to personal development and education, attention to personal events and accomplishments, as well as taking care of work pressure (Verbeke, 2000). *Parochial versus professional* opposes organizational units whose employees derive their identity largely from the organization (parochial) to units in which people identify with their type of job (professional). In Verbeke's (2000) rendering, the organizational (=parochial) pole implies hiring people living in the company's geographic area, an emphasis on long-term employment and a moderate specialization of employees. The *open system versus closed system* dimension describes the communication climate. More specifically, it refers to the way in which employees and management deal with (self) criticism (Verbeke, 2000). *Loose control versus tight control* refers to the degree of internal control, and is associated with strict (unwritten) codes in terms of dress and dignified behavior. The distinction between this dimension and process versus results-orientation, which is not very clear in Hofstede et al. (1990), is explicated by Verbeke (2000) as the distinction between the focus on work habits (like on-time arrival or ways of dressing) and the way employees within and across departments deal with business processes. The sixth dimension identified by Hofstede et al. (1990) is *normative versus pragmatic*. Pragmatic organizational units are market-driven; normative units perceive their tasks toward the outside world as the implementation of inviolable rules. Verbeke (2000) ties this dimension to the mission of the organization: socially-responsable (=normative) organizations carry an ethical mission and urge employees to behave according to that mission, other organizations are driven by self-interest (=pragmatic). Verbeke (2000) added a seventh dimension to the six identified by Hofstede et al.

(1990): *market versus internally oriented.* It captures the extent to which the organization as a whole interacts with the customers and monitors competition.

O'Reilly et al. (1991) give no descriptions of their dimensions, but the contents of the dimensions can be deduced from the items loading high on the factors. The first dimension is *innovation.* An organization scoring high on this dimension is seen by its members as being innovative, quick to take advantage of opportunities, risk taking, and displaying a willingness to experiment. Uncharacteristic of these organizations is being careful and being rule-orientated. The second dimension is *stability.* Characteristic of organization scoring high on this dimension is being rule oriented, emphasizing stability, predictability, and security of employment; employees are constrained by many rules. *Respect for people* refers to a respect for the individual's right, fairness, and tolerance. The *outcome orientation* dimension refers to achievement orientation, action orientation, high expectations for performance, and a results orientation within the organization. Organizations scoring high on *attention to detail* are precise, pay attention to detail, and are analytical. *Team orientation*: characteristic of the organization is a team orientation, working in collaboration with others, and a people orientation. The characteristics of organizations scoring high on the *aggressiveness*, dimension, finally, are aggressiveness and competitiveness. Uncharacteristic is being socially responsible.

The first dimension identified by Christensen and Gordon (1999) is *aggressiveness/action orientation*: an emphasis is placed on getting things done, being a pacesetter rather than a follower. *Innovation* indicates the extent to which individual managers are encouraged to take risks and innovate. The *confrontation* dimension involves addressing issues openly instead of burying them. Organizations scoring high on planning orientation emphasize managing in a planful manner and avoiding surprises. The *results orientation* denotes an emphasis on holding people accountable for clear and demanding end results, whereas a strong *people orientation* indicates that emphasis is placed on concern for and growth of current employees. The *team orientation* dimension refers to the extent that people are encouraged to

cooperate and coordinate within and across units. *Communication*, finally, involves an openness to communicate and allowing others to be knowledgeable, thus enhancing the possibility of participation.

Based on an inspection of the contents of the dimensions, these can be compared over studies. The organizational culture dimensions discussed are tabulated in Table 1. Dimensions that seem to overlap are put in the same row. A dimension can overlap with various other dimensions, and hence appear on several rows.

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Deciding which dimensions are more or less identical is a matter of judgment. For instance, rule orientation, which is negatively associated with O'Reilly et al.'s (1991) *innovation* dimension, is also part of Hofstede et al.'s (1990) *loose versus tight control*, but the latter is more specifically geared to formality and discipline at the work place. Likewise, O'Reilly et al.'s (1991) *respect for people* is not identical to Hofstede et al.'s (1990) *employee orientation*, as it is less specific, and may also apply to other people than the organization's employees. Christensen and Gordon (1999) identify their *communication* dimension with Hofstede et al.'s (1990) *open versus closed system*, but their *confrontation* dimension seems to be a better match. About fifteen dimensions appear to be sufficient to summarize the findings of the three studies. In the next section we will hypothesize relationships between dimensions of organizational culture and the tendency of an organization to become strongly embedded in network relations.

ORGANIZATIONAL CULTURE DIMENSION
AND NETWORK EMBEDDEDNESS

When considering the influence of organizational culture on network embeddedness two possibilities have to be taken into account. Firstly, cultural characteristics of an individual organization may make it more or

less likely for that organization to become strongly embedded. In this type of explanation we reason that particular organizational cultures are conducive to the formation of trust relations, open interorganizational communication, and joint problem solving, and hence to network embeddedness. This is the route we will follow below. But there is an alternative that also has to be discussed, viz., to focus on the 'fit' between the organizational cultures of two or more firms that have or aim to have a strong cooperative relationship.

There is little doubt that organizational culture fit is important for alliance success (Douma et al., 2000 ; Medcof, 1997). Cultural dissimilarity has been found to impede the development of trust in channel relationships (Anderson and Weitz, 1989), and conflicts result from not understanding each other's organizational cultures (Brock Smith, 1997). However, while not denying that cultural fit may also play a role, we will concentrate on organizational culture as a set of individual firm characteristics. Cultural fit may be more important in deciding with *whom* a firm partners, than in deciding the overall success of a firm's collaborative efforts, assuming that the focal firm does not have an organizational culture so different from most of the firms it wants to collaborate with that this gap impeeds succesful interaction. Hence we will focus our discussion on the question how aspects of the culture of a given organization may make that organization more or less likely to become strongly embedded in network relations.

When selecting culture dimensions to be discussed, it must be borne in mind that it is difficult, if not impossible, to completely specify organizational culture. It makes more sense to try to identify the dimensions that are relevant to the particular phenomenon that is studied in relation to organizational culture (Denison, 1996). In our case, the question must be asked which dimensions of organizational culture are assumed to be of most importance to the management of the external relations of the organization. We will discuss each of the fifteen dimensions of organizational culture identified above, to see if they can be linked to the development of trust, open communication, or joint problem solving. If so, we will formulate a proposition regarding the link between that dimension and network embeddedness.

Propositions

The first dimension, *outcome or results orientation*, is identified in all three studies. This dimension may be expected to be positively related to the quality of external relations, since it implies that the results to be achieved are more important than the internal processes and procedures of the organization, most explicitly so in Hofstede et al.'s (1990) scale. A results orientation means that the organization, if necessary, is open to other approaches, even if this means that the own organizational procedures may not be followed. This makes it more likely that the organization will engage in joint problem solving activities, if the need to do so arises in the context of one of its external relationships. An example of this concerns the implementation of new behaviours and practices as a result of the introduction or improvement of a Total Quality Management (TQM) system within organizations. Generally, companies implement TQM strategies to improve their effectiveness, that is, to increase quality and as a result, increase speed of delivery, reduce costs and defects. To achieve maximum effectiveness, TQM initiatives necessitate partnerships with suppliers and customers. Especially, cooperation with suppliers is characterized by joint-problem solving arrangements in the pursuit of quality (Detert, Schroeder, and Mauriel, 2000). Hence:

Proposition 1 :   Organizations with a culture characterized by a strong outcome or result orientation will display more network embeddedness.

 In Verbeke's version of the scale of Hofstede et al. the dimension is more specific, and pertains to the extent to which employees do or do not adhere rigidly to their own responsibilities, also if transgressing functional or departmental boundaries would be necessary to obtain a desired result. This more specific dimension closely resembles Christensen and Gordon's *team orientation* (discussed below).

The second dimension, *employee or people orientation*, is identified in two of the three studies. At face value, there may seem to be no reason to hypothesize a direct effect on network embeddedness.

However, an atmosphere within the organizations that fosters good interpersonal relationships will also help to attract and retain employees who are good at establishing and maintaining relationships with external constituencies (Walter, 1999). Conversely, an organizational culture de-emphasizing the importance of the employee and of personal relations (and emphasizing the task dimension, in the bipolar scale of Hofstede et al., 1990) may find it difficult to pay sufficient attention to the maintenance of relationships with representatives of customers, suppliers, and other business relations. A strong *employee/people orientation* may be expected to help the organization maintaining open communication with its network partners. A strong employee oriented organizational culture could be argued to be expressed in a human resource policy that is focused upon the broader needs of employees rather than upon task performance only. This focus, in turn, will promote an open, flexible and spontaneous atmosphere in which open communication is enabled. Employees will be encouraged not only to discuss problems and issues related to their specific task in the organization but will also be relaxed about expressing more personal and individual problems and desires. As argued below with regard to proposition 10, open internal communication and internal openness, in general, also help to develop open communication with external relationships. Hence, a positive relation between this dimension and the quality of external relations is expected:

Proposition 2 :   Organizations with a culture characterized by a strong employee or people orientation will display more network embeddedness.

The *parochial versus professional* dimension was identified only in Hofstede et al. (1990). Moreover, Verbeke (2000) in his replication failed to identify this dimension. As discussed above, this dimension opposes organizational units whose employees derive their identity largely from the organization itself (parochial) to units in which people identify with their type of job (professional). Theoretically, this dimension can be relevant for network building. A professional attitude can help employees to communicate

smoothly across organizational boundaries. This means that an organization with a professional culture will be more capable of maintaining open and effective communication with external contacts. Conversely, a parochial culture is likely to mean that employees are more inward-looking, and may have more difficulties in cooperating with outsiders. The support of this argument can be found in the existence of 'dysfunctional role conflict' (Walter, 1999: 542). On the one hand, the 'relationship promotors' have to negotiate favorable conditions with customers and suppliers, while on the other, they depend on the development of a minimum of trust with the negotiation partner. From these diverging requirements, Walter (1999) argues, distrust within the organization towards the relationship promotors can easily emerge. In this case, the boundary spanning activities of the relationship promotors will be strongly impaired or even completely blocked. We expect a parochial culture to be more open to developing distrust in response to this type of trust-based relationships and, thus, to hamper the relationship, than a professional culture. A professional culture would be more understanding of the necessity to develop this type of relationships.

Moreover, Walter also argues that the best relationship promotors will hardly be able to utilize the potentials of a customers and suppliers relationship if they have to get by without the support of their own organization. To develop and realize ideas, concepts, and projects with customers and/or suppliers, relationship promotors need backup from the sales, manufacturing, and/or R&D departments (Ibid.). Departments and divisions with a parochial orientation will be unable to provide this support, especially so because it could be expected that they will be more open to developing distrust and pay less attention to the professionalism that is expected from them. Hence:

Proposition 3 :   Organizations with a culture characterized by a professional orientation will display more network embeddedness.

The fourth dimension encompasses Hofstede et al.'s (1990) *open versus closed system* and Christensen and Gordon's (1999) *confrontation*. In both cases the connotation of the dimension is the willingness and ability to engage in open and, if necessary, critical communication. For Hofstede et al.'s dimension this is particularly so in Verbeke's (2000) rendering of the dimension. We emphasize the aspect of openness to criticism, in order to distinguish this dimension from the more general communication dimension identified by Christensen and Gordon (1999), discussed below. The *open versus closed system/confrontation* dimension may be assumed to be positively related to the ability to build and maintain high-quality external relations, as a climate of open critical communication enables the organization to learn from mistakes without having to resort to self-defensive tactics. In this respect, 'self-reflectiveness' has been identified as an essential social competence that organizations need to have for the successful management of business relationships. 'Self-reflectiveness' - which could be seen as related to the ability to deal with (self)criticism - is essential to motivate relevant actors to cooperate with an organization, to resolve conflict situations, and to be able to carry responsibility (Walter, 1999).

Proposition 4 :   *Organizations with a culture characterized by an open system/confrontation orientation will display more network embeddedness.*

The fifth dimension, Hofstede et al.'s (1990) *loose versus tight control,* is not replicated in the other two studies. In particular in Verbeke's (2000) version, this dimension focuses rather narrowly on discipline and control with regard to working hours and expenses. This does not seem to be very relevant to the quality of external relations. A related dimension, O'Reilly's *stability,* captures the more general orientation within the organization regarding control. This dimension will be discussed below.

The sixth dimension, Hofstede et al.'s (1990) *normative versus pragmatic* (Verbeke, 2000: *social responsibility versus self-interest*) was also not replicated in the other two studies. Whereas Hofstede et

al.'s scale seem to overlap with the first dimension (e.g., the item "results are more important than procedures"), in Verbeke's version the dimension more clearly focuses on the question whether management and employees see themselves as pursuing an ethical and socially responsible mission. A number of theories of the firm, including resource-based, resource dependence, transaction costs, agency, and game theories, recognize the importance of reputation for organizations (Saxton, 1997: 444-445). Reputation can reflect an alliance partner's characteristics in the areas of management, quality, financial position, but can also, however, reflect the way in which a firm relates to its partner firms or the way in which it manages its external relations. Reputation has been found to be an important factor in alliance success (Granovetter, 1985 ; Hill, 1990). The alliance literature suggests that a positive reputation signals that a partner is trustworthy and decreases the perceived likelihood that the partner will defect (Saxton, 1997: 444-445). Trustworthiness, on the other hand, has been seen as a useful kind of social capital that increases 'the capacity to form new associations' (Fukuyama, 1995, p.27). For instance, insurance brokers typically view membership, or non-membership, in a particular industry association as a valid indicator of a broker's trustworthiness and business conduct. This, in turn, influences their willingness to establish ties with particular brokers and the conditions that they apply when conducting business with them (Sydow, van Well, and Windeler, 1997). It follows from this that reputation can be said to reflect ethical or socially responsible behaviour, which can be linked to this organizational culture dimension. It can be argued that it will be easier for firms with a positive reputation or that demonstrate socially responsible behaviour to build and maintain relationships based on trust. Accordingly:

Proposition 5 :   *Organizations with a culture characterized by a normative/social responsibility orientation will display more network embeddedness.*

Verbeke (2000) added a seventh dimension, *market versus internal orientation*, to those of Hofstede et al. (1990), in response to suggestions from focus groups consisting of sales and service representatives. An external orientation, meaning that the organization actively engages in interactions with customers, suppliers and competitors to stay up-to-date, may be very important. This dimension is related to one aspect of Christensen and Gordon's (1999) *aggressiveness/action orientation* (viz., "responsiveness to changes in business environment"). Research by Kale, Dyer, and Singh on over 200 organizations reveals that 'companies that make proactive investments in establishing a formal structure and systems to manage their alliance activity are better positioned to enjoy greater alliance success and value creation with their alliance portfolio' (2001: 464). To be interested in making such proactive investments companies must have an interest in what happens in the external environment. Or, in other words, 'external orientation is a driving force to analyze a company's environment' (Ritter, 1999 :472). Moreover, external or market orientedness has been empirically proven to be vital for the development of network competence (Ritter, 478). However, the problem is that it will be difficult to distinguish empirically between an organizational culture orientation towards the environment (the hypothesized cause) and proactive behavior vis-a-vis the environment (the hypothesized effect). For this reason, we prefer to abstain from formulating a proposition regarding this aspect of organizational culture.

Dimension number eight is *innovation*. This dimension reflects the attitude of the organizational culture towards innovation and risk-taking. The question may be asked how well employees can evaluate their own organizations on this issue. Measurements may be subject to a strong social desirability bias, given the positive connotations of innovativeness. In general, however, the dimension seems to be relevant, the more so since one of the potential benefits of embedded relations is joint innovation (Gemünden, Ritter, and Heydebreck, 1996). Innovation-oriented companies have a high R&D-intensity and are eager to increase their internal technological know-how through cooperation with external innovation partners (Walter, 1999; Gemünden, Heydebreck and Rainer, 1992; Gemünden, Ritter, and Heydebreck, 1996). The

organizational structure and culture of these companies are argued to be marked by a high flexibility and to encourage risk-taking behavior. Innovation orientation is the notion of openness to new ideas, products, processes or services (Walter, 1999 : 542). Moreover, it has been found that employees in innovation-oriented companies are faced with conditions that enable and motivate them to perform boundary spanning activities and to develop relational power sources (Ibid.). These characteristics of an innovative organizational culture may be expected to be conducive to joint problem solving. The innovative organization is not only strongly motivated to cooperate with knowledgeable partners, it also has the flexibility and risk-taking behavior that help solve unexpected problems in a cooperative manner. A positive relationship between the *innovation* dimension of organizational culture and network embeddedness may be hypothesized. However, in measuring this dimension items that may be expected to lead to a strongly social desirability bias should be avoided.

Proposition 6 :   *Organizations with a culture characterized by an orientation towards innovation will display more network embeddedness.*

Dimension number nine, *stability*, was identified only in O'Reilly et al.'s (1991) study. In a sense, this dimension can be seen as the opposite of *innovation*, as it reflects predictability and being rule-oriented. It can also be seen as the opposite of a *loose control* orientation (Hofstede et al., 1990). However, the dimension can also be seen as independent. Good external relations will normally entail some relinquishing of control, something which may be difficult for an organization very strongly geared to tight control, stability and predictability. In particular building up trust is possible only if the representatives of the organizations involved are able and willing to relinquish some control (Saxton, 1997; Butler, 1991; Mohr and Spekman, 1994). Hence, a strong *stability* orientation stands in the way of forming trust-based relations, and a negative effect on the ability to form and maintain cooperative external relations is predicted.

Proposition 7 : *Organizations with a culture characterized by a stability orientation will display less network embeddedness.*

Dimensions ten and eleven, *respect for people* and *attention to detail*, were identified only in O'Reilly et al. (1991) For both dimensions no direct and independent effect on the quality of external relations seems plausible, and they will be left out of consideration in this paper.

Dimension number twelve, *team orientation*, reflects the extent to which employees are encouraged to cooperate across intra-organizational boundaries. This dimension can be expected to be positively related to the quality of external relations, as the management of these relationships often calls for coordination across functions. Team orientation involves the development of trust, co-operation and involvement. The benefits for organizations from intra-and inter-organizational co-operation have been widely documented (see Smith et al., 1995). Alliance research has found that the degree to which partners trust each other and are commited to a relationship is a result of their investment and involvement in that relationship (Parkhe, 1993). This paper hypothezises that a team-oriented organizational culture within firms, which stimulates the generation of a behavior or attitude of trust and involvement, helps to develop the same attitude in external relationships and could, therefore, be argued to be positively related to the ability to enter and maintain successful interfirm relations. This dimension of organizational culture may contribute equally to the formation of trust, open communication, and joint problem solving, and hence is expected to be a key dimension in explaining network embeddedness.

Proposition 8 : *Organizations with a culture characterized by a team orientation will display more network embeddedness.*

Both O'Reilly et al. (1991) and Christensen and Gordon (1999) identified dimension thirteen, *aggressiveness/action orientation*. However, there are important differences between the two versions of this dimension. Christensen and Gordon's dimension reflects responsiveness to changes in the environment, and the timeliness and innovativeness of decision-making. In the case of O'Reilly et al., the dimension reflects an aggressive, competitive, and not socially-responsible atmosphere. This second set of aspects was discussed above in the context of the *normative/social responsibility orientation* dimension (proposition 5). Here we concentrate on *aggressiveness/action orientation* in the sense of Christensen and Gordon (1999).

Recent research suggests that firms see their interfirm relations as assets to be strategically leveraged (Johnson, 1999 ; Jap, 1999). The strategically aggressive firm is argued to search out and muster all possible resources that can be used in achieving strategic objectives and sustainable competitive advantage (Johson and Sohi, 2001). Thus, the argument goes, firms with strategic aggressiveness are more likely to be enlightened with regard to the potential role of interfirm relations as a resource to be developed and used in achieving their objectives (Dyer and Singh, 1998). Moreover, the strategically aggressive firm is argued to show greater levels of connectedness in the interface with its interfirm partners to develop inimitability in its interfirm relations. Arm's-length relationships may be efficient and effective in some respects. But they do not offer the same potential for sustainable competitive advantage that close partner-style interfirm relation do, as they can be more readily duplicated and thus lose their ability to generate competitive advantage (Dyer and Singh, 1998 ; Jap, 1999 ; and Johnson and Sohi, 2001). To create and preserve the inimitability in interfirm relations that make them valuable competitively, firms will work to develop and cultivate interfirm relations (Johnson and Sohi, 2001). This type of firm behavior is akin to what Sarkar, Echambadi and Harrison call 'alliance proactiveness', and what these authors found to be related to firm performance.

However, aggressiveness/action orientation may not be sufficient for network embeddedness to arise. Proactively forming new alliances is one thing, but for the successful maintenance of the relationships other orientations may also be necessary. It is not clear in what way aggressiveness/action orientation could contribute to the formation of trust, open communication, and joint problem-solving. If an organization is not capable of building these essential elements of embedded relationships, the risk is that many newly formed relationships quickly dissolve, bringing limited benefit to the organization and overall resulting in weak network embeddedness. For strong network embeddedness to arise, we would expect an organizational culture to be conducive also to trust, communication and joint problem solving. Given the crucial importance of all three aspects, we would expect aggressiveness/action orientation only to lead to strong network embeddedness if cultural orientations promoting each of these three aspects are also present in the organizational culture. Hence, we posit the following:

Proposition 9:   *Organizations with a culture characterized by aggressiveness/action orientation will display more network embeddedness, if their culture is also characterized by orientations conducive to trust formation, open communication, and joint problem solving.*

The fourteenth dimension, *planning orientation*, partly corresponds to the *stability* dimension (avoidance of surprises), but mostly reflects the formality of planning procedures. As no effect on the quality of external relations can a-priori be hypothesized, the dimension will be left out of further consideration.

Finally, dimension number fifteen is *communication*. This dimension shows conceptual overlap with dimension four, *open versus closed system/confrontation* (see above). In both cases communicative capabilities play a role, but in the case of open versus closed system/confrontation the emphasis is on the ability to deal with (self)criticism. The communication dimension can be more broadly defined as openness to communicate and allowing others to be knowledgeable, thus enhancing the possibility of participation

(Christensen and Gordon, 1999). It has been argued that collaborative communication serves as a pseudo-integrating device since it helps align partners' interests and values (Mohr, Fisher, and Nevin, 1996). Communication is also argued to be vital to successful collaboration as it acts as a bonding mechanism between partners (Mohr and Nevin, 1990). Open communication facilitates the realisation of mutual benefits by allowing exchange of necessary information and by reducing misunderstandings and uncertainty (Sarkar et al. 2001). Openness of corporate culture is said to account for the development and establishment of network competence within the networking company (Ritter, 1999). Openness of corporate culture is expressed in, as well as stimulated by, open internal communication. It could therefore be argued that the promotion of internal openness and communication would also help to develop open communication with external relations. Indeed, Ritter argues that people dealing with relationships need to have specific 'social qualifications of which communication abilities is one' (1999 : 469). These social abilities are claimed to be of special interest because individuals are interacting with one another within a relationship. Furthermore, 'By increasing the interdepartmental communication, network competence can be improved (Ritter, 477).' While a communication-oriented organizational culture is also likely to contribute to the formation of trust and engagement in joint problem solving activities, this cultural orientation may of course be expected to be particularly inducive to open communication within embedded relations.

Proposition 10:   Organizations with a culture characterized by a communication orientation will display more network embeddedness.

DISCUSSION, IMPLICATIONS AND FUTURE DIRECTIONS

We have asserted that more attention needs to be paid to the question why some firms are more strongly embedded in networks than others. While not denying influences at the levels of industries and individual employees and managers, as well as first-mover advantages or the possibility of chance events coupled to

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path dependency, we point at organizational level phenomena as a potentially important category of explanatory factors. Within this category, organizational culture, broadly defined, is an attractive candidate for the independent variable, because organizational culture is a relatively constant characteristic, difficult to change at will, and differs from organization to organization. The limited existing evidence of organizational characteristics related to network embeddedness also point in the direction of organizational culture as an important factor. We have selected ten dimensions of organizational culture identified in previous empirical research that are likely to influence network embeddedness.

Contributions

We contribute to the literature by focusing on a question that has not received much attention in past research: where do differences in network embeddedness come from? While considerable efforts have been put in studying effects of network embeddedness, factors influencing the genesis of networks have been left too much in the dark. We have focused on a constitutive question of the more general issue of network genesis, viz., the origin of network embeddedness differentiation. Our reading of the network literature yielded three key characteristics of embedded relationships: trust-based relations, open communications, and joint problem solving.

On the basis of the sparse empirical studies of factors leading to network embeddedness, mostly from the industrial marketing and purchasing literature, we have identified organizational culture as a potentially important organizational-level factor. Building on empirical organizational culture studies we have selected ten dimensions of organizational culture that for theoretical and/or empirical reasons could be linked to network embeddedness. Of these dimensions, two are expected to promote the development of trust relations between a focal firm and its network partners: a normative/social responsibility orientation, and a team orientation, while a third dimension, a stability orientation, is hypothesized to be detrimental to building trust. Five dimensions of organizational culture are expected to be conducive to open

communication within network relations: an employee/people orientation, a professional orientation, an open system/confrontation orientation, a team orientation, and a communication orientation. Three dimensions are hypothesized to be positively related to joint problem solving in network relations: an outcome/results orientation, an orientation towards innovation, and a team orientation. Finally, one dimension, aggressiveness/action orientation, was reasoned not to be conducive to trust, communication, or joint problem solving, but to the initiation of new network relations. This dimension was hypothesized to be positively related to network embeddednes only if the focal organization's organizational culture also displayed characteristics leading to the formation of trust relations, open communication, and joint problem solving. One dimension, team orientation, is expected to be positively related to all three aspects of embeddedness, trust, communication and joint problem solving. Hence team orientation can be assumed to be a key organizational culture characteristic for network embeddedness to arise.

Although it is impossible to know to what extent the dimensions of organizational culture selected exhaust the universe of relevant aspects of organizational culture (let alone organizational factors more in general), we believe that together they provide a reasonable starting point for an empirical exploration of the link between organizational culture and network embeddedness. Moreover, since both the ten organizational culture dimensions as the three aspects of network embeddedness on which our propositions are based are taken from empirical studies, translation of our propositions into testable hypothesis is straightforward. Below we will discuss suggestions for future (empirical) research, after having considered the limitations of our study.

Limitations

A first limitation is that our analysis was restricted in the sense that we have chosen to focus only on organizational-level factors, and at that level only on organizational culture. Taking that choice as given, there are still a number of other limitations that merit attention. One limitation pertains to the selection of

dimensions of organizational culture. As stated in our discussion of the organizational culture literature, research in this field is only limitedly cumulative and convergent. The major division is between forms of scholarship that advocate working from direct experience with an organization and forms of scholarship building on research tools like questionnaires (Ashkanasy, Wilderom and Peterson, 2000). We have taken our dimensions from studies representative of the second school of thought, with the unavoidable consequence that their validity will be doubted by proponents of the first approach (cf. Schein, 2000). Moreover, we have combined the findings from three key studies, and compared the dimensions of organizational culture identified in these studies. However, there is no way of telling whether we are right when we consider certain dimensions identified in different studies identical or overlapping. It is also impossible to tell whether all relevant aspects of organizational culture have been identified, the more so since none of the studies had the purpose of linking organizational culture to the management of external relations.

Furthermore, in our propositions we have focused on direct links between dimensions of organizational culture and key elements of embedded ties (with the exception of one dimension, for which we proposed an interaction effect on network embeddedness with other culture dimensions). In doing this there is a risk that we have oversimplified things, and that network embeddedness is not some much influenced directly by organizational culture, but by organizational culture in combination with other factors. Another simplification is that we have assumed that the organizational culture dimensions discussed are orthogonal, or at least, that it makes sense to formulate seperate propositions for each of the dimensions. Even though the dimensions were identified as independent in the empirical studies from which they originate, interrelations are likely. Hence, it would perhaps be better to speak of different organizational culture profiles (Ashkanasy, Broadfoot and Falkus, 2000), some of which would be more conducive than others to the formation of embedded ties. However, at this phase of the research it seems most productive to start with less complex questions, with allowing for more complexity when necessary. It is also much

more easy to operationalize and measure dimensions of organizational culture than organizational culture profiles, and one of the aims of this study was to provide a basis for empirical work.

With regard to network embeddedness, we have made the simplifying assumption that this phenomenon can be reduced to three essential characteristics, trust-based relations, open communication, and joint problem solving. Although the selection of these characteristics was based on a good deal of empirical literature, it is not possible to tell whether these three aspects are strictly necessary and sufficient for embedded ties to exist. Furthermore, we have not specified whether all three ingredients need to be present to the same degree. This complicates the analysis, because it is possible that an organizational culture dimension that is expected to positively influence, say, trust, will be associated with stronger network embeddedness only if cultural characteristics promoting open communication and joint problem solving are also present. In this regard, too, we propagate a simplifying approach to start with, while holding open the possibility of progressively complicating the model when research findings induce us to do so.

Suggestions for Future Research

We see a strong need for empirical research on the link between organizational culture and network embeddedness. Organizational culture research has had a tendency to remain focused on the identification of culture dimensions, without always explicitly linking these dimensions to other intra-organizational or to interorganizational phenomena. Network research has had a tendency to concentrate on effects of (differences in) network embeddedness, often without asking the question where embeddedness or differences in embeddedness come from. We think that substantial insights can be generated when both approaches are combined in empirical research.

One of our aims was to formulate theoretical propositions that are immediately useful for empirical research because the main concepts are taken from previous empirical studies. As far as organizational culture is concerned, scales for measuring the dimensions used can be taken from the original sources

(Christensen and Gordon, 1999; Hofstede et al., 1990; O'Reilly et al., 1991; Verbeke, 2000). Where dimensions from different studies are combined, a choice of items can be made, or the scales can be combined with some redundancy. The dependent variable, network embeddedness, can be constructed from its three constitutive elements, trust-based relations, open communication, and joint problem solving. As indicated earlier, the three variables are operationalized in an appropriate way in existing empirical studies.

When testing for the effect of organizational culture dimensions on network embeddedness a number of issues have to be kept in mind. First of all, other factors than organizational culture influencing network embeddedness have to be controlled for as much as plossible. Size of the organization is an obvious candidate, as are industry-specific effects. Secondly, while members of the focal organization are in the best position to answer questions concerning its organizational culture, this is not necessarily the case when it comes to the organization's external relations. It is preferable to ask the *other* partner questions concerning characteristics of the relationship. In this way a self-serving bias is prevented, as well as contamination of organizational culture issues and evaluation of external relations. Thirdly, it may be advisable to also measure the organizational culture of the focal firm's partners. Although we have emphasized the effect of characteristics of the focal organization's culture, issues of cultural fit may stymie identification of these effects. A combined study of the effect of culture dimensions and of culture fit may be able to pry out the working of both possible interrelated mechanisms.

Finally, we have in this paper kept a neutral position regarding the question whether network embeddedness is a good or a bad thing for an organization. In most of the literature the beneficial aspects of network embeddedness are emphasized, although too much embeddedness may have the negative effect of insulating firms from the environment beyond the network (Uzzi, 1997). If future studies want to address the issue of organizational effectiveness in combination with network embeddedness and organizational culture, a choice has to be made concerning the operationalization of organizational

outcomes. Relationship effectiveness can be viewed in terms of objective financial or economic data, such as contributions or increases in revenues (Johnson and Sohi, 2001 : 305). However, researchers have prefered to examine interfirm relationship effectiveness in terms of factors involving psychological states and behaviors in the relationship that are expected to generate benefits, and ultimately financial rewards (e.g. Anderson and Weitz, 1992 ; Morgan and Hunt, 1994).

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Table 1: Dimensions of Organizational Culture

	Hofstede et al./Verbeke	O'Reilly et al.	Christensen & Gordon
1	Process vs. results orientation	Outcome orientation	Results orientation
2	Employee vs. job orientation		People orientation
3	Parochial vs. professional orientation		
4	Open vs. closed system orientation		Confrontation orientation
5	Loose vs. tight control orientation		
6	Normative vs. pragmatic orientation		
7	Market vs. internal orientation		
8		Innovation orientation	Innovation orientation
9		Stability orientation	
10		Respect for people orientation	
11		Attention to detail orientation	
12		Team orientation	Team orientation
13		Aggressiveness orientation	Aggressiveness/Action orientation
14			Planning orientation
15			Communication orientation