
A Review of Interfirm Networks: A Deeper Understanding of the Relationships Paradigm

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Abstract

Interfirm relationships or networks take a variety of forms and can potentially provide significant synergy for the participants. Yet, most of research studies, to date, have primarily analyzed interfirm networks based upon one paradigm/perspective. This review aims to examine a complete theoretical basis of network research and looks for research gaps and practical implications for both researchers and practitioners. Specifically, it summarizes six conceptual perspectives regarding interfirm networks: motivational, relational, structural, evolutionary, interactional, and governance, in order to address similarities and differences among different perspectives. With this purpose in mind, the relevant literature is reviewed and, at the conclusion of each conceptual perspective, areas of research that require more development and investigation are identified. Finally, suggestions for managers contemplating or engaged in interfirm networks are presented.

Introduction

The network paradigm originally built upon the notion that economic actions are embedded in a social network of relationships. In essence, organizations can be interconnected with other organizations through a wide array of social networks in order to improve effectiveness and efficiency. For instance, through examining a variety of forms of collaboration, ranging from consortia to joint venture, to franchising, to dealership, Fabrizio (2011) found collaboration among firms of different sizes helps to overcome weaknesses without increasing transitional costs. Other scholars found that firms organized in networks have higher survival chances and that prestigious partners help firms to go to IPO faster (Gulati, Dialdin & Wang, 2002). In addition, networks may also enable firms to gain access to capital in order to sustain operations and investment, while lower the transitional costs (Khanna & Rivkin, 2001). For instance, research findings show that network members in China reported higher financial performance and productivity (Keister, 1998). Further, networks may reduce consumer uncertainty attitudes towards the brand. For instance,

Ingram and Baum's (1997) study of chain affiliation of Manhattan hotels suggests that a hotel that joins a high status hotel chain signals its high status. Recent literature on networks attempted to examine the knowledge transfer among connected firms. For instance, the vertical networks between Toyota and its suppliers and among suppliers themselves facilitate knowledge learning and provide members learning and productivity advantages over non-members (Dyer & Nobeoka, 2000).

Traditional economic literature identified that a firm has at least three alternatives in order to maintain its strategies, such as searching for suppliers and new markets (Mariti & Smiley, 1983): the firms have options to develop a cooperative agreement with other firms, firms may make resources available to individual market transactions, and firms may organize themselves internationally. The last two alternatives can be illustrated by the technological approach based upon economies and diseconomies of scale and Adam Smith's principle of division of labor---refined and elaborated by Stigler (1951), Coase (1937), and Williamson (1975). However, recent empirical evidence shows that the maxim of "networks matter" may contradict the traditional economics of scope/scale and successful exploitation of personal or organizational relationships is essential for firms to gain and maintain competitive advantages (Khoja, 2010). As such, practitioners should be vigilant to develop relationships in networks.

By definition, a network describes a collection of actors (e.g., persons, divisions, firms, countries) and their connections (Iacobucci, 1996; Thorelli, 1986). Brass, Galaskiewicz, Greve, and Tsai (2004) define a network as "a set of nodes and the set of ties representing some relationships, or lack of relationships, between the nodes" (p. 481). The ties that connect actors take many different forms. They can be directed (i.e., potentially unidirectional as in giving advice to someone) or undirected (e.g., being physically proximate), and they can be dichotomous (e.g., present or absent) or valued (e.g., the strength of a friendship) (Borgatti & Foster, 2003). An organizational network is defined as a collection of more than two firms that pursue repeated exchange relationships with one another but lack a legitimate organizational authority to manage the exchange process (Podolny & Page, 1998). This definition encompasses a wide range of interfirm relations, including alliances, joint ventures, business groups, franchises, and research consortia, while excluding such market arrangements as short term contracts or spot-market transactions. Sydow and Windeler (1998) investigate the properties of interfirm networks, which they consider "as an institutional arrangement among distinct but related for-profit organizations which are characterized by a special kind of network relationship, a certain degree of flexibility, and a logic of exchange that operates differently from

that of markets and hierarchies” (p. 266). In essence, interfirm networks differ from any interorganizational arrangement of firms at least with respect to the three properties above.

Traditionally, networks have been investigated in connection with other topics, such as sociology. For instance, various sociologists have investigated such topics as embeddedness (Uzzi, 1997), social capital (Portes, 1998), social exchange (Cook, 1977), and structuration theory (Giddens, 1984) in an organizational network context. Increasingly, they have become interesting topics unto themselves in organizational research. Organizational scholars found that economic actions are embedded in social relations and interfirm relations generate and are generated by embedded relations that differ from traditional arm’s-length market ties. In marketing and management, over the last three decades, this recognition is reflected in the increase in, and the character of, research on distribution channels, supply chain management, buyer-seller relationships, buying centers, diffusion of innovations, and new product alliances.

As a result, recent expansion of research interest in management and marketing calls for a review and classification of work in interfirm networks. As such, the primary objective of this paper is to review, synthesize, and integrate empirical and conceptual articles on interfirm networks in management and marketing literature and to offer suggestions and direction for researchers and practitioners in this area. We examine the articles in six groupings, based upon what we interpret as one of six primary conceptual perspectives that they reflect: motivation, relational, structural, evolutionalist, interactionalist, and governance.

The following discussion begins with examinations of interfirm network research that reflects each of the previously noted six conceptual perspectives. For each perspective, the literature is reviewed and the research gap in each perspective is identified at the end of each section.¹

The Motivation Perspective and Research Gaps

The motivation perspective is concerned with why firms behave in certain ways with respect to the networks. It focuses on two basic questions: why do firms enter into network entities such as alliances, joint ventures and other business groups such as buying groups and trade associations; and why do they make certain strategic choices about relations and interactions with other network members? In general, this body of work is based upon cost factors (transaction costs), internal factors (firm’s capabilities, resources-based view), and external influences (social

capital, institutional-based view) (e.g., Eisenhardt & Schoonhoven, 1996; Williamson, 1985).

Traditionally, the approach that has been used to understand how strategic alliances form is transaction cost economics (Williamson, 1985). Transaction cost economics emphasizes transaction cost efficiency as a motivation for the corporation to enter into a network (Eisenhardt & Schoonhoven, 1996). It has been effective in predicting vertical integration among suppliers and buyers in mature industries, such as automobile manufacturing (e.g., Osborn & Baughn, 1990). However, the logic of transaction costs does not capture many strategic aspects of networks, such as learning, creation of legitimacy, and fast market entry (Eisenhardt & Schoonhoven, 1996). In order to address the firm's capabilities in forming strategic alliances, Eisenhardt and Schoonhoven began to examine strategic needs as motivation for firms forming alliances and positioning themselves in a network. Such work begins to move beyond transaction costs and looks at logical resource needs and social resource opportunities.

In comparison, the resource-based view of motivation in interfirm networks emphasizes strategic factors and characteristics of the firm rather than transaction costs. Furthermore, this view focuses on the logic of needs rather than efficiency. Many studies on firms' motivations for entering into alliances take a resource-based view. Das and Teng (2000) attempt to relate different resource characteristics (i.e., property-based and knowledge-based resources) to alliance formation and structure. Lee, Lee, and Pennings (2001) further examine the influence of internal capabilities and external networks. Lavie (2006) borrows the notion of network resources (Gulati, 1999) to extend the resource-based view by incorporating network resources of interconnected firms. Lavie (2006) proposes a model that distinguishes shared resources from non-shared resources and reveals how interconnected firms can extract value from resources that are not fully-owned or controlled by the organization.

Another stream of research on firms' motivations employs social capital theory. Scholars who have contributed to social capital theory include Bourdieu (1983, 1986), Burt (1997), Coleman (1988), Lin (1999), Portes (1998), and Putnam (2000). Specifically, social capital theory explains how organizations access and use resources embedded in a social network to gain returns (e.g., seeking economic help). Based upon this theory, organizations are motivated to engage in interaction and networking in order to enhance outcomes (Lin, 1999). Organizational scholars have utilized social capital theory for decades. For instance, Koka and Prescott (2002) suggest that social capital could yield informational benefits for the firm. Lee et al. (2001) argue that the firms' capabilities and social capital interactively influ-

ence start-up firms' performance in terms of sales growth but that social capital alone has weak main effects on firm performance. In recent years, due to the rising global marketplace, scholars have begun to apply social capital theory to cross-cultural research. For instance, Gu, Huang, and Tse (2008) draw upon social capital theory to examine how firms make strategic choices through guanxi networks in China.

Additionally, a series of studies grounded in the institutional-based view can be used to explain the firm's motivation to make strategic choices as well. Institutional theories (DiMaggio & Powell, 1983; Scott, 1987) believe that organizational actions are driven by social justification. From this perspective, strategic decisions are social and normatively defined because their motives derive from an actor's propensity to legitimate cooperating activities. Participants in the network believe that their effectiveness is judged by other constituents (e.g., shareholders, customers, suppliers). According to the theory, organizations are motivated to seek legitimacy or approval from those potential constituents. So far, there are only a few scholars who have applied this theory in network research. For instance, Dacin, Oliver, and Roy (2007) examine the legitimating aspect of strategic alliances. Drawing upon an institutional-based view, they argue that the social symbolic and signaling characteristics of alliances serve as a source of legitimacy for partnering, and legitimacy serves as a means to achieve competitive advantage.

As previously mentioned, motivational studies in network research tend to explain why firms enter into networks and why they make certain strategic choices within those networks. The research reviewed thus far highlights many of the theories (transaction cost economics, resource-based view, social capital theory, and the institutional-based view), and each of them emphasizes different aspects of what motivates firms to enter into networks. However, each also tends to ignore or trade-off other important factors that may lead firms to enter into networks. For instance, transaction cost economics theorists highlight the cost and efficiency but lack explanations of social legitimacy. The resource-based view theorists focus upon firms' capabilities but ignore the cost factor. Additionally, social capital theorists concentrate on social gain and membership but lose sight of stakeholders' capabilities.

Furthermore, while researchers have shown that different theories can explain different kinds of motives, there are no clear boundaries among these theories. For instance, the institutional-based view, which concerns social norms, may potentially overlap with social capital theory in terms of social sanctions and expected reciprocity. The resource-based view may overlap with social capital theory in terms of instrumental return. In general, while a few scholars (e.g., Lee et al., 2001) often acknowledge that there is a need for combining theories when conducting research,

we believe that examining the commonality and difference between theories can create an outlet for future research.

Finally, though much research has been done in terms of organizational motives to enter into a network, there is a lack of research concerning the retreat or exit from a network. There is a need to investigate the causes/motivations for exiting a strategic network. Factors such as relational conflicts, asymmetric exchange, new partnership formation, relationship maintenance costs, industrial environmental change, and network structure transition need to be examined as well. Such studies will not only inform us as to what motivates firms to exit networks but potentially what motivates firms to enter them.

The Relational Perspective and Research Gaps

Relational studies represent one of the earliest streams of research related to networks and continue to be of interest to network researchers. In general, the relational perspective is concerned with how aspects of the relationships among networks members—including strength, distance, and other qualities of ties—affect and are affected by other factors, such as member firms' strategic choices, performance, and knowledge creation. Specifically, relational network studies are based upon the relational tie literature, which is primarily concerned with the nature of the relational bond between two or more actors. Scholars in this domain typically classify the relationship between social actors as being linked by weak or strong, instrumental or expressive, and direct or indirect ties. For instance, Larson (1992) shows that strong ties promote or enhance trust, mutual gain, and reciprocity among firms from a long-term perspective. Consequently, partners are likely to form joint problem solving arrangements as well (Powell, 1990; Uzzi, 1996).

Several important studies have clarified, and in some cases modified, the theory of relational ties by extending the research in new directions. Gulati and Westpal (1999) examine how interlocking ties have different effects on the formation of joint ventures between firms. Based upon this finding, the content of ties (direct vs. indirect) can have a strong influence over corporate strategy decisions; some ties may promote the creation of a new alliance, while others could actually reduce the likelihood. In addition, Gulati, Nohria, and Zaheer (2000) argue that network ties are important sources of referrals that enable prospective partners to identify and learn about each other's capabilities and reduce the informational asymmetries that increase contracting costs. In order to test the hypothesis, the authors define tie strength by the frequency of interaction between partners and their level of resource

commitment to the relationship. Further, Rowley, Behrens, and Krackhardt (2000) explore the conditions under which strong and weak ties are positively related to firm performance. Specifically, the authors argue that whether or not firms form their strategic alliances through strong or weak ties depends on how it is structurally embedded in the network. In essence, ties can act as a social control agent in terms of governing how alliance partners behave or cooperate in the marketplace.

A few recent studies provide useful challenges and an extension to the traditional relational-based view of interfirm networks. Rindfleisch and Moorman (2001) examine the acquisition and utilization of information in new product alliances from a strength-of-ties perspective. Drawing upon network theory (Granovetter, 1973, 1983), the authors suggest that horizontal alliances have a lower level of relational embeddedness and a higher level of knowledge redundancy than do vertical alliances. The results also question the key underlying assumptions of the strength-of-ties literature. For instance, strong ties are typically assumed to share both high levels of embeddedness and high levels of redundancy; however, the findings of Rindfleisch and Moorman (2001) indicate that this assumption does not hold for organizational contexts. In an organizational context, strong ties are more likely to act as “bridges” than weak ties. Additionally, Khanna and Rivkin (2006) extend interfirm ties beyond the strength-of-ties literature and define ties by their content. Based upon a survey in Chile, the findings suggest that the content of ties (e.g., family connections, common owners) play a role in determining the boundary of a business group. Mariotti (2011) investigated how firms gather and combine knowledge through strengthened bridging ties and high quality relationships. Most recently, Lee, Kroll and Walters (2011) developed a model of corporate governance stages and suggested that, in transitional economics, corporate governance is likely to shift from a bureaucratic control-based structure to a more relational governance structure.

Although few studies have provided challenges and extensions to the relational-based view, a large amount of research is grounded in network theory (Granovetter, 1973, 1983). However, we should also realize that network theory originally examined individuals within those networks and not organizations. We should further investigate the theoretical boundaries of *organizational* network research. In other words, we are not clear as to whether or not individual ties can be fully applied to organizational research. Additionally, we have to acknowledge that organizations do not build ties, people build ties. If this is true, how managers transfer their personal ties to the organization becomes an interesting research question which has yet to be studied in detail. Lastly, there is no clear definition of the qualities of interorganizational ties, and other qualities of ties besides tie strength (i.e.,

distance, symmetry, etc.) have not been fully examined as well.

The Structural Perspective and Research Gaps

Despite the value and quality of work conducted under the relational perspective, many recent studies have moved from the relational perspective to a network structure perspective. For instance, Liao (2010) studies the firm's ability to process and create knowledge in interfirm networks from a structural perspective. Westbrock (2010) found that an efficient network typically has a dominant group in the structure of oligopolistic markets. The structural perspective is concerned with how the overall structure of networks and structural factors within networks affect and are affected by other factors such as member firms' strategic choices, performance, knowledge creation, and knowledge transfer. Overall, the structure of networks refers to vertical networks (e.g., vertical alliances or marketing channel networks that typically include suppliers, manufacturers, distributors, and/or retailers), horizontal networks (e.g., horizontal alliances and buying groups that are typically composed of competitors in the same industry and that share the same market), mixed networks that include both horizontal and vertical networks (e.g., multichannel networks), and intermarket or concentric networks (e.g., Japanese Keiretsu). Structural factors within networks refer to factors such as size, density, actors' positions (centrality), network composition, interlocking board memberships, and structural holes (e.g., Achrol & Kotler, 1999; Fombrun, 1982; Gulati, Nohria, & Zaheer, 2000; Provan & Kenis, 2007; Sydow & Windeler, 1998).

Early research in the structural perspective has attempted to understand and define interorganizational relations within marketing channels (Reve & Stern, 1979), leaving little question as to why marketing has a long tradition of examining vertical relationships between firms. In the past, many authors conceive of networks in this sense (Snow et al., 1992). By definition, the vertical network is the organizational set of firms comprising vertical exchange relations (Achrol, 1997). Scholars have brought together a variety of research arenas relating to vertical networks such as interdependency, contracting, and relational behavior in marketing channels (e.g., Kumar, Heide, & Wathne, 2011; Lusch & Brown, 1996) and power (Walker, 1972). Achrol and Kotler (1999) argue that marketing can be a network integrator in vertical channels because the network members are highly specialized and the burden rests on marketing managers to organize information and resource flow.

In marketing, Ganesan et al. (2009) further brought vertical network research into a retailing context, finding that retailers are looking beyond their or-

ganizational boundaries to develop and leverage the resources and capabilities of their supply chain partners to create superior value and competitive advantage in the marketplace. The authors also discuss how global sourcing, multichannel routes, and relationship-based innovation lead to performance improvements with regard to brand image, reputation, sales, profits, innovation, and relationships. Additionally, a recent study conducted by Zaheer and Bell (2005) concludes that firms with superior network structure may be better able to exploit their internal capabilities and thus enhance performance.

Horizontal networks have also been examined in recent literature (e.g., Frels, Shervani, & Sriastava, 2003; Provan & Sebastian, 1998; Rindfleisch & Moorman, 2009; Rowley, Behrens, & Krackhardt, 2000; Swaminathan & Moorman, 2009; Zaheer & Bell, 2005). For instance, Nygaard and Dahlstrom (2002) state that horizontal arrangements are increasingly deployed in organizational networks. In order to address the lack of horizontal alliances in the marketing literature, the authors examine the distribution system of two oil companies that operate through a horizontal alliance at the retail level in order to address the role of stress in horizontal alliances, the influence of role stress on organizational outcomes, and the organizational and communicative processes that influence the level of stress in alliances. Additionally, Rindfliesch and Moorman (2001) suggest that horizontal alliances have lower levels of relational embeddedness and higher levels of knowledge redundancy than vertical alliances.

Aside from vertical and horizontal networks, the concentric network is also a network form that marketers are becoming more and more aware of. The concentric network, also known as an intermarket network, is defined as an enterprise group consisting of affiliations that operate in several related and unrelated industries and center around a major corporation (Achrol & Kotler, 1999). The concentric network, at this point, is largely a phenomenon of the Japanese and Korean business environment (Achrol, 1997). Normally, the enterprise group is organized around one or more major financial institutions in the financial market. However, we believe that concentric networks not only exist in the Japanese and Korean environments but also in the Western marketplace. A possible example is in Uzzi's (1997) study of structural embeddedness. Uzzi did not identify his research context as a concentric network. However, his study involves a major manufacturer surrounded by an interfirm network (e.g., design studio, warehouse, showroom, and retailer), which can be considered a concentric network.

Mixed networks, a fourth network structure, have rarely been examined, much less defined, in past literature. McGuire and Dow (2009) reviewed the major

theoretical and empirical work of Japanese Keiretsu, dividing the keiretsu structure into vertical and horizontal networks and claiming that the distinction between the two is often blurred. Often, there is an overlap between the two. For instance, the overlap between the Mitsubishi horizontal and production centered grouping and the overlap between Toyota (vertical) and Mitsui (horizontal) groups are classic examples.

It seems that researchers have made considerable efforts to study vertical or horizontal networks. However, we take note that any discussion of vertical or horizontal network structures is likely to be oversimplified. Networks are characterized by permeable and evolving ties. For instance, each of the ties could move from horizontal to vertical structures and vice versa. Practically, simply examining horizontal networks may neglect the other vertical relationships the firms may have established that have an impact on the horizontal networks at play. Possibly, the combination of ties leads to superior performance instead of any one single vertical or horizontal tie. In other words, simply looking at vertical or horizontal networks separately may lead to inaccurate research results. As such, we believe that investigating the mixed network could possibly provide a new research arena.

The Evolutionary Perspective and Research Gaps

An already large and still growing body of literature concerning organizational networks draws attention to the importance of network evolution. The evolutionist perspective focuses on how and why changes in networks affect and/or are affected by firms' strategic choices, industry events, and institutional factors (i.e., changing social norms, laws, or regulations) within a network. For example, how do the changing size, density, and positions of new or existing firms in a network, joint venture, and alliance formation impact the relationships within those networks? Additionally, research has focused on the stages of relationship development among existing and potential network members.

Specifically, the majority of the body of work concerning the evolutionist perspective focuses on network formation and network dissolution. In the view of network formation, organizations build ties based upon theories of social and socioeconomic exchange (Larson & Starr, 1993), social capital (Walker, Kogut, & Shan, 1997), and structure roles. For instance, Larson and Starr (1993) detail the three stages of network building, focusing on dyads and converting dyadic ties to socioeconomic exchanges while layering the exchanges with multiple exchange processes. During the three stages, organizations selectively use the network dyads

to match their business decision making. Further, Gulati (1993) investigates how social structure affects interfirm alliance formation patterns through a longitudinal study in which he proposes that the social context emerging from prior alliances and consideration of strategic interdependence influences partnership decisions between firms. The social network then facilitates new alliances by providing information to firms about the capabilities and reliability of the potential partners. As such, organizations create ties to manage uncertain environments and to satisfy their resource needs (Gulati & Gargiulo, 1999).

In addition, organizational scholars investigate network evolution from other social theories other than social exchange which, to some extent, overlap with the motivational perspective. However, evolutionists focus upon the stage and process of building networks. For instance, changes in political and economic power can affect channel structure and firms' decisions in terms of social network formation (Dahab, Gentry, & Sohi, 1996). Resource dependence theorists have argued that the formation of interorganizational ties, such as strategic alliances, is a result of underlying resource dependence (Pfeffer & Nowak, 1976). In addition, Madhavan, Koka, and Prescott (1998) draw upon the structural perspective to theorize about how and why interfirm networks change over time. They argue that interfirm networks evolve in response to key industry events. Scholars of corporate strategy have suggested that firms form or change alliances to improve their strategic position in the network and in the marketplace (Contractor & Lorange, 1988; Kogut, 1988; Porter & Fuller, 1986). Interestingly, Gulati and Gargiulo (1999) argue that the new alliance modifies the existing network, prompting a dynamic between organizational action and network structure. Through testing the ideas over a nine-year period, the study shows a new alliance may increase with their interdependence and also with their prior mutual alliances, common third parties, and joint centrality in the alliance networks.

In recent years, scholars have begun to investigate network dissolution. Due to the complexity of collecting data, the research is mostly theoretical. Baker, Faulkner, and Fisher (1998) analyzed the dissolution of interorganizational ties between advertising agencies and their clients as a function of competition, power, and institutional forces. Specifically, they find that most exchange relationships between advertising agencies and their clients are exclusive, and most last for several years; but competition, power, and institutional forces support or undermine these relationships. Powerful advertising agencies use resources to increase stability, but their clients mobilize resources to increase or decrease stability. Competition has an effect on tie dissolution, and institutional forces, such as changing norms, destabilize

relationships.

Although researchers have made significant strides in understanding how networks evolve through joining new networks, modifying existing networks, and natural evolution within current networks, they have left a few questions relatively unexplored. Some scholars, for example, assume that exchange relationships between two firms exist as a given and seek to explain how those relations are formalized (c.f. Pisano, 1989). This assumption that exchange relations may guide tie formation between firms may actually lead to false conclusions. Some scholars, despite an understanding that other reasons may guide tie formation, may not account for network formation and change. For instance, little research has been conducted that explains if marketing capabilities are a resource that firms do not rely upon when entering a new network. Interestingly enough, though resource factors have been specified in the past, the question remains whether or not these resources are tangible (e.g., financial or human resources) or intangible (e.g., accessibility to other networks, capabilities in managing partnerships).

Further, a large body of studies in this domain focuses upon the formation of alliances instead of the formation and change of networks. Although the formation of alliances can provide insights into network formation, it is hard to know how other business networks (e.g., buying groups or business associations) form through this conceptual perspective. As such, research on informal business groups could be a possible future research arena. Lastly, arguably, institutional forces, such as cultural norms, play an important role in network formation. Although a few scholars (c.f. Peng, 2003; Peng & Zhou, 2005) investigate how firms use network-centered strategies and how networks evolve in a transitional economy, little work has been done to compare network evolution in different cultures or to analyze network evolution that involves firms from more than one culture.

The Interactionist Perspective and Research Gaps

Much network research draws attention to the importance of interaction among firms (e.g., Belle, Katsikeas, & Robson, 2010). The interactionist perspective focuses on the types, conditions, and consequences of interaction among firms in networks. As such, informational exchange, knowledge transfer, organizational learning, contractual and informal exchange, and reciprocity are important transactions that concern the interactionists. This perspective can be traced back to the 1970s. In general, early research simply focused on exchange interactions between entities in a network, and scholars agreed that conditions such as power, exchange

behavior, and environmental forces served as important factors influencing and facilitating interactions among firms. For instance, Bensen (1975) proposes that resource concentration, power network dependence, resource abundance, and environmental control mechanisms are dimensions for firms to build networks and make interactive strategic decisions. Cook (1977) borrowed an exchange model for analysis of interorganizational relations and defines interorganizational linkages as networks of exchange interaction. Organizational activities are viewed as networks of exchange network relations. In order to develop his exchange model, Cook proposes that building interorganizational relationships such as alliance formation are correlated with power and position in the network.

In addition to these early conceptual articles, Larson (1992) further conducted a field study through a sample of dyadic relationships established by high growth entrepreneurial firms and finds that a process model of network formation, which emphasizes reciprocity and mutual interdependence. Jones, Hesterly, and Borgatti (1997) further combine network theory and transaction cost economics to assert that the interaction among firms are based upon asset specificity, demand uncertainty, task complexity, and frequency. These conditions drive firms to use their social mechanisms for exchange interaction.

Although early research focuses on the exchange interaction aspect of networks, little has been done to investigate alliance constellations in recent years. Das and Teng (2002) were the first scholars to propose that social interaction should be applied to alliance constellations. Alliance constellations are strategic alliances formed by multiple partner firms. Popular constellation types include R&D consortia, joint bidding, and code-sharing among airlines and other industries. In the process of exchange among firms, reciprocity plays an important function for subsequent transactions.

While the early work with an interactional perspective is dominated by exchange theorists, researchers have focused on learning aspects of interaction in the past two decades. Scholars generally agree that economic exchanges among firms may involve both more obvious and less obvious tangible and intangible resources (such as market information). For instance, Uzzi (1997) finds that information exchange is very proprietary in arm's length ties and that learning synergies can arise from sharing insights within a network (Morgan, 2004). In addition, Bell and Zaheer (2007) examine the geographic impact on knowledge flow among networked firms. They acknowledge that knowledge—which is closely linked to a firm's innovativeness—is accessed across interorganizational boundaries and geographic space via networks. Using a combination of primary and secondary data on mutual fund firms,

they find that institutional level ties (ties formed by the industry trade association structure arising incidentally to the firms involved rather than purposefully by the firms or their executives) are valuable in knowledge transmission only when such ties are geographically proximate. Organizational ties fail to act as transmitters of knowledge transference regardless of the location while, on the other hand, individual ties are superior for knowledge flow.

In general, past research has focused on common themes, such as exchange behavior among firms and organizational learning. However, there is much left to be done in terms of the interactivity among firms. Peters, Gassenheimer, and Johnston (2009) call for a more explicit connection to the interactivity and network literature. The nature of interactions, as a dynamic phenomenon, has presented researchers with challenges that are both conceptual and empirical. For instance, although scholars focus upon interfirm interaction, we still lack an understanding of how individual ties serve as transmitters of knowledge flow among or within firms. We do not yet know much about how specific knowledge links to a specific tie or resource. We also do not know how different ties influence the levels or amount of knowledge or information flow. In addition, we may need to seek a better understanding of how the types of interaction (e.g., frequency, the length of the relationship, etc.) impact organizational learning.

The Governance Perspective and Research Gaps

In recent years, scholars have recognized that the forms of governance may serve as key factors affecting research results. The governance perspective focuses on the locus of control within networks. Major examples of governance include network administrative organizations (NAO) networks that govern by an overarching entity that is separate from the firms within the network (i.e., a trade association), lead organizational governed networks (LOG) that are governed by a lead or dominant organization within the network, and participant governed networks (PGN) that are jointly governed by the many firms in the network.

Provan and Kenis (2007) propose that the simplest and most common form of network governance is the PGN, which is governed by the network members themselves with no separation of the governance entity. In health and human services, shared governance networks are common, in part because networks are often considered to be an important way of building community (Chaskin et al., 2001). In such a context, network members will only be likely to be committed to the goals of the network if they all participate on an equal basis. In business, shared governance

may be used in small, multi-firm strategic alliances and partnerships to develop new products or attract new businesses, which could not be easily done through the independent efforts of network members (Venkatraman & Lee, 2004). Shared governance may also be used in multilateral relations among banking firms to assemble financial investment (Eccles & Crane, 1988).

At another extreme, LOG governance can occur in horizontal networks, most often when one organization has sufficient resources to play a lead role (Provan & Kenis, 2007). It can also occur in vertical, buyer-supplier relationships, especially when there is a single, powerful buyer/supplier/funder and several weak and small suppliers or buyers. The most classic example can be found in the Japanese Keiretsu model (Gerlach, 1992) and other similar models of cooperative buyer-supplier models in the U.S. (Uzzi, 1999) and Europe (Inzerilli, 1990; Lazerson, 1995). Additionally, lead organizations play important roles across different industries. For instance, in the entertainment industry, the LOG may be a major firm's studio (Jones & DeFillippi, 1996). The LOG can also occur in health and human services; in community health, it may be a hospital or health clinic (Weiner & Alexander, 1998). Teisman and Klijn (2002) also argue that a government agency can act as a lead organization in networks. Graddy and Chen (2006) focus on the role of the lead organization in governing child welfare in Los Angeles.

A third form of network governance is the NAO in which the basic governance model is a separate administrative entity set up to govern the network. Although the network members still interact with one another, the NAO model is highly centralized (Provan & Kennis, 2007). For example, Human and Provan (2000) describe two networks in the wood processing industry that are both guided by an NAO. All the firms were for-profit, but the NAOs were non-profit. However, the NAO can be for a for-profit organization as in the case of Nexial International, the global accounting network discussed by Koza and Lewin (1999). Other scholars (e.g., McEvily & Zaheer, 2004; Provan, Isett, & Milward, 2004) argue that the NAO can also be used as a mechanism to enhance network legitimacy, to deal with unique and complex network level problems and issues, and to reduce the complexity of shared governance. In recent years, scholars (e.g., Provan et al., 2004) find that a more formalized NAO typically have board structures that include all or a subset of network members. The board addresses strategic concerns, leaving operational decisions to the NAO. Organizations join or form networks for a variety of reasons, including the need to gain legitimacy, serve clients efficiently, gain resources, and solve operational problems; and due to the different needs of the network, governance may vary.

In the past, although marketing scholars have made significant efforts to address the impact of networks, few of them clearly distinguish the type of network governance examined. Of the existing literature, only that within the health and human service sector has even attempted to distinguish the type of governance examined. Even so, a clear identification of governance within those studies in health and human services was far from universal. Most articles lack a specific explanation of the governance structure. As such, there is also a need to classify the network governance structure and discuss the basic characteristics of each form of governance. In marketing, we suspect that each form of governance may have a different impact on marketing variables (e.g., new product development, increasing market share). On the other hand, positive marketing outcomes may require different forms of network governance. Last, firms may interact or be embedded within several different types of network governance. From a micro-level, how firms manage their position in a specific or multiple network governance is unknown, providing fuel for additional research in the area.

Discussion

Research scholars have conducted interfirm network research for a few decades. However, much research was built upon one paradigm/perspective and lacked a complete theoretical view. For instance, research built upon the relational perspective was only concerned about the strength or quality of ties and ignored the potential network effects of network structure or network density. Research on network governance, however, put little emphasis on personal relationships. In other words, there is a need to combine different perspectives in order to have a complete understanding of how networks play roles in terms of gaining and maintaining competitive advantages in different areas such as, facilitating knowledge transfer and innovation, seeking financial support, and reducing consumer uncertainty towards a brand.

In addition, research on each of the paradigms was incomplete and may need to be developed further. For instance, the network evolutionists may conduct more longitudinal studies to examine the change of the relationships over time. Relational researchers may investigate the quality or characteristics of personal relationships besides the tie strength. For instance, the ties may be built upon reciprocity, and others may be built upon shared objectives. Relational ties may also involve emotions. According to past research, emotions play important roles in strategic decision making (Flint & Fleet, 2011; Holmes et al., 2011). As such, studying the emotion elements in tie building can be meaningful.

Further, this review provides researchers opportunities to engage in empirical network research. As Khoka (2010) suggested, for example, many antecedents have been left out of network research. For instance, resource and financial requirements and organizational structure should be studied as antecedents for organizational network research. In addition, a more balanced view of network performance and network costs needs to be researched. Also, a study of comparing formal and informal networks can be valuable. For instance, Chinese *guanxi*, which is considered as an informal relationship, can be a valuable resource to form formal relationships, perhaps because in high context cultures like China, networks are essential in business strategies (Liu, Atinc, & Kroll, 2011).

Much network research has been done on a theoretical level, which perhaps is due to the difficulties of data collection. Though network structuralists, for example, may believe it is feasible to design simulations to calculate network intensity/density or distance between the nodes, it can be out of reach for managers to envision the structure of the network they embedded within. That is to say, there is a deep gap between theoretical network research and its practical value. This may explain why conceptual work tends to focus upon the network level of analysis, but empirical research on networks tends to examine alliances at the firm or relational level (See Table 1 and Table 2).

The conceptual perspectives have implications for managers representing organizations that are contemplating interfirm relationships, managing interfirm relationships, and/or considering expanding or exiting interfirm relationships. Thus, for managers, it is also important to understand different network perspectives, such as relational and structure perspectives. This is because network structure/density and other network characteristics in which the relationship is embedded may have effects on the quality of personal ties and such an impact may, as a result, influence the outcome of the relationships, such as sharing information or knowledge.

Firms also need to evaluate and balance resources, e.g., financial costs, knowledge, social capital/social ties before entering into a network. Additionally, the capability of managing interpersonal ties may determine the firm's potential capability of entering and maintaining its interfirm networks. Managers should also give attention to the structure of the network that the firm adopts because the structure may have potential impact on the amount of benefit the firm may obtain from its networks.

Moreover, as networks change, the benefits that the firm may gain from such a network may decline/increase. As other firms enter or withdraw from the network, managers need to design flexible strategies to react such a change. As a

result, managers should be aware of both positive (e.g., share resources) and negative consequences (e.g., being dominated by another organization) of a network. Last, managers may need to be aware that network structure is culturally-based. For instance, the participant governed networks (PNG) may not apply to cultures which are rather hierarchical, e.g., India.

Thus, managers can be cognizant that there are multiple motivations for engaging in interfirm networks and be informed about the possible relational and structural composition of networks. Furthermore, there are consequences of the interactions between and/or among network firms and that there will be effects of network change over time (evolutionary). Finally, managers can note that there are several ways in which networks are controlled or governed.

This paper reviewed the research regarding interfirm networks, and as such, the purpose of this paper has been to provide an overview of the existing research into the phenomenon as well as directions for future research. As with any such review, there are limitations due to the conceptual nature of the paper. Unlike a meta-analysis, this paper does not provide a systematic statistical analysis of the interfirm network research findings. Also, we approached this review from a managerial marketing perspective as opposed to an economic perspective.

In this review, we have outlined the conceptual perspectives and methodological foundations of organizational networks. Organizations engaged in and/or considering developing an organizational network need to be aware of the various conceptual perspectives of interfirm networks so that the relationship potential is maximized. A better understanding of organizational network perspectives may not only potentially enhance existing relationships, paving the way for their further development and expansion, but also foster new relationships. In today's increasingly complex marketplace, successful organizations may no longer be huge, vertically-integrated firms. In many cases, they may be lean, specialized organizations that are part of a network of firms. Arguably, these developments signal the need for added and conceptually richer investigations of interfirm networks. Intuitively, there are varying levels of synergy as a result of interfirm collaboration. A clear understanding of the way in which these relationships are facilitated may maximize this synergy.

Note

1 The research gap for each perspective is identified at the end of each section. The overall discussion of research gaps is summarized in the end of the paper.

Table 1: Summary of Selected Empirical Interfirm Network Studies

Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Larson (1992)	Evolutional Motivational	Social control Social exchange	Alliance PGN	Relational	Three phases of entrepreneurial dyad formation (preconditions, conditions to build exchange structure, and integration and control); firms are governed by social norms of trust and reciprocity. Insights on: processes and structure of sustained dyadic interfirm exchange, network as alternative to vertical integration for entrepreneurial firms, and networks as bases for firm growth.
Gulati (1995)	Evolutional Motivational	Social network RBV Structuration (implicit)	Alliance PGN	Relational	Consistent with strategic interdependence and social structural theories, social network affects new alliances by giving information to firms on capabilities and reliability of potential partners. Shows importance of social network in alliance formation, which provides bridge between network and resource interdependence theories.
Eisenhardt & Schoonhoven (1996)	Evolutional Motivational	RBV	Alliance PGN	Relational	Difficult market conditions and risky firm strategies increase rate of alliance formation. Top management's characteristics affect alliance formation. Extends resource-based view to issue of alliance formation.
Walker, Kogut & Shan (1997)	Evolutional Motivational	Social capital Social network	Unclear	Network	Network formation and industry growth are impacted by development and nurtur-ing social capital. Contributes to comparison of social capital and social network theories in explain-ing network formation. Structure holes should be given more attention in market transactions rather than firms' cooperative relationships. Also indicates interfirm collaboration requires analysis of network as a whole.

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Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Uzzi (1997)	Structural	Embeddedness	LOG	Network	Embeddedness is logic of exchange that aids economies of time, integrative agreement, Pareto improvement in allocative efficiency, and complex adaptation, but also has negative effects. Offers explanation of links between social structure, decision making, and economic outcomes in a organizational network. Proposes framework to explain how properties of embeddedness vary with quality of social ties, structure of organizational network, and firm's position in network.
Madhavan, Koka, & Prescott (1998)	Evolutional	Unclear	Alliance PGN	Relational	Shows industry events may be classified as reinforcing or loosening the structure of the network. Develops a model to explain how industry networks evolve over time in response to specific events.
Provan & Sebastian (1998)	Structural	Network	PGN (implicit) Horizontal	Network	Network effectiveness is negatively related to integration of full networks. It is positively related to integration among small cliques of agencies when cliques had overlapping links through reciprocated referrals and case coordination. Shows value of studying network clique structure, explains outcomes (such as network effectiveness), and points to need to consider networks and network structure in microanalytic way.
Walker, Kogut & Shan (1997)	Evolutional Motivational	Social capital Social network	Unclear	Network	Network formation and industry growth are impacted by development and nurturing social capital. Contributes to comparison of social capital and social network theories in explaining network formation. Structure holes should be given more attention in market transactions rather than firms' cooperative relationships. Also indicates interfirm collaboration requires analysis of network as a whole.

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Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Gulati & Westphal (1999)	Evolutional Structural	Unclear	Board interlock Joint ventures Alliances PGNs	Relational	CEO-board relationships with independent board control reduce likelihood of alliance formation by promoting distrust between firm leaders, while CEO-board cooperation promotes alliance formation by enhancing trust. Also, direct interlock tie effects are amplified by network ties and indirect ties impact firm action. Goes beyond focus on content and effects of dyadic ties. Suggests indirect ties, in which partners to an interlock tie are embedded, may positively and negatively impact interorganizational action.
Gulati & Gargiulo (1999)	Evolutional Relational	Embeddedness Structuration (implicit)	Alliance	Relational Network	Probability of new alliance between organizations increases with their interdependence, prior mutual alliances, and common third parties, and the joint centrality in the alliance network. Differentiation of emerging network structure limits effects of interdependence and enhances effect of joint centrality on new alliance formation. Social structure shapes organizational action, which subsequently affects social structure.
Baum, Calabrese, & Silverman (2000)	Structural	Unclear	Alliance Horizontal Vertical	Network	Alliance composition impacts firm performance. Enriches literature, by examining vertical, horizontal, upstream and downstream alliance and effects of network composition (e.g., size, efficiency, alliance with rivals, and firm ages).
Rowley, Behrens, & Krackhardt (2000)	Relational	Embeddedness Social capital	Alliance	Relational	In general, weak ties and strong ties positively affect firms' performance and effects of relational embeddedness depend on structural embeddedness and environmental context. Strong and weak ties are important to firms for different purposes, in different conditions, industrial contexts, and times. Also, relational and structural embeddedness can only be understood with reference to each other.

Table 1: Summary of Selected Empirical Interfirm Network Studies

Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Stevenson & Greenberg (2000)	Evolutional Interactional	Social movement	Unclear	Firm	Strategies firms use to impact government policy, use a broker to reach agreement, or form a coalition with other organizations to shape government decisions depend on social context. Even peripheral actors can affect policy if they use a directcontact strategy and the political opportunity structure is favorable. Applies social movement theory, which, unlike social network theory, makes allowance for actor movements. Also, synthesizes more macro social levels of organizational analysis with more micro level actions of individuals.
Khama & Rivkin (2001)	Motivational	Transaction cost economics (TCE)	Business group	Network	Focuses on the economies of thirteen countries: Argentina, Brazil, Chile, India, Indonesia, Israel, Mexico, Peru, the Philippines, South Korea, Taiwan, Thailand, and Turkey. Business groups affect the economic performance in 12 of the markets. In other words, the group affiliation impact performance. In addition, the analysis provides no support for the view that groups are primarily responses to capital market imperfections, nor for the view for rent-seeking behavior. Indicates that groups exist for different reasons and perform different functions in each individual institutional setting.
Lee, Lee, & Pennings (2001)	Motivational	RBV Social capital	Unclear	Firm	Internal capabilities are important predictors of firm performance. Not all indicators of external network predict start-up firms' performance. Several interactions between internal capabilities and external networks also emerge. Suggests integrating views of RBV (on firm capabilities) and social capital (on external networks) to predict firms' performance.

Table 1: Summary of Selected Empirical Interfirm Network Studies

Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Rindfleisch & Moorman (2001)	Structural Interactional	Social network	New product alliance Horizontal Vertical	Relational	Horizontal alliances tend to have lower levels of relational embeddedness and higher level of knowledge redundancy than vertical alliances. Embeddedness elevates acquisition and utilization of information. Redundancy reduces acquisition but enhances utilization of information. Challenges view on social networks based on Granovetter's work. For example, individuals with close ties are assumed to share both high levels of relational embeddedness and information redundancy. Findings suggest assumption does not hold for interorganizational relationships.
Koka & Prescott (2002)	Motivational	Social capital	Alliance	Firm	Supports hypotheses that social capital is a three dimensional construct. Considers the construct validity and contingent nature of social capital. Suggests that social capital should be viewed terms of the different information volume, information diversity, and information richness available to firms.
Frels, Shervani, & Srivastava (2003)	Structural	Unclear	Horizontal	Networks	Value added by the three networks is positively related with resources allocated to competing product by business customers. The three networks mediate the relationship between product performance and resource allocation. Refine the notion of market based assets. Propose integrated network model of different types of networks, Extend conceptualizations of innovation diffusion, codiffusion, adoption, and intraorganization adoption.
Bradford, Stringfellow, & Weitz (2004)	Interactional	Unclear	Unclear	Relational	Negative effects of interpersonal and task conflict on network outcomes can be reduced by conflict management. However, effectiveness of using different conflict management approach differs. Extends ideas on conflict in channel relationships by considering effectiveness of conflict management. Also explain how types of conflict and conflict management affect network outcomes.

Table 1: Summary of Selected Empirical Interfirm Network Studies

Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Powell et al. (2005)	Evolutional	Unclear	Horizontal	Network	As organizations increase their collaboration and diversify their new ties to others, sub-networks (characterized by multiple, independent pathways) form. Such structural changes, in turn, may change choices and opportunities available for the firm and, thus, reinforce an attachment. Suggests that neither money nor market can dominate a field's network evolution. Instead, organizations with diverse portfolios of well-connected collaborators are in the most cohesive and central positions and have the power to shape the field's evolution.
Zaheer & Bell (2005)	Structural	RBV Social capital	PGN	Firm	Firms' innovative capabilities and network structures enhance performance, but effect of structural holes on performance is greater for innovative firms. Firms with superior networks can exploit their capabilities to improve performance. Challenges network study view that firms automatically benefit from positions they occupy. Shows firms well-endowed with internal capabilities are better able to exploit favorable network structure and network closure does not always impact firm performance (as Coleman argued).
Khanna & Rivkin (2006)	Relational Structural	Social network	Indirect and direct equity holdings Director interlocks Family connections	Networks	Overlap in owners, indirect equity holdings and director interlocks are strong group boundary delineators, which is not the case for family connections and direct equity holdings. Distinguish different ties and their use in terms of defining group boundaries.

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Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Bell & Zaheer (2007)	Interactional	Organizational learning Knowledge management Network (implicit)	NAO governance network (implicit) PGN (e.g., equity holding alliance; implicit)	Relational	Institutional level ties are valuable in knowledge transfer, if they are geographically proximate. Organizational level ties fail to transfer knowledge, regardless of geographic location. Individual level friendship ties are superior conduits for knowledge flow and span geographic holes. Shows different types of ties across organizations differ in propensity to transmit knowledge when they are geographically proximate or distant.
Luo & Hassan (2009)	Interactional	Social network	Unclear	Firm Relational	Networking promotes knowledge creation but too much networking embeddedness leads to diminished returns. Networking disparity also has negative impact. Competitive environment and technological turbulence impact networking disparity and marketing knowledge learning. This is because in more competitive and turbulent markets, brokerage opportunities offered by complementary knowledge bases would be even greater. Offers insights on influence of internal social actors (top management) and debate on relative benefits of weak social networks. Argue that networking strength may have more complicated effects than usually expected. Relationship is inverted U-shape (neither too strong nor too weak ties are optimal). Also, note network effects may depend on market conditions.
Swaminathan & Morrman (2009)	Structural	Social network	Alliance PGN	Network	Marketing alliances create value for firm in announcement period event window. Network efficiency and network density have strongest positive impact when they are moderate. Network reputation and network centrality have no effect. In addition, relational network characteristics have greater role than size or status benefits. Marketing alliance capability, which reflects a firm's ability to manage a network of previous marketing alliances, has a positive impact on value creation. Indicates the role of relational network characteristics.

Table 1: Summary of Selected Empirical Interfirm Network Studies

Author(s)/ year	Conceptual perspective	Theory base(s)	Types of networks	Level of analysis	Key findings/ theoretical contributions
Bello, Katsikeas, & Robson (2010)	Interactional	Accommodative response behaviors	Alliance	Firm Relational	Examines a firm's performance in an international marketing alliance when it responds to a self-serving partner's exploitive behavior. The authors found that a firm's payoff from accommodation depends on its approach to monitoring, either employing overt surveillance or relying on its partner's self-control. For instance, overt surveillance can undermine accommodations' ability to convince a selfish partner that cooperation is beneficial and not inconsistent with its self-interest.
Kumar, Heide, & Wathne (2011)	Structural	Unclear	Vertical networks	Firm Relational	Examines how manufacture's governance of an external supplier relationship affects its performance towards a downstream retail customer. For instance, the authors found that a manufacture's reliance on supplier norms and incentives promotes performance. However, internal incentives weaken the effect of external norms, and internal norms weaken the effect of external incentives.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Benson (1975)	Interactional	Institutional	Relational	Focuses on environmental forces and conditions that impact network relations. Environmental dimensions include resource concentration, power concentration, network autonomy, environmental dominance, resource abundance, and environment network control mechanisms. Proposes four general strategies for changing network relations: cooperative, disruptive, manipulative, and authoritative strategies. Also identifies four dimensions of interorganizational equilibrium: domain consensus, ideological consensus, positive evaluation, and work coordination.
Cook (1977)	Interactional	Exchange theory	Relational	Argues no one theoretical perspective will enable scholars to completely explain organization interaction (networks). Every theory has scope restrictions. Major contribution is to present an extension of exchange theory for analysis of interorganizational relations. In doing so, theoretical framework focuses on effects of power on exchange relations among organizations. Also offers definitions and propositions and discusses linkage between different types of exchange networks and market structure. Finally, reviews criticisms of exchange analysis of interorganizational relations and discusses future directions for research.
Fombrun (1982)	Structuralist	Unclear	Multi-level	Argues researchers should identify types of networks (e.g., attribute networks and transactional networks). Identifies three kinds of strategies for network research (nodal, dyadic, and triadic). Nodal approaches are grounded in cross-sectional comparison of a set of individual actors. Dyadic approaches focus on relationship among pairs and are grounded in information about the whole network in terms of pair distance. Triadic approaches explore all possible triads in the network and rely on the degree of balance in the network. Also discusses strength and weakness of network research and application of three research approaches. Major contribution is to lay out key methodological issues available for researchers who wish to use a network approach to organizational analysis.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Thorelli (1986)	Unclear	Network theory	Network	Summarizes strategic issues involving networks: (1) turnkey contracts and “system selling”, (2) barter and reciprocal trading, (3) make-lease or buy decision, (4) split or unify sourcing, (5) transactions between firm’s divisions, (6) cartels, (7) interlocking directorates, (8) joint ventures, mergers, and acquisitions, (9) diversification, (10) internationalization, and (11) vertical integration. Notes strategic implications of network paradigm in marketing (distribution channels) and other fields.
Powell (1990)	Unclear	Embeddedness (implicit)	Network	Argues that relational or network forms of organization are an identifiable form of economic change under certain circumstances. The salient features of three modes of organization (market, hierarchy, and networks) are identified and compared. The logic of network forms is explored systematically.
Iacobucci & Hopkins (1992)	Unclear	Unclear	Relational & network	Emphasizes the importance of social relations and explains the transformation of an exchange dyadic relationship to a set of stable, multidimensional, multilayered interorganizational networks. The author proposes three stages of entrepreneurial networking activity which are used to secure the critical economic and non-economic resources needed to start a business. 1. Focus on essential dyads, 2. Transfer dyadic ties to socioeconomic exchange ties and 3. Layer the initial exchange relationship with additional business functions, activities, and levels of exchange (from personal exchange to organizational exchange).
Anderson, Hakansson & Johanson (1994)	Interactional	Embeddedness & social exchange	Relational & Organizational	Provides conceptual development of dyadic business relationships that captures the embedded context and formulates business network constructs from focal firm’s perspective and its partners’ perspective. In the article, the authors’ conceptualize the business network as sets of connected relationships.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Jones, Hesterly & Borgatti (1997)	Interactional & motivational	Transaction cost economics & social network theories	Network	Integrates transaction cost theory and social network theories. Claims network form of governance is a response to exchange conditions of asset specificity, demand uncertainty, task complexity, and frequency. These exchange conditions drive firms toward embedding their transactions and let them use social mechanisms to coordinate and safeguard exchanges. When all of these conditions are in place, network governance form has advantages over both hierarchy and market solutions. Shows how embeddedness provides foundation for firms to coordinate and safeguard exchange in network governance.
Achrol (1997)	Structural	Unclear	Organizational	Analyzes the evolution of the network organization and explores the characteristics of four types of network organizations, including the internal market network, the vertical market network, the inter-market network, and the opportunity network.
Dahab, Gentry & Sohi (1997)	Structural	Institutional	Network	Suggests channels in transitional economies may be controlled by groups or networks of people with mutual interest (interest domination). Examines interest domination by managers, communist cadres, and other party elite in two transforming economies and describes how command economies might be conducive to interest domination for marketing channels. Presents propositions of how political, social, and economic factors that sustain interest domination. Examples from Hungary and Tajikistan are used to provide context for the discussion.
Podolny & Page (1998)	Evolutional	Unclear	Network	Reviews literature of network organizations and focuses on variation cross-industry and cross-population. Explains why organizations do not adopt network approaches. Finally, calls for attention to success and failure of network form of organization.
Sydow & Windeler (1998)	Structural	Structuration theory	Network & organizational	Applies Giddens' structuration theory to analyze network processes. Defines inter-firm network and then moves to organizational network practices. Stresses how structure of signification, domination, and legitimation shape network processes and how structure is created under auspices of network effectiveness.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Achrol & Kotler (1999)	Structural	Embeddedness & theory of networks (im-plicit)	Network	Defines and distinguishes four types of network organizations, including internal networks, vertical networks, inter-market networks, and opportunity networks. Most importantly, explains role of marketing in different types of network organizations and the limitations of network organizations.
Lin (1999)	Motivational	Social capital	Relational & network	Analyzes the evolution of the network organization and explores the characteristics of four types of network organizations, including the internal market network, the vertical market network, the inter-market network, and the opportunity network.
Dacin, Ventresca & Beal (1999)	Unclear	Embeddedness	Unclear/ organizational, relational, & network	Reviews research on embeddedness and contribute to understanding embeddedness of organizations. Covers research on economic sociology, network theories of alliance, organizations and strategy, social capital, and network theory and organizations, and network theory and cultural sociology. Mainly focuses on conceptualization of embeddedness. Presents integrated framework that considers sources, mechanisms, outcomes, and strategic implications of embeddedness. Also, comments on future research and issues related to networks and methodology.
Gulati, Nohria & Zaheer (2000)	Structural	Social capital (implicit)	Organizational, relational, & network	Notes that strategic networks encompass interorganizational ties (e.g., strategic alliances, joint ventures, long-term, buyer-supplier partnerships, and many other ties. Argues that relationships in which firms are embedded shape their conduct and performance. Identifies five areas of strategy research that may involve strategic networks: (1) industry structure, (2) positioning in an industry, (3) inimitable firm resources and capabilities, (4) contracting and coordination cost, and (5) dynamic network constraints and benefits. Discusses strategic networks' potential positive (e.g., information access, resources, markets, technologies, and scope economics positive, risk sharing, and outsourcing) and negative effects.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Das & Teng (2000)	Motivational & evolutionary	Resource-based theory	Organizational	Review resource-based theory of strategic alliance literature, and synthesizes the findings. Proposes four major aspects of strategic alliances: rationale, formation, structural preferences, and performance. Notes resource-based view suggests that the rationale for alliances is the value creation and resources characteristics, such as imperfect mobility, facilitate alliance formation. Identifies resource characteristics, discusses a typology of alliance and structure preferences for alliance structures, and uses a set of propositions to indicate future research directions.
Das & Teng (2002)	Interactional	Social exchange	Relational	Develops a social exchange perspective of alliance constellations (multi-firm alliances), which emphasizes role of exchange. Also, discusses three social control mechanisms, (e.g., reciprocity, social sanctions, macroculture) for mitigating difficulties of managing constellations. Proposes typology of constellations based on dimensions of exchange. Contributes to alliance literature that is largely based on an exchange process, but which has been centered on interpersonal relations.
Borgatii & Foster (2003)	Unclear	Social capital, network, & diffusion theories	All, but primarily organizational & relational	Reviews and develops typology and dimensions of network studies in organizational research.
Peng (2003)	Evolutional	Institutional, resource-based, & network theories	Firm	Extends literature on how organizations make strategic choices during institutional transitions. Its three primary contributions are to (1) highlight institutional change, (2) develop two-phase model, focusing on longitudinal process to move from relationship-based, personalized transaction structure requiring network centered strategies to a rule-based, impersonal exchange model that emphasizes market-centered strategy, and (3) extend work of institutional based view of strategy choice. Cautions that not all networks are the same and firms can practice both network- and market-based strategies, which are not mutually exclusive. Cultural difference may also interact with institutional change.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Brass et al. (2004)	Unclear	Unclear	Firm & relational	Reviews antecedents and consequences of networks by levels of analysis (interpersonal level, group level, interorganizational level) and, on each level, suggests areas that have been overlooked by researchers.
Betts & Stouder (2004)	Unclear	Unclear	Organizational, relational, & network	Reviews major network organization research and notes that although much is written on notion of “network organizations,” most articles are theoretical and rarely use well-established network analytical techniques. Suggests that notion of network organization is still developing and does not have a clear meaning. Critiques use of network analysis and concept of network organization, which have little overlap in the literature.
Currah & Wrigley (2004)	Interactional	Organizational learning/ knowledge management	Relational & organizational	Applies “competence based” view of the firm to emerging transnational corporate (TNC) retailing industry. Analyzes geographic impact of organizational learning and investigates adaptation among retail TNCs, to raise awareness of their conceptual importance. Uses concept of inter-firm, intra-firm, and extra-firm relational network to shed light on nature of embeddedness. Offers more detail by focusing on interplay between extra-firm networks of store-based learning and intra-firm networks of knowledge exchange and organizational adaptation.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Peng & Zhou (2005)	Evolutional	Network theory	Relational	Examines how network strategies evolve with institutional transitions. Argues that while certain network strategies are becoming less important, other network strategies may become more crucial. Specifically, weak tie strategies may dominate network strategy choices as transition evolves. Instead of being phased out, strong ties may be transformed into weak ties. Argue that political and legal forces may shape the content of different networks that focus on business-to-government and business-to-business ties. Supports idea that business networks in Asia driven by impact of institutional change. Notes that the differences between firms in developed and emerging economies is not that formal, do not use network strategies and the latter only use network strategies.
Lavie (2006)	Motivational	Resource-based view	Firm & relational	Offers systematic theoretical analysis of competitive advantage of firm alliances and integrates and extends relational view/social network theories with traditional resource-based view (RBV) with a reformulated version that should be taken into account in network literature. Contributes to extension of RBV and firms' competitive advantage in networked environments. Author reveals how a firm can extract value from resources that are not fully owned or controlled by its internal organization. To do so, he develops model that allows for estimating different types of economic rent that firm can generate by relying on resources across its network of alliances. It identifies firm-specific, relation-specific and partner-specific factors. Finally, it calls for integration of RBV and network theories.
Lavie (2006)	Evolutional	Embeddedness	Organizational, relational, & network	Stresses theory development rather than logical positivism. Contributes to a debate from different theoretical views. Finally, it offers a dynamic stability approach to analyze network research. Authors see organizational networks as complex adaptive system that exhibits both persistence and change.
Provan & Kenis (2007)	Structural	Network theory	Network	Provides rationale for studying network governance, its role, and its impact on network effectiveness. Proposes three basic forms of network governance (NAO model, lead organizational governed networks, and participant governed networks). Also discusses tensions in each governance form and how to manage them.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Provan, Fish, & Sydow (2007)	Structural	Network theories	Network	Mainly focuses on interorganizational networks at the network level rather than at organizational or relational level of analysis. Argues that we need to examine whole network, to further understand issues such as how networks evolve, are governed, and how network outcomes might be generated. For instance, studying the whole network would help shed light on how multilateral collaboration impacts overall business climate in an industry or region. Suggests researchers and practitioners should have perspectives that go beyond performance of individual organizations. Also notes that studying whole network may reveal implications for its members, e.g., stage of network evolution may explain how individuals reach their goals.
Dacin, Oliver, & Roy (2007)	Motivational	Institutional	Firm	Agues legitimacy gained via participation in strategic alliance can have a major impact on firm performance. Suggests alliances serve important functions for firms. Proposes five types of legitimacy associated with alliances (market, relational, social, investment, and legitimacy). Offers propositions to explain when firms are most likely to enter into alliances for legitimacy purposes and how legitimating role of alliances contributes to firm and alliance performance. Most importantly, supports idea that legitimization may be an important role for alliances and extends alliance literature from institutional perspective.
Peters, Gassenheimer & Johnston (2009)	Interactional	Organizational learning & structuration theory	Organizational & relational	Argues that the new marketing logic requires more refinement and explicitness in networking literature. Addresses this need by exploring how value creation in marketing relies on organizational learning. Uses structuration theory to explain relationship between organizational and individual learning. Explores three facets of structuralization process of organizational learning: (1) structural properties that enable and constrain learning processes, (2) ways that individuals carry out learning practice, (3) social process in which learning practices are embedded. Illustrates process with examples of typical network relationship in construction industry and highlights role of marketing in enhancing knowledge management, organizational learning, and value creation.

Table 2: Summary of Selected Examples of Conceptual Research on Interfirm Networks

Author(s)/ year	Research perspective	Theoretical base	Level of analysis	Key contributions
Ganesan, George, Iap, Palmätier, & Weitz (2009)	Structural	Knowledge management & network theories (Implicit)	Firm & relational	Discusses how recent trends and changes in retailer supply chain management impact firm performance. Propose three directions in which retailers leverage upstream and downstream relationships in supply chain to create performance outcomes for brands, reputation, revenues, innovation, and long term prospects (sourcing practices on worldwide, multichannel, and nature of interfirm ties bases).
McGuire & Dow (2009)	Structural	Unclear	Network	Reviews major theoretical and empirical work on vertical and horizontal Japanese Keiretsu. Discusses history, characters, and changes for each type of Keiretsu in post-1992 period. Suggests future research and implications.

References

- Achrol, R. S. (1997). Changes in the theory of interorganizational relations in marketing: Toward a network paradigm. *Journal of the Academy of Marketing Science*, 25 (1), 56-71.
- Achrol, R. S., & Kotler, P. (1999). Marketing in the Network Economy. *The Journal of Marketing*, 63, 146-163.
- Baker, W. E., Faulkner, R. R., & Fisher, G. A. (1998). Hazard of the market: The continuity and dissolution of interorganizational marketing relationships. *American Sociological Review*, 63(2), 147-177.
- Bell, G. G., & Zaheer, A. (2007). Geography, networks and knowledge flow. *Organization Science*, 18(6), 955-972.
- Bell, D. C., Katsikeas, C. S., & Robson, M. J. (2010). Does accommodating a self-serving partner in an international marketing alliance pay off? *Journal of Marketing*, 74(Nov), 77-93.
- Bensen, K. J. (1975). The interorganizational network as a political economy. *Administrative Science Quarterly*, 20(2), 229-249.
- Borgatti, S. P., & Foster, P. C. (2003). The network paradigm in organizational research: A review and typology. *Journal of Management*, 29(6), 991-1013.
- Bourdieu, P. (1983). The Forms of Capital, in *Soziale Ungleichheiten (Soziale Welt, Sonderheft 2)*, ed. Reinhard Kreckel, 183-98, Goettingen: Otto Schartz & Co.
- Bourdieu, P. (1986). The Forms of Capital. In: Richardson, J. G. ed. *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood Press.
- Brass, D., Galaskeiwicz, J. Greve, H. R., & Tsai, W. (2004). Taking stock of networks and organizations: A multilevel perspective. *Academy of Management Journal*, 47(6), 795-817.
- Burt, R.S. (1997). The contingent value of social capital. *Administrative Science Quarterly*, 42, 339-365.
- Chaskin, R. J., Brown, P., Venkatesh, S., & Vidal, A. (2001). *Building Community Capacity*. New York: Aldine de Gruyter.
- Coase, R. (1937). The nature of the firm. *Economica*, 4(16), 386-405.

- Contractor, F. J., & Lorange, P. (1988). *Cooperative Strategies in International Business*. Oxford, UK: Elsevier Science, Ltd.
- Cook, K. S. (1977). Exchange and power in networks of interorganizational relations. *The Sociological Quarterly*, 18(1), Special Issue, 62-82.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S120.
- Dacin, M. T., Oliver, C., & Roy, J-P. (2007). The legitimacy of strategic alliances: An institutional perspective. *Strategic Management Journal*, 28, 169-187.
- Dahab, D. J., Gentry, J. W., & Sohi, R. S. (1996). Interest domination as a framework for exploring channel changes in transforming economies. *Journal of Macromarketing*, 16(2), 8-23.
- Das, T. K., & Teng, B-S. (2000). A resource-based theory of strategic alliance. *Journal of Management*, 26(1), 31-61.
- Das, T. K., & Teng, B-S. (2002). Alliance constellations: A social exchange perspective. *The Academy of Management Review*, 27(3), 445-456.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147-160.
- Dyer, J. H. & Nobeoka, K. (2000). Creating and managing a high performance knowledge sharing network: The Toyota case. *Strategic Management Journal*, 21, 345-67.
- Eccles, R. G., & Crane, D. B. (1988). *Doing Deals: Investment Banks at Work*. Boston: Harvard Business School Press.
- Eisenhardt, K. M., & Schoonhoven, C. B. (1996). Resource based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science*, 7(2), 136-150.
- Fabrizio, C. (2011). *Contractual networks, interfirm cooperation and economics growth.*, Cheltenham, UK: Edward Elgar Publishing, Inc.
- Flint, G. D., & Fleet, D. D. (2011). The competitive cohort: An extension of strategic understanding. *Journal of Business Strategies*, 28(2), 97-122.
- Fombrun, C. J. (1982). Strategies for network research in organizations. *The Academy of Management Review*, 7(2), 280-291.

- Frels, J. K., Shervani, T. & Srivastava, R. K. (2003). The intergrated networks model: Explaining resource allocation in network markets. *Journal of Marketing*, 67(1), 29-45.
- Ganesan, S., George, M., Jap, S., Palmatier, R.W., & Weitz, B. (2009). Supply chain management and retailer performance: Emerging trends, issues, and implications for research and practice. *Journal of Retailing*, 85(1), 84-94.
- Gerlach, M. L. (1992). *Alliance Capitalism: The Social Organization of Japanese Business*. Berkeley, CA: University of California Press.
- Giddens, A. (1984). *The Constitution of Society. Outline of the Theory of Structuration*. Cambridge: Polity.
- Graddy, E. A., & Chen, B. (2006). Influences on the size and scope of networks for social service delivery. *Journal of Public Administration Research and Theory*, 16, 533-552.
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360-1390.
- Granovetter, M. (1983). The strength of weak ties: A network theory revisited, in *Social Structure and Network Analysis*, P.V. Marsden and Nan Lin (eds), 201-233, Beverly Hills, CA: Sage Publications.
- Gu, F. F., Hung, K., & Tse, D. K. (2008). When does guanxi matter? Issues of capitalization and its dark sides. *Journal of Marketing*, 72(4), 12-28.
- Gulati, R. (1993). The Dynamics of Alliance Formation. Unpublished Doctoral dissertation, Harvard University.
- Gulati, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal*, 20(5), 397-420.
- Gulati, R., & Garguilo, M. (1999). Where do interorganizational networks come from? *American Journal of Sociology*, 104(5), 1439-93.
- Gulati, R., & Westphal, J. D. (1999). Cooperate or controlling? The effects of CEO-board relations and the content of interlocks on the formation of joint ventures. *Administrative Science Quarterly*, 44, 473-506.
- Gulati, R., Nohria, N., & Zaheer, A. (2000). Strategic networks. *Strategic Management Journal*, 21, 203-205.

- Gulati, R., Dialdin, D. A., & Wang, L. (2002). Organizational networks. In J. A. C. Baum (Ed.), *The Blackwell Companion to Organizations*: 281-303. Malden, MA: Blackwell.
- Holmes, R. M., Bromiley, P., Devers, C. E., Holcomb, T. R., & McGuire, J. B. (2011). Management theory applications of prospect theory: Accomplishments, challenges, and opportunities. *Journal of Management*, *37*(4), 1069-1107.
- Human, S. E., & Provan, K. G. (2000). Legitimacy building in the evolution of small-firm networks: A comparative study of success and demise. *Administrative Science Quarterly*, *45*, 327-65.
- Iacobucci, D. (1996). *Networks in Marketing*. Thousand Oaks, CA: Sage Publications.
- Ingram, P., & Baum, J. A. C. (1997). Chain affiliation and the failure of Manhattan hotels, 1998-1980. *Administrative Science Quarterly*, *42*, 68-102.
- Inzerilli, G. (1990). The Italian perspective: Flexible organization and social management. *International Studies of Management and Organization*, *20*, 6-21.
- Jones, C., & DeFillippi, R. J. (1996). Back to the future in film: Combining industry and self-knowledge to meet career challenges of the 21st century. *Academy of Management Executive*, *10*(4), 89-104.
- Jones, C., Hesterly, W. S., & Borgatti, S. P. (1997). A general theory of network governance: Exchange conditions and social mechanism. *The Academy of Management Review*, *22*(4), 911-945.
- Keister, L. A. (1998). Engineering growth: Business group structure and firm performance in China's transitional economy. *American Journal of Sociology*, *104*, 404-40.
- Khanna, T., & Rivkin, J. W. (2006). Interorganizational ties and business group boundaries evidence from an emerging economy. *Organization Science*, *17*(3), 333-352.
- Kogut, B. (1988). Joint ventures: Theoretical and empirical perspectives. *Strategic Management Journal*, *9*(4), 319-332.
- Khoja, F. (2010). The triad: Organizational cultural values, practices and strong social intra-firm networks. *Journal of Business Strategies*, *27*(2), 205-228.

- Koka, B. R., & Prescott, J. E. (2002). Strategic alliance as social capital: A multidimensional view. *Strategic Management Journal*, 23, 795-816.
- Koza, M. P., & Lewin, A. Y. (1999). The coevolution of network alliances: A longitudinal analysis of an international professional service network. *Organization Science* 10, 638-53.
- Kumar, A, Heide, J. B., & Wathne, K. H. (2011). Performance implications of mismatched governance regimes across external and internal relationships. *Journal of Marketing*, 75(March), 1-17.
- Larson, A. (1992). Network dyads in entrepreneurial settings: A study of the governance of exchange processes. *Administrative Science Quarterly*, 397, 76-104.
- Larson, A., & Starr, J. A. (1993). A network model of organization formation. *Entrepreneurship Theory and Practice*, Winter, 1042-2578.
- Lavie, D. (2006). The competitive advantage of interconnected firms: An extension of the resource based view. *Academy of Management Review*, 31(3), 638-658.
- Lazerson, M. (1995). A new phoenix? Modern putting-out in the Modena knitwear industry. *Administrative Science Quarterly*, 40, 34-59.
- Lee, C., Lee, K., & Pennings, H. M. (2001). Internal capabilities, external networks, and performance: A study on technology-based ventures. *Strategic Management Review*, 22, 615-640.
- Lee, S., Kroll, M. J., & Walters, B. A. (2011). Stages of corporate governance in transition economies. *Journal of Business Strategies*, 28(2), 151-176.
- Liao, Y. C. (2010). *Internal capabilities, external network position, and knowledge creation*. Doctoral dissertation, Rensselaer Polytechnic Institute, 2010.
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22(1), 28-51.
- Liu, Y., Atinc, G., & Kroll, M. (2011). The unique nature of Chinese corporate governance practices. *Journal of Business Strategies*, 28(1), 29-58.
- Lusch, R. F., & Brown, J. R. (1996). Interdependency, contracting, and relational behavior in marketing channels. *Journal of Marketing*, 60(October), 19-38.
- Madhavan, R., Koka, B. R., & Prescott, J. E. (1998). Networks in transitions: How industry events (re)shape interfirm relationships. *Strategic Management Journal*, 19(5), 439-459.

- Mariotti, F. (2011). Knowledge mediation and overlapping in interfirm networks. *Journal of Knowledge Management*, 15(6), 875-899.
- Mariti, P. & Similey, R. H. (1983). Co-operative agreements and the organization of industry. *The Journal of Industrial Economics*, 16(4), 437-451.
- McEvily, B., & Zaheer, A. (2004). Architects of trust: The role of network facilitators in geographical clusters. In *Trust and Distrust in Organizations*, ed. R. Kramer and K. Cook, 189-213. New York: Russell Sage Foundation.
- McGuire, J., & Dow, S. (2009). Japanese keiretsu: Past, present, future. *Asia Pacific Journal of Management*, 26, 333-351.
- Morgan, R. E. (2004). Market-based organizational learning – theoretical reflections and conceptual insights. *Journal of Marketing Management*, 20, 67-103.
- Nygaard A. & Dahlstrom, R. (2002). Role stress and effectiveness in horizontal alliances. *The Journal of Marketing*, 66(2), 61-82.
- Osborn, R. N., & Baughn, C. C. (1990). Forms of interorganizational governance for multinational alliances. *Academy of Management Journal*, 3, 503-519.
- Peng, M. W. (2003). Institutional transitions and strategic choice. *The Academy of Management Review*, 28(2), 275-296.
- Peng, M.W., & Zhou, J. Q. (2005). How network strategies and institutional transitions evolve in Asia. *Asia Pacific Journal of Management*, 22, 321-336.
- Peters, L. D., Gassenheimer, J. B., & Johnston, W. J. (2009). Marketing and the structuration of organizational learning. *Marketing Theory*, 9, 341-368.
- Pfeffer, J., & Nowak, P. (1976). Joint ventures and interorganizational interdependence. *Administrative Science Quarterly*, 21(3), 398-418.
- Pisano, G. P. (1989). Using equity participation to support exchange: Evidence from the biotechnology industry. *Journal of Law, Economics and Organization*, 5(1), 109-126.
- Podolny, J. M., & Page, K. L. (1998). Network forms organization. *Annual Review Sociology*, 24, 57-76.
- Porter, M., & Fuller, M. B. (1986). Coalitions and Global Strategy. In Michael Porter, ed. *Competition in Global Industries*, 315-344, Boston: HBS Press.

- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24, 1-24.
- Powell, W. W. (1990). Neither market or hierarchy: Network forms of organization. *Research in Organizational Behavior*, 12, 295.
- Provan, K. G., Isett, K. R., & Milward, H. B. (2004). Cooperation and compromise: A network response to conflicting institutional pressures in community mental health. *Nonprofit and Voluntary Sector Quarterly*, 33, 489-514.
- Provan, K.G., & Kennis, P. (2007). Modes of network governance: Structure, management, and effectiveness. *Journal of Public Administration Research and Theory*, August, 1-24.
- Provan, K.G., & Sebastian, J.G. (1998). Network within networks: Service link overlap, organizational cliques and network effectiveness. *The Academy of Management Review*, 41(4), 453-463.
- Putnam, R. D. (2000). *Bowling lane: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Reve, T., & Stern, L. W. (1979). Interorganizational relations in marketing channels. *The Academy of Management Review*, 4(3), 405-16.
- Rindfleisch, A., & Moorman, C. (2001). The acquisition and utilization of information in new product alliances: A strength of ties perspective. *Journal of Marketing*, 65, 1-18.
- Rowley, T., Behrens, D., & Krackhardt, D. (2000). Redundant governance structures: An analysis of structural and relational embeddedness in the steel and semiconductor industries. *Strategic Management Journal*, 21, 369-386.
- Scott R.W. (1987). The adolescence of institutional theory. *Administrative Science Quarterly*, 32, 493-511.
- Snow, C. C., Miles, R.E., & Coleman, H.J., Jr. (1992). Managing 21st century network organizations. *Organizational Dynamics*, 21(Winter), 5-20.
- Stigler, G. J. (1951). The division of labor is limited by the extent of the market. *Journal of Political Economy*, 59(3), 185-93.
- Swaminathan, V., & Moorman, C. (2009). "Marketing alliances, firm networks, and firm value creation. *Journal of Marketing*, 73, 52-69.

- Sydow, J., & Windeler, A. (1998). Organizing and evaluating Interfirm networks: A structurationist perspective on network processes and effectiveness. *Organization Science*, 9(3), 265-283.
- Teisman, G. R., & Klijn, E. H. (2002). Partnership arrangements: Governmental rhetoric or governance scheme? *Public Administration Review*, 62, 197-205.
- Thorelli, H. B. (1986). Networks: between markets and hierarchies. *Strategic Management Journal*, 7, 37-51.
- Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effects. *American Sociological Review*, 61, 674-698.
- Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly*, 42, 35-76.
- Uzzi, B. (1999). Embeddedness in the making financial capital: How social relations and networks benefit firms seeking financing. *American Sociological Review*, 64(4), 481-505.
- Venkatraman, N., & Lee, C. (2004). Preferential linkage and network evolution: A conceptual model and empirical test in the U.S. video game sector. *Academy of Management Journal*, 47, 876-892.
- Walker, O. C., Jr. (1972). The effects of learning on bargaining behavior. In 1971 Combined Proceedings, F. C. Allvine, ed. Chicago: American Marketing Association, 1, 94-99.
- Walker G., Kogut, B., & Shan, W. (1997). Social capital, structure holes and the formation of an industry network. *Organization Science*, 8(2), 109-125.
- Weiner, B. J., & Alexander, J. A. (1998). The challenges of governing public-private community health partnerships. *Health Care Management Review*, 23(2), 39-55.
- Westbrock, B. (2010). Natural concentration in industrial research collaboration. *The Rand Journal of Economics*, 41(2), 351-371.
- Williamson, O. E. (1975). *Market and hierarchies: Analysis of antitrust implications*. London, UK: The Free Press.
- Williamson, O. E. (1985). *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*. New York: Free Press.

Zaheer, A., & Bell, G.G. (2005). Benefiting from network position: Firm capabilities, structural holes, and performance. *Strategic Management Journal*, 26, 809-82.

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