Toward a Conceptual Model for Social Mechanisms Enabling Knowledge Sharing: Dynamic Relationships among Three Dimensions of Social Capital

Sung Jun Jo
University of Minnesota

Knowledge sharing is important because individual knowledge is not transformed into organizational knowledge until it is shared. The conceptual model presents how social factors create the conditions for effective knowledge sharing. It illustrates how three dimensions of social capital impact with each other and with knowledge sharing. Social mechanisms that maintain existing relationships and structures as well as they change them are identified. Implications of this model for practice and research are discussed.

Keywords: Social Capital, Knowledge Sharing, Institution

Introduction

Knowledge sharing is an area of high interest among researchers of organizational learning and knowledge management, more so than other aspects, such as knowledge creation and knowledge retention (Argote, McEvily, & Reagans, 2003). Individual knowledge is not transformed into organizational knowledge until it is shared with and transferred to others across an organization.

A number of studies have attempted to identify significant explanatory variables affecting individual behavior of sharing knowledge. They have tried to discover the factors that facilitate or impede sharing and transferring knowledge. For example, the properties of shared knowledge (Collins & Hitt, 2006), individual motivation (Osterloh, Frost, & Frey, 2002), beliefs and attitudes (Kolekofski & Heminger, 2003), and culture (Husted & Michailova, 2002) have been claimed as the primary factors in facilitating knowledge sharing. However, knowledge sharing is a too complex process to be explained by one or a few factors. Hence, another group of research has tried to create a conceptual model, combining multiple factors and/or clarifying the relationships among them with an integrative and comprehensive perspective (Bock, Lee, Zmud, & Kim, 2005; Ipe, 2003; Hendriks, 1999).

The occurrence of knowledge sharing depends directly on the willingness of knowledge owners to provide their knowledge; it also depends on the knowledge recipients' willingness to receive the owners' knowledge. A willingness to share is socially produced and can be regarded as a dependent variable of relationships among: 1) knowledge sharing partners; 2) social structure, which constrains individual behaviors; and 3) institutional mechanisms, such as culture, regulation, sanctions and so forth, which configure and control the benefit structure of the actors. From this perspective, a willingness to share knowledge is thought of as a resource produced by or embedded in social relations and structures, also referred to as *social capital* (Von Krogh, 2003; Lin, 1999).

What Is Social Capital?

Social capital is a concept that not only consists of various facets, but has also been defined in various ways by different theorists (Gubbins & Garavan, 2005; Inkpen & Tsang, 2005; Lin, 1999; Putnam, 1995; Coleman, 1990). For example, Koka and Prescott (2002) conceptualize social capital as a set of ties through which knowledge, information and resources possessed by actors are exchanged. These interactions establish social capital, a pattern of obligations and expectations, based on the norms of reciprocity and equity. Gubbins and Garavan (2005) define social capital as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or a social unit.

Coleman (1990) found that although a variety of different definitions of social capital exist, they share two common characteristics. First, they all consist of some aspects of a social structure; furthermore, they facilitate certain actions of individuals within the structure. Unlike other forms of capital, such as physical or human capital, social capital is inseparable from social structure, insofar as it is always inherent in the structure of social relationships among members (Portes 2000; Nahapiet, & Ghoshal 1998).

Another property of social capital identified by Coleman (1990) is that it is productive, making possible the achievement of certain ends that would be unattainable in its absence. Burt (2000) states that social capital is a

metaphor concerning an advantage. A human capital metaphor example claims that people who earn more are better educated; on the other hand, the social capital metaphor example claims that the people who do better are better connected. Inkpen and Tsang (2005) state that social capital provides members in a network with privileged access to knowledge, information and opportunities.

Social capital is a multi-dimensional concept. The most established and most frequently cited framework in terms of the dimensions of social capital was proposed by Nahapiet and Ghoshal (1998) who demonstrated that social capital includes structural, relational and cognitive dimensions. Structural dimension involves the properties of a social system and of the network relationships as a whole. The presence or absence of network ties, network configurations describing the patterns of linkages, and appropriate organizations are three subcategories of the structural dimension. The relational dimension represents the particular relationships as an asset created and leveraged through the network among actors, thus influencing their behavior. Cognitive dimension involves the resources providing shared representations, interpretations and systems of meaning among actors (Nahapiet & Ghoshal, 1998).

Research Problem: Knowledge Sharing and Social Capital

This paper intends to demonstrate how social capital and knowledge sharing are associated. Knowledge possessed by one member in a network can be shared easily and efficiently in the condition where sufficient social capital resides (Collins & Hitt, 2006). Von Krogh (2003) suggests that "imagined oneness" be built and an alignment of individual interests with collective ones be promoted in order to enhance knowledge sharing within members to overcome sequenced collective action problems, which may impede knowledge sharing. Communal resources, analogous to social capital, plays a role as the foundation for creating and sharing knowledge voluntarily by developing a shared identity, language, artifacts and norms (Von Krogh, 2003).

Makino and Inkpen (2003) indicate that social capital facilitates knowledge sharing in two ways. First, social capital creates a set of higher-order organizing principles that act as mechanisms by which to codify knowledge into a common language accessible to a group of individuals, which enforces organizational identity. Second, social capital increases the efficiency of the actions of both sources and the recipients of knowledge, which reduces the probability of opportunistic behavior, as well as the need for costly monitoring processes and thus,, the costs of transactions (Makino & Inkpen, 2003; Von Krogh, 2003).

In spite of the continuous efforts to identify the effects of social capital on effective knowledge sharing, the lack of comprehensive model integrating various facets of social capital and their relationships with knowledge sharing has been felt. For example, even though Daniel, Schwier and McCalla (2003) attempted to study how the social capital was related with knowledge sharing in virtual learning communities and in communities of practice, the focus of their research was restricted and failed to extend its coverage to the various characteristics of social capital. Similarly, Lucas (2005) concludes that trust and reputation are the most critical factors in promoting employees' willingness of to share their knowledge, but the structural conditions that might nurture trust and reputation were neglected.

This paper is based on the perspective that social capital has diverse facets. Comprehensive model of social capital which is composed of three dimensions will be proposed and how each dimension of social capital relates with knowledge sharing will be discussed. In addition, dynamic relationship among three dimensions of social capital will be proposed.

Framework of Theoretical Background: Three Dimensions of Social Capital

From the comprehensive literature review, three dimensions of social capital were identified: relational, structural and institutional dimension. Each of the dimensions includes several variables which are said to impact on knowledge sharing.

Relational Dimension of Social Capital

Trust. Trust is defined as a belief in, and a willingness to be vulnerable to another party (Renzl, 2006; Lucas, 2005; Abrams, Cross, Lesser, & Levin, 2003). In a dyadic relation, trust is intended to serve the function of obtaining access to information from another party, acquired through interactions (Lucas, 2005).

Mayer, Davis and Shoorman (1995) found three antecedents leading to trust. First, trust comes from the ability of the trustee (competency-based trust). Second, trust can emerge when a trustee is believed to be benevolent to the truster, aside from self-interests (benevolence-based trust). Third, the integrity of the trustee can be a source of trust (integrity-based trust).

Scholars have identified the various types of trust and have investigated their different outcomes through quantitative studies (Levin & Cross 2004; Abrams et al., 2003). As an example, Levin and Cross (2004) conducted empirical research with data from the employees of three large companies to examine the role of competence- and benevolence-based trust in improving the usefulness of exchanged knowledge. The results show that while competence-based trust was found to improve the usefulness of tacit knowledge, the role of benevolence-based trust was significant in both tacit and explicit types of knowledge.

In terms of the relationship between trust and knowledge sharing, there is agreement among researchers that trust plays a key role (Inkpen & Tsang, 2005). Cohen (2007) indicates that knowledge is most readily shared by people with relationships characterized by trust; Lucas (2005) also emphasizes the importance of trust in successful knowledge transfer. When trust exists, people are more willing to share knowledge, as it makes knowledge transfer less costly as trust reduces the need to undertake actions to protect one's interests. Furthermore when trust exists, the likelihood that newly acquired knowledge will be absorbed and retained increases (Lucas, 2005; Levin & Cross, 2004).

Reciprocity. Coleman (1988) suggests that obligations and expectations are generated from social exchanges in which payment for benefits is deferred to the future (Coleman, 1990). For instance, if A does something for B and trusts B to reciprocate in the future, this establishes an expectation in A and an obligation on the part of B (Coleman, 1988. p.102).

The norm of reciprocity is presented as a principle of social exchange. Social exchange theory is based on the premise that individuals evaluate the alternative courses of action so that they will get the best value at the lowest cost from any transaction completed (Wu, Lin, & Lin, 2006). Social exchange shares basic assumptions with economic exchange, in that an individual’s exchange depends on reciprocal and equivalent rewards gained in return (Wu, Lin, & Lin, 2006; Homans, 1958). One interpretation of social exchange maintains that human interactions are transactions aimed at maximizing one’s rewards and minimizing one’s costs. Even though social exchange theory does not contend that human beings consciously calculate costs and rewards whenever they take actions, such considerations can be used to predict human behavior (Myers, 1993).

The norm of reciprocity has been viewed as another factor affecting knowledge sharing. Unlike classical economic market theory, in which tangible products and services are exchanged, and only one price clears market (Burt, 1997), the knowledge market is different in that knowledge traded is not tangible, its value varies with context, and payment is deferred to the future. A knowledge owner will spend the time and effort needed to share knowledge effectively if that person expects buyers to be willing to share when he/she is in need of their knowledge (Davenport & Prusak, 1998). In this sense, knowledge sharing can be regarded as a kind of social exchange, and reciprocity is applied when analyzing knowledge exchange (Moran & Ghoshal, 1996; Nahapiet & Ghoshal, 1998).

Distance. Distance refers to the difference between knowledge owners and recipients. Distance between knowledge actors is determined partly by formal memberships or affiliations with departments, units and project teams; it is also partly determined by psychological orientations, such as values, perspectives and ideologies.

Leonard (2007) indicates that the physical proximity of the knowledge owner and the recipient is another factors affecting knowledge transfer. This knowledge transfer is believed to be more efficient among people when they work together physically. Davenport and Prusak (1998) showed that engineers in Boston and New Zealand were able to share knowledge more successfully with one another after having a series of meetings together. One of the reasons as to why physical proximity facilitates knowledge transfer is that knowledge is most credible when it comes from a trusted source; indeed, working or living with someone provides some basis for establishing trust.

Knowledge and culture distance have a significant effect on knowledge sharing. If the knowledge gap between the partners is too great, then too many learning steps will be required for the knowledge to be transferred. In other words, redundancy and overlapping areas of expertise facilitate knowledge transfer (Cummings & Teng, 2003). Shared culture and language also work in terms of improving communication between partners (Leonard, 2007; Davenport, & Prusak, 1998). Put differently, people who share the same work culture and who use same language can communicate better and can transfer knowledge more effectively than people who do not.

Structural Dimension

Social network. Social network is defined as a collectivity of individuals among whom exchanges take place that are supported by the shared norm of trustworthy behavior (Liebeskind, Oliver, Zucker, & Brewer 1996). From the knowledge transfer standpoint, Van Wijk, Van Den Bosch and Volberda (2003) characterize networks as linkages between actors who learn from one another and who integrate each other's knowledge until a problem is solved; a new series of linkages can then be formed with a different set of actors.

As Liebeskind et al. (1996) states, social networks promote organizational learning, as social network exchanges contribute to extending the scope of knowledge that an organization possesses and to integrating knowledge. A social network spanning boundaries enhances learning and flexibility, (which is one of the learning

capabilities) which are scarce within a self-contained hierarchical structured organization. Network allows organizational units to obtain an access to new knowledge from one another, which may increase cost efficiency (Van Wijk et al., 2003).

Jones, Hesterly, and Borgatti (1997) formulate a conceptual model explaining the creating and operating mechanisms of a network form of governance, which is coordination characterized by informal social systems rather than by bureaucratic structures within firms. According to their model, a social network is created as a response to: 1) environmental uncertainty; 2) customized exchanges high in human asset specificity; 3) task complexity; and 4) frequency. These four conditions drive firms toward structurally embedding their transactions, thus enabling firms to use social mechanisms for coordinating and safeguarding exchanges (Jones et al., 1997).

Tie strength. The concept of tie is interchangeably used with link or connection as a basic element of a social network and represents the specific ways in which actors are related and resources are exchanged (Inkpen & Tsang, 2005; Cook & Whitmeyer, 1992). Tie is viewed as a fundamental aspect of social capital, insofar as a network of social ties among actors creates opportunities for social transactions (Inkpen & Tsang, 2005). Van Wijk et al. (2003) addresses that ties have advantages in information exchange. Network ties provide actors with the access to the right parties for exchanges, allowing the actors to obtain information sooner than if it were to become available to the actors without such contacts; in fact, ties constitute the process that provide information to actors about available opportunities from which the actors benefit (Van Wijk et al., 2003).

The common classifications of tie strength involves the strong tie, which is close and frequent, and the weak tie, which is distant and infrequent (Van Wijk et al., 2003; Hansen, 1999; Burt, 1997; Granovetter, 1973, 1985). A great deal of attention has been paid to the different functions between strong and weak ties since Granovetter (1973) contended that weak ties are more likely to link members of different small groups than are strong ties, which tend to deliver redundant information. Weak tie plays an important role in connecting one network to others, and in expanding the network width. Hansen (1999) argues that strong ties provide the highest relative net effect when the knowledge is highly complex (non-codified), whereas weak ties have the strongest positive effect on completion time when the knowledge is not complex (codified) (Van Wijk et al., 2003; Hansen, 1999).

Network formation. Network formation refers to the pattern of linkages and the relationships built through them as a foundation for social capital (Nahapiet & Ghoshal, 1998). Gargiulo and Benassi (2000) indicate that the main issue in the structural dimension of social capital involves how the structure of social ties enhances an actor's ability to attain his/her goals. They identified that a social network can facilitate access to information, resources and opportunities, and that it can help actors to coordinate critical task interdependencies and to overcome the dilemmas of cooperation and collective action.

In terms of formation, there are two kinds of social networks: 1) a closed (clique) network; 2) an open (structural hole) network (Burt, 2000). A closed network in which everyone is connected such that no one can escape the notice of others (which in operational terms means a dense network) gives access to information and facilitates sanctions that make it less risky for people in the network to trust one another. A structural hole creates a competitive advantage for an individual who occupies that position.

Which formation of network is more advantageous has been raised as an issue of research. Burt (1997) argues that social capital is a function of brokerage opportunities within a network. Unlike ideal market conditions in which actors have perfect information, social networks are disconnected and have structural holes (disconnected points). In this condition where an asymmetry of information exists, location within a network can be an asset attributed to an actor (Van Wijk et al., 2003; Gargiulo & Benassi, 2000; Burt, 1997).

Institutional Dimension

What is an institution? Institutions are defined as the rules and practices prescribing and guiding the appropriate behavior in specific problems and situations (March & Olsen, 1984). However, the structures, rules and standards in this definition do not necessarily represent formal ones (Brown & Duguid, 1991). In some instances, informal communities, such as communities of practice, are found to be more influential. In such a case, informal norms and codes should be regarded as a more important institution than formal ones because the former ones are the guiding principles.

Institutions are indispensable in social structures because of their contribution to the stability of the structures. By instilling values and intrinsic worth, institutions promote stability (Scott, 1987). According to March and Olsen (1984), roles maintaining the stability of existing structures include mediating the structure and the individual behavior of actors involved, thus creating order and predictability, providing bonds among members, and translating structure into action through the routine generating process.

However, the role of institutions cannot be restricted to that of maintaining the status-quo (Wiseman, 2007). Institution evolves independently from structure. An institution has its own purpose and intentions, and exerts its

own influence on forming individuals' interests, which are independent of, and sometimes, contradictory with the structure (Scott, 1987).

Institutional dimension of social capital is connected with relational dimension because the former boosts the predictability of an actor's behavior with its guiding role (Feldman 1984). Under uncertainty, no one is able to predict which behavioral option another will choose. However, under the condition in which institutions such as agreed norms, standards and regulations exist, the predictability of another's choice will increase. Hence, trusting others will be cheaper without institutions because of lower transaction costs (Leana & Barry, 2000) and/or coordination costs (Jones et al., 1997).

Endogenous institution. An endogenous institution is understood as a product of an existing social structure and as an agent in making existing relationships and structures stable.

Jones et al. (1997) states that four social mechanisms are embedded in a structure and social problems in the network are solved through these mechanisms. They include: 1) restricting access to exchange; 2) the macroculture; 3) collective sanctions; and 4) reputation. All of them are understood as endogenous institutions, in that they are structurally embedded in the network and are used to solve problems that may harm existing relationships among actors by lowering transaction costs and/or by ensuring exchanges. Leana and Barry (2000) identify routines and power structures as the major institutions in maintaining organizational stability.

The most representative endogenous institution is the organizational culture. Schein (1988) defines culture as "a pattern of basic assumptions, invented, discovered, or developed by a given group" (p.7). This definition shows that culture can be regarded as an institution embedded and developed in existing relationships and structures. Schein (1988) also indicates that culture is "to be taught to new members as the correct way to perceive, think and feel in relation to their problem" (p.7). This statement implies that culture plays a maintaining role as do other endogenous institutions. In addition, the organizational culture creates high levels of behavioral consistency in members through social norms, shared values and a shared mental model (Dalkir, 2005).

However, organizations have the intention to change its culture in order to adapt to external environmental changes, or to vitalize people's morale. Schein (1988) maintains that the durability of a culture in a group depends on the group stability and the strength of socialization. The higher the organizational stability is, and the more opportunities of learning there exist in an organizational culture, the more durable the existing organizational culture will be. Loosely connected networks and admitting diversity may be advantageous for innovation.

Exogenous institution. An exogenous institution is developed outside of existing structures and is compelled to make changes between the existing relationships among actors. Exogenous institutions are innovative in nature, in that their intention is not to maintain existing relationships and structures. Interventions for organizational development are typical examples. In many cases, interventions are designed by external members, such as OD consultants when internal members are not expected to challenge the existing relationships and values.

Prior literature proposes many interventions to facilitate knowledge sharing through changes in the existing relationships between knowledge owners and recipients. In order to enhance trust, mentoring and storytelling (Swap, Leonard, Shields, & Abrams, 2001), holding persistent conversation sessions (Cohen, 2007) and building communities-of-practice (Wenger & Synder, 2000; Lesser & Prusak, 1999) are proposed as appropriate interventions. To increase the feeling of reciprocity and to avoid the public goods dilemma (Cabrera & Cabrera, 2002), interventions to reduce risks and to enhance benefits of knowledge sharing should be considered; for example, financial or promotional rewards.

The vision statement presented by management is exogenous, as it is created based on the needs for change in existing and institutionalized practices. Senge (1992) articulates that the newly stated vision statement from the top management becomes institutionalized through the enrollment, commitment and compliance of the members. Institutionalization of vision statement changes people's value systems, consequently resulting in establishing new relationships among people. Once most people in an organization accept and comply with the newly stated vision, it is no longer a new vision; rather, it has been transformed into an endogenous institution.

Conceptual Model: Maintaining and Innovating Loops

By synthesizing the three dimensions of social capital discussed above, two conceptual loops are proposed: maintaining loop and innovating loop. Each dimension of social capital interacts with one another. Relational dimensions are viewed as having a direct impact on knowledge sharing. The relational dimension also configures a structural dimension, with the assumption that the network structure is a collective of each relationship and its position in the network (Cook & Whitmeyer, 1992). The structural dimension, in reverse, forms actors' behavior and their mutual relationships within its structural boundaries. This process maintains or strengthens the existing relationships and structure, inasmuch as the structure would not allow behaviors and relationships that would

threaten its stability. Such a constraining and controlling role of structure is mediated by endogenous institutions, such as organizational routines, power structures and culture. Such a self-containing process represents a maintaining loop.

On the other hand, an innovating loop which conceptualizes the systematic changes of social capital is also proposed. This loop begins with an exogenous institution, which is stimulated by environmental change. Exogenous institutions, which contain conflicting norms and values, intend to transform existing relationships into new ones. Even though the effect of the changes in the relational dimension is incremental, persistent interventions of exogenous institutions ultimately lead to changes in the structural dimension and produce new types of endogenous institutions, which can be referred to as institutionalization. Once institutionalization occurs, the attribute of the loop is transformed into a maintaining one. If there is a need to make changes due to the environment, another exogenous institution will emerge. This process represents an innovating loop.

Conclusion

The ultimate goal of knowledge management is to leverage organizational knowledge to achieve competitive advantages (Davenport & Prusak, 1998). If organizational knowledge is viewed as one of the competitive advantages, social relationships and social structures that create a willingness to share knowledge are worthwhile to focus on as an important source of competitive advantage. Thus, managers in an organization need to turn their attention to creating favorable social relations and structures for knowledge sharing.

The discussion of three dimensions of social capital presented above enhances the understandings about the social factors affecting knowledge sharing. Knowledge sharing is an outcome of social capital accumulated in an organization. The effect of social capital on knowledge sharing is multi-dimensional. While knowledge is more easily shared among partners who have trust, reciprocal norm and closeness, the relationships among partners are partly affected by network structure and institutions in organization level. Therefore, it would especially be valuable in an analysis of the effects of organizational interventions on knowledge sharing. It can explain why some organizations are successful in knowledge sharing, while others are not, even though the same interventions or policies are enforced. The effectiveness of an intervention or policy depends on its proximity with existing values.

Implications for Practice

From the discussion of this paper, several implications for practice and management are indicated. First, in order to enhance knowledge sharing and transfer in knowledge management, managers and HRD practitioners need to focus mainly on the social relationships among people in the organization. As knowledge sharing is a social issue in nature, even adopting elaborate technology to develop knowledge management systems and to implement new policies for improving individual motivation to share knowledge will not be successful if the management fails to control the relationships among individuals.

Second, managers and practitioners need to possess a systems perspective. Considerations for environments, organizational strategies and expected effects are required before implementing policies or regulations. For example, this paper shows that the effectiveness of network formation for knowledge sharing depends on the type of knowledge to be shared. Hence, organizations pursuing innovation should be concerned more with developing structural hole network rather than closed network. Additionally, they should notice that mimicking the best practices of other organizations without consideration of the differences in their own organization will not necessarily lead to the expected outcomes.

Third, the focus should be placed on informal knowledge network rather than on official hierarchies presented in official organizational charts, as significant learning and innovation are generated in informal communities (Brown & Duguid, 1991). In this vein, redesigning the formal structure would not have a significant impact on the actual flow of knowledge without considering informal knowledge flow. Interventions for improving knowledge management should be enforced under the full understanding of informal, as well as formal relationships among organization members; moreover, these interventions should blueprint how these relationships will change after the enforcement of specific policies.

References

Abrams, L., Cross, R., Lesser, E., & Levin, Z. (2003). Nurturing interpersonal trust in knowledge-sharing networks. *Academy of Management Executive, 17*(4), 64-77.

Argote, L., McEvily, B., & Reagans, R. (2003). Managing knowledge in organizations: An integrative framework and review of emerging themes. *Management Science, 49*(4), 571-582.

Bock, G., Lee, J., Zmud, R., & Kim, Y. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly, 29*(1), 87-111.

Brown, J. S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science, 2*(1), 40-57.

Burt, R. S. (1997). The contingent value of social capital. *Administrative Science Quarterly, 42*(2), 339-365.

Burt, R. S. (2000). The network structure of social capital. *Research in Organizational Behavior, 22*(2), 345-423.

Cabrera, A., & Cabrera, E. (2002). Knowledge-sharing dilemmas. *Organization Studies, 23*(5), 687-710.

Cohen, D. (2007). Enhancing social capital for knowledge effectiveness. In K. Ichijo, & I. Nonaka (Eds.), *Knowledge creation and management* (pp. 240-253). New York: Oxford University Press.

Coleman, J. (1988). Social capital in the creation of human capital. *The American Journal of Sociology, 94*, 95-120.

Coleman, J. (1990). *Foundations of social theory*. Cambridge, MA: Harvard University Press.

Collins, J. D., & Hitt, M. A. (2006). Leveraging tacit knowledge in alliances: The importance of using relational capabilities to build and leverage relational capital. *Journal of Engineering and Technology Management, 23*(3), 147-167.

Cook, K. S., & Whitmeyer, J. M. (1992). Two approaches to social structure: Exchange theory and network analysis. *Annual Review of Sociology, 18*(1), 109-127.

Cummings, J. L., & Teng, B. S. (2003). Transferring R&D knowledge: The key factors affecting knowledge transfer success. *Journal of Engineering and Technology Management, 20*(1-2), 39-68.

Dalkir, K. (2005). *Knowledge management in theory and practice.* Burlington, MA: Elsevier Butterworth-Heinemann.

Daniel, B., Schwier, R., & McCalla, G. (2003). Social capital in virtual learning communities and distributed communities of practice. *Canadian Journal of Learning and Technology, 29*(3), 113-139.

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know.* Boston, MA: Harvard Business School Press.

Feldman, D. C. (1984). The development and enforcement of group norms. *The Academy of Management Review, 9*(1), 47-53.

Gargiulo, M., & Benassi, M. (2000). Trapped in your own net? Network cohesion, structural holes, and the adaptation of social capital. *Organization Science, 11*(2), 183-196.

Granovetter, M. (1973). The strength of weak ties: A network theory revisited. *Sociological Theory, 1*, 201-233.

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *The American Journal of Sociology, 91*(3), 481-510.

Gubbins, M. C., & Garavan, T. N. (2005). Studying HRD practitioners: A social capital model. *Human Resource Development Review, 4*(2), 189-218.

Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly, 44*(1), 82-85.

Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management, 6*(2), 91-100.

Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology, 63*(6), 597-606.

Husted, K., & Michailova, S. (2002). Diagnosing and fighting knowledge-sharing hostility. *Organizational Dynamics, 31*(1), 60-73.

Inkpen, A. C., & Tsang, E. W. (2005). Social capital, networks, and knowledge transfer. *The Academy of Management Review, 30*(1), 146-165.

Ipe, M. (2003). Knowledge sharing in organizations: A conceptual framework. *Human Resource Development Review, 2*(4), 337-359.

Jones, C., Hesterly, W. S., & Borgatti, S. P. (1997). A general theory of network governance: Exchange conditions and social mechanisms. *The Academy of Management Review, 22*(4), 911-945.

Koka, B., & Prescott, J. (2002). Strategic alliances as social capital: A multidimensional view. *Strategic Management Journal, 23*(9), 795-816.

Kolekofski, K. E., & Heminger, A. R. (2003). Beliefs and attitudes affecting intentions to share information in an organizational setting. *Information & Management, 40*(6), 521-532.

Leana, R., & Barry, B. (2000) Stability and change as simultaneous experiences in organizational life. *Academy of Management Review, 25*, 753-759.

Leonard, D. (2007). Market research in product development. In K. Ichijo, & I. Nonaka (Eds.), *Knowledge creation and management* (pp. 146-157). New York: Oxford University Press.

Lesser, E., & Prusak, L. (1999). Communities of practice, social capital and organizational knowledge. *Information Systems Review, 1*, 3-9.

Levin, D., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management Science, 50*(11), 1477-1490.

Liebeskind, J. P., Oliver, A. L., Zucker, L., & Brewer, M. (1996). Social networks, learning, and flexibility: Sourcing scientific knowledge in new biotechnology firms. *Organization Science, 7*(4), 428-443.

Lin, N. (1999). Building a network theory of social capital. *Connections, 22*(1), 28-51.

Lucas, L. M. (2005). The impact of trust and reputation on the transfer of best practices. *Journal of Knowledge Management, 9*(4), 87-101.

Makino, S., & Inkpen, A. (2003). Knowledge seeking FDI and learning across borders. In M. Easterby-Smith, & M. Lyles (Eds.), *Handbook of organizational learning and knowledge management* (pp. 233-252). Malden, MA: Blackwell Publishing.

March, J., & Olsen, J. (1984). The new institutionalism: Organizational factors in political life. *American Political Science Review, 78*, 734-349

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *The Academy of Management Review, 20*(3), 709-734.

Moran, P., & Ghoshal, S. (1996). Theories of economic organization: The case for realism and balance. *The Academy of Management Review, 21*(1), 58-72.

Myers, D. G. (1993). *Social psychology.* New York: McGraw-Hill.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *The Academy of Management Review, 23*(2), 242-266.

Osterloh, M., Frost, J., & Frey, B. (2002). The dynamics of motivation in new organizational forms. *International Journal of the Economics of Business, 9*(1), 61-77.

Portes, A. (2000). The two meanings of social capital. *Sociological Forum, 15*(1), 1-12.

Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy, 6*(1), 65-78.

Renzl, B. (2006). Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation. *Omega, 36*(2), 206-220.

Schein, E. H. (1988). *Organizational culture.* Retrieved July 31, 2007, from http://dspace.mit.edu/bitstream/1721.1/2224/1/SWP-2088-24854366.pdf

Scott, W. R. (1987). *Organizations: Rational, natural, and open systems.* Englewood Cliffs, NJ: Prentice-Hall.

Senge, P. (1992). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.

Swap, W., Leonard, D., Shields, M., & Abrams, L. (2001). Using mentoring and storytelling to transfer knowledge in the workplace. *Journal of Management Information Systems, 18*(1), 95-114.

Van Wijk, R., Van Den Bosch, F.A., & Volberda, H. W. (2003). Knowledge and networks. In M. Easterby-Smith, & M. Lyles (Eds.), *Handbook of organizational learning and knowledge management* (pp. 428-453). Malden, MA: Blackwell Publishing.

Von Krogh, G. (2003). Knowledge sharing and the communal resource. In M. Easterby-Smith, & M. Lyles (Eds.), *Handbook of organizational learning and knowledge management* (pp. 372-392). Malden, MA: Blackwell Publishing.

Wenger, E. C., & Snyder, W. M. (2000). Communities of practice: The organizational frontier. *Harvard Business Review, 78*(1), 139-145.

Wiseman, E. (2007). The institutionalization of organizational learning: A neoinstitutional perspective. *Proceedings of International Conference on Organizational learning, Knowledge and Capabilities 2007.* Ontario, Canada.

Wu, S., Lin, C., & Lin, T. (2006). Exploring knowledge sharing in virtual teams: A social exchange theory perspective. *Proceedings of the 39th Annual Hawaii International Conference on System Sciences.* Hawaii.