

Developing Strategic Communication Strategies for Cultivating Communities of Practice

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Abstract: This paper lays the groundwork for building a communication model that will help cultivate communities of practice through the use of strategic communications. Theoretical models describing communities of practice in organizational knowledge generation typically have three main actors; the individual, the community and the organization. These models usually mention the necessity for their interaction, but are never specific about how this should be done. Furthermore, there has been little research on how communication processes can affect the relationship between the three actors in the model. This paper proposes that the interaction between the community, the individual members of the community and the organization must be facilitated and promoted through specific strategic communications in order to guarantee the success of the community. Topics such as knowledge sharing, knowledge building and organizational learning are looked at through a communication perspective.

Keywords; Communities of practice, communication strategy, knowledge sharing, organizational learning

1. Introduction

Communities of practice have for some years been recognized as a knowledge management (KM) method for organizations wishing to stimulate learning and innovation among its employees. Wenger (2002) defines communities of practice as “...groups of people who share a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.” (p.4) (The term ‘cultivating’ used in this paper can be attributed to Wenger (2002) and represents a many-faceted concept of development that includes ideas such as fostering, aiding, promoting and supporting.)

While organizational communication is a well-established discipline, a review of the literature has shown there to be little empirical research into when or how specific formal procedures should be implemented in group communication interventions in order to produce specific results, and none at all that links this with communities of practice (Sunwolf). Furthermore, there is a lack of research exploring correlations between the success rate of a community of practice with the quality of its strategic internal and external communication strategy in relation to the actors in the environment in which it operates; namely the community, the individual members and the organization itself. These levels of analysis play an important role in the development of communication strategies and will be expanded on below.

2. Theoretical framework

The structure of this paper is built on the theoretical framework proposed below. We feel that a multidisciplinary approach to organizational communication is needed in order to help build the foundations for a communication model. These include;

1. Knowledge management theory - theory concerning why communities of practice are cultivated as a function of knowledge management and what is needed for them to be successful.
2. Knowledge building theory - theory on how knowledge is built; by individuals, within communities of practice and within organizations.
3. Communication theory – theory relating to how, when and why knowledge is exchanged between the actors in an organization.

2.1 Theories on communities of practice as a function of knowledge management

Communities of practice in organizations are cultivated in order to improve its competitiveness in the market place through investment in learning at the individual level (Davenport 1998). They are one way of systematically managing knowledge in a rapidly changing business world where highly contextual and complex problems need to be quickly solved, or innovation must occur at a rapid pace in order for the firm to remain competitive (Wenger 2002, Nonaka 1995, Davenport 1998). The need for knowledge management is highly documented, as is the effectiveness of communities of practice as a KM tool (Davenport 1998, Smith 2003, Wenger 2002).

However, because communities of practice are organic as well as social in nature, they tend to be difficult to cultivate and often fail due to problems that can arise at three levels; organizational, community, and the individual, or member level. In order to understand the needed components of a communication model, we'll first need to first look at what general problems communities encounter at each of the three levels mentioned above.

2.1.1 Organizational level problems

The organizational level is the broadest level at which problems for communities can arise and perhaps the most important for building our model. Without a firm commitment from management, and an understanding by management of communities and their strategic role in KM, problems for communities can occur. Several of these problems are; lack of funding (Saint-Onge 2003), lack of recognition (Wenger 2002) and too much involvement by management (Brown 2000). Furthermore, an important aspect of community cultivation one must bear in mind is the organizational environment, which consists of, among other things, the structure, the technological infrastructure and finally its culture (Kayworth 2003).

In order for communities of practice to thrive, organizational structure must lend itself to collaboration and open information flows. A strong hierarchical organization will probably have difficulties cultivating communities because they are difficult to control and benefits are not easily quantitatively measurable (Steinheider 2004).

Organization in which there is an open culture, reflected in knowledge sharing, open communication and a tendency towards workplace participation, on the other hand, promote community development (Deetz 2004).

The technological infrastructure is important for modern knowledge-based organizations in that it needs to facilitate the collaborative efforts of people who may be distributed, or when face-to-face meetings are not possible on a regular basis. Tools such as searchable databases and intranets lead to more effective knowledge sharing and play an important role in organizational communication.

2.1.2 Community level

Problems that may arise at the community level that can affect its own cultivation are; lack of interest (Blunt 2003), poor management (Saint-Onge 2003), lack of coordination and facilitation (Wenger 2002), poor internal communication processes (Sunwolf 1999) and no sense of community (Sharrat 2003).

In order for a community to function well, communication must flow freely in a reliable manner and in a trustful environment. Such an environment will encourage members to exchange knowledge, leading to innovation, better problem-solving and finally, organizational learning (Schneider 2004).

2.1.3 Individual, or member, level

At the individual level, motivational and cognitive aspects of knowledge sharing form barriers to success (Davenport 1998, Hakkarainen 2004a). The strong social ties associated with a membership in a community motivates knowledge and expertise sharing. Cognitive problems, such as differences in levels of expertise are also important issues (Hinds 2003) that need to be addressed.

Thus, the environment needed to spawn and maintain communities of practice is quite complex and often requires fine-tuning of the processes associated with it. The problematic factors listed above reflect a *reverse* of the required conditions for starting a community of practice as well as lead us to the factors for maintaining a successful one. What is missing in the literature is the direct coupling of strategic communication processes that either contribute to the cultivation of communities at each of the three levels, or help overcome the problems that they face.

3. How knowledge is built

Scardamalia and Bereiter (Hakkarainen 2004a) define knowledge building as “...collective work that focuses on advancing, articulating and further elaborating development of conceptual artifacts, such as product plans, business strategies, marketing plans, ideas and models.” (p.78) In this respect, the concept of knowledge-building, especially as understood by this author, is literally the same as innovation. Most definitions of innovation also contain the notion of change or betterment of an existing

product, process, system or social relationship. In this paper I use the terms interchangeably.

3.2 Knowledge building within organizations

In 1995, Nonaka and Takeuchi (1995) developed a model of how knowledge is built within Japanese organizations. They argue that the first step in creating new knowledge is to change knowledge that exists in the individual (tacit) to knowledge that can be shared with others (explicit). Through socialization and conversation, implicit knowledge follows a spiral-shaped path through various stages, finally ending up as objective, organizational knowledge, expressed in new processes, products, etc.

Huysman and DeWitt (2003) developed a similar model of organizational knowledge creation based on their research about knowledge management initiatives in ten Dutch firms. In their model, knowledge creation also starts with an individual who externalizes and then shares his knowledge. This knowledge is objectified by the group, which then either accepts or denies the new knowledge as group knowledge. If it is collectively accepted, then it becomes organizational knowledge. This is a cyclical model that considers that organizational knowledge is returned to the individual, where it becomes internalized.

What is very interesting for this research is a later contention by Huysman (2004) that communities of practice are usually concerned exclusively with individual learning and thus have a problematic lack of connection to the organization and its learning. This discrepancy in the theory probably has to do with the fact that organizational learning is hard to measure and direct results are not always immediately apparent (van Aken 2004).

Finally, Stahl (2000) developed a model for organizational knowledge building in virtual environments. However, this model can be easily adapted and used for a non-virtual situation. His model, which he refers to as a social knowledge-building model, is more elaborate than either Nonaka and Takeuchi's or Huysman and DeWitt's. Stahl breaks down the knowledge building process into separate steps, elaborating on the actual process of innovation. He also portrays the three separate actors - organization/group/individual - as being engaged in a cyclical process of their own. Stahl then connects the actors through processes such as communication, reification and negotiation. Thus his model differs from the others mentioned in two ways; in that specific steps in the knowledge building process are explicated and also that reference is made to the act of articulation as a means of explicating knowledge. However, his model does not give any insight into how knowledge can be articulated; only that it is in fact a part of the process involved in organizational innovation.

Thus, a review of the literature surrounding knowledge building at the organizational level reveals several close similarities. It seems that most models are cyclical in nature and have comparable notions of how knowledge building starts with the individual. This cycle is portrayed below in figure 3.

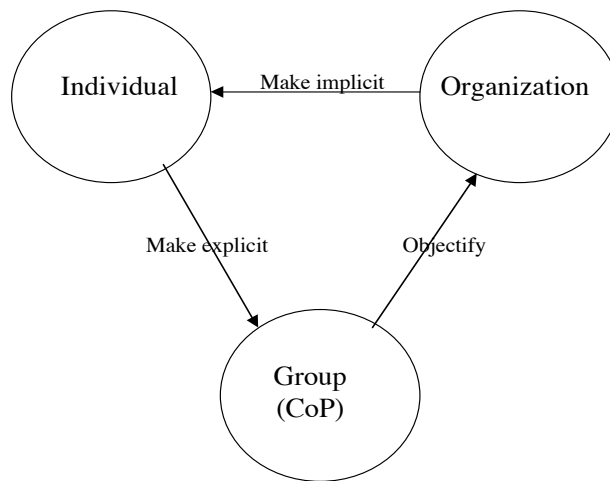


Figure 3. The organizational knowledge building cycle

3.3 Knowledge-building within groups

Hakkarainen (2004a), in their recent book on networked expertise, compared three knowledge-building models and how they are applied to (innovative) communities of practice. The first model that they analyze, from Nonaka and Takeuchi, I have already discussed above. The second model they scrutinize is Yrjö Engeström's expansive learning model, which has similarities with Stahl's (2000), in that both models contend that learning is cyclical at an individual and group level. In a group situation, problems are discussed in regards to established practice and previously generated artifacts. These are questioned as to their validity and applicability in other contexts. This eventually leads to new concepts being developed, which are then in turn critically discussed and integrated into the community (Hakkarainen 2004a, p. 77). What one must not forget is that this is foremost a learning model and considers the group process to be a learning one that results in new knowledge for the individual. In other words, the transfer to the organization is not explicit. This is in contrast to Bereiter, whose third model is discussed by Hakkarainen. Bereiter theorizes that knowledge is *intentionally* created within communities, resulting in new conceptual artifacts that become available to the whole group involved in the process. This leads directly to organizational knowledge. This is in sharp contrast to Engeström's expansive learning model, which considers the new knowledge to be redirected back into the individual. However, Hakkarainen, *et al* don't see the three theories as being mutually exclusive in innovative communities of practice, because communities of practice have different cycles in which certain types of learning or innovation are needed. Another reason is that intentionally cultivated communities are often made up of diverse individuals, who may learn in different manners. Moreover, Hakkarainen (2004b) believe that Bereiter's theory is more applicable to a community that is specifically designed for innovation, rather than one that has been designed for, or whose main purpose, is learning.

According to Wenger (1998), social learning is the collaborative negotiation of new concepts or artifacts that are introduced into the community of practice. This is

similar to Yrjö Engeström's expansive learning model, but Wenger does not consider learning to be necessarily expansive and thus his theory explains the nature of innovation as a learning process even less. However, all three models discussed by Hakkarainen (2004a, 2004b) agree that learning is in fact a social act and cannot be separated from social situations. This is also consistent with modern social-constructivist theories of learning as well, and so fits the paradigm of this research.

Propp (1998) approaches group knowledge building from an information processing perspective. Although this is not wholly congruent with the previously discussed theory, her model of collective information processing can be enlightening when trying to understand the information exchange process among members of a group. This process begins with individual actors coming together and exchanging knowledge. The group then goes through a three-step process when finally it has a new, collective knowledge base. Propp's work is significant for this research because she uses small group communication theory as a basis for her model and this is one of the important theoretical links between knowledge building and communication that might be considered.

3.4 Knowledge-building at an individual level

The individual is the trigger for innovation. Individuals bring their knowledge and information into a social setting through communication. The theoretical perspective developed in this paper considers that innovation is a group process associated with negotiated learning through social interaction. In other words, knowledge is socially constructed by individuals working together.

Thus, it is important when building a communication model to understand the effects individuals have on the innovation process. Research on this aspect of innovation usually considers the importance of diverse types of actors in a community that are needed in order to stimulate creativity (Bood 2004, Davenport 1998, Nonaka 1995). This diversity is consistent with the social learning theories of Engeström, and the knowledge building concepts introduced by Hakkarainen (2004a, 2004b). Expansive learning theory is based on the idea that the equilibrium in a group's social and (social-cognitive) structure is disturbed in some way, such as by the introduction of new knowledge from an outsider to the group, and new learning is needed to bring the group back in balance.

Hakkarainen (2004a) in his theory of innovative communities, uses the term *knotworks* in order to explain the member make-up of an innovative community of practice. Knotworks are the loose ties among divergent members of an overtly stimulated community, and innovation benefits from the diverse backgrounds of individuals (Hakkarainen 2004a). Davenport and Prusak (1998) also argue that diversity of individuals is of great importance for innovation in a community and refer to the intentional mixing of people with different backgrounds as the "fusion" method of knowledge generation. This is contrary to the original concepts of communities – in which members from similar backgrounds learn together – where a common language and understanding is generated over time. This difference between 'knotworks' and traditional networks within a community of practice has serious consequences for a model that addresses communication at an individual level.

Finally, aspects such as motivation, cognitive problems and other considerations play a role in an individual's knowledge building (Hinds 2003). However, it might be preferable to relate these more with knowledge exchange, because this is strongly affected by an individual's motivation and cognitive processes. These concepts are examined more thoroughly in the following section where the communication aspects surrounding communities are discussed.

4. Communication theories surrounding communities of practice

In this section the theories that are used to build the conceptual framework are discussed, using figure 4 as a basis.

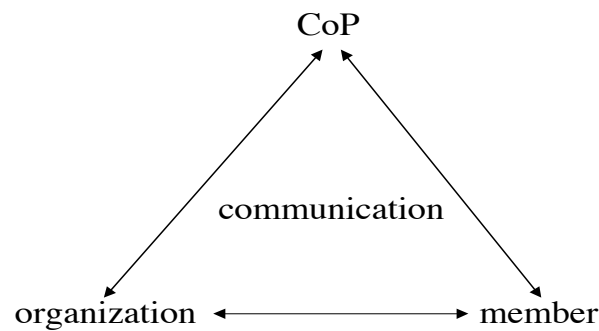


Figure 4. Conceptual Framework- Communications

In figure 4, the underlying conceptual premise of the communication framework is portrayed. This framework is based on communication, which is represented by the arrows between the three actors. As one can see from the model, communication takes place between; the organization and the individual members of the community of practice; the community of practice as a whole and its individual members and the community of practice and the organization. Table 4 below shows the actual interrelatedness of the communication processes in a detailed matrix, and the specific goals each type of communication should accomplish.

Table 4. Conceptual framework for organizational communications through a KM perspective

Source/Receiver	Community of practice	Organization	Individual
Community of practice	<ul style="list-style-type: none"> •Socialization •Knowledge –building •Innovation •Practical aspects 	<ul style="list-style-type: none"> •Objectify innovations •Gate-keeping •Validate existence •Growth 	<ul style="list-style-type: none"> •Prove value •Facilitate
Organization	<ul style="list-style-type: none"> •Alignment with organizational strategies •Knowledge/attitude and behavior 	<ul style="list-style-type: none"> •Validate new knowledge •Formalize and spread new knowledge, best practices, etc 	<ul style="list-style-type: none"> •Alignment with organizational strategies •Knowledge/attitude and behavior
Individual member	<ul style="list-style-type: none"> •Cognitive aspects (explication of tacit knowledge) 	<ul style="list-style-type: none"> •Prove value of membership (motivation) 	<ul style="list-style-type: none"> •Personal motivation

4.1 Theories about communication and communities – the community as source

What literature there is about communication within communities of practice is anecdotal in nature. There have been no known attempts to empirically design and test a model that will help facilitators of communities decide on strategic communication processes. Sunwolf and Siebold (1997), in their meta-analysis of formal communication procedures for small groups, explicitly mention the need for research into this topic. What is proposed in this paper is to develop a model, based on a synthesis of existing theories and models about small-group communication and knowledge building, that will facilitate the actual making of strategic decisions surrounding implementation of communication processes within communities of practice. For example, theory explains that sometimes a community of practice needs to be stimulated in a certain way in order to achieve a specific goal (Bood 2004). These goals could include; structuring a learning agenda; facilitating reflection; improving group-level knowledge exchange or iterating new knowledge for organizational use.

As I mentioned above, information processing theories can also be useful in understanding how knowledge is exchanged. Propp (1998) as well as others, introduce a number of social aspects to information exchange that are pertinent for this study. Notions such as status (Hollingshead 1996) individual's traits (Davenport 1998, Reagans 2003) and group characteristics (Bood 2004) all influence how a group communicates internally.

External communication for a community of practice needs to focus on several important points, including proving its value for the organization; to the individuals involved and to other possible stakeholders outside of the community itself. Communicating the intrinsic, indirect value associated with communities of practice is not always easy due to the difficulties of measuring intangibles. However, using the theoretical frameworks for valuing intangibles developed by Andriessen (2000, 2003) and Castro (2003) as a foundation, it should be possible to build this aspect into the model.

4.2 Theories about communication and communities – the organization as source

A review of the literature showed that there is not much theory on exactly *how* the organization actually communicates with the community of practice, or with what strategic goal in mind. There are, however, quite a few articles and book chapters that discuss the *importance* of this communication (Bood 2004, Saint-Onge 2003, Wenger 2002). Thus, in order to understand the specific communication processes that should take place between an organization and the community, and the organization and the members, I will need to cross over into the field of internal corporate communications, or, as it is known internationally, organizational communication.

Reijnders (2002) contends that internal communication is “... a process of continuous exchange of information between actors in the same organization”(p. 7) and that these two factors influence each other immensely. Good information flow is thus a function of good cooperation among members of an organization, and vice-versa.

Activities such as spreading best practice cases are a responsibility of the organization and should be fundamental to the communication policies of the organization. Further, assuring an adequate digital communication system is of utmost importance for proper stimulation of information exchange and collaboration. This is especially true if employees are distributed geographically far apart or need to collaborate often.

Strategic management in professional organizations uses communication as its operationalizing process. Communication of the organization’s strategy and the goals it has set for itself, as well as for the positioning of the organization, is a fundamental part of strategic management (Stoter 1998). From this we can then infer that an important strategic objective of organizational communication is to assure alignment of both the individual employee (community member) and the community of practice as a whole, with the organization’s strategic goals. This will be needed in order to guide the innovation process within the community.

This concept fits with the general theories on organizational communication, which conceptualize communication between management and staff as having three strategic purposes; increasing the knowledge base, affecting attitude and affecting behavior (Koelman 1998, Reijnders 2002). I would contend that communication between management and a community of practice needs to focus on the first two aspects, knowledge and attitude, but that due to a community’s own self-regulated behavior, attempts to change it would be counter-productive.

4.3 Theories about communication and communities – the individual member as source

At this level of analysis it is important to look at communication theory that explains why and how individuals share knowledge. Hinds and Pfeffer (2003) explain that barriers to knowledge sharing can take two forms, cognitive and motivational. They contend that communities of practice are excellent forums for overcoming these barriers, but that there are still problems associated with people explicating tacit knowledge in order to share it. Discussion, according to Nonaka and Takeuchi (1995), is the only possible way of overcoming the tacit-explicit problem of knowledge exchange. Through discussion – which includes storytelling, use of metaphor and free conversation – contextual and situational problems are minimized, resulting in a clearer picture for the group of what the actual knowledge is. However, free discussion within small groups is often non-productive and fails to lead to the desired goals (Sunwolf 1998).

Motivational problems related to knowledge exchange concern individual and organizational aspects. At an individual level, the difficulty of sharing knowledge sometimes outweighs the returns on the time spent (Hinds 2003). Competition factors are also inhibiting (Wenger 2002). These problems *may* be overcome within a community of practice thanks to the strong social structure of it. However, these problems can be quite pervasive. My belief is that through structured communication processes, a specific social structure can be built within a community of practice that will diminish these motivational barriers so that they no longer influence the functioning or development of the community.

Finally, motivational problems are also associated with the connection between the organization and the individual. If there is no alignment of the individual's goals with those of the organization, trust is absent and motivation decreases (Pigg 2004, Gaines 2003).

5. Conclusion – a proposed model

In conclusion, we see that the communication processes involving communities of practice are quite complex and are very much dependent on which perspective is used, i.e. an individual's, an organization's or a community's. Furthermore, one needs to consider the objectives of the communication and understand if they are related to knowledge-building, motivation or alignment (Reijnders 2002). Finally, the mode of communication is also important and reliant on the communication objective and actor.

Figure 5 is a proposed research model showing the complexity of the organizational communication processes. In this model the communication objectives that literature suggests should be met is represented by the arrows. The conceptual framework for this model can be seen in figure 4 above. Once these objectives are understood, then the most suitable mode of communication can be determined.

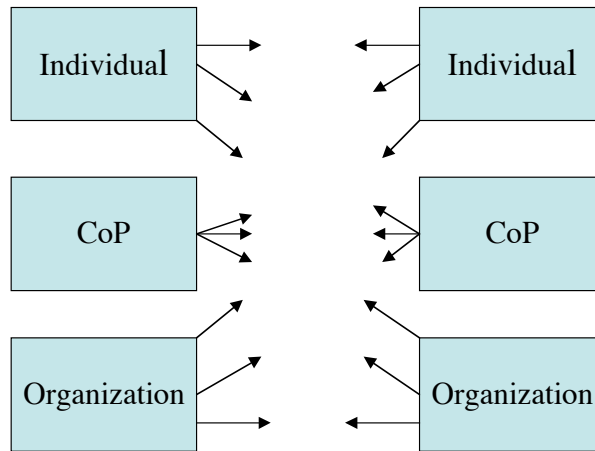


Figure 5. A Model for Organizational Communication from a KM perspective

6. References

- Andriessen, D. (2003) *The Value of Weightless Wealth: Designing and Testing a Method for the valuation of Intangible Resources*. Dissertation
- _____ and Tissen, R. (2000) *Weightless Wealth: Find your real value in a future of intangible assets*, Prentice-Hall, London.
- Avis, J. (2002) Social Capital, Collective Intelligence and Expansive Learning: Thinking Through the Connections. Education and the Economy, *British Journal of Educational Studies*, Vol 50, No.3, pp 308-326.
- Buysse, V., Sparkman, K., and Wesley, P. (2003) Communities of Practice: Connecting What We Know With What We Do, *Exceptional Children*, Vol 69, No.3, pp263-277.
- Bood, R. & Coenders, M. (2004) *Communities of Practice: Bronnen van inspiratie*. Utrecht, Lemma.
- Brown, J. and Duguid, P. (2000) *The Social Life of Information*. Harvard, Harvard Business School Press.
- Blunt, R. (2003) *Communities at the Speed of Business*, NY, iUniverse.
- Castro, M. (2003) *Explaining and Capturing CoP Value*. Paper presented at the 3rd European Management Summer School, San Sebastian, Spain.

- Caverly, D.C. and MacDonald, L. (2002) Techtalk: Online Learning Communities. *Journal of Developmental Education* Vol 25, No.3, pp36-37.
- DeSanctis, G. and Monge, P. (1998) Communication Processes for Virtual Organizations, *Journal of Computer mediated Communication*, Vol 3, No.4.
- _____ and Fulk, J. (1999) *Shaping organization form : communication, connection, and community*. Thousand Oaks, California, Sage.
- Devlin, K. and Rosenberg, D. (1996) *Language at Work: Analyzing Communication Breakdown in the Workplace to Inform Systems Design*. Stanford, California, CSLI Publications.
- Donellen, B. and Fitzgerald, B. (2003) Developing Systems to Support Organisational Learning in Product Development Organisations. Retrieved 22-01-2005 from [*Electronic Journal of Knowledge Management*](#)
- Frey, L.R. et al (1992) *Interpretating Communication Research: A Case Study Approach*, Englewood Cliffs, N.J., Prentice Hall.
- _____ (1994) The Call of the Field: Studying communication in small groups, in L.R. Frey (Ed.), *Group Communication in context: Studies of natural groups*, Hillsdale, NJ, Erlbaum, ppix-xiv.
- Gaines, B. (2003) Organizational Knowledge Acquisition, in *Handbook of Knowledge Management*, vol. 1, C. W. Holsapple, ed., Berlin: Springer-Verlag, pp318-346.
- Garrik, J. and Rhodes, C. (1998) Deconstructive organisational learning: The possibilities for a postmodern epistemology of practice, *Studies in the Education of Adults*, Vol 30, No.2, pp172-184.
- Gilsing, V. and Nooteboom, B. (2004) *Density and strength of ties in innovation networks: an analysis of multimedia and biotechnology*. Working paper 04.16, Eindhoven Centre for Innovation Studies, Eindhoven, The Netherlands.
- Hakkarainen, K., Paavlova, S. and Lipponen, L. (2004a). From communities of practice to innovative knowledge communities. *Lifelong Learning in Europe* Vol 2, pp75-83.
- _____, Palonen, T. , Paavlova, S. and Lehtinen, E. (2004b) *Communities of Networked Expertise: Professional and Educational Perspectives*. Amsterdam, Elsevier.
- Hinds, P. and Pfeffer, J. (2003) Why Organizations Don't 'Know What They Know': Cognitive and Motivational Factors Affecting the Transfer of Expertise, in

- Sharing Knowledge*, M. Ackerman, Pipek, V. and Wulf, V., (Eds) Cambridge, Massachusetts, MIT Press, pp3-22.
- Hollingshead, A. (1996) Information suppression and status persistence in group decision making: The effects of communication media, *Human Communication Research* Vol 23, pp193-219.
- Holsapple, C.W. (Ed) (2003) *Handbook on Knowledge Management*. Berlin: Springer-Verlag.
- Hung, W.L.D. and Chen, D.T.V. (2002) Learning within the Context of Communities of Practices: A Re-Conceptualization of Tools, Rules and Roles of the Activity System, *Educational Media International* Vol 39, pp3-4.
- Huysman, M. and deWit, D. (2003) A Critical Evaluation of Knowledge Management Practices, Ackerman, M., Pipek, V. and Wolf, V. (Eds) *Sharing Expertise*. Cambridge: MIT Press, pp 27-55.
- _____ (2004) Communities of Practice: Facilitating Social Learning while Frustrating organizational Learning, in Tsoukas, H. and Mylonopoulos, M. (Eds) *Organizations as Knowledge Systems*, Hampshire, Palgrave MacMillan, pp 67-85.
- Kant, J. & Springer, C. (2004) *Faciliteren van Kenniskringen*. Soest, Nelisson.
- Kayworth, T and Leidner, D. (2003) Organizational Culture as a Knowledge Resource, in *Handbook on Knowledge Management*, C. W. Holsapple, (Ed) Berlin: Springer-Verlag, Vol 2 pp. 235-252.
- Koelman, H. (2002) *Interne communicatie bij verandering: Van middelen-naar intervisiedenken*. Alphen aan de Rijn, Kluwer.
- Kramer, M. (2004) *Managing Uncertainty in Organizational Communication*, Malwah, New Jersey, Erlbaum.
- Lave, J. & Wenger, E. (1991) *Situated learning: Legitimate peripheral participation*, Cambridge, Cambridge University Press.
- Lee, B.H. et al (2004) Getting to Know You: Exploring the Development of Relational Intimacy in Computer-mediated Communication, *Journal of Computer Mediated Communication*, Vol 3, No.9.
- Lines, R. and Johansen, S. (2004) Organisational Learning in the Context of Strategic Reorientation, *Journal of Information & Knowledge Management*, Vol3, No.3, pp199-212.

- Muthasamy, S. and Palanisamy, R. (2004) Leveraging Cognition for Competitive Advantage: A Knowledge-Based Strategy Process, *Journal of Information & Knowledge Management*, Vol 3, No.3, pp259-272.
- Neve, T. (2003) Right Questions to Capture Knowledge, *Electronic Journal of Knowledge Management* Vol1, pp47-54.
- Nonaka, I. and Takeuchi, H. (1995) *The Knowledge-Creating Company*. New York, Oxford University Press.
- Pigg, K and Crank, L. (2004) Building Community Social Capital: The Potential and Promise of Information and Communication Technologies, *The Journal of Community Informatics* Vol1, pp58-73.
- Propp, K. (1998) Collective Information Processing in Groups, in *The handbook of small group communication theory and research*, Frey, L. (Ed.), Thousand oaks, Sage, pp225-249.
- Putz, P. & Arnold, P. (2001) Communities of Practice: guidelines for the design of online seminars in higher education, *Education, Communication & Information*, Vol 1, No.2, pp181-195.
- Reagans, R. and McEvily, B. (2003) Network Structure and Knowledge transfer: The Effects of Cohesion and Range, *Administrative Science Quarterly*, Vol 48, No.2, pp240-268.
- Reijnders, E. (2002) *Interne Communicatie: aanpak en achtergronden*, Assen, Koninklijke van Gorcum.
- Rowland, G. (2004) Shall We Dance? A Design Epistemology for Organizational Learning and Performance, *Educational Technology Research & Development*, Vol 52, No.1, pp33-48.
- Saint-Onge, H. & Wallace, D. (2003) *Leveraging Communities of Practice for Strategic Advantage*, Amsterdam, Butterworth-Heinemann.
- Schwen, T.M. and Hara, N. (2003) Community of Practice: Metaphor for Online Design?, *The Information Society*, Vol 19, pp257-270.
- Sharrat, M. and Usoro, A. (2003) Understanding Knowledge Sharing in Online Communities of Practice. [*Electronic Journal of Knowledge Management*](#). Retrieved 24-01-2005.
- Stam, C. (Ed) (2004) *Kennisproductiviteit: Het effect van investeren in mensen, kennis, leren*, Prentice hall, Benelux.

- Steinheider, B. and Al-Hawamdeh, S. (2004) Team Coordination, Communication and Knowledge Sharing in SMEs and Large Organisations, *Journal of Information & Knowledge Management*, Vol 3, No.3, pp223-232.
- Stoter, A. (1997) *De Communicerende Organisatie: Communicatie in relatie tot organisatieverandering*, Lemma, Utrecht.
- Sunwolf and Siebold, D. (1998) The Impact on Formal Procedures on Group Processes, Members, and Task Outcomes, in *The Handbook of Small Group Communication Theory and Research*, Frey, L. (Ed.), Thousand Oaks, Sage, pp395-431.
- Tourish, D. and Hargie, O. eds. (2004) *Key issues in Organizational Communication*, Routledge, London.
- Stahl, G. (2000) A Model of Collaborative Knowledge-Building, B. Fishman & S. O'Connor-Divelbiss (Eds.), Fourth International Conference of the Learning Sciences, Erlbaum, Mahwah, NJ., pp70-77.
- Tu, C-H. and Corry, M. (2002) Research in Online Learning Community.
<http://www.usq.edu.au/electpub/e-jist/docs/html2002/chtu.html> retrieved 05-04-2004.
- Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity*, Cambridge, Cambridge University Press.
- _____, McDermott, R. & Snyder, W. (2002) *Cultivating Communities of Practice*. Harvard, Harvard Business School Press.