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# **SOCIAL CAPITAL AS AN ENABLER FOR SUSTAINABLE KNOWLEDGE MANAGEMENT IN ORGANIZATIONS**

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## **Abstract**

*While the importance of knowledge management in organizations and its benefits as innovative powers and a competitive edge is a widely accepted notion in our field of research, it lacks contributions that focus on how knowledge management can be performed in a sustainable way. If we rely so strongly on knowledge management, we should strive for it that current knowledge practices respect both present and future knowledge demands. This paper aims to uncover how organizations can stimulate sustainable knowledge management, meaning the extent to which the organization is capable to track and adapt to changes, internally and in its external environment, by seeking its enablers. While it is clear now that an important part of knowledge in organizations resides in the informal networks, we use the concept of social capital as a measure for informal networks in organizations. By assessing 50 Dutch knowledge-intensive organizations, we seek to reveal to what extent the existence of social capital is an enabler for a set of best practices in knowledge management (known as New Knowledge Management) of which its practice is regarded as sustainable knowledge management.*

*Keywords: Social Capital, Knowledge Management, New Knowledge Management, Sustainability*

# 1 Introduction

Much has been published about the role of knowledge in organizations nowadays. Knowledge is regarded as the primary asset of the firm (Alavi & Leidner, 2001). This resulted in a shift in strategic thinking from the resource-based view of the firm (Penrose, 1960; Wernerfelt, 1984; Barney, 1991b) to the knowledge-based view of the firm (Grant, 1996), regarding knowledge as the primary strategic resource of the firm. Knowledge management involves the management of knowledge processes and is currently widespread in organizations (Davenport & Prusak, 1998; Jashapara, 2004). These processes are crucial if an organization wants to maintain its competitive advantage based on knowledge. A view on knowledge management that has received relatively less attention, however, is how the practice of knowledge management and processes be performed in a sustainable manner, hence respecting both current and future knowledge demands and therewith prolonging the existence of the organization.

This research follows-up on earlier research in the field of sustainable knowledge management that was conducted by McElroy (2003), coining the term of New Knowledge Management (further referred to as NKM). He proposed a policy model for achieving sustainable knowledge management in organizations. , whichThe policy model became known as the Sustainability Code and consists of 11 policies (McElroy, 2005). It is argued that, when an organization adopts this model, it will achieve sustainable knowledge management within the organization. Later research (van Reijssen, Helms & Batenburg, 2006a, 2006b) empirically validated this claim to a large extent. Our current research adopts the concept of NKM to operationalize the concept of sustainable knowledge management in organizations.

While research in the field of knowledge management advanced, we have learned that knowledge actually remains tacit and is accessed through the informal networks in the organization (Brown & Duguid, 1991; Kogut & Zander, 1992; Macdonald, 1995; Cross, Borgatti & Parker, 2001; Cross & Parker, 2004). This informal perspective is in line with the relational approach to knowledge management, where the main interest in knowledge is in social relationships and interaction (Kianto & Waajakoski, 2010). The NKM policy model is mostly formal and of a managerial nature and thus approaches sustainable knowledge management from a formal perspective. We identify this as a gap and claim that regarding sustainable knowledge management from an informal perspective would be a more rigorous approach to uncover how organizations can adopt its practice.

The concept of social capital (Coleman, 1988; Adler & Kwon, 2000, Lin, 2001) is proposed to be a means to look at the informal network of the organization. Social capital is the component of Intellectual Capital that focuses on the social relationships in organizations and is therefore a suitable indicator for informal activity in an organization.

When both the extent of the practice of NKM and the existence of social capital in an organization can be operationalized and related, having empirically learned that the practice of NKM is in fact a measure for sustainable knowledge management, the extent to which social capital is an enabler for sustainable knowledge management can be researched. Knowing to what extent social capital can enable sustainable knowledge management enables businesses to define practical interventions in their informal network to stimulate sustainability in their knowledge management function.

The main research question in this paper is:

*To what extent is social capital an enabler for sustainable knowledge management in organizations?*

## 2 Theoretical Background

### 2.1 Social Capital

The concept of social capital is well-defined by Lin (2001), who defines it as “resources embedded in a social structure that are accessed and/or mobilized in purposive actions”. Social capital follows a relational approach towards knowledge in organizations (Brown & Duguid, 1991; Lave & Wenger, 1991; Nahapiet & Ghoshal, 1998; Cohen & Prusak, 2001). In Kianto & Waajakoski (2010), the authors provide a clear overview of the relational approach that social capital has towards knowledge. They state that knowledge is understood as a “socially constructed and shared resource”, that the main interest is “social relationships and interaction” and that the focus is on “the characteristics of the social relationships connecting the actors and social capital embedded in them”. Social capital can moreover be divided into 3 dimensions: structural, relational and cognitive (Nahapiet & Ghosal, 1998). Structural capital refers to the existence of relations between actors. Relational capital focuses on the quality of these relations, e.g. norms, values and trust. Cognitive capital focuses on the extent to which relational capital is shared among actors in the organization. All three dimensions are incorporated in this research and are elaborated in more detail in our research model.

Another view on social capital is presented by Adler & Kwon (2002) who distinguish 2 viewpoints. First is the ego-centric approach focusing on the benefits of social capital for the individual actor in a network. Second is the social-centric approach (Putnam, 1993) focusing on social capital as a shared resource for the collective (organization). In our research, we focus on social capital from a socio-centric approach as we are interested in the benefits that social capital may have for the entire organization and to enable comparison to NKM adoption that also focuses on an organizational level.

### 2.2 New Knowledge Management

The term New Knowledge Management was coined by McElroy (2003). NKM is based on four corner stones. The contents of these four corner stones are not completely new, however. Some corner stones are based on existing knowledge management theories and were extended by McElroy. Hence, it is the combination of the corner stones and the claim that its adoption will result in sustainable knowledge management that makes NKM unique. The first corner stone is referred to as the Knowledge Life-Cycle. This concept reflects the cycle that knowledge follows in an organization (e.g. creation, distribution and application). The concept of the knowledge life-cycle was previously discussed by scholars as Wiig (1993) and Weggeman (1997). McElroy’s addition is the explicit evaluation of knowledge claims as a part of the life-cycle. The second corner stone of NKM is the theory of Complex Adaptive Systems, first coined by Holland (1995). Here, the self-organizing capabilities of humans are underscored. Every human is regarded as a complex adaptive system that will intrinsically adapt its behavior based on the changing environment it is acting in. McElroy states that an organization may also be regarded as a complex adaptive system. Such a system that has the capability of detecting flaws in its behavior and adapting to it, should not be restrained in doing so (e.g. by policy or politics). The third corner stone of NKM is the idea of the Open Enterprise that states that knowledge making is not the same as decision making. The organization should be as open as possible (bottom-up) such that everyone can participate in knowledge processes and learning and that all knowledge is accessible to everyone in the organization. The idea of the Open Enterprise is derived from e.g. Daft (2003) who argues about organizations as organic structures instead of bureaucratic systems. The idea of the Open Enterprise also leans on the concept of Empowerment (Thomas & Velthouse, 1990). The final corner stone of NKM is the idea of an Epistemic Hierarchy that basically promotes separation of knowledge processes and business processes. It calls for a distinct knowledge management function that is not integrated in the executive (decision making) function. The knowledge management function should have its own resources. Earlier scholars that detected the

formation of such distinct knowledge management functions in organizations are Davenport & Prusak (1998), Smith & McKeen (2003) and Awad & Ghaziri (2004). Based on these 4 corner stones, a policy model was formed that is referred to as the Sustainability Code (McElroy, 2005). The sustainability code consists of 11 policies: practical guidelines that an organization can adopt. The 11 policies from the sustainability code are based on 3 out of the 4 corner stones of NKM. To cover all 4 corner stones of NKM, the model was extended with the 4 policies of Complex Adaptive Systems theory.

<b>Policy (Sustainability Code)</b>	<b>Description</b>
Fallibility	Knowledge is regarded fallible
Transparency	All knowledge is available to all actors
Inclusiveness	All actors have access to all learning processes
Fair Comparison	Openness to testing & criticizing knowledge
Looking for Trouble	Actors evaluate the performance of knowledge in action
Internalization	Social and environmental impact of knowledge processes are evaluated
Growth of Knowledge	All actors may produce new knowledge policies if not contradicting
Fact/Value	Knowledge claims of both fact and value are evaluated
Knowledge Management	A distinct knowledge management function exists with distinct budget
Policy Synchronization	Policy is a result of behavior, not the other way around
Enforcement	Actors that do not abide these policies leave the organization
<b>Policy (CAS)</b>	<b>Description</b>
Embryology	Employees should be allowed to have own personal learning agenda's
Politics of Knowledge	Knowledge creation may not be limited to the executive function
Ethodiversity	Employees should be hired based on divergent worldviews
Connectedness	Resources for IT-based and social connectivity must be adequate

*Table 1. The 11 policies of the Sustainability Code and 4 policies from Complex Adaptive Systems Theory.*

McElroy claims that, should an organization adopt these policies in its knowledge management practice, it will result in improved sustainability and innovation in that organization. Empirical validation of this claim (van Reijssen, Helms & Batenburg, 2006a, 2006b) uncovered that this is only partially true: adoption of NKM will only result in improved sustainability. It is, however, important to state that NKM adoption cannot directly influence organizational sustainability. NKM adoption influences knowledge outcomes and only in turn, knowledge outcomes will influence business outcomes. It is therefore that we adopt the term sustainable knowledge management. Moreover, in this research, sustainability is defined as “the extent to which an organization is capable to track changes, internally, as well as in the external environment, and is capable to adapt to these changes” (Faber, Jorna & Van Engelen, 2005). While it has been empirically validated that NKM adoption will positively influence the sustainability of knowledge management, it is argued that NKM adoption can in fact be applied as a measure for sustainable knowledge management.

### 3 Research Model

Our research model comprises of two main constructs: operationalized components of social capital and operationalized components of NKM adoption. Based on the theoretical elaboration in this paper, social capital is divided into three constructs: structural capital, relational capital and cognitive capital. The 15 NKM policies are combined into one construct that represents NKM adoption as a whole. We intend to research the relation between each component of social capital and NKM adoption.

Structural social capital is about actors and links and about the ability to locate information sources. If there are more links between actors and actors are better able to locate and utilize each other's knowledge that may increase the effectiveness of adopting the transparency, inclusiveness, fair comparison and looking for trouble policies that lead to sustainable knowledge management. Hence, we state our first hypothesis:

**H1:** Structural social capital positively influences on New Knowledge Management adoption

Relational social capital is about the quality of the relations. Key topics are trust, the content of values and norms and the personal nature of relationships. If the quality of the relations, values and norms in an organization is improved, this could lead to a successful adoption of most of the policies, e.g. fallibility, fair comparison, fact/value and policy synchronization and hence a more effective sustainable knowledge management. This leads us to the statement of the second hypothesis:

**H2:** Relational social capital positively influences New Knowledge Management adoption

Cognitive social capital is about a shared mind throughout the organization: the extent to which values and norms are shared. Although this perspective on social capital cannot be mapped onto the NKM policies directly, this perspective is in fact very important to the success or failure of its adoption. The cognitive aspect of social capital will reveal to what extent the policies are likely to be shared throughout the organization. It can be argued that a larger extent of shared mind will result in a higher degree of adoption of the policies. However, if there is a large extent of shared mind and a minimal adoption of the policies, this may negatively influence the adoption . It is therefore important to measure the levels of cognitive social capital. We state our third hypothesis as follows:

**H3:** Cognitive social capital positively influences New Knowledge Management adoption

The constructs and hypotheses of our research model are depicted in figure 1 below. Note that the model supplies for possible covariance between all variables of social capital. This is done because all three variables are subsets of a larger variable: social capital. The extent of covariance is of interest if we decide to combine the three variables into a single variable for social capital.

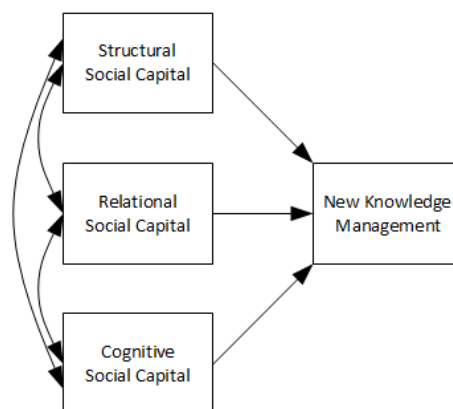


Figure 1. Research Model

## 4 Research Approach

In this research, we intend to collect data from 50 knowledge-intensive organizations in The Netherlands. In these organizations we target HR managers, because we believe that these managers have the best overview of knowledge management and practices in their organization. Furthermore, it is not an option to target knowledge managers, as not all organizations have a distinct knowledge management function (department). Our applied sampling method is convenient random sampling (Triola, 2004). The respondents will be surveyed, using an online survey tool (LimeSurvey). The survey will be held within the time frame of one month. The respondents will answer a limited set of

questions: general questions about their organization, questions that measure the existence of social capital in their organization and questions about the extent of NKM adoption in their organization. The validity of the survey is strengthened by the fact that the questions about social capital are derived from an existing survey that was successfully applied to measure a variety of forms of social capital. Also, the questions about NKM adoption stem from an existing survey that was expert-reviewed and successfully applied earlier. The survey will consist of 3 components. First is a component that targets generic information about the organization (e.g. size, industry). The second component consists of various questions about the existence of social capital. There are distinct questions for each type of social capital. Each of these questions can be answered on a 5-point Likert scale (1 = totally disagree; 5 = totally agree. This component in the survey is based on the survey applied by Kianto & Waajakoski (2010) and was extended for our research purposes. The third component consists of 15 multiple-choice questions: 1 measure for each of the 15 NKM policies. The answer options for each question correlate with the extent to which that policy can be adopted in an organization (0%-100%). This component of the survey is based on the survey applied by van Reijssen, Helms & Batenburg (2006a, 2006b). When all data is collected, it will be refined and checked for validity. Incomplete surveys will be excluded. Next, constructs are generated for each form of social capital and one construct is defined for the extent of NKM adoption. All constructs are checked for internal reliability. For the 15 NKM measures and the several measures for each form of social capital, inter-correlations are calculated and analyzed in order to confirm that the measures may indeed form aggregated constructs. Moreover, the full research model is tested using Structural Equation Modeling, considering that both “Social Capital” and “New Knowledge Management” are latent variables that are measured based on several directly observed variables. By applying the technique of Structural Equation Modeling, the relations between the constructs are tested, based on the research model that was defined earlier in this paper. Based on the findings here, conclusions will be drawn on the extent to which social capital enables NKM adoption and hence can be an enabler for sustainable knowledge management in organizations.

## 5 Current State & Future Work

At this moment, our research model and approach are fully completed. All constructs that need to be measured are defined and the approach to analyze and conclude has also been set. The survey is currently nearing completion and the targeted respondents are being invited to participate in our research. The next step is to complete the survey and make it available online for a one month time frame. After this data collection process, the data will be refined and analyzed and conclusions will be drawn based upon our findings. We aim to publish our eventual findings in a next scientific paper.

## References

- Adler, P. & Kwon, S-W. (2000). Social capital: the good, the bad, and the ugly. *In Knowledge and Social Capital: Foundations and Applications* (Lesser, E., Ed), pp 89–118, Butterworth-Heinemann, Boston.
- Akgün, A. E., Byrne, J., Keskin, H., Lynn, G. S., & Imamoglu, S. Z. (2005). Knowledge networks in new product development projects: a transactive memory perspective. *Information & Management*, 42(8), 1105–1120.
- Alavi, M., Leidner, D.E., (2001). Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, 25(1), pp. 107-136.
- Awad E.M., Ghaziri H.M. (2004) *Knowledge Management*, Upper Saddle River, New Jersey: Pearson Education.
- Barney, J. B. (1991) Firm Resources and Sustained Competitive Advantage, *Journal of Management*, 17(1), pp. 99-120.
- Brown, J.S., Duguid (1991). Organizational learning and communities of practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40-57.

- Coleman, J. (1988) Social capital in the creation of human capital. *American Journal of Sociology* 94, 95–120.
- Cross, R., and A. Parker (2004). *The Hidden Power of Social Networks: Understanding How Work Really Gets Done in Organizations*. Boston, MA: Harvard Business School Press.
- Cross, R., Borgatti, S.P., Parker, A. (2001). Beyond answers: dimensions of the advice network. *Social networks*, 23, 215-235.
- Daft, R.L. (2003) *Organization Theory and Design*, South-Western College Pub, 8 edition.
- Davenport, T., Prusak, L. (1998). *Working Knowledge – How organisations manage what they now*. Boston, Massachusetts: Harvard Business School Press.
- Faber, N., Jorna, R., van Engelen, J. (2005). *The sustainability of “sustainability”. A study into the conceptual foundations of the notion of “sustainability”*. *Journal of Environmental Assessment Policy and Management* Vol. 7, No. 1 (March 2005) pp. 1–33
- Grant, R.M. (1996) Toward a knowledge-based theory of the firm, *Strategic Management Journal*, 17, pp. 109-122.
- Jashapara, A. (2004). *Knowledge Management: an integrated approach*, Financial Times / Prentice Hall.
- Holland, J.H. (1995) *Hidden order: How adaptation builds complexity*, Perseus Books Group.
- Kianto, A., & Waajakoski, J. (2010). Linking social capital to organizational growth. *Knowledge Management Research & Practice*, 8(1), 4-14.
- Kogut, B. & Zander, U. (1992). Knowledge of the firm, combinative capabilities and the replication of technology. *Organization Science*, 3(3), pp. 383-397.
- Lin, N. (2001) *Social Capital*, Cambridge university press: New York, NY
- Lock Lee, L., Neff, M. (2004). How Information Technologies Can Help Build and Sustain an Organization’s CoP: Spanning the Socio-Technical Divide? In: Hildreth, P.M., Kimble, C. (Eds): *Knowledge Networks*, Idea Group, London.
- Macdonald, S. (1995). Learning to change: An information perspective on learning in the organization. *Organization Science*, 6(5), pp. 557-568.
- McElroy, M.W. (2003). *The New Knowledge Management*. Butterworth-Heinemann.
- McElroy, M.W. (2005). *The Sustainability Code - A Policy Model for Achieving Sustainable Innovation in Organizations*. Retrieved July 3, 2006, from <http://www.sustainableinnovation.org/The-Sustainability-Code.pdf>.
- Nahapiet, J. & Ghoshal, S. (1998) Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review* 23(2), 242–266.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5, pp. 14-37.
- Penrose, E.T. (1959) *The Theory of the Growth of the Firm*, New York: Wiley.
- Reijssen, J. van, Helms, R.W. & Batenburg, R.S. (2007). Validation of the New Knowledge Management claim. In H. Osterle, J. Schelp & R. Winter (Eds.), *Proceedings of the 15th European Conference on Information Systems*, 552-564.
- Reijssen, J. van, Helms, R.W & Batenburg, R.S. (2007). Organizational conditions for New Knowledge Management application. In B. Martins (Ed.), *Proceedings of the 8th European Conference on Knowledge Management*, Academic Conferences, 1040-1047.
- Smith, H. and J. McKeen (2003) Knowledge management in organizations: the state of current practice, In C. W. Holsapple (ed), *Handbook on Knowledge Management*, New York: Springer-Verlag.
- Thomas, K.W., Velthouse, B.A. (1990) Cognitive Elements of Empowerment: An "Interpretive" Model of Intrinsic Task Motivation, *The Academy of Management Review*, 15(4), pp. 666-681.
- Triola, M.F. (2004) *Elementary Statistics*, Pearson Education, Ninth Edition, Boston.
- Weggeman M. (1997) *Kennis Management – Inrichting en besturing van kennisintensieve organisaties* (in Dutch), Scriptum Management.
- Wernerfelt, B. (1984) A resource-based view of the firm, *Strategic Management Journal*, 5(2), pp. 171 – 180.
- Wiig, K. (1993) *Knowledge management foundations*, Arlington, TX: Schema Press.