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Social Capital and Knowledge Sharing – Lessons Learned

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Abstract. Social capital is put forward as a suitable theoretical framework to explain knowledge sharing mechanisms in organizations. The aim of this paper is to summarize lessons learned from different contexts where the social capital dimensions have been used to explain information and knowledge sharing. The contexts studied are mainly within business organizations, virtual worlds, and higher education. The dimensions of social capital have been found useful when exploring knowledge sharing practices. The studies illuminate important aspects on how the combination of structures, relations and contents support sharing. The different cases also underline the importance of the *contextual dimension*, the role of the social capital dimensions are focused differently depending on context.

Keywords: Social capital, Knowledge sharing, Knowledge Management, Business organization, Virtual worlds, Higher education

1. Introduction

Social capital has been put forward to explain knowledge sharing and has been used as a theoretical framework to illuminate motives and enablers of information and knowledge sharing [1, 2, 3, 4]. Social capital provides a framework explaining knowledge sharing mechanisms through the dimensions of structures, relations, and contents. This perspective illuminates how social and information phenomena are anchored in each other [4]. A larger research project at Åbo Akademi University has focused social capital and information behaviour [5] and has resulted in a number of empirical studies where social capital dimensions have been used to study knowledge sharing from an information science perspective.

The aim of this paper is to summarize lessons learned so far from the project and in collaboration with other researchers in the field. Also other relevant studies and literature on social capital and knowledge sharing is included. The contexts studied are mainly within business organizations, virtual worlds, and higher education. The dimensions of social capital have been found useful when exploring knowledge sharing practices. The studies bring important aspects to our attention on how the combination of structures, relations and contents support sharing.

2. The Social Capital Framework

Social capital is associated with benefits coming from and changing with social relations and networks [6]. According to a often cited definition by Nahapiet and Ghoshal [7, p 243] social capital is

"The sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network".

Social capital is mainly studied on a society level [8] and refers to enablers like networks, norms, and trust that help individuals to act together more effectively towards common aims [9]. In the organizational context social capital focuses on information as a resource and e.g. inter-unit resource exchange [10]. Social capital is also studied on an individual level, underlining what individuals gain from networks like status and opportunities [11]. Connected to information and knowledge sharing social capital is relevant while information behaviour patterns are anchored in the individual and organisational structures where people interact. Information seeking takes often place in collaborative settings and therefore the social aspects play an important role. Contextual and social factors affect group members' physical activities and their cognitive and emotional experiences with relevance to information sharing [12]. Therefore, empirical studies on information seekers within their social context focus on practices rather than on the individuals' information behaviour. The analysis shift from cognitive to social, looking at the information seekers within their social context where connections and interacting with sources are underlined [13, 14]. The social capital perspective helps us to explore the context in which information sharing takes place. It provides us with a framework for the hidden motives of information sharing, giving information behaviour its social context. In order to manage multiple aspects on knowledge sharing mechanisms the dimensions of social capital are suitable tools while they describe structures, relations, and contents (see table 1).

Table 1. Dimensions of social capital according to the definition by Nahapiet and Ghoshal [7]

Dimensions of social capital and aspects focused in the different dimensions		
Structural dimension	**Cognitive (content) dimension**	**Relational dimension**
Network ties Network configuration Appropriable organization	Shared codes, language Shared narratives	Norms Trust Obligations Identification

The s*tructure dimension* is about the access to other actors, individual and corporate [15]. This structure is necessary for information sharing and development and use of social capital in an organization. The structure influences the two other dimensions of social capital [7, 15]. Social interaction in structures are channels for information and resource flows [10]. This dimension reflects the impersonal

properties of the network relations and a network tie is the fundamental structural concept, the basic element of communication networks [16].

The *relational dimension* is about expectations and obligations where trust is the most important relational feature [15]. Trust is needed in order to share what you know. This dimension influences access to other parties in the structure, it underlines the expected value through exchange, and the motivation of parties to engage in knowledge creation [7, 15]. Trust is the most studied concept of social capital [17]. As trusting relationships develop inside a network, actors build up reputations of trustworthiness. There are different levels of trustworthiness which result in different levels of resource exchange and combination [10].

Finally, the *cognitive (or content) dimension* is both the foundation for social capital as well as a key mechanism in generating further organizational goals like intellectual capital [15]. This dimension is a visible condition necessary for formation and utilization of social capital. Communication is the mechanism whereby the available stock of social capital can be accessed and utilized to further organizational goals and objectives [15].

In the following the dimensions of social capital are studied in three different contexts; business, virtual, and higher education in order to illuminate information and knowledge sharing mechanisms.

3. Social Capital and Knowledge Sharing in Business Organizations

There is a wide repertoire of studies on social capital in corporate research. The interest in social capital lies in the rise of the knowledge-based organization [18]. Social capital and social networks are seen as giving financial advantage. Firms benefit from social capital because it facilitates cooperation and coordination, which minimize transaction costs [19]. Social capital unifies shared resources which are accessed based on relationships [20]. This is the main aspect of research concerned with social capital in the business organisation literature.

Social capital affects business organizations internally, promoting greater coordination among people and collaboration between units. Further, trust is the foundation for cooperation internally as well as externally. Companies that are working together in a joint effort and that have established trustful relationships are able to develop deeper relationships with one another, which can be accessed in the future for other business projects. However, managing social capital explicitly is complicated while social capital formation is more a local process and involves social practices [2].

In a study in two Finnish companies [21] it is shown how the structural and relational dimensions of social capital interplay supporting knowledge sharing for common aims. The studied companies are different where one case is a claims handling department in insurance business involving routine-based work and the other case is a biotechnology firm defined as an expert organization. Studying the social capital dimensions in these cases show that building a common knowledge base is better realised in the claims handling unit where the personal knowledge and expertise is brought to the group systematically through weekly meetings and a functioning

personal network structure. The group has a high level of trust within their structures and information and knowledge has become a collective resource. This group has however better circumstances to develop the structures that are needed. The biotechnology field is a hectic environment and the importance of communicative ability and trust is more highlighted. Trust has another role where information and knowledge are typically personal resources that are brought to a collective attention on demand. The individuals must trust that they get crucial information from each other whenever needed.

This is also shown in business online environments. In a case study by Hall and Widén-Wulff [22] it was clear that the exchange of information in online environments is highly dependent on social relationships. Effective sharing of information contents is not happening without trusting relationships although there are technical infrastructure and financial rewards on offer.

Knowledge Management initiatives must be brought to the local context where the human and social processes underpin the formal structures enabling information sharing. These are important insights in the management of organisations and especially in the management of expert organisations where the individual knowledge base is important to bring into the common awareness. The online perspective put additional challenges to Knowledge Management and underlines the importance of the relational dimension of social capital even more.

4. Social Capital and Knowledge Sharing in Virtual Worlds

Using the social capital framework to study information and knowledge sharing in virtual communities and contexts is useful while social capital is the basis for collective action and it helps to understand what the motivations are to participate in the community and what it is that people get for their participation. Social capital has been studied in different kinds of virtual communities, such as virtual learning communities [23, 24] and social networking sites [25]. According to Blanchard and Horan [26] social capital can increase in virtual communities that are based on existing physical communities. Boundaries that have separated real and virtual are fading and the social actors move more and more within and among different domains, converting forms of capital into one another [27].

Södergård [24] has studied young people's use of the Internet during their free time and participation in virtual community (Lunarstorm). In this case possible tools for developing social capital in that context were studied. It was shown that the virtual community is of importance for young people's social capital. The structural dimension describes the pattern of interaction between the players. Social structures are more obvious in virtual context than in real life. Trust was developed through entries in the so called guestbooks in the community and had an impact on relationships between friends in reality. The young persons interacted with their friends in real life also in the virtual community. In the content/cognitive dimension the common language was underlined. Here the young persons experienced that they could use their own language. The knowledge base created in the virtual community is of value in that it is embedded in a social structure and accessible to those who are members of the structure. The virtual community offered additional aspects to all

three dimensions of social capital that is not available in real life. Based on this study it can be concluded that a virtual community can be seen as a complement and tool for developing social capital among young people [24].

In a study by Huvila et al. [28] it was shown that the virtual world Second Life clearly had key elements for generating and fostering social capital although the existence of social capital in Second Life and real life respectively do not completely match. Socialising is an important motivation for participating in Second Life and Second Life is an environment, which fosters the accumulation of social capital. Most of the activities the respondents mentioned were meetings, get-togethers, conferences or informal meetings with people and colleagues. Individuals in Second Life form networks and have friends they meet in the virtual world and the more they engage in 'production', the more they have social capital. There are clear codes of conduct and behaviour expressed in form of positive and negative experiences of behaviour. The mechanisms of trust are mostly based on judgments made on social behaviour rather than on Second Life specific indicators such as the type of the account of the other resident. Second Life gives access to extended social networks beyond the real life and as the findings indicate, increases both the amount and quality of these connections. Any further conclusions may not be done based on this study [28] while it is limited by the relatively small sample with an unknown bias. A larger study and case studies on considerably different samples of Second Life residents are needed to get a deeper understanding of the nature of social capital in Second Life.

In an interview study of players in the multiplayer online game (World of Warcraft) it was shown how players formed different kinds of social networks in the game where rules, boundaries, and norms were formed. It was clear that social capital was created in the process where the players formed these social networks with different kinds of goals in mind (a wide range of practical benefits for accomplishing game goals). For players who knew each other from before the online game was an important way to maintain and pursue their relationships. For others it was also an possibility to bridging social capital [29].

In summary, the research conducted so far shows that virtual communities and virtual worlds foster social capital among the members of the world or community. The emergence of social capital in virtual communities has implications from the information sharing point of view. Social capital has been shown to be important in engaging users to make significant contributions in virtual communities. Existence of social capital can be seen as an indicator of a success of information sharing online, and simultaneously the understanding of social capital and its formation can be used to understand why some collaborative efforts of sharing information and constructing common knowledge resources succeed and other fail. Again the relational dimension is heavily defined through trust, identity, and roles. In the relational dimension the underlying motives for sharing are stressed. In earlier studies it has been shown that exchange of information in online environments is highly dependent on social relationships. Although social infrastructure often starts in the face-to-face environment, online techniques and Web platforms support the development of relational ties through structures and shared codes [22].

5. Social Capital and Knowledge Sharing in Higher Education

Social capital in the context of higher education has not been studied very much. The studies are mainly looking at social aspects of learning which of course touches upon the same interest. How students interact in their networks and how social capital can be beneficial in students work has been of interest lately especially in online environments. There are a number of studies looking at blogs, wikis and social networks as important tools of support for learning in different environments [30].

Hall and Widén-Wulff [22] have studied social aspects of information sharing in two cases in the context of higher education. They underline that it is clear that the exchange of information in online environments is highly dependent on social relationships. Studying a group of undergraduate students it was shown that time spent in shared classes accounted for friendship ties (social capital). These, in turn, yielded the highest levels of online information exchange. In the other case, master students attending a distance course, showed that trust between the students in the online environment was first established and grew from face-to-face interactions. In addition, students were unwilling to share the benefit of their strong relationships with group outsiders. Further evidence of the importance of social factors is underlined in the power of social incentives to information share, as opposed to hard rewards, such as the expectation of the straightforward award of a mark in the case of undergraduate students. Social factors affecting information sharing behaviour in online environments in higher education depends on a complex mix of factors. These include the social capital shared amongst actors, the level of trust on which this is based, the potential for reciprocal transactions, and the management of incentives structures. In a later study on university students in blogging communities where blogs were used as a tool to encourage the interaction between students Hall et al. [31] showed that social reward is a key to sharing, a kind of gift economy, and therefore an important part of how the social network structures are built among students. Blogs increased the reflective engagement with teaching material and there was also a higher level of shared peer support between class members [32].

Tötterman [33, 34] has studied social capital and information sharing on an organizational level in a university context (Finnish university faculty). In this study, the main focus was on the interdepartmental information sharing, i.e. the interviewees' communication with their faculty colleagues from other departments. The university system - both internationally and in Finland - is undergoing some rather great changes (e.g. educational, financial, and organizational), and the effects from social capital, e.g. synergy, reduced transaction costs and intellectual capital, could be seen as crucial to handling these changes efficiently. In the study it was shown that a lack of organizational social capital within the faculty's interdepartmental relations had effects on the faculty's information sharing climate. The findings from this study indicated that information sharing tends to work more efficiently within the departments, the local bounded networks and the faculty external networks. The interviewees themselves stressed some important incentives for a successful information sharing climate, such as working in the same building, personal friendship and scholarly closeness. Most interviewees tended to underline the existence of formal and informal network structures, trust and an open

communication climate within one's own department and in some cases with one's closest neighboring departments. In these environments, the signs of active collaborative information sharing are most obvious.

Lessons learned from the context of higher education show that social capital is a useful framework to gain insights into information sharing mechanisms. The framework of social capital sheds light and characterizes the incentives for information sharing in a very distinct manner. The findings show that in the studied university faculty that there existed many different forms of cultures with their own kinds of social capital, which in turn affects their information sharing activities. The relational dimension is highlighted in this context.

6. Discussion and Lessons Learned

The role of social capital in knowledge sharing is clear. Social construction of knowledge is crucial and is depending on the environment. The organizational environment is a combination of structures, relations, and contents supporting knowledge sharing in different ways. How these dimensions interplay and support sharing is illuminated through three main contexts studied through several cases, that is business organizations, virtual communities and virtual worlds, and higher education and university context. This overview underlines that the *contextual perspective* in information and knowledge sharing is very important. The dimensions of social capital put forward especially the roles of structures and relations which are promoted differently depending on context.

Table 2. Social capital dimensions in the studied contexts

Studied context	Most focused dimension	Challenge
Business	Relational and Structural	Content dimension
Virtual	Structural	Relational
Higher education	Relational	Structural

In table 2 we can see that different dimensions of social capital are underlined and a challenge depending on the studied contexts.

Studying cases of business organizations it was clear that depending on the nature of work and work tasks different dimensions of social capital are promoted and therefore affecting information and knowledge sharing. Knowledge on an organizational level is created in conversations, collaboration, and different social contexts [35]. One of the problems of knowledge work and knowledge management is the content dimension, that is the difficulty in getting people to share their tacit knowledge. The awareness of the importance of functioning network structures and relational factors is an important prerequisite for sharing also tacit knowledge. Accessibility and common language also motivates people to contribute. In this context new social and interactive tools can support sharing, enabling people to create ideas, accumulate knowledge, create networks, share and manage information [36, 37].

The virtual community context offered additional aspects to all three dimensions of social capital that is not available in real life. This is a complement and tool for

developing social capital. Open source technologies give the sharing visible structures, underlining the structural dimension in this context. The content dimension is defined as shared goals, common experience, language and knowledge. Shared meaning and collective knowledge are key aspects. The relational dimension is seen as a challenge where interaction between virtual and real life seems important for the development of trust.

In the higher education context the findings show that in the studied university faculty that there existed many different forms of cultures with their own kinds of social capital, which in turn affects their information sharing activities. Local contexts and local networks are stronger places for knowledge sharing. Social factors affecting information sharing behaviour among students in online environments in higher education depends on a complex mix of factors. These include the social capital shared amongst actors, the level of trust on which this is based, the potential for reciprocal transactions, and the management of incentives structures. In a later study on university students in blogging communities where blogs were used as a tool to encourage the interaction between students Hall et al. [31] showed that social reward is a key to sharing, a kind of gift economy, and therefore an important part of how the social network structures are built among students which is a challenging task.

Understanding how social capital works is crucial when creating new intellectual capital in an organization. Social capital refers to both norms and networks as facilitating collective action and encouraging cooperative behaviour. Especially the relational and structural dimensions interplay with emphasis on relation dimension as a key enabler of sharing. Structures give access but relations are needed to actually share. This is also underlined by Wilson [38] who points out that sharing happens more likely where the individual experience benefits from sharing and trusts the person sharing with. It is crucial to be aware of the contextual perspective, how social capital is nurtured, while it directly affects how information and knowledge is accessed and shared. For effective information and knowledge sharing to happen there is a need to know the network, how to access it and what kinds of benefits there are within the network. KM initiatives must be brought to the local context where the human and social processes underpin the formal structures enabling information sharing. These are important insights in the management of organisations and especially in the management of expert organisations where the individual knowledge base is important to bring into the common awareness. These insights are further discussed in combination of suitable tools for supporting information and knowledge sharing in a business organisation.

7. Conclusions

Social capital has been suggested as a suitable theoretical framework to explain knowledge sharing mechanisms in organizations. This paper has summarized lessons learned from different contexts where the social capital dimensions have been used to explain information and knowledge sharing. The studies illuminate important aspects on how the combination of structures, relations and contents support sharing. The different cases also underline the importance of the *contextual perspective*, the role of the social capital dimensions are focused differently depending on context. Especially

the relational dimension is underlined in all three contexts, both as a prerequisite and a challenge. The importance of trust can't be neglected when discussing knowledge sharing. Also the aspects of benefits and social rewards have been pointed out in several cases underlining that knowledge sharing is a kind of gift economy. Managing social capital and knowledge sharing is a complex task but the awareness of the different dimensions of social capital underpinning information sharing is prerequisite for effective knowledge management.

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