Knowledge sharing through ICT:

Theoretical concepts meet the empirical field

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Abstract

This paper describes the initial empirical phase of my PhD-project. The aim of the project is to obtain more insight in the role of ICT in processes of knowledge sharing in organizations. The empirical findings presented in this paper are based on 7 explorative interviews with key-figures in two large organizations and deal with concepts related to the selection of cases (teams and events) and to the development of observation instruments (knowledge sharing and ICT). The results indicate that the concept of teams appears to be problematic. This makes itself felt by the concepts knowledge sharing and events. The concept of ICT seems to be suitable in this research project.

Introduction

This paper describes the initial empirical phase of my PhD-project. The aim of the project is to obtain more insight in the role of ICT in processes of knowledge sharing in organizations. This initial step into the empirical field involved a number of orientating interviews with key-figures which were thought to have an overview of processes of knowledge sharing and ICT in several large knowledge-intensive organizations. The aim of the explorative interviews was to get a better understanding of the empirical appearances of theoretical concepts in order to

1. examine which consequences the context of knowledge sharing has for the selection of cases
2. gain access to empirical appearances in the research field and to develop observation instruments

The empirical findings presented in this paper are based on 7 explorative interviews with key-figures in 2 large organizations, organization A and organization B. The results and

conclusions in this paper are not the final conclusions, as a number of interviews still is to be analyzed.

First of all, concepts related to the selection of cases, 'teams' and 'events' will be discussed. Subsequently, we will elaborate on the concepts that are relevant for the development of observation instruments: 'knowledge sharing and' and 'ICT'. We will go into the theoretical concepts and empirical findings. Finally we will draw conclusions and indicate consequences for future research.

Concepts related to selection of cases

Teams

In the theoretical framework teams obtain a central position. In the literature is mentioned that teams are the primary units in organizations for the execution of tasks. It is assumed that teams are crucial in modern organizations. Teams are considered to be the basic learning-units in organizations (Senge, 1990), knowledge transfer and learning processes mainly take place in small groups (Hedlund, 1994), groups are subsystems of organizations in which tasks are carried out (Goldhaber, 1993; Kreps, 1990). Teams also exercise authority in order to gain and control resources (Daniels, Spiker & Papa, 1997) and teams seen as 'communities of practice' contribute to innovation and knowledge creation in the organization (Brown & Duiguid, 1991; Wenger, 2000).

In addition various empirical studies focus on teams, like the role of team learning in organizational learning (Edmondson, 1999), the various ways of knowledge transfer of teams, (Dixon, 2000); the role of implicit knowledge in group innovation (Leonard & Sensiper, 1998); groups interacting with ICT (McGrath & Hollingshead, 1994), and integration of knowledge in groups (Okhuysen & Eisenhardt, 2002). Teams will be the starting point in the empirical part of this project. Initially we described the following team characteristics:

1. a team typically consists of 15-30 persons
2. team members are collaborating together
3. teams are involved in the primary process, i.e. the 'core' activity of an organization
4. team members try to reach a collaborative aim or task
5. teams exist for more than half a year
6. collaborative use of ICT for more than half a year in team
7. team members are working as a team for 50 % of their working hours

The interviews show that there is much variation in the size and types of teams. The interviewees mention that several groups in the organization can be seen as a team. There are large and small teams and often small teams appear to be part of larger teams. Moreover, teams residing in one or another organization differ considerably with respect to various aspects. In organization A the primary process involves performing tasks in departments, whereas in organization B the primary process enrolls in project teams. Due to this variety in teams, we have to anticipate that teams within and between organizations might be difficult to compare.

Furthermore, it appears that only one team, an executive team, corresponds with the profile presented above. The other teams in the organizations do not come up with one or more of the various characteristics of this profile, such as teams which do not collaborate on one task (i.e. communities of practice), teams existing for half a year or shorter (i.e. projectteams) and teams which are not involved in an organization's actual core activity (i.e. managementteams).

From the former we can conclude that the initial profile of a team is not suitable for the selection of teams and should be adapted to the empirical situation encountered in real life organizations.

Events

Since knowledge sharing in organizations concerns 'everything' in organizations, it is difficult to examine knowledge sharing in general. Therefore, in this research project we will examine knowledge sharing of teams concerned with particular 'events'. Such an 'event' is for instance a new focus in strategy of an organization or an alteration in policy which may have implications for every section in the organization.

We initially described events as follows:

1. salience of topic
2. top-down directed
3. has consequences for all parts of the organization
4. has consequences for primary process
5. goes beyond daily work routines
6. actuality

We expect that focusing on knowledge sharing around an 'event' provides access to the several processes of knowledge sharing in an illustrative way. The focus on 'events' is a more frequently used method. Flanagan (1954), the founder of the 'critical incident technique',

describes this technique as: "…a set of procedures for collecting direct observations of human behavior in such a way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles." (Flanagan, 1954, p. 327) In addition to Flanagan, Urquhart et al. (2003) argue that on the basis of several studies the critical incident technique could be usefully extended and enriched by some explication methods. This 'critical incident technique' constitutes one of the various measurements tools of the ICA-audit. Respondents are invited to describe typical 'critical communication episodes' of successful or non-successful incidents. Based on these descriptions, it is explicated why the organizational communication in the organizations functions well or not (Goldhaber, Rogers, Lesniak & Porter, 1979).

Each interviewee appeared being able of mentioning several events fairly easy. In addition, they were able to describe these events and to indicate which levels in the organization are involved in these events. The events mentioned by interviewees related to changes in corporate policy, new ways of approaching customers and new work-methods. The events mentioned can be positioned at the level of the entire concern, branch or department. Nevertheless, a number of interviewees had difficulties in mentioning teams involved in events, especially executive teams.

From the former we can conclude that our idea of focussing on events for gaining access in both organizations and in order to investigate processes of knowledge sharing can be carried out further. Nevertheless, we must be cautious to select events that contribute sufficiently to knowledge sharing in teams.

So far, we have discussed concepts related to the selection of cases. In the next section we will elaborate on two concepts that are of relevance for the development of observation instruments, 'knowledge sharing' and 'ICT'.

Concept related to the development of observation instruments

Knowledge sharing

In the theoretical framework we employed Davenport & Prusak's definition of knowledge. They defined knowledge as: "a fluid mix of framed experience, values contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the mind of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in

organizational routines, processes, practices and norms." Therefore, we made a distinction between explicit and implicit knowledge in the theoretical framework. The literature emphasizes both qualities of knowledge (Nonaka & Takeuchi, 1995; Davenport & Prusak, 1998; Polanyi, 1966). Explicit knowledge is knowledge which can be expressed in words by human agents. Implicit knowledge is knowledge which can not be expressed in words, but refers to visible and demonstrable skills or a tangible culture. In addition, the distinction between knowledge in terms of property and in terms of metaknowledge is of importance. In the mainstream literature knowledge is mostly considered in terms of property, as it refers to the content of knowledge: which knowledge does an individual, team or organization hold? Few authors focus explicitly on metaknowledge. Here, attention is paid to a) a notion of the existence of a body of knowledge (Winter, 1987), b) the localisation of crucial knowledge (Blaauw & Boersma, 1999), c) the importance of metaknowledge for the transfer of 'best practices' (O'Dell & Jackson Grayson, 1998) and d) the importance of metaknowledge for the judgement and verification of knowledge (Boersma, 2002). Moreover, our theoretical framework distinguishes between three knowledge levels: the individual, group and organizational knowledge level (e.g., Berger & Luckmann, 1966; Huysman & De Wit, 2000). Group knowledge can be considered as knowledge residing in teams mentioned above. Between these three knowledge levels conversions take place, in which knowledge available and shared on a level becomes knowledge on another level.

The interviews were able to distinguish between explicit as implicit knowledge. They mentioned, for instance, instructions and knowledgemanagement-systems (explicit knowledge) and education programmes (related to daily practice), learning by doing and tutors and informal communication (implicit knowledge).
The same goes for knowledge in terms of property versus metaknowledge: interviewees recognized these concepts. With respect to metaknowledge the interviewees indicated that the way in which knowledge is found constitutes an important aspect as well. Therefore, we have to add this aspect of metaknowledge to the theoretical framework of concepts.
The levels of knowledge appeared to be problematic. First, several levels can be identified as group knowledge. In addition interviewees have difficulties in filling in group and organizational knowledge. Only at the individual level the interviewees succeed in doing so. Individual knowledge is described as personal specialistic knowledge build through a combination of education and experiences. From the preceeding we could conclude that more fine-tuning is needed while defining three levels of knowledge. In addition, the problems

regarding levels of knowledge also seem to have repercussions for the knowledge conversions.

ICT-use

In the literature is paid much attention to ICT in organizations. Nevertheless less is published explicitly on ICT and knowledge sharing. In general, the literature about ICT and knowledge sharing focuses on the role of ICT in knowledge creation as in 'communities' (e.g., Huysman & De Wit; 2000; Walsham, 2001), knowledge storage (e.g., Huysman & De Wit, 2000; Schwartz, Divitini & Brasethvik, 2000) and sharing implicit and explicit knowledge (e.g., Huysman & De Wit, 2000; Walsham, 2001). In this research project we employ a conceptualization of functionalities of ICT aimed at knowledge sharing (Choo, Detlor & Turnbull, 2000). These functionalities are a) facilitating the collective shared process of knowledge creation in which dialogue and negotiation are central concepts ('communication space'), b) offering possibilities to build and unlock organizational memory ('content space') en c) offering possibilities for cooperation independent of time and/or place ('collaboration space') (Choo, Detlor & Turnbull, 2000). ICT enables an integration of these three spaces. When the three spaces are facilitated collaboratively by means of ICT, a shared information work space is realized. This means that interactions between the several spaces take place. We expect that a shared information work space intensifies and improves the processes of knowledge sharing.

The interviewees mentioned examples of ICT-use that can be regarded as instances of spaces. ICT offers a communication space by ways of possibilities for communication within teams via e-mail, i.e. discussions via e-mail. Furthermore intranets and knowledgemanagentsystems offer discussionfora. A content space is offered by ways of unlocking documents via intranets or knowledgemanagement-systems. In addition, newsletters are sent by e-mail. The collaboration space is facilitated in knowledgemanagement-systems where employees work collaboratively. In addition, it should be noticed that the interviewees emphasize that for the most part ICT-applications are used in combination with more traditional communication channels.

From the former we can conclude that it seems that ICT facilitates the three spaces and organizations facilitate a shared information work space. However, as mentioned before, for the most part, it seems that ICT-applications are used in combination with more traditional

communication channels. Therefore, the shared information work space is not realized by ICT only. Further examination is needed in order to gain a better understanding of the spaces.

Conclusion and consequences for future research

Our first encounter with the empirical field resulted in new insights with respect to the suitability for empirical analysis of concepts central in our theoretical framework. The distinction in explicit and implicit knowledge and knowledge in terms op property and metaknowledge seems suitable for the research project. If you take the traditional channels in consideration, the functionalities of ICT aimed at knowledge sharing seem useful too. Teams, levels of knowledge and conversions of knowledge appear to be problematic and events to a lesser extent too. Therefore, we have to reconsider the applicability of these concepts in the empirical part of the project.

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