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Knowledge Sharing in the Military Context: An Investigation of Cultural Dynamics in Knowledge Intensive Teams of the German Federal Armed Forces

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Abstract

This study aims to shed light on the cultural dynamics involved in effective knowledge generation, sharing and use in knowledge intensive teams of German Federal Armed Forces (GFAF). In our analysis we draw on interviews conducted with members of so called CD&E (Concept Development & Experimentation) projects. These projects are designed to develop and test new ideas. They constitute a novelty for the whole organization and a cultural challenge for effective knowledge work through its cross disciplinary, cross functional, and cross hierarchical design. Hence, these projects are a good venue to study cultural dynamics in inter-group knowledge sharing. The analysis reveals four major influencing factors on knowledge sharing within the CD&E project teams and between the teams and the line organization.

1. Introduction

The imperative of the knowledge society is knowledge sharing. Even though it may sound paradoxical, in "the knowledge society it is not the individual that performs…It is the organization that performs" (Drucker, 2005, 309). In contrast to individual experts' leveraging their knowledge, collaboration, interchange and the sharing of expertise are at the heart of everyday business. This is due to the nature of companies as distributed knowledge systems (Tsoukas, 1996) whose value creation spans organizational units, companies, countries, and cultures. Moreover, increasingly complex environments in terms of short product life cycles, political and legal conditions, etc. require constant learning, both on the individual and the organizational level. The importance of knowledge sharing, collaboration and learning give rise to the establishment of team and project based structures as an appropriate way of handling complex and non routine tasks (Hopfenbeck, 2002; Nonaka and Takeuchi, 1995; Rattay, 2003).

In this respect, a broad research area has emerged investigating influencing factors on knowledge sharing both on an organizational and team level. Various antecedents of knowledge sharing have been addressed so far, such as care (von Krogh, 1998), trust (Armutat et al., 2002; Scott et al., 2005; Renzl et al., 2004), openness (Armutat et al., 2002), individual networks (Lang, 2004), and both organizational structure (Gupta and Govindarajan, 2000; Mønsted, 2004) and culture (Henrie and Sousa-Poza, 2005; Sackmann and Friesl, 2007).

Comparing the trend to team based structures (Rattay, 2003) with recent findings regarding cultural influences on knowledge sharing reveals an interesting aspect. The interchange of knowledge between organizational entities, groups and departments is regarded a major driver of long term success (Argote and Ingram, 2000), simultaneously though, the differing group

identities and cultural roots are identified as obstacles in knowledge sharing (Kane et al., 2005; Sackmann and Friesl, 2007). This is especially the case if no meta-identity exists that all groups refer to (Kane et al., 2005). This challenge needs to be solved in order to leverage the potential of knowledge sharing in organizations.

This study contributes to this line of research by exploring the broad cultural context of inter-group knowledge sharing. In our analysis, we draw on interviews conducted with members of so called CD&E (Concept Development & Experimentation) projects of the German Federal Armed Forces (GFAF). These projects are designed to develop and test new ideas, processes and technologies. They constitute a novelty for the whole organization and a cultural challenge for effective knowledge work since they are cross disciplinary, cross functional and cross hierarchical. Because of this design, they are a good venue to study cultural dynamics in inter-group knowledge sharing.

In the first part of this paper, we provide a brief overview of the theoretical underpinnings of the study in terms of our understanding of organizational culture and the impact on knowledge sharing. This is followed by an in-depth despription, discussion and systematization of the interview results. The paper concludes with a summary of major findings and suggestions for further research.

2. Cultural dynamics in knowledge sharing

We draw on the concept on cultural complexity (Phillips et al., 1994; Sackmann, 1997, 2003) to describe that project members' identity may be rooted in multiple contexts ranging from varying nationalities to functional backgrounds, hierarchies, professions, gender and age. In their review of culturally-based influencing factors Sackmann and Friesl (2007) distinguish emotionally based, cognitive, and experience based influences on knowledge sharing.

Membership in a social group like a work organization is an emotionally important aspect of the individual self concept and an influencing factor of interaction and communication (Sackmann et al., 2002; Brewer, 1991). Since individual identities may promote distinctions between 'we-they' and 'us-them' that can lead to negative stereotyping and ultimately to distrust among the members of the team (Brewer, 1995), knowledge sharing among these members may be affected. In this respect, Kane et al. (2005) show that in-group members tend to be more influential than out-group members because they are perceived in more positive terms such as more trustworthy, honest and loyal.

A second group of studies highlights cognitive aspects. These aspects comprise frames of reference or cognitive structures that are shared among the members of a certain profession or discipline (Weick and Roberts, 1993). In their daily interactions, members of the same profession develop a specific vocabulary and distinct gestures (Schmidt, 1994), as well as rules about acceptable and unacceptable behavior. This collectively-held knowledge may originate from a profession, a functional department, an organization, or even an industry (Spender, 1989; Tsoukas, 1996; Phillips, 1994) and influences the perception and interpretation of situations.

Finally, the experience base refers to the idiosyncratic knowledge of each project member. It represents the knowledge and skills that were developed in past projects, organizational settings, and during socialization processes into national or regional cultures. Each project member is rooted in a rich background of individual and idiosyncratic experience that shapes the interpretation of the project situation and determines communication behaviour. Knowledge sharing is affected as past experience may contribute to the emergence of stereotypes with relation to other cultures, professions or organizations (Sackmann, 2003).

3. Methodology

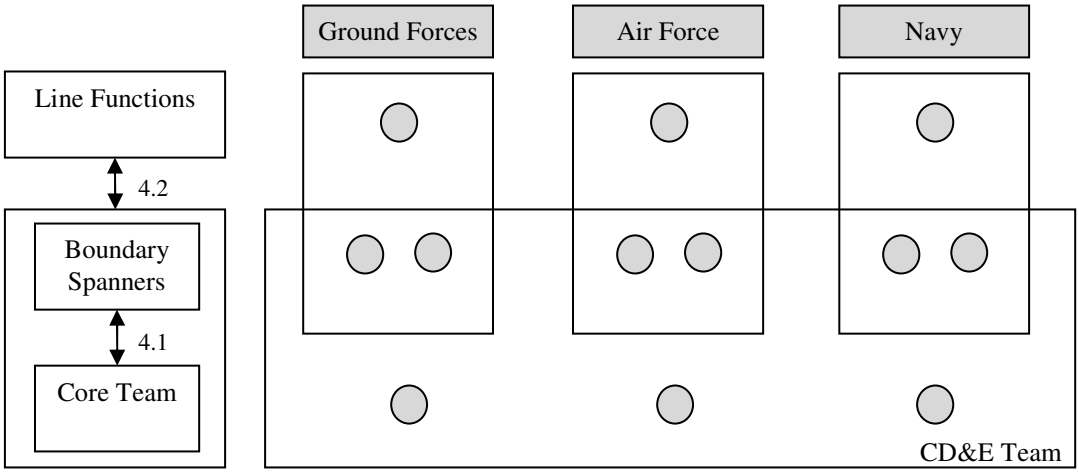
For this study we chose the context of so called CD&E projects of the GFAF to investigate cultural dynamics of inter-group knowledge sharing. These projects constitute a 'cultural' novelty to the whole organization with its interdisciplinary, cross-hierarchical and cross-organizational design. In the course of our study that was part of a research project on knowledge barriers funded by the GFAF, we conducted nine half-structured interviews with members of CD&E projects. All interviews were tape recorded and transcribed. For two interviews, protocols were written after the interview on the request of the interviewee. This study is explorative in nature in order to identify cultural influencing factors on knowledge sharing as a basis for further empirical and conceptual research.

4. Knowledge sharing in the military context - The case of CD&E

In reaction to the challenges of the knowledge society, the world political situation and changes in its mandate, the GFAF initiated so called CD&E (Concept Development & Experimentation) projects. These projects have the character of a cross disciplinary think tank with the objective to develop innovative solutions, test them in situ in form of experiments and eventually transform the whole organization both technologically and mentally by implementing successful concepts (BMVg/Struck, 2004). The organizational entity CD&E with its group of specialists (the CD&E core team) can be regarded as a new subculture within the GFAF that is fully dedicated to innovation and knowledge. The overall objective is to sustainably improve the capability of the GFAF to conduct complex operations.

The basic idea of CD&E is an iterative development process with alternating phases of theoretical ground work (concept development) and practical testing in form of experiments. The latter aspect has also the intention to involve target groups already in the early stages of concept development. Topical wise, CD&E has a wide scope by covering technological, organizational, process oriented and behavioral challenges (Schäfer, 2006). Figure 1 shows the usual set-up of a CD&E project. Within the GFAF there is a small group of specialists fully dedicated to CD&E. This group is referred to as the core team. Additionally, the different forces (Ground Forces, Air Force and Navy) delegate people to the project on a part time basis. This group is termed 'Boundary Spanners' as they have both a line and project function. In the project they either assume the role of topical specialists or so called Points of Contact (POCs) that ensure that the interests of their home force are looked after. The core team and the boundary spanners make up a CD&E project team. A third group, in figure 1 referred to as line functions, has not an active part in the project but may be affected by experiments.

Figure 1: Structure of CD&E projects



In the following two sections we summarize the interview results. In 4.1 we stress those cultural factors that are salient in the interaction within the CD&E team, i.e. between the core team and the boundary spanners. In 4.2, knowledge sharing between the CD&E Team and the line functions is investigated.

4.1 Knowledge sharing within the CD&E team

The core of CD&E projects consists of conceptual work and the subsequent empirical testing. In this respect the effective interplay of the core team which steers the whole process and the boundary spanners (POCs and topical specialists) is absolutely crucial. The interviews with CD&E members revealed three cultural challenges to knowledge sharing within the project team: Hierarchy, Organizational Context and Micro Politics.

- **Hierarchy**

The structure of the GFAF is characterized by clear hierarchies that are deeply ingrained in the organizational culture and codified in laws and regulations. The approach of CD&E with its cross-disciplinary, cross-functional and cross-hierarchical design stands in strong contrast to the existing culture. The aspect of hierarchy in knowledge sharing manifests in differences in rank and age and the necessity to 'sell' the project.

The interview results show that differences in rank between POCs and the project management in charge (core team) significantly influence knowledge sharing especially if the POC has a higher rank. Decisions may be overruled based on rank instead of conceptual arguments especially if resources of their military discipline (ground forces, navy or air force) are affected as the following quotation indicates: *"Hierarchy is the winner of discussions…it is not easy to come through the ministerial layer."*

Moreover, hierarchical differences not only manifest themselves in ranks but also in age which correlates with the career system of the line organization. In this respect, interviewees' comments show that seniority influences the acceptance of project members' conceptual contributions to joint problem solving: *"As a young lieutenant, your judgment is not trusted…although you might have an excellent scientific expertise"; "A civilian with a Ph.D. has a higher acceptance then a young lieutenant."*.

A third hierarchical aspect influencing knowledge sharing is the necessity of project management to 'sell' the project up the hierarchy. While project management is responsible for the overall success of the project, in experimentations that are part of the project, responsibility is formally moved to especially dedicated experimentation directors. The rationale underlying this shift in responsibility is to ensure independent testing. Independency of testing and the quality of analysis is, however, affected if the responsibility stays informally with project management: *"Some projects get lighthouse status…We have not even begun but you can already read [that] on the intranet. Then you have no chance to work…scientifically."*

- **Organizational Context**

Only a small group of people in the GFAF is fully dedicated to CD&E projects. All other members (boundary spanners) work on the project part time, in addition to their respective line functions. Moreover, due to the long project durations of several years, the boundary spanners carry their organizational context, i.e. norms and regulations of the line organization, into the project. Based on the interviews, two aspects of the organizational context were identified that influence knowledge sharing within the team: existing career planning and the functional double burden.

Due to the career planning system of the GFAF each soldier is transferred every two to three years to a new position. Based on current policy the regular transfer is overruling unfinished project engagements leading to possible fluctuation within the boundary spanner group of the CD&E team. In these cases, relevant skills and experiental knowledge obtained during the project might be lost (esp. without thorough debriefing), leading to inefficiencies as new members need time to catch up. Moreover, being part in a CD&E project constitutes a significant double burden for the boundary spanner group. But, individual prioritization of work is often done to the disadvantage of the line function, leading to negative sentiments towards CD&E within the line organization. This is expressed in the following quotation: *"I am doing this [the project] because I've got the order. I have done that to the disadvantage of my people…But as I am personally committed to the project, the necessary effort was clear to me to make this a success."*

- **Micro politics**

The boundary spanners, especially the POCs, are caught between the interests of their home force and the responsibilities in the project. What is more, the POCs' job is to ensure that the interests of their disciplinary home forces are met, especially concerning matters of resource allocation. Thus, conflicting force strategies and interests become a hidden agenda beside the actual project objectives. This supports micro political behavior of the participating project members leading to a rift in the project team and a blockage of open and constructive project work, as the following quotation shows. *"…If…an experiment e.g. reveals that Ground Forces and Air Force have similar capabilities…[and] if the capability can be reduced based on budget reasons then it becomes interesting…How open is communication between the [participating parties]?...Can you afford acting against [the interests of] your force considering your career?"*

4.2 Knowledge sharing between CD&E team and line organizations

The conceptual work of CD&E projects is done within the project team. In order to test the concepts (experiments), the contribution of the line organization is needed, e.g. as participants in military exercises or by providing resources (e.g. material). This requires the buy-in of the forces and the affected organizational entities, the acceptance of the CD&E methodology and the willingness of the participants to stretch beyond current routine and learn new processes and concepts. The interview data suggests that this buy-in is influenced by line functions' prior knowledge on CD&E.

The CD&E approach is new to the organization and the benefits of participation both on the individual and organizational level have not yet reached the line organization fully so far. Moreover, the organization underwent already several transformation efforts in the past. Thus, the lack of information regarding the benefits of CD&E leads to rumors concerning the efforts that go along with participation. *"There are prejudices; 'we have already tried this and that in the past'. If an experiment becomes too big people are afraid and turn negative…"* The negative stereotyping that goes along with these rumors reduces line functions' willingness to participate and therefore influence the quality of interaction with the CD&E team. This is also expressed in the following quotation: *"…you are too close to the picture but not willing to take two steps back in order to see the project in a [different] light, from a different point of view."*

5. Discussion and summary

This study takes a cultural complexity perspective, acknowledging that project members are rooted in multiple contexts. The emotional, cognitive and experience based aspects related to these contexts shape their interpretations of the world and their communication behavior. As

outlined above, CD&E is an example of a culturally complex project environment. Its subculture based on equal ranks, innovation, creativity and learning clashes with the existing culture of the GFAF. The exploratory analysis of this study adds to our understanding of knowledge sharing in culturally complex environments with the identification of four main cultural aspects as summarized in Table 1.

Table 1: Summary of influencing factors on knowledge sharing

Cultural Aspects	Within CD&E team	CD&E team and line organization
Hierarchy	▪ *Rank* ▪ *Age* ▪ *Selling Success*	
Organizational Context	▪ *Career Planning* ▪ *Double Burden*	
Micro Politics	▪ *Micro politics*	
Acceptance		▪ *Experience* ▪ *Project Awareness*

Besides adding to the body of research on knowledge sharing, our results also contribute to the research and practice of organizational change. The CD&E approach of the GFAF has been set up as a means to transform the organization from within, through constant innovation and learning. Our results highlight the importance of early target group involvement in change efforts. The interview data show that the target groups of the CD&E projects (the line functions) are not aware of the CD&E approach and its objectives. In this respect, the boundary spanners play a key role as change agents and linkages between the line organization and the project. Ideally these people have a strong background in the respective topic and a good standing in their home organizations. Leveraging the boundary spanners' potential does, however, not only require conceptual contribution in the project but also intensive communication work within the home organization.

Moreover, the study indicates that the dynamics in these projects require culturally sensitive project management that already starts in the initial phase of the project. Interviewees clearly indicated that thorough staffing decisions in terms of rank are crucial, in order to avoid later frictions. What is more, the culturally diverse setting of the projects regarding rank, functional background, age, force, etc. requires team building activities throughout the whole project. These sessions support the development of a common language and a mutually shared understanding of the objectives. This fosters the creation of a project identity that helps to overcome the cultural influences on knowledge sharing described above.

Our study is subject to the following limitations. First, with only nine interviewees, the sample is relatively small given the complexity of CD&E projects. Second, the unbalanced structure of the sample (seven out of nine interviewees belong to the CD&E core team, line functions are not represented) might bias the analysis. Third, the specifics of the military context need to be taken into account, when comparing the results with research conducted within companies.

Despite these limitations, our study of knowledge intensive teams in the military sector contributes to an enhanced understanding of cultural dynamics in knowledge sharing. Building on these results, future research could further stress the informal structure of complex teams that emerges in the course of the project. This would add another dimension to the analysis of interactions between otherwise a priori (e.g. according to functional or organizational background) defined groups.

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