

Organizing for the sharing and creation of knowledge
- are we too afraid to kill it?¹

Etty R. Nilsen

Norwegian School of Management BI and Buskerud University College, Norway
etty.nilsen@wbs.ac.uk

Submitted to OLKC 2006 Conference at the University of Warwick,
Coventry on 20th - 22nd March 2006

¹ Work in progress

Abstract

This paper raises the question of whether learning and knowledge creation in organizations should be left to live its own life, practice-related and without intervention or nourishment, or whether these processes should be actively facilitated and organized for. An empirical example from the introduction of a control- and measuring system (Balanced Score Card and Business Process Reengineering) in a hospital ward, illustrates that even through top down initiated projects, represented by these systems, a learning space is created, and learning and sharing of soft knowledge takes place. The knowledge processes are unintended consequences of a structural intervention, and point to the general need for facilitation and organizing of knowledge processes. Lack of- and difficulty with knowledge sharing and knowledge creation is often due to lack of opportunity and lack of meeting places (Wenger 1998, Nonaka and Konno 1998).

This paper concludes that imposed projects, like the empirical example of introducing balanced score card in a maternity ward, can also provide a field for learning and knowledge creation, and suggests that organization of knowledge processes can be useful in rule- and procedure based organizations.

Introduction

Knowledge management makes knowledge problematic (Bate and Robert 2002) in that knowledge, which is a source of advantage and sustainability, is only potentially valuable for the organization. Even if the knowledge exists in the organization, it may be sticky and it does not automatically disperse (Szulanski 1996). Knowledge is believed, however, to be easier shared and developed closely connected to task performance – situated and in a community of practice (Wenger and Snyder 2000, Wenger 1998).

In this paper, the introduction of a tool oriented management system, BSC, is studied within a knowledge perspective, the situated learning perspective (Wenger 1998). The situated learning perspective and the BSC is an odd couple, and there are great differences in the underlying assumptions about knowledge between the two. The BSC is a change- and improvement tool with measurement and codification as its prime devices,

aimed to focus on critical measures and transfer of best practice (Kaplan and Norton 1992). The balanced score card, as developed by Kaplan and Norton, has a learning and growth perspective (one of four perspectives), operationalized as: employee capabilities, information system capabilities and motivation, empowerment and alignment (Kaplan and Norton 1996). The BSC is based on the assumption that knowledge can be made explicit and remain as such long enough to be measured. This is contrary to the practice based view, which emphasizes the dynamic aspect of knowing and acknowledges that knowledge has a tacit dimension which is vital.

The situated learning perspective, based on social learning theory, views knowledge as socially constructed and acknowledge that there are dimensions of knowledge, soft or tacit, that need a social context and interaction in order to be shared and developed (Wenger 1998, Brown and Duguid 2001). Knowledge is created through collective reflection. In this context, knowledge creation does not only point to the big inventions. Most knowledge creation is incremental, takes a long time and includes long processes. In the cases under study here collective reflections take place for example during process mapping, discussions on indicators, planning future measurement procedures etc. This interaction reflects the stakeholders' interests and demands, which become part of the knowledge creation and part of the identity formation (Wenger 1998).

The hospital as a whole has introduced Patient Focused Redesign, a form of Business Process Reengineering. The Balanced Score Card is a prolongation of this restructuring. The patient focused redesign involves mapping the generic core care processes in the hospital, and these mapping processes have proved to be very effective knowledge sharing fields, where the employees meet in groups vertically organized with the purpose of discussing practice in general. This is otherwise rare in the daily practice in the hospital, where learning is mostly seen in a rational frame, as an activity separated from practice, like internal and external training (Lampel and Bhalla 2004).

In this paper the situated learning perspective, with emphasis on the community of practice framework (Lave and Wenger 1991) and the theory of knowledge creation

(Nonaka 1994) will be presented in brief, along with a presentation of the balanced score card system and the patient focused redesign. Subsequently the case will be introduced, followed by a discussion with the following focus: *Organizing for knowledge sharing and creation – how the process of introducing a balanced score card system created a learning space for collective reflection, learning, and sharing of knowledge.*

Organizing for knowledge sharing and knowledge creation –

Knowledge sharing and knowledge creation

At present the situated learning perspective and the Community of practice framework (Lave and Wenger 1991, Wenger 1998) dominate the organizational-learning and knowing stage as a way to describe how knowledge travels. The situated learning perspective offers an alternative to cognitive learning theories (Contu and Willmott 2003), and emphasize the necessity of creating shared contexts, and they see interaction and collective reflection as a necessary context for sharing and creating knowledge (Nonaka and Takeuchi 1995, von Krogh et al. 2000). The interaction aspect is key, and learning takes place in the negotiation of meaning which happens between people (Lampel and Bhalla 2004).

Viewing knowledge as multidimensional (tacit/explicit), means understanding knowledge as a “process created and articulated in day-to-day interactions between individuals in the organizations”, rather than “an organizational asset that can be used, exploited and traded” (Styhre 2003:21). “Measured” could have been added to this quote. Hildreth and Kimble (2002) introduce the terms soft and hard knowledge, where soft knowledge is broader than tacit knowledge, and the borders between tacit and explicit knowledge are blurred (Hildreth and Kimble 2002). The social context within the practice based approach is referred to as a community of practice (Wenger 1998), with its parallel BA in Nonaka’s framework, which means place and can be thought of as “a shared space for emerging relationships” (Nonaka and Konno 1998:40). The perspective of “communities

of practice” is rooted in social learning theory. In a work context, the communities of practice are communication channels and fields for interaction. Communities of practice are “significant repositories for the development, maintenance, and reproduction of knowledge” (Brown and Duguid 2001). People continuously reconstitute their knowing over time and they modify it as they change their practices. Improvisation in practice is a powerful means of increasing organizational innovation, learning and change. Nonaka (1994) has developed a framework for knowledge sharing and knowledge creation. New knowledge is created through different modes of knowledge conversion. These modes of conversion are socialization, externalization, combination and internalization and they take place in different forms of interaction. The theory emphasizes the dynamic aspect of knowledge in an ever-evolving process. In order for the knowledge conversion and creation processes to take place in fields for interaction, certain conditions will facilitate these processes (according to Nonaka they are necessary). These conditions are: Autonomy, creative chaos, redundancy, requisite variety, love, care, trust and commitment (Nonaka et al. 2000). These conditions energize the fields for interaction, which in turn give energy and quality to the knowledge conversion processes (between tacit and explicit).

Etienne Wenger states that “learning happens, design or no design” (Wenger 1998). There is however no doubt hindrances to learning in every organization, and these are numerous and of various characters. Learning can be obstructed by power patterns, by structure, by organizational culture, by distinct characteristics of professions, by lack of time, lack of opportunity etc. This can be mended by managerial facilitation and organization, but there is danger of “killing” knowledge in the process of intervention. (sitat fra Brown and Duguid how to capture knowledge without killing it).

Wenger treats the question of organization, or design, and defines it as “a systematic, planned, and reflexive colonization of time and space in the service of an undertaking” (Wenger 1998:238). Of course, there has been much emphasis on *non-colonization* in the discussion of communities of practice and the communities of practice can be “recognized, supported, encouraged, and nurtured, but they are not reified, designable

units”, which also means that “learning cannot be designed, but designed for”(Wenger 1998:229).

Communities of practice and BA

A community of practice is a group of employees all involved in a shared practice (Lave and Wenger 1991). Even though it is claimed that they can be formal or informal (Brown and Duguid 2001, Wenger and Snyder 2000), the “natural”, self-selected, and non-interfered-by-management group vision of a CoP has become dominant (Thompson 2005).

The community of practice is a learning space where both the tacit and explicit dimensions of knowledge are intertwined and developed further. This is contrary to the characteristics of the BSC-tool, where features of practice are reduced to measurable entities and has the underlying assumption that codification of crucial knowledge and information is possible.

For soft knowledge to be shared and new knowledge to be created, a shared context must exist or be created (Hildreth and Kimble 2002). The study of how knowledge is shared and created is a study of the interaction and communication pattern in an organization. “This means that the community must, of necessity, have a space for conversation and action isolated from the larger organization” (Boland and Tenkasi 1995). The social interaction that takes place in a shared context can be both formal and informal; it can emerge coincidentally or in planned settings within the formal structure, or for example during a regular meeting in the department, or during a brainstorming event, *intended* to create knowledge and new solutions. The continuous dialogue is a necessary condition for knowledge creation (Nonaka 1994). Senge calls *for setting the collective aspiration free and continually learn how to learn together* (Senge 1990). Hustad has studied knowledge creation in an oil drilling project in the North Sea and states that through professional networks and by rotating individuals knowledge is shared in the base organization and in new projects (Hustad 1998).

The lack of structural elements to a community of practice is relevant to the management of such groups. If a community consist of members that participate by choice because they have something to contribute with, it will seem hard to manage (Lampel and Bholla 2004) and attempt to manage it will risk killing the knowledge processes and the community itself (Brown and Duguid 2000, Thompson 2005).

Nonaka and Konno (1998) call this context Ba. Ba is a concept from Japanese philosophy and means place. Even though a shared context can be both mental and virtual, it is especially important to share time and space in the processes that involve transferring of tacit knowledge.

The Communities of Practice (CoP) perspective offer a shared context. The concept is rooted in social learning theory. CoPs exist within the organizational borders and along organization and department lines, but even more so across these borders and between organizations. The same individuals will be members of several communities of practice. Communities of practice are “significant repositories for the development, maintenance, and reproduction of knowledge” (Brown and Duguid 2001). “People’s ongoing engagement in social practices, and thus their reproduction of the knowing generated in those practices, is how they reconstitute knowledge-ability over time and across contexts. Continuity of competence, of skill-full practice is thus achieved, not given” (Orlikowski 2002). Although CoP’s are seen as emergent, an increasing amount of contributions suggest that they can, to a certain extent, be facilitated or even created (Thompson 2005, Newell et al. 2002).

The facilitation and construction of CoPs, as opposed to seeing them as an emergent organizational feature, is a central question of how to manage knowledge. It is a question of whether this intervention will hurt and obstruct the knowledge processes, rather than facilitate them (Thompson 2005). One of the ways of facilitating creation of CoPs is through providing structures. Thompson (2005) divides structure in seeding structures and controlling structures. Seeding structures aim to using “structure in a non-prescriptive way in the hope of indirectly seeding future collaboration” (Thompson 2005:162). This is

opposed to directly controlling present collaboration through controlling structures, which can be done through introducing *best practice* and consultants. Controlling structures are, according to Thompson, likely to fail because they “impose structural constraints on an emergent social dynamic” (Thompson 2005:163).

Patient Focused redesign and Balanced Score card

The Patient Focused redesign

Patient focused redesign is inspired by Business Process (BPR) redesign. The purpose of BPR is to organize business activities around processes rather than functions (Newell, et al. 2000). Emphasis is on operational effectiveness, customer satisfaction and cost reduction. In the actual redesign, the processes of practice have to be made explicit, and it is part of the implementation to map *generic core care processes* (Bowns and McNulty 1999).

A project for reengineering the business processes is a managerial intervention aimed at making radical changes (Bowns and McNulty 1999). New tasks emerge: the employees must keep the scorecards up to date, the measurements must be recorded, and there should, according to the method, be a discussion on possible indicators. The redesign presupposes the forming of many different new teams, like the process teams, the treatment teams etc., which are vertically compounded. The balanced score card is intended to be maintained by the process teams, which is part of the patient focused redesign.

The process team has as the following tasks in the case to be introduced below:

“Define quality measures and critical success factors according to laws and directions, and according to the objectives and plans of the region, the health enterprise, and the ward.

Define indicators according to the objectives and to CSF.

Monitor the main processes and define target figures.

Update treatment plans and procedures

Handle reports on unwanted incidents

Initiate improvement-projects for the purpose of stabilizing processes and improve the level of quality

Manage the main care processes according to the objectives.”

(Presentation by the internal consultant A. in the pilot project meeting²)

² Translated by the author.

The balanced score card

The balanced score card method has been very popular, mostly in the private sector, for the last decade (Voelpel et al. 2005). In contrast to Kaplan and Norton's vision that BSC is a "system that makes companies excel", there are repeated reports that the system does not work (Keating et al. 1999, Voelpel et al. 2005, Angel and Rampersad 2005). In spite of the critical voices, the balanced score card – in this case seen as a prolongation of the Patient Focused Redesign project, is perceived as something "new" in the public sector in Norway. For the hospital in this case, the project has an aura of modern times for public hospitals, and is introduced by the local top management, parallel to a national reorganization of the health sector. The BSC provides a systematic tool for measuring indicators within four perspectives in the organization: financial, customer, internal business processes and innovation and learning (Kaplan and Norton 1996). The purpose is to follow the development of these measurements and to compare with competitors, and it is vital that these are in line with the strategy of the company and backed by top management.

In this context the knowledge perspective – how knowledge is considered within the BSC system – is of interest. There are obvious difficulties in measuring knowledge, especially considering that knowledge has a tacit dimension. The BSC demands codified and measurable indicators, and attention is therefore turned to the indicators that can be operationalized as such (Voelpel et al. 2005). It is beside the scope of this paper to treat this issue in any depth. In the empirical section I will comment on how this system seems to have gone down in this particular organization – so far – and briefly compare to the success criteria and pitfalls mentioned by Kaplan and Norton (2001).

Methods

Data was gathered through observation and long, open ended interviews, using a story telling approach, in a maternity ward in a hospital in Norway, during half a year. The interviewees were midwives, children's nurses and doctors. The pilot project studied ran for five months. Data were constructed from field notes taken during observation of day-seminars and group work during these seminars, from interviews and from a number of written reports from the project. I talked to the participants during breaks during the

seminars, and I had several conversations with the internal consultant, who was the facilitator and instructor. I interviewed staff from the maternity ward who had participated in the projects. The interviews were part of a larger research project, but we did include sequences on this pilot project in particular. The data were analyzed using a manual coding system based on categories derived from theory. The coding was done deductively with codes from theory studied a priori, and inductively as tentative findings rose from the data.

The case was purposefully and theoretically sampled, rather than for statistical reasons (Eisenhardt 1989, Miles and Huberman 1994). The goal of theoretical sampling is to choose cases which are likely to replicate or extend the emergent theory of the field (Eisenhardt 1989). The hospital was chosen because it labels itself “a learning organization”, and a knowledge intensive organization and at the same time practice intensive, and not because it is a hospital. In this manner it is of instrumental interest, and not of interest because of its particular features as a hospital. It is hierarchical and rule- and procedure based. In some functions and wards the knowledge intensity is very high (for example between the midwives in the maternity ward), while it is low in the kitchen staff and in other support departments, which means that there are large internal differences.

The case of introducing the balanced score card in the maternity ward

The hospital under study is a local hospital in Norway, and the organization is very conscious about knowledge- and learning issues. They call themselves “a learning organization” in their vision and in their image building, both internally and externally. The hospital treated close to 10000 regular patients in 2003, in addition to 50000 out-patient treatments. The hospital has about 900 employees.

In 2002 the hospitals in Norway were transferred from county council district (fylkeskommunen) to the State, and they were divided in geographical regions, each

under a regional health administration. They are in a competitive situation (even as a public hospital), competing partly with the other hospitals for funding from the regional health administration, and competing to attract the patients. Patients in Norway are free to choose where to receive treatment. The money from social security will follow the patient. When the patient chooses a hospital outside his or her geographical area, the chosen hospital receives funding according to the nature of the treatment.

Hospitals are knowledge intensive organizations (Johannessen and Olaisen 2004). Knowledge development is of high importance to the daily operation of this kind of organization, and this is reinforced by the competitive situation hospitals are in. Their competitive advantage will depend on their ability to use and develop new knowledge in their practice. The employees own a vast amount of the means of production (the knowledge), they are organized in teams, and their competence often exceeds that of the management, and because of the complex and competitive environment they must be innovative, both administratively and within medicine and care. That is, they do fit a few of the characteristics of a knowledge intensive organization or adhocracy (Minzberg 1983). The organization has features of a hypertext organization (Nonaka 1994), and it also functions as a matrix organization. Given the tension between high and increasing pressure for knowledge sharing and knowledge creation, and the large amount of routines and procedures in an organization like a hospital, the organization constitutes the oxymoron of a “learning hospital” (Weick and Westley 1996).

The management of the hospital has introduced a process oriented work method based on Patient Focused Redesign, which was originally developed in Great Britain. The method has been adapted somewhat to this specific organization and to a Norwegian context. The idea is to organize the running of the hospital around the main pathological processes, and not vice versa, which traditionally has been to organize the patients around the different wards and departments of the hospital. The new way of organizing the work is slowly being introduced to the whole hospital.

The hospital, as any hospital, can be described as “thoroughly regulated institution”, in that it has codified rules and procedures for every activity. They have a traditional hierarchical structure, and not what we can describe as a flat organization, and does not

much resemble a knowledge organization in an “adhocratic” sense. The intensity of knowledge may be somewhat unevenly distributed, which means that in some professions and wards the intensity is very high, while it is low in other professions and in several support departments (like nurse’s aids, kitchen aids, receptionists, hospital orderlies etc.).

The mandate of the pilot project in the maternity ward, which is the case under study here, was “to consider and clarify the possibility of implementing a system for balanced scorecards based on registration of events in the medical treatment processes, selected measurement indicators for quality, and registration of economic data in accordance with the core care processes in the hospital” and “The project team is asked to consider the possibility of using the data in a system for economical analysis after the principle: cost per patient – CPP.” (Report from a preliminary study to the pilot study). A condition for moving this project from a pilot project to a full sized project, for this ward and later for the whole hospital, is that the scores are linked to the accounting system of the hospital. Due to lack of funding this condition has not yet been fulfilled, and the system is presently “in a drawer”.

The pilot project under study included a user survey and project work, meetings, and work on the ward between meetings. In this paper emphasis is on the meetings in the project groups and the interaction that went on during these meetings. The focus is on side effects of the project and not on the balanced score card implementation per se.

Pilot project: Caesarian operations and epidural as balanced score card parameters

The pilot project, which was an introduction and implementation of the Balanced Score Card, was established in the summer of 2004. This coincided with the opening of a new clinic in the hospital, and the introduction of a work method inspired by Business Process Reengineering, called Patient Focused Redesign (PFR). The introduction of the Balanced Score Card was to be introduced as an extension of the PFR-work method in the new clinic. In the maternity ward, which is not a part of the new clinic, the process-based

work method was not yet fully introduced. They started in the other end – by introducing the balanced score card system first, and through this the reengineering process was initiated. In the process of defining parameters to be measured, the generic core care processes were defined and mapped. This mapping also constitutes the foundation of the patient focused redesign. Since this pilot project was on the Balanced Score card, several of the managers from other wards came to observe the first meeting.

On the ward

On the maternity ward there is a culture of continuous reflection on practice. They are conscious about sharing knowledge, adopting new working methods, and of incremental innovation on the ward. This reflection takes place during breaks and in practise as the employees pass each other in the hallway. If there are any serious incidents, there will be a debriefing – but this is not standard procedure. There is however little interaction and reflection in the actual practice situations, like during an actual delivery or during a gynaecological consultation. The midwives are repeatedly urged to go into “each other’s” deliveries, but they rarely do.

“At the maternity ward we work very independently and alone, we very seldom... although it is stressed in all staff meetings that we must be better at being present in each other’s delivery rooms. Not in order to control, but to learn from each other and ask a little and be supervised”.

(Midwife P)

They do however consult each other during delivery, but not in the delivery room. This is of course also due to the presence of the patient. If suggestions are made within earshot of the patient, this creates a problem if there is disagreement about the suggested action. Collective reflection, tossing of ideas and disagreement is difficult in front of a, usually apprehensive, woman in labour.

“I have experienced that I have asked another midwife to come in to the delivery room to give me some advice, and have ended up with her taking over the whole delivery”.

(Midwife P)

Equally, this is the situation during gynaecological consultation. The midwife does not stay during a consultation if not specifically asked by the doctor, and thereby not allowing the learning space to be created.

Project starts...

When the project group members were summoned to the first project meeting, they knew almost nothing about what the project was about. The group was vertically compounded, along professional and management levels, with doctors, midwives and children's nurses. Two internal consultants facilitated the process, one on the BSC and one on the PFR (the process mapping). One of the participating midwives says that she felt that they had been randomly picked to be in the project group.

“We did not know what we accepted to participate in. We were summoned without knowing how many other participants, and who else.” “We were fifteen from the ward, and many of the non-participants asked: what are you going to participate in? No, I do not know.”

“After the first day we were all very confused. But I. said that it was not odd and that this was very special stuff.”

(Midwife P)

“I have never been in a setting where so many people have participated so much and understood so little about so much.”

“But there was very much frustration in that group, and nobody understood where the road led to and what we really were supposed to do... And we are used to know what to do!”

(Midwife F)

The language used by the consultant A. and later by an external speaker who came to share her experiences from another hospital, was quite unfamiliar to most of the participants. The consultant A. did to a large extent use a vocabulary totally unknown to the staff. She would say things like: “We are going to try to make the whole house coordinated with the emergency ward. So that we know how much a gynecology patient costs – so that we can have control of the economy” and “You need to improve your competence in statistics, monitoring, choice and development of the right measurement indicators” and “That which is not documented has not happened, been said, done or planned.” (From the first day-seminar of the pilot project). The external speaker talked about reliability-tests and interrater reliability, validation, measuring the need for direct nursing etc. Time studies are emphasized: How much time does the children's nurses use when they go to the lab to have the umbilical cord tested” etc.

In contrast to this "Tayloristic" inheritance, the consultant A., in explaining the purpose of the system, said that these measures could be used to protect what is actually good on the ward or the hospital. This happened on several occasions.

“The dream is that we can measure for example downsize-threatened, at risk areas so that we can show the consequences of the decisions on diagrams”.

(Consultant A)

Even though the participants are visibly or audibly, at least during breaks and when interviewed later, confused, there are few critical voices. Even when time studies of nursing of different patient categories are mentioned, there is no open criticism of the methods and underlying motivations.

In these meetings, the group uses the opportunity to discuss other issues. An example of a hot issue is the demand from the patients for single rooms. In the new clinic, which the maternity ward is not a part of, single rooms has been an important feature. This is now used in the marketing of the hospital, but the maternity ward has multi-patient rooms. This is linked to the problem of too many visitors, which is another issue discussed. The husbands practically move in, and other visitors come at all hours.

Another example of a topic that is discussed is that the doctors fail to have a conversation with the patient before the patient is discharged, which is how the procedure is and which is also what gives the lowest score on the survey. And even when the doctors make time for this conversation, the midwives experience that the patients are still full of questions afterwards.

The discussion on the indicators raises many discussions on practice. Examples are: what does increased body weight do to the delivery process, what is the reimbursement for the antenatal consultation, and what does that mean that we can earn?³ Increased redundancy with economy and accounting departments: “This contributes to talking the same language as economy” (participant).

³ An antenatal out-patients clinic was opened in April 2005

The issue of *Elective caesarian operations* is energetically discussed. Caesarian operations are easy to count; the frequency is easy to measure, also whether they are planned or acute. This leads to a wider discussion on caesarian operations: the number of elective ones are increasing. And women often choose caesarian operations when they have child number two, because they have had traumatic first-time deliveries. This leads to another association: the fact that women tend to be overweight to an increasing degree – which makes deliveries more complicated. Other are: covariance between stimulation during delivery and duration of delivery. In a discussion of indicators that cause long deliveries, the collective reflection is intense and bubbling: How active is the mother, is the mother overweight, epidural or not, is the mother a smoker?

Even a discussion on time studies of the walk to the laboratory for the children's nurses, develops into a process of knowledge sharing on the purpose and procedure of the test, why they cannot use technical equipment *on* the ward, what the different procedures cost etc.

A very large part of the concepts used during the mapping are up for discussion and definition. These are concepts well known to the participants, concepts that they use every day, like healthy mother, normal birth, when is treatment after delivery terminated etc. This illustrates one of the many long lines of collective reflection that take place during mapping- and indicator discussions. The impact on practice is for example suggestions on therapy groups for women who have had bad first-birth experiences.

During the third meeting of the project the groups have measured according to indicators that they came up with in earlier sessions. One example was telephone calls into the ward. This is motivated by 1) the very high frequency of calls, and 2) the perceived need for a secretary to answer these calls. The result of the registration, however, shows that hardly any calls are registered on the busiest days, and the measurement cannot be used. This incident raises questions of phone calls for the employees (private calls) and very interestingly, “what is a professional question” – which is linked to: who should answer

it? Later they carry through a new registration, which shows that ½ stilling on the ward is used on answering the phone.

In order to proceed with the project beyond the pilot project, the consultant A. emphasizes the need for ICT systems and manpower (“resource personnel”) to perform and process the measures for statistical purposes. But she also mentions several times the need for a *place* (meaning a physical place), where the medical (clinical) staff can collaborate with the resource personnel in their interpretation of the data.

Time to work on this project is a problem; there is no room for it in between the daily chores. “The problem is that we are only staffed for regular operation, and not for development activities. Which means that we will be additionally shorthanded.” (*Doctor H.*)

The minute from the last meeting in the project team (written by the consultant A.) describes what she perceives that the project group has learned in this project: “The members in the working groups and in the project team have developed their competence in the form of “having an eye” for what exists of data/possibilities for measuring in the processes. This is also a process, and there are continuously new ideas on what should be measured. The members of the project group have developed their competence on monitoring, and the midwives find some of the measurements that are tried out interesting enough to be presented in their professional journals” (Minute from meeting December 9th 2004, our translation).

Discussion

The project as a learning field

The project group in the present study would perhaps not qualify as a community of practice, since CoPs are essentially informal and “produced by its members through mutual engagement” (Wenger 1998:118). However, the members of this group both represent and overlap various communities of practice on the ward. It can be classified as a BA, which is a more general concept. The project group and its meetings represent a

place for the employees to interact, and although the task is strictly connected to the introduction of a measuring system, data from observation and interviews show that soft knowledge is shared and developed in this context.

As for the need for *Ba* or a place, this is implicitly demonstrated through how motivated the project members are for the discussions in the project group. They are very eager to discuss the issues, especially during process mapping and indicator definitions. This is despite alienation due to unfamiliar vocabulary, disinterested doctors, difficulty in legitimizing the project and time taken to work on it (towards non-participating colleagues). They really make an effort to identify with the project and they contribute to the work in the groups and to the actual measuring when they are back on the ward. This means that they have some of the features of a CoP: absence of introductory preambles, high degree of redundancy, shared stories and jargon etc. (Wenger 1998:125). The need for a *place* is explicitly mentioned by the consultant A. when she appeals to top management to provide a place where the resource personnel (ICT and statistics experts) and the clinical personnel can meet in order to interpret processed data.

By offering scarce information to the participants of the group of the content of the project beforehand, the management created a deliberate chaos. Several of the informants say that they were totally confused after the first introduction to the BSC system. This is parallel to what Kaplan and Norton writes about managers wishing to create “the sense of urgency for change” in their organization (Kaplan and Norton 2001:333). Further the language used challenged their identities as health workers, especially the midwives and the nurse’s aids (Vaagaasar and Nilsen 2005). “I learned to think in other ways.” (*Midwife P*). The BSC system works as a boundary object, connecting the maternity ward (at least the project group) to other parts of the hospital, like the economy department, personnel, IT- department. Boundary objects are various “reifications around which communities of practice can organize their interconnections” (Wenger 1998:105). It also links to the rest of the world through comparing measurements with other hospitals (for example: what is the rate of caesarean operations elsewhere?), and to the regional health administration, since they depend on them for further funding. And ultimately to the

National Health Authorities, who are important stakeholders and premise providers through setting the rules for reimbursement.

In their daily work, when the midwives take the discussion out of the delivery room and separate it from practice, the tacit dimension can get lost, and the possible associations and reflections created by seeing a colleague actually do the job, is lost. Reflection in the project group does not solve this problem. On the contrary, the reflection is taken even more dramatically out of context. However, during the mapping the group is forced to go through the procedure from A to Z and discuss: what comes first, how do we do this. It is a discussion of the process, and of aligning the description of the process with practice (Brown and Duguid 2000, Lampel and Bhalla 2004).

Considering the BSC project

Although this is not a study on whether the BSC system works or not, I have found it adequate to consider the project relative to some of the critical success factors that Kaplan and Norton emphasize (Kaplan and Norton 1992). The first is that the introduction of the BSC should be closely followed by the top management. The project under study is initiated by the management. Although approved both by middle management (ward management) and top management (managing director), it is not followed closely by them. At the end of the pilot project the top management show up for the final presentation an hour late. The purpose of the meeting is to lay the foundation for funding of a complete implementation of the BSC system, and also necessary funding of technological support and facilities. To date, this funding is still lacking and the project has “been put in a drawer” (project report). The autonomy of the hospital is perceived as limited after the establishment of the regional health administration, and they feel that it is difficult to get through to them. The system is perceived as more bureaucratic, and the economic situation is difficult. Relevant to this case are the scale advantages that the regional health administration looks for in ICT investments, which means that all the hospitals should use the same software. This slows down the process of deciding on a common technological platform.

There appears to be an unclear purpose of the project, although it is linked to the change program called Patient Focused Redesign. Kaplan and Norton further state that the measures in the BSC are designed to “pull people toward the overall vision” (Kaplan and Norton 1992:180). In the context of the hospital this raises interesting questions, since this is a hierarchical organization, thoroughly ruled and procedure based, with relatively clear division of labor. One example to illustrate this is the indicator “number of Caesarean operations” relative to number of births. This is an interesting indicator in light of the ongoing discussion on Caesarean operations vs. giving birth naturally. It can be used to see the development of the frequency of Caesarean operations, and to compare numbers with other hospitals. But how is it connected to the overall vision? The overall vision is that the ward should be “A good and safe place to give birth and an attractive place to work”. The question remains whether a high number of Caesarean operations or a low number makes it safe and good. And if a high frequency of Caesarean operations coincides with a certain doctor on duty, how will that be dealt with? This illustrates that the causal connections are very complicated and dynamic, and not clear and linear as critiques say that the BSC system assumes (Voelpel et al. 2005). “Number of in-coming phone calls” is another indicator that can serve as an example here. The midwives see it as a problem that they have to spend much of their time on the phone, and they would like to document that they need a ward secretary. This is another example of an indicator that is disconnected or only has a fuzzy connection to the goals of the ward.

At the same time, the reflection and debate on the indicators is also an illustration of the main theme in this paper – the issue is discussed in a vertically organized group – and reflected on collectively. This is an unintended effect – a chance to discuss and share knowledge on an issue of current interest. This collective reflection or meta analysis of concepts in the health service makes explicit the knowledge that the personnel has on practice. This is an externalization process (Nonaka 1994).

“That which is not documented has not happened, been said, done or planned” (Consultant A.)

The terminology used and the epistemological underpinning of the system, which is quantitative and emphasizing the explicit and countable dimension of knowledge, represents a contrast to the apprehension of knowledge and learning in a nursing setting, and perhaps especially in a maternity ward. It is however not contradictory to the medical tradition of evidence based medicine (Malterud 2001). The contradicting knowledge view may be difficult to recognize for the participants, due to the tools used, like for instance process mapping (Newell et al. 2000), but when adopted it shapes identity. Further this must be seen in the context of the strained economy in the organization and the increasing introduction of technology in maternity wards in general. The focus on explicit and codified knowledge within the BSC system contrasts the emphasis on experience and tacit knowledge in health sector training, especially for nurses and midwives, but also for medical doctors (Malterud 2001).

The above analysis indicates that the introduction of BSC in a hospital ward, which can be described as a controlling mechanism, can still function as a seeding structure (Thompson 2005) because the project and the agenda of the project develop as a field for collective reflection. The BSC project can be a foundation for dialogue and knowledge sharing. But at the same time it is a controlling structure. In Thompson’s empirical study, the controlling structures on CoP fail. Data from the present study, however, indicate that even through a strong controlling structure like this project, knowledge processes are triggered and are fertile.

Concluding remarks

The Balanced score card system and project of introducing it, functions as a boundary object (Wenger 1998). The project is introduced top-down, which has been much warned against (Brown and Duguid 2000). In this case, the pilot project is a facilitator that nurtures knowledge processes, which can and does change practice (like establishing the antenatal clinic). Even through the introduction of the BSC, a controlling structure in

Thompson's terminology, which at the same time brings employees together – a process of negotiating meaning and knowledge processes are under way.

The BSC project was imposed upon the ward – top-down, and it has epistemological underpinnings that are quite different from the practice based view, in that it views knowledge as codified and measurable. The introduction of the BSC worked as a facilitator for collective reflection and knowledge sharing. The data demonstrate knowledge sharing and rising consciousness about what goes on in practice and there is externalization going on. There is a need for further studies in order to explore to what degree these processes actually change practice.

The study shows, as was its purpose, that in an organization with low managerial awareness of facilitating situated learning, such learning can take place also in organized activities where employees are brought together and invited to reflect on practice. Knowledge is shared and created in spite of the fact that the project was top-down initiated and process oriented.

References

- Andreasson, Magdalena and Andreas Svartling (1999): "The balanced score card – a tool for managing knowledge?"
http://www.handels.gu.se/epc/archive/00001973/01/Andreasson_1999_7.pdf
- Angel, Robert and Hubert Rampersad (2005): "Do Scorecards Add Up?" in *CAmagazine*. May 2005.
- Bate, S.P. and Robert, G. (2002): "Knowledge Management and Communities of Practice in Private Sector: Lessons for Modernizing the National Health Service in England and Wales" in *Public Administration*, Vol. 80, No. 4, (643-663)
- Boland Jr., Richard J. and Ramkdishnan V. Tenkasi (1995): "Perspective Making and Perspective Taking in Communities of Knowing" in *Organization Science*. Volume 6, No. 4, July-August
- Bowns, I. R. and T. McNulty (1999): "Re-engineering Leicester Royal Infirmary: An Independent Evaluation of Implementation and Impact. Executive Summary." Published by School of Health and Related Research, University of Sheffield.
- Brown, John Seely and Paul Duguid (2000): "Balancing Act: How to Capture Knowledge Without Killing It" in *Harvard Business Review*, May-June 2000, pp. 73-80
- Brown, John Seely and Paul Duguid (2001): "Knowledge and Organization: A Social-Practice Perspective" in *Organization Science*, Vol. 12, No.2, March-April
- Carlile, Paul R. (2002): "A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development" in *Organization Science*. Vol.13, No. 4. pp.442-455
- Contu, Alessia and Hugh Willmott (2003): "Re-Embedding Situatedness: The Importance of Power Relations in Learning Theory" in *Organization Science*, Vol. 14, No. 3, pp. 283-296
- Eisenhardt, K.M. (1989): "Building theories from Case Study Research" in *Academy of Management Review*, Vol. 14, No. 4, 532-550
- Gherardi, Silvia and Davide Nicolini (2002): "Learning in a Constellation of Interconnected Practices: Canon or Dissonance?" in *Journal of Management Studies*, 39:4, pp. 419-436
- Hildreth, P.J. and C. Kimble (2002): "The duality of knowledge" in *Information Research*, 8 (1), paper no. 142.
- Hodkinson, Heather and Phil Hodkinson (2004): "Rethinking the concept of community of practice in relation to schoolteachers' workplace learning" in *International Journal of Training and Development* 8:1, pp. 21-31.
- Hustad, Wiggo (1998): *Lærande organisasjonar*. Det Norske Samlaget, Oslo
- Johannessen, Jon-Arild and Johan Olaisen (2004): *Strategisk helseledelse*. Oslo: Universitetsforlaget
- Kaplan, Robert S. and David P. Norton (1992): "The balanced Scorecard-Measures That Drive Performance" in *Harvard Business Review*. Vol. 70, issue 1, p.71
- Kaplan, Robert S. and David P. Norton (1996): *The balanced Scorecard; translating strategy into action*. Boston Mass.: Harvard Business School Press.
- Kaplan, Robert S. and David P. Norton (2001): "Transforming the Balanced Scorecard from Performance Measurement to Strategic Management: Part I" in *Accounting Horizons*, Mar2001, Vol. 15 Issue 1, p87-104

- Keating, Elisabeth, Rogelio Oliva, Nelson Repenning, Scott Rockart and John Sterman (1999): "Overcoming the improvement paradox" in *European Management Journal*, Vol. 17, No. 2, April 1999, pp. 120-134
- Lampel, Joseph and Ajay Bhalla (2004): "Let's Get Natural: Communities of Practice and the Discourse of Spontaneous Sharing in Knowledge Management". Paper presented at the *Fifth European Conference on Organizational Knowledge, Learning and Capabilities*. Innsbruck, Austria, 2-3 April 2004
- Lave, Jean and Etienne Wenger (1991): *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press.
- Malterud, Kirsti (2001): "The art and science of clinical knowledge: evidence beyond measures and numbers" in *The Lancet*, Vol. 358, August 4, 2001
- Miles, Matthew B. and A. Michael Huberman (1994): *Qualitative Data Analysis. An Expanded Sourcebook*. Thousand Oaks: Sage Publications.
- Mintzberg, Henry (1983): *Structures in Fives. Designing Effective Organizations*. New Jersey: Prentice Hall
- Newell, S., J.A. Swan and R. D. Galliers (2000): "A knowledge-focused perspective on the diffusion and adoption of complex information technologies: the BPR example" in *Info Systems Journal*, 10, 239-259
- Newell, Sue, Maxine Robertson, Harry Scarbrough, and Jacky Swan (2002): *Managing knowledge work*. Basingstoke: Palgrave
- Nonaka, I. (1994): "A Dynamic Theory of Organizational Knowledge Creation". *Organization Science/ Vol. 5, No.1*
- Nonaka, Ikujiro and H. Takeuchi (1995): *The knowledge creating company*. Oxford University Press. New York.
- Nonaka, Ikujiro and Noboru Konno (1998): "The Concept of "Ba": Building a Foundation for Knowledge Creation" in *California Management Review*, Vol. 40, No. 3
- Nonaka, I., R. Toyama, and N. Konno (2000): "SECI, Ba, and Leadership: A Unified Model of Dynamic Knowledge Creation" in *Long Range Planning*, Vol. 33,1, pp 5-34
- Orlikowski, Wanda J. (2002): "Knowing in Practice: Enacting a Collective Capability in Distributed Organizing" in *Organization Science*, Volume 13, Number 3, May-June 2002.
- Orr, Julian E. (1996): *Talking about machines. An Ethnography of a Modern Job*. ILR Press an imprint of Cornell University Press.
- Senge, P. M. (1990): *Den femte disiplin. Kunsten å skape den lærende organisasjon*. Hjemmets bokforlag, Oslo
- Sterman, John D, Nelson P. Repenning, and Fred Kofman (1997): "Unanticipated Side Effects of Successful Quality Programs: Exploring a Paradox of Organizational Improvement" in *Management Science/Vol. 43, No. 4, April 1997*
- Styhre, Alexander (2003): *Understanding Knowledge Management*. Abstract forlag.
- Swan, Jacky, Harry Scarbrough and Maxine Robertson (2002): "The Construction of 'Communities of Practice' in the Management of Innovation" in *Management Learning*, December 2002, 33,4,pp. 477-496
- Szulanski, Gabriel (1996): "Exploring internal stickiness: Impediments to the transfer of best practice within the firm" in *Strategic Management Journal*, Volume 17 (Winter Special Issue), 27-43.

- Thompson, Mark (2005): "Structural and Epistemic Parameters in Communities of Practice" in *Organization Science*. Volume 16, No. 2, pp. 151-164
- Vaagaasar, Anne Live and Etty Nilsen (2005): "Multivoicedness in organisational identity construction. Knowledge creation as the alignment of interests" in Gherardi, Silvia and Davide Nicolini(Eds.)(2005): *The passion for learning and knowing. Proceedings from 6th International Conference on Organizational Learning and Knowledge*. Volume 2, University of Trento.
- Voelpel, Sven C., Marius Leibold, Robert A. Eckoff, and Thomas H. Davenport (2005): "The Tyranny of the Balanced Scorecard in the Innovation Economy". Paper presented at the 4th *International Critical Management Studies Conference*, Cambridge University, July 2005, pp. 1-19
- von Krogh, Georg, Ichijo Kazuo and Ikujiro Nonaka (2000): *Enabling Knowledge Creation. How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation*. USA: Oxford University Press
- Weick, K.E. and F. Westley (1996): "Organizational learning: Affirming an oxymoron" in Clegg, S., C. Hardy, and W.R. Nord (eds.): *Handbook of Organization Studies*. London: Sage.
- Wenger, Etienne (1998): *Communities of Practice. Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.
- Wenger, Etienne C. and William M. Snyder (2000): "Communities of Practice: The Organizational Frontier" in *Harvard Business Review*, January-February 2000

Documents:

- Power point presentations from the day meetings in the pilot project group
- Minutes from meetings in the steering committee for the project