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IN THIS PAPER WE INTRODUCE THE CONCEPT OF KNOWLEDGE COOPERATION, A PARTICIPATIVE APPROACH TO KNOWLEDGE MANAGEMENT, AND PRESENT ITS IMPLEMENTATION IN THE WEAK TIES KNOWLEDGE NETWORK CORE, A DISTRIBUTED COMMUNITY OF PRACTICE OF RESEARCHERS ("COMMUNITY OF RESEARCH") SUPPORTED BY AN ONLINE PLATTFORM THAT IMPLEMENTS A WEB 2.0 APPROACH BASED ON MOODLE.
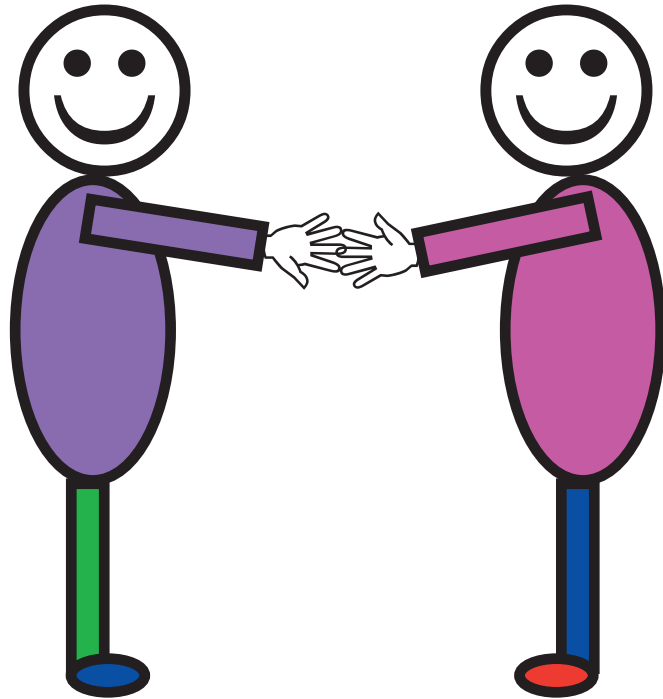
WEAK TIES COOPERATION WITH WEB 2.0

1 Introduction

The Swiss Distance University of Applied Sciences is organized in a radically decen-tralized way. This structure is consistent with its mission but on the other side it creates some unusual situations, in which weak ties become the norm. How to meet the challenge of improving research performances under condi-tions of weak ties? Our approach consisted in a collaborative knowledge strategy: to create and cultivate a knowledge network of researchers organized as a CoP with the purpose of stewarding research knowledge.

2 CoRe – A Community of Research

As previously mentioned, the Swiss Distance University of Applied Sciences is or-ganized in a radically decentralized way combined with traditional hierarchical struc-tures and functional divisions. This has led to an insufficient level of interactions be-tween geographically distributed university members (academic staff, students) so that weak ties have become the norm. For research work one major consequence was that research activities were too much isolated in the departments, human re-sources were dispersed and research knowledge did not flow enough. Projects were small and less recognised, know how got easily lost and research tools' development was too slow. Our approach for improving research performances under conditions of weak ties like these consisted in a collaborative knowledge stra-

tegy: to create and cultivate CoRe, an intra-organizational knowledge network of researchers (academic staff, students) organized as a community of practice connecting its members around the common task of stewarding research knowledge with a community-oriented approach.

The business strategy for research activities that had been given to us by the top management of the Swiss Distance University of Applied Sciences - and that we wanted to implement by means of the CoRe network - had two main strategic pur-poses: 1) acquiring and realising major research projects; 2) integrating teaching and research (Bernhard & Bettoni, 2007). Other universities approach the first task by hir-ing a large number of professional researchers and by putting them together in con-ven-

tional institutes composed by one or more teams; for the second task the main-stream approach is to simply organize teaching and research activities within one department under the responsibility of one or more professors with remarkable re-search experience. In our case the situation was different: we did not have the finan-cial resources for hiring a fixed staff of many researchers and we did not have heads of departments with research experience. What we had was research experience dis-tributed over different professors, limited internal research resources within our staff and a large amount of potential external research resources distributed over a wide network of connections.

Given this situation and the mentioned obstacles we found a solution in the new concept of CoRe as a network that connects researchers from two groups: a) from the internal staff and b) from the external connections. The new and most challenging aspect of our concept was the way in which we designed the connection between these network members: in fact our idea – based on our constructivist view of knowledge (von Glasersfeld, 1995) - was to connect them around the common task of stewarding their research knowledge in a participative way (Bettoni, 2005).

3 Knowledge Cooperation

Each human being has this innate desire to exchange and develop its knowledge and ideas with others. This principle is valid also for the educational sector. But be-cause of today's decentralization of enterpri-

ses and competences new ways are needed in order to cultivate, and use this knowledge. «Knowledge Cooperation» (Bettoni, Andenmatten & Mathieu 2007) is a new method, which helps to foster par-ticipative cultivation of knowledge. Here, in contrast to the classical approach of knowledge management, the intellectual and the social capital of human beings get considered as a cross-coupled system and supported accordingly. Social software tools, like blogs and wikis serve as development tools for this new knowledge culture.

Based on the complexity and dynamic of markets and technologies, decentrali-zation of company structures and therefore the decentralization of competences be-come a stronger trend. This of course has an impact on the priorities of knowledge management as well in theory as in practice.While till now the technical realization of knowledge management tools was the prevailing standard, the objective now and in the near future should be primarily in embedding knowledge management in decen-tralized, dispersed organizations and using the possibilities, which are arising through new socio-centred and open

FIG. 1 - Structural Model of CoRe

ways of dealing with knowledge.

How can these typical tasks of knowledge management be realized in a decen-tralized structure that is characterized by weak ties (Granovetter 1983)? How to pass
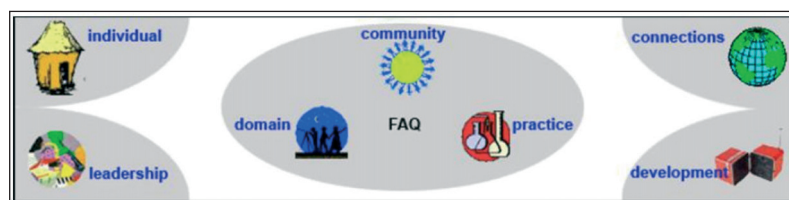
on individual competences, to generalize single solutions to problems, to develop consensual opinions, to make the dispersion of competences transparent and to in-tegrate these dispersed competences? After all, even the Swiss educational system as a whole can be looked at, as a distributed organization in itself, with strong and weak ties between the involved parties.

The solution is called «Knowledge Cooperation» (Bettoni et al. 2006, Bettoni & Borter, 2007, Bettoni M., Andenmatten S., Mathieu R., 2007). In contrast to the idea of knowledge management, the new approach of knowledge cooperation deals in equal parts with intellectual capital and with social capital. It functions thanks to the interdependency of the three knowledge processes «cultivation», «utilization» and «socializing» of knowledge.

Knowledge cooperation describes the process of «participative cultivation of knowledge in a voluntarily, informal social group» (Bettoni 2005). In this model the classical knowledge management constitutes only part of the process, which only through the socialization process of knowledge cooperation develops to its full extent. The nowadays often mentioned social software tools serve as tools of knowledge co-operation. One very important element of this shift in thinking might be the conclusion that knowledge is not an object, nor a thing, which can be managed like other economic resources. Knowledge demands organic approaches, which consider its peculiarity. One possible approach to cultivate knowledge is given by

the actual trend in knowl-edge management through social software, also known as Web 2.0 (Bendel 2006; Schütt 2005; O'Reilly, 2006). Social software, seen as a tool of knowledge manage-ment, offers with its blogs, wikis and other tools, the possibility to exchange knowl-edge in an organic, spontaneous, open way and without any delays. With the help of these tools contributions i.e. about the actual situation, new developments and pro-jects can be quickly created and commented. Interaction is supported through this process, and networking on certain domains of knowledge and interest can develop and flourish easier. One insight is today of huge importance for knowledge management: that tacit knowledge must not be separated from and dispossessed to the individual or group, which are creating and cultivating it. Why must the knowledge owner of tacit knowl-edge not be dispossessed? Because whereas explicit knowledge is something we «have», tacit knowledge is something we «are» and which therefore constitutes our identity. Dispossessing knowledge is then the same as negating the individual who owned it.

Knowledge processes therefore cannot be cultivated in the same way as work-ing or performing processes. The insight into the difference between the mode of having and being in regard to knowledge shows this very clearly. In 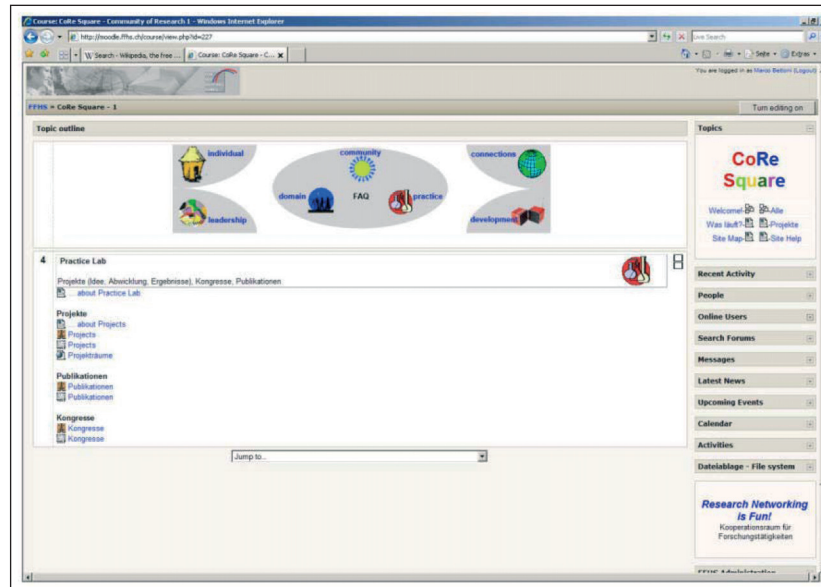knowledge man-agement we are facing a simi-lar dilemma as in life dealing with both basic attitudes towards human existence (Fromm, 1976): the one of having and the one of being.

4 Design and Implementation of CoRe

Viewed as a social structure CoRe is constituted by seven basic elements, seven in-teraction and cooperation areas which correspond to aspects of community life. The individual elements are: 1) Community, 2) Practice, 3) Domain, 4) Leadership, 5) In-dividual, 6) Connections and 7) Resource Development. This concept is based on Etienne Wenger's social theory of learning and on his international online workshop "Foundations of Communities of Practice".

Since CoRe is a distributed community, interactions among its members are supported by an online collaboration platform on MOOD-LE called 'CoRe Square', a virtual space for meeting and stewarding research knowledge (Bettoni, Andenmatten & Mathieu 2006). The CoRe Square platform is designed as a "community coopera-tion space" for research tasks: for each aspect of community life in CoRe there is a corresponding cooperation area in CoRe Square collecting a specific set of re-sources that support and facilitate the activities in that area. The first three of these elements – community, practice and domain - combined together constitute the necessary central framework of the structure: it is here where the main part of CoRe activities takes place and it is this triad of areas that needs to be cultivated first. The next three elemen-ts – leadership, individual and connections - are important and useful ex-tensions with a lower intensity of activities so that their deve-lopment can be delayed to later stages. They build the peripheral framework of CoRe, like an interface to the out-side or a membrane that regulates what enters and exits the central part of CoRe. Finally the seventh area is where members of the community interact and cooperate for supporting the structural and fun-ctional needs of CoRe by developing the resources needed by the pre-vious six structural elements.

FIG. 2 - Practice Lab Area

These elements and their combination distinguish CoRe from other types of so-cial structures; they also provide a practical model to guide community development by clarifying the definition of "community of research" in terms of a structural model and by indicating the various areas on which the development and evaluation proc-ess will have to be focused.

4.1 CoRe Square - The Online-Platform of CoRe

Since CoRe, as mentioned above, is a distributed community, its members cannot rely only on face-to-face interactions or meetings for working together in research projects, stewarding their research knowledge and building relationships. For sup-porting and facilitating interactions among distributed CoRe members we have de-veloped CoRe Square, an online collaboration platform on MOODLE. In this section, after introducing our technology requirements and our approach to selecting a suit-able software tool, we will shortly sketch the main elements of our implementation.

4.2 The Platform Technology

Our first approach for selecting a technology for the CoRe Square platform was to start evaluating only the two open-source web platforms already in use by our lectur-ers: a plone-based intranet and a MOOD-LE e-learning platform (Williams, 2005). The reasons for this very solution-oriented, highly focused approach are summarized in the following requirements for supporting

community life and development (see also Agostini, Albolino, De Paoli, Grasso et al., 2005):

· lowering the cost of participation in the system (while performing daily work)

· promoting occasions for informal knowledge exchange

· increasing the visibility of community activities and of personal contributions

· support getting started with research activities (organizational learning)

We decided to work on the well known MOODLE platform that lecturers use for teaching. First of all MOODLE would allow to have our research cooperation space easily integrated with the teaching space (same login, same tools, same conceptual background in constructivism). Since lecturers do their teaching on MOODLE, having the research space also in the same platform would support the nexus between teaching and research both for academic staff and for students.

4.3 The Platform Design

In order to contribute to the creation and cultivation of CoRe, the CoRe Square plat-form is designed as a "community cooperation space" for research tasks. For each aspect of community life in CoRe there is in CoRe Square a corresponding coopera-tion area collecting a specific set of resources that support and facilitate the activities in that area. The central framework of CoRe is supported in CoRe Square by the following three cooperation areas:

· Community Circle: in this area members gather as an inci-

pient community, share announcements, and reflect on their experience. Currently the three primary resources of the Community Circle are "Annual Conference", "Yellow Tool" and "Reflection on CoRe".

· Practice Lab: in this area members cooperate in different kinds of problem solving activities by working on projects (from conception to delivery of results). Accordingly, the three primary resources of the Practice Lab are: Projects, Conferences and Publications

· Domain Club: in this area members discuss the hot topics of "Research at FFHS", the knowledge domain of CoRe, share related best practices and collect lessons learned from past research experiences. Currently the three primary resources of the Domain Club are "Research Strategy", Research Programs (Grants)" and "Research Methods".

Around this center, CoRe's peripheral framework is supported in CoRe Square by the following three cooperation areas whose resources, in the current stage are only sketched and waiting to be fully implemented:

· Leadership Lounge: in this area members can sign up for tasks related to community leadership and discuss about how to organize and perform them.

· Connections Room: in this area members can welcome guest researchers or visitors, host guest speakers, take fieldtrips and more generally open the access to CoRe Square for non members.

· Individual Hut: in this area each member can initiate and organize her own personal platform space and can visit each other.

Finally the activities of "Resour-

ce development", the seventh aspect of commu-nity life in CoRe, are supported in CoRe Square by a cooperation area called "CoRe Development Corner". Currently the three primary resources of the Development Corner are: CoRe Team Office, Competence Analysis and Incentives System.

4.4 Implementation of Core Square

The seven cooperation spaces (areas) of CoRe Square are implemented as one sin-gle course in the MOODLE topic format. Each area is implemented in an own topic that can be accessed directly by a navigation bar placed in the upper part of the Top section of the CoRe Square home page (see Fig. 2). This navigation bar contains seven icons placed in a way that visualizes the structural model of CoRe: thus navi-gating in the CoRe Square space is at the same time a way to experience and un-derstand the social structure of CoRe. Each icon in the navigation bar is linked to a specific cooperation area: clicking on the icon (or on the title below it) opens the associated area under the top section. Right of the navigation bar, a column ranging from the top to the bottom of the screen offers a set of quick links to the most used views of CoRe Square and to useful functions or lists.

As an example of an activity area the "Practice Lab" is shown in Fig. 2. Just below the title bar there is a file named "… about Practice Lab". It explains the primary ac-tivity in this area. Further explanations are given in three additional "about" fi-les be-low it. This kind of documen-

ts is provided also in all the other areas: they offer guid-ance and step-by-step instructions for initiating a new activity or cooperating in those already running. When visiting an area for the first time, members are encouraged to review the "about" file. Below the about-file explaining the Practice Lab, this area gives access to 3 dyads: Projects, Publica-tions and Conferences.

5 Autonomy vs. Guidance

Looking at the evolution of CoRe in its first year (June 2006 to June 2007) one main question came up: why seems there to be a need for less self-organization and more structure, guidance and directives? By asking this question from the point of view of the 5 main dimensions of a CoP and in the light of our theory (Bettoni, Andenmatten & Mathieu 2007) we deduced the following answers (hypotheses):

• Domain. CoP members defi-ne their domain by discussing current topics and sharing best practices and lessons learned from past research practice. When research expertise is at a relatively low level (we have many novice researchers in our CoP), people of a linear-active culture (Lewis 2003) like Germans and Swiss-Germans more easily feel afraid of spontaneously starting discussions, contributing to existing ones or sharing their experiences.

• Community. This is whe-re CoP members cultivate inte-ractions, explore who is who and understand who knows what. For supporting this we had created a tool for competence analysis, visua-

lisation and interaction called "Yel-low Tool" (Bet-toni, Bernhard et al. 2007). In the first year our tool re-mained at the stage of a prototype and it looks as if our CoP members would need some additional self-explained views of the competence map for really being motivated in using it.

• Practice. CoP members build their practice mainly by engaging in collaborative activities like projects, story telling and case-based problem solving. In the first year members of CoRe started a lot of research projects but - seemingly out of an old habit - did that mostly on an individual basis without trying to include other colleagues. One reason for this can be found in a difficulty that is typical for our Central-European cultural environment as a consequence of its educational sys-tem: voluntary activities are equalled with free time and holidays (= fun, not seri-ous), work instead is mostly seen as something serious (and not fun) and hence completely different from volunteering. As a consequence the idea of "volun-teer-ing for work" is intuitively seen as not serious or even impossible.

• Sponsorship. In the first year of CoRe, people from the top management who were also members of the CoP, were not really involved in research activities and therefore seldom seen in CoRe. This constellation would have required an ex-plicit expectation management on both sides (sponsors and researchers): without that, the commitment to CoRe by top management remained for too long time unclear to the other CoP members.

• Support. The web platform

is divided in 7 spaces: for each aspect of community life in CoRe there is in CoRe Square a corresponding cooperation area. But it seems that it took too much time for our CoP members to explore and share the concept of community life, and therefore they experienced the platform as un-structured. In fact, the need for more structure was expressed only after one year, first in the 1st Annual CoRe Conference and then in the answers of the evaluation survey that took place after that event.

6 Conclusions

In our experience the evolution of CoRe from its launch in June 2006 to the conclu-sion of the first year of its life in June 2007 leads to a clear challenge for implement-ing a collaborative knowledge strategy under conditions of weak ties: that of balanc-ing self-governance, self-organization and voluntary participation on one side and stronger guidance, obligatory interactions and mandatory use of tools (CoRe Square) on the other side. Thus we

see a clear emergence of a tension between two oppos-ing structures and tendencies: between hierarchy and network and between auton-omy and guidance. These tensions must be addressed by any system design in or-der to foster knowledge cooperation among partners which are connected by weak ties. To make this possible the main lear-ning challenge is this: to develop a facilita-tive approach to leadership and to apply it in eading negotia-tions of knowledge.

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