Weak Ties Cooperation in the *CoRe* Knowledge Network[1]

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Abstract: How to implement a collaborative knowledge strategy under conditions of *weak ties*? This paper will first explain how came that we faced this question in the research department of our university, then tell the story of how we are answering it by means of a new kind of knowledge network called "CoRe" and finally reflect on lessons we are learning about weak ties cooperation.
The Swiss Distance University of Applied Sciences is organized in a radically decentralized way combined with traditional hierarchical structures and functional divisions. This has led to an insufficient level of interactions between geographically distributed university members (academic staff, students) so that *weak ties* have become the norm. In research one major consequence was that research activities were too much isolated in the departments, human resources 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.
How to meet the challenge of improving research performances under conditions of weak ties like these? Our approach consisted in a collaborative knowledge strategy: 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*.
This paper provides first an overview of how we are designing, implementing and cultivating the CoRe knowledge network and then reflections on the new subject of *weak ties cooperation* as realized in CoRe.
In the first part, after introducing the background of the CoRe project as well as our approach to knowledge cooperation we will present the development process and focus on the evolution of the network requirements by comparing the initial and a revised version. In both cases these requirements were collaboratively developed by the network members in two large events: a) the network launch, a future search event (June 2006) and b) the 1st Annual CoRe Conference (June 2007). Based on an analysis of the evolution between these two versions, *in the second part* our paper will provide reflections and key lessons learned about how to design and implement a collaborative knowledge strategy which is able to foster knowledge cooperation under conditions of *weak ties*. Here we will sketch the essential principles of our solution which consists in transferring to knowledge management lessons learned from *bioteams* thus building a bridge between Nature and Culture.

Keywords: Collaborative knowledge strategy, weak ties cooperation, bioteams, knowledge cooperation, communities of practice, knowledge networking.

1. Introduction

How to implement a collaborative knowledge strategy under conditions of weak ties? In this introduction we will first explain how came that we faced this question in the research department of our university and sketch the background of the CoRe project.

The Swiss Distance University of Applied Sciences is organized in a radically decentralized way combined with traditional hierarchical structures and functional divisions. This has led to an insufficient level of interactions between geographically distributed university members (academic staff, students) so that *weak ties* have become the norm. In research one major consequence was that research activities were too much isolated in the departments, human resources 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.
How to meet the challenge of improving research performances under conditions of weak ties like these? Our approach consisted in a collaborative knowledge strategy: to create and cultivate *CoRe*, an intra-organizational knowledge network of researchers (academic staff, students) organized as a community of practice (Bettoni, Andenmatten & Mathieu 2007) connecting its members around the common task of *stewarding research knowledge*.

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2. The *CoRe* Knowledge Network

Here we tell the story of how we are answering our main research question by means of a new kind of knowledge network called "CoRe" and introduce our approach to knowledge cooperation.

The CoRe network is being developed at the Swiss Distance University of Applied Sciences for two main strategic purposes: 1) acquiring and realising major research projects; 2) integrating teaching and research (Bernhard & Bettoni, 2007). CoRe connects people doing research around the common task of stewarding their research knowledge in a participative way. Viewed as a social structure CoRe is constituted by seven basic elements, seven interaction and cooperation areas which correspond to aspects of community life. The individual elements are: 1) Community, 2) Practice, 3) Domain, 4) Leadership, 5) Individual, 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 MOODLE 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 cooperation 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 resources that support and facilitate the activities in that area.

3. Development of *CoRe*

We present here the development process and give an overview of how we are designing, implementing and cultivating the CoRe knowledge network.

The CoRe project began in October 2005 as a pilot project with the objective of creating and cultivating a prototype of the CoRe network. This community pilot project will end in December 2008 and run through 4 phases:

- Phase 1: Planning = defining the project and preparing all community components
- Phase 2: Resources = community launch, resources development, informal assessment
- Phase 3: Practicing = community maturation and practice development
- Phase 4: Outcomes = resources validation, project evaluation and transfer.

In Phase 1 ("Planning" - between October 2005 and Mai 2006) we began by sketching a project definition (business case) and then worked on preparing all community components. This involved creating ideas and models of how the community might work, starting the development of a community core group, beginning to address basic cultural issues as well as preparing the organizational and technical infrastructure (the MOODLE platform "CoRe Square").

In Phase 2 ("Resources" - between June 2006 and June 2007) the CoRe network prototype started its activities with 45 members that participated in a 2 days "Future Search" conference. During this meeting we identified 4 main topics for community development in its first year: a) competence analysis, b) research strategy, c) incentives system and d) communication. Our approach for addressing these topics was to build a strong core team and have its members work - with the support of the other community members - on the development of four community resources: a competence tool (Bettoni, Bernhard, Borter & Dönnges 2007), a research strategy with a research plan draft, an incentives plan and an internet site about research at FFHS. After one year, in June 2007, during the "1st Annual CoRe Conference", we took an informal check on the community's health to see whether community building is on the right track. In particular we collected feedback on the following issues: how members experienced first year of the community, their thinking about the work that had been done in developing the 4 resources, their understanding of the plans for the second year of CoRe and finally their wishes, expectations and positive ideas for contributing to the success of the community.

Phase 3 ("Practicing") is running between July 2007 and June 2008. Based on the informal assessment completed in the phase 2, activities in this year of community maturation began with a first report on the efforts of the project up to now including an outline of recommendations. After evaluating these recommendations, their implementation is guiding the second phase of community cultivation that will be focused on strengthening the community and contributing to the development of research practice by focusing on projects and on 'open cooperation', i.e. a new way of collaborating on research projects whose steps, procedures, methods and structures are visible to the whole community (Bernhard & Bettoni 2007).

Finally in Phase 4 ("Outcomes" - from July to December 2008) work will address the questions of how to justify the organization's investment and what did we learn in the CoRe project. Activities will focus on the qualitative and quantitative evaluation of the two main strategic efforts of the project: improving the FFHS research performances and developing a community-oriented strategy for integrating teaching and research.

4. Requirements of *CoRe*: Collaborative Development

We present here two milestones of the evolution of the requirements for CoRe: an initial and a revised version. In both cases these requirements were collaboratively developed by the network members in two large events: a) the network launch, a future search event (June 2006) and b) the 1st Annual CoRe Conference (June 2007).

a) Launch of CoRe

The launch took place in Brig (Valais, Switzerland), in June 2006 and it was designed as a two days conference based on the method of Future Search. The about 45 participants represented employees with research tasks, professors, students and former students of the FFHS. The goal was to recognize shared visions, to invigorate the "FFHS- attitude" and to do a SWOT analysis. In order to cope with this challenging task the event was designed to create an atmosphere of departure to new horizons of collaboration. Participants were encouraged to create "their" future of research at the FFHS. At the end of the second day, out of initially small sections the whole picture of the state of the art of research at FFHS got visible and allowed participants to identify strengths and chances which then could be bundled in a community of research. The result was an overview of how research was seen at the FFHS, and four fields of action got identified. In order to execute the resulting tasks the research community CoRe (Community of Research) was inaugurated. Around the identified four fields of action - competence analysis, research strategy, incentives system and communication -, a community nucleus formed and in the 12 months to follow (CoRe year 1) the community consequently started concentrating on the given tasks.

b) 1st Annual CoRe Conference

The second event took place one year after the first one in Bern, Switzerland on June 18, 2007. Since in the meantime a core group had been established around the founding members, the conference was therefore organized by a committee recruited out of them. Such they invited people who had contributed to the community, who had signalized interest in the community during the last year, or who were identified as potential key players. As a result about 30 participants met for this one day meeting. They consisted of heads of departments, some students and the core team. The meeting was dedicated to solving the future needs of the community by shedding light on the first year's experience. The goal was to present and discuss the concept for year two, and to investigate in what had happened in year one. Another important aspect was to give space for feedback and to collect these inputs for further analyses. The gathering was also laid out to provide space for face-to-face community networking. With the support of a moderator participants got input through impulse presentations, and were asked to work on the raised topics with the help of flip chart drawings in groups of four to five. Results got then presented back to the main group by one member of the subgroups. People could also join several groups and give feedback to already found answers. After each subgroups presentation the whole group could ask questions to the speaker and discuss the results. At the end of the day a whole catalogue of requirements and points of importance was created by the group. The results provided enough material for further analyses and helped to create a catalogue of requirements for year two.

5. Requirements of *CoRe*: Evolution

Here we focus on the evolution of the network requirements by comparing the initial and a revised version.

a) Requirements of June 2006

As mentioned before (section 4), the first event had the goal of putting the community into place. Therefore the main objectives were, generally speaking, to introduce the community, to create the suiting environment, set up the core team and to establish a certain set of rules and behaviours.
Based on the four fields of action identified during the future search interactions, the specific requirements for CoRe were to develop four key resources:

- *Research strategy*: a shared research strategy had to be collaboratively developed that would specify how to realize the research mandate (strategic goals) of our university

- *Incentive system*: an incentive system had to be developed that would motivate community members to participate in projects and in stewarding research knowledge (Bettoni, Braun & Weber 2003). This work produced a questionnaire that collected the key motivational factors.
- *Analysis of competences*: a collection and an overview of the competence profiles of each member of the community, a work which eventually produced the Yellow tool (Bettoni et al. 2007)
- *Communication strategy*: guidelines and tools on how to increase the visibility of research within the university as well as outside (other universities, business partners, government).

The overall importance was seen in changing the given situation and establishing a community of research that would solve all the existing problems ("holy cow").

b) Requirements of June 2007
The task of the second event was to evaluate the first year's achievements, and to determine how to continue. Therefore, whereas the first event was a more strategy oriented meeting, the second event was a more operative one. Based on the results of the workshop a mind map was developed which clustered the compiled results into six key elements: structure, motivation, commitment, projects, knowledge and communication (see Figure 1).

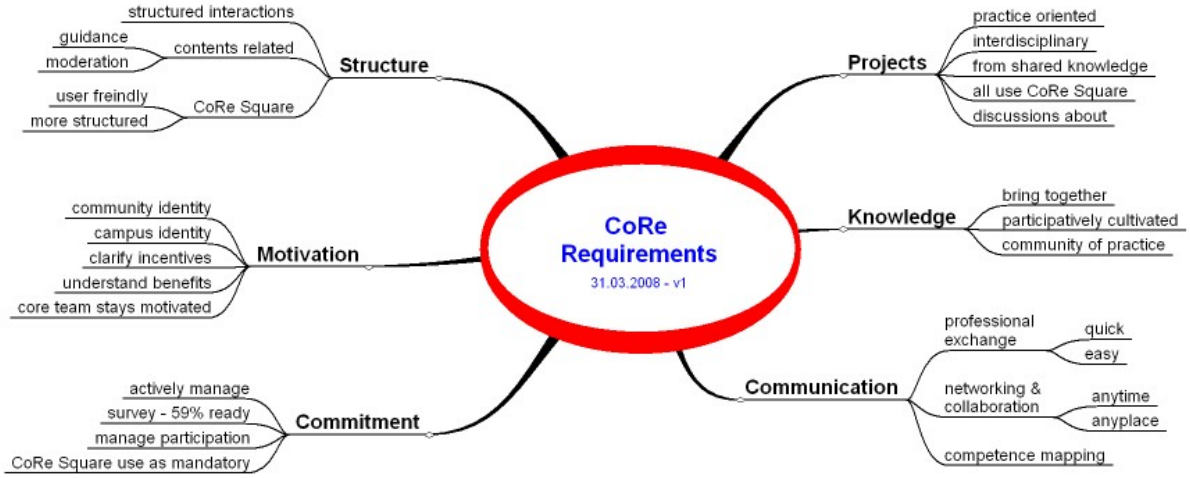

Figure 1: CoRe Requirements

Each of the mentioned 6 key elements included several sub-requirements as follows:

- *Structure*: interactions should get a stronger guidance, discussions should be more moderated and related spaces (contents) on the platform should be simplified and made more user friendly
- *Motivation*: there should be clear visible benefits, a stronger shared identity (both among community members and at the university level) and a core team which stays motivated as in the first year
- *Commitment*: there should be a certain obligation to participate and the use of CoRe Square as a general working tool should become mandatory
- *Projects*: should be practice oriented and interdisciplinary, discussed in the community and started from shared knowledge
- *Knowledge*: should be shared and participatively cultivated following the community of practice model
- *Communication*: should be possible in a fast and easy, anytime and anyplace professional exchange and should create contacts among research fellows actively supported by competence mapping

This time the overall importance was such considered completely different from the one of the inauguration meeting. The expectation had shifted. When at the first meeting people thought that the mere act of building community spaces would immediately solve all the problems, at the second meeting they were expressing the need for less self-organization and more structure, guidance and directives (managing commitment) on how those spaces and their resources could be fuelled with life.

6. Knowledge Cooperation & Weak Ties – The Challenge of Autonomy vs. Guidance

We now provide reflections and key lessons learned about how to design and implement a collaborative knowledge strategy which is able to foster knowledge cooperation under conditions of weak ties. We conclude by sketching the essential principles of our solution which consists in transferring to knowledge management lessons learned from bioteams thus building a bridge between Nature and Culture.

In our experience the mentioned evolution of the CoRe requirements from the launch of CoRe in June 2006 to the conclusion of the first year of its life in June 2007 leads to a clear challenge for implementing a collaborative knowledge strategy under conditions of weak ties: that of balancing 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 opposing tendencies, autonomy and guidance, that must be addressed by any design in order to foster knowledge cooperation among partners which are connected by weak ties.

6.1 Reflection: Why "More Structure"?

Looking at the evolution of the CoRe requirements between the two plenary events of 2006 and 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 define 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 where CoP members cultivate interactions, explore who is who and understand who knows what. For supporting this we had created a tool for competence analysis, visualisation and interaction called "Yellow Tool" (Bettoni, Bernhard et al. 2007). In the first year our tool remained 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 system: voluntary activities are equalled with free time and holidays (= fun, not serious), work instead is mostly seen as something serious (and not fun) and hence completely different from volunteering. As a consequence the idea of "volunteering 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 explicit 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 unstructured. 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.

6.2 Solution: Focus on Projects

Based on the previous reflection, our approach for meeting the challenge of autonomy vs. guidance has been to redesign our community initiative with a stronger focus on projects that will temporarily transform CoRe into a project-oriented knowledge network. A main source of inspiration for conceiving this new approach came from the principles of bioteaming, particularly from some insights into the social behaviour of dolphins based on research reported by the Western Illinois University (Thompson 2006). The reasons for taking this research as a source of inspiration were on one side simply the fact that dolphins have demonstrated to be successful with their complex social organisation, and on the other side the weak ties character of their relationships. Dolphins embody in their behaviour two principles that in our view could help in redesigning CoRe, the 'pod-principle' and the 'herd-principle':

- **Pod-Principle**. Dolphins live in close knit groups; these groups, called pods, are coherent long-term social units with strong ties and bonding of social capital;

- **Herd-Principle**. Dolphins can operate in larger communities. Several small pods may join to form larger groups called herds or aggregations: these groups are short-term units with weak ties and bridging of social capital.

Inspired by the pod-principle and keeping in mind social network research (Kavanaugh et al. 2003) – based on what Granovetter originally distinguished as weak ties (Granovetter 1973) among members of low-density networks (Granovetter 1983) - we have devised for CoRe the idea of continuing the network development by focusing on building and cultivating individual "project pods". Each project pod (team) will be created around the common task of realising a research project within and outside of CoRe from its definition and acquisition to its dissemination.

During the realisation of their research project the project pod's members will have the opportunity to develop strong ties but, more importantly, they will be guided by the CoRe coordinator (and his team) to implement in a small scale the same requirements that they had requested for the large scale of the whole CoRe network (see Figure 1). At the same time the CoRe coordinator, following the herd-principle, will create selected opportunities for all the project pods to form temporarily larger groups called "project herds". These opportunities could be for example a series of regular events like monthly f2f meetings, teleconferences or Web events (like virtual field trips etc.), in which all or some of the project pods meet and have the opportunity to build bridges to other project pods.

Currently our main effort is concentrated on organizing a „Pod and Herd Office" (PHO), a kind of Project Management Office, with the aim of supporting and guiding the formation and cultivation of the individual project pods and the temporary formation of the global project herds. In this initial, exploratory phase of the redesign, the PHO will have two main tasks, one at the pod level and one at the herd level:

- **main pod-level task**: create and cultivate a dedicated virtual pod room (a space on Moodle) organized as a project environment for supporting the whole project life-cycle from acquisition to dissemination

- **main herd-level task**: design, organize facilitate and lead a 'research colloquium" (called FOKO, an acronym from German "Forschungskolloquium") as a regular meeting of all the project pods' members where participants have the opportunity to profit directly from the many benefits of CoP interactions; for internal cultural reasons this event will initially be face-to-face and evolve later to a blended format of alternating f2f and virtual meetings**.**

7. Conclusion

In our universities but also in business companies or more generally in any kind of social network one essential need should be urgently taken more seriously in order to meet the complex challenges that we are facing globally: the need for "social bridges". By that we understand the need for people who "develop a relationship that bridges a gap – racial, ethnic, religious, demographic …" (Heath & Heath, 2007, p. 228) or, like in our case, a knowledge collaboration gap. These "bridge-people" inspire us in social ways: "They make us want to help others, be more tolerant of others, work with others, love others" (ibid. p. 229). As research shows these people "are better educated, more informed and more extroverted" and, even more importantly they "have greater confidence than non-bridges in the community's ability to work together to solve common problems" (Kavanaugh et al. 2003, p. 15).

How to create an environment and promote a culture in which these bridge-people can be supported in their activities and become attractive role models for non-bridges? We think that answering this question will be the main critical success factor for implementing our collaborative knowledge strategy and we will try to achieve our goal by learning from nature's successful bioteams, like the previously mentioned dolphins, thus bridging the gap between nature and culture.
One of the most interesting traits of bioteams in this regard is that they utilise indirect communication (for example scent trails) much more than direct communication (Good 2005). Laying scent trails has been determined by the evolutionary path of nature as a critical success factor for bioteams. This may appear completely foreign to business and educational organizations where, like in our university, conventional face-to-face meetings are still considered the optimal way for fostering collaboration. Far from it! By transforming CoRe into a project-oriented knowledge network implementing the pod-principle, the herd-principle and the scent-trail principle, a new kind of scent-trail interactions will eventually emerge - supported by our CoRe Square platform - which would be impossible with the conventional f2f approach.
In nature weak ties strategies seem to be an established part of animal social networks and also we as humans are by nature adapted to this strategy; even if it seems to be something arduous, as we sometimes experienced in our project, a suitable *bionic* weak ties strategy can be considered as a viable, enriching path for knowledge management initiatives. Thus, implementing our collaborative knowledge strategy under conditions of weak ties by building a bridge between Nature and Culture will be an attractive challenge: a strong burden but, we hope, also a great blessing!

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