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Designing virtual team building with a focus on social capital

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Abstract. An interview study in virtual teams in Danske Bank revealed seven problem areas. To cope with the problems we used a design science research approach to design a conceptual framework for team building in virtual and distributed project teams. The conceptual framework combines a six-phase teambuilding model with the notion and elements of social capital. Thus in each phase of teambuilding you build up all six elements of social capital. The complete six-by-six framework was diffused in Danske Bank in January 2011. This paper gives an account of the framework content and the very first results from the evaluation.

Keywords: Virtual teams, teambuilding, social capital

1 Introduction

Future work will be done everywhere, globalization is here now (cf. Friedman, 2006). This means that work is being done by anyone who does it better, cheaper or faster. It also means that a company will have many projects characterized by rapidly assembled project teams, geographically dispersed, but with highly specialized professionals who perform specific projects. Individual project teams will gather (virtual) to varying periods of time depending on the type of work, and will be dissolved as soon as project task is done. For the individual, placed somewhere in the world, work and career will be about participating in a series of individual "projects", made of progress and achievements.

Thus virtual teams and virtual projects will be very common in the future, where a virtual team in our understanding is a team separated by geography, time zones and/or culture, but never the less has to work together as a team.

In this chapter we look at a concrete process improvement effort in Danske Bank. Project work in Danske Bank is characterized by having many virtual teams with people in both Bangalore, India and in Denmark and these teams needs to improve their collaboration. This was realized by Danske Bank in the beginning of 2010 and our process improvement effort initiated in the summer of 2010..

The remainder of the paper is organized as follows. First, in section 2, we carefully explain our research method; design science research. Then in the last part of section 2 we give a short account of existing knowledge in relation to virtual teams and management as well as the problem at hand. In section 3 we lay out all the details of an interview study conducted in Danske Bank. Then follows a section 4 where we give the details of our design of a

conceptual framework solving the problem faced in Danske Bank. And a section 5 where we give an account of the diffusion and successful adoption of our six-by-six conceptual framework (= the design). Finally the chapter ends with a conclusion.

2 Research Method

In this section we carefully explain our design science research approach, the business needs we are addressing and applicable knowledge for the problem at hand.

Benbasat & Zmud (1999) argue that much IS research today is irrelevant and recommend research that are more relevant, but without fundamentally challenging the existing academic value system. We believe that design science research offers the practical relevance and utility requested because it emphasises that a design should address a need or a problem and at the same time should 'stand on the shoulders' of existing research within the problem area..

Probably the first journal paper on design science research in Information systems was published in 1992 by Walls et al. (1992). They argue that design is both a product and a process. Thus a design theory must on one side handle the design product and on the other side it should handle the design process. In 1995 another influential paper on design science research by March and Smith (1995) was published. One of their key points is that in design science one can build and evaluate four things:

1. Constructs that are concepts that characterize a phenomenon. I.e. an entity-relationship model could be a construct.
2. Models which describes tasks, situations, or artefacts. An example would be an entity-relationship model of a concrete company ABC.
3. Methods seen as how to carry out activities towards a goal, i.e. how to design an entity-relationship model.
4. Instantiations that are "physical implementations intended to perform certain tasks" as for example the physical implementation of an entity-relationship model in company ABC

The conceptual framework we ended up developing is both a *Model* and a *Method* and we are using it in at least seven areas; making it seven *Instantiations*.

Continuing from the work of March and Smith (1995) Hevner et al. (2004) presented a design science research framework that enhances the Walls et al. (1992). An overview of the framework is shown in figure 1. At the core is the build and justify. Arrows back and forth symbolizes the iterative nature of design science research. To the left are business needs stemming from people, organization or technology. To the right are our common knowledge base consisting of foundations, methodologies and technology. At the bottom two arrows show the main outcomes of design science research; applications in a concrete setting and additions to the general knowledge base.
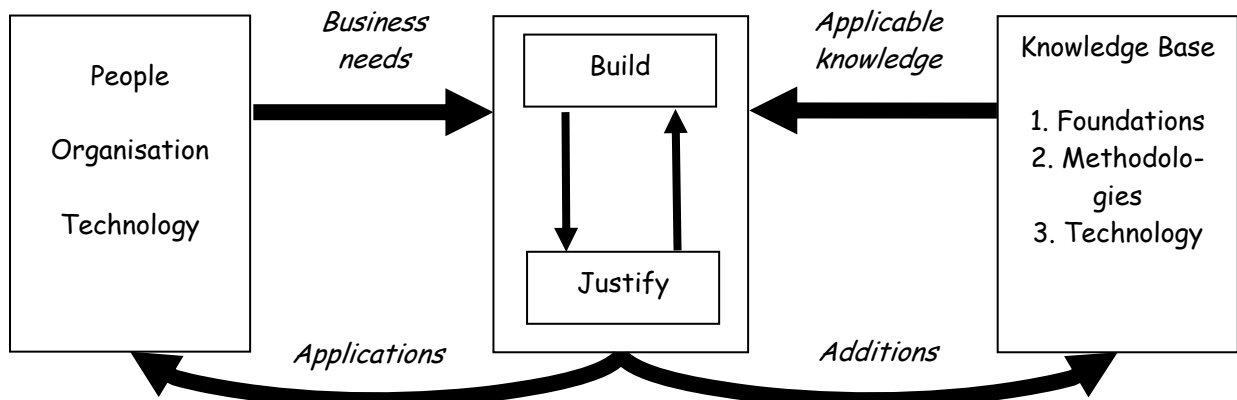
Figure 1: Components of a design theory according to Hevner et al. (2004).

2.1 Research initiation and the business need

The research reported in this chapter was initiated in the summer of 2010 when Linda Olsen, the First Vice President for Danske Bank's Outsourcing setup called Development Center India (DCI), stated that they needed an improvement; they needed better virtual management.

The set-up between DCI and Danske Bank in Denmark is built on the outsourcing strategy called staff augmentation. In short this strategy means that more and more projects will have people from different sites – e.g. Bangalore, India and Ejby, Brabrand & Lyngby, Denmark – working together in the same project team. The main advantage of the staff augmentation approach is that it may leverage existing resources in Denmark as well as utilize outsourced services and contract workers in Bangalore. In the concrete Danske Bank (at time of writing – April 2011) has close to 500 people from ITC Infotech working in Bangalore as part of project teams with both Danish and Indian team members. Most shared project teams are not creating totally new IT systems but are responsible for updates and maintenance of existing systems; system Management projects that is.

In August 2010 we interviewed the First Vice President Linda Olsen to obtain a better understanding of the business need for better virtual management. She told us that Danske Bank have two types of projects. One type is new development projects where something new is developed often as an add-on to existing applications or from scratch. The other type of projects is system management projects where development consists of smaller changes, additions and defect corrections. The virtual projects (across Denmark-India) were mainly of the latter system management type. She also told us that in her opinion there was enough technology available to the virtual project teams. Danske Bank had implemented tele-presence rooms at all main sites including Bangalore. They had eMeeting software and Chat at all workstations in Denmark and India. And they had several Video meeting facilities in Bangalore and at the Danish sites. Thus Linda Olsen emphasised that the need for better virtual management was in her view a *management* problem.

To address this management problem an interview study was planned and conducted to obtain a deeper and more thorough understanding of the problem.

2.2 Applicable knowledge from the Knowledge Base

Before you can design anything in design science research you need to "stand on the shoulders" of all the others who have looked into a similar problem; the upper right arrow called "Applicable knowledge" in Figure 1. Quite many researchers have looked at virtual (project) management. "Much depends on experiential learning and sheer hard work" says Lacity et al (2008, p. p. 32), and they continue to say that "… outsourcing is not about giving up management but managing in a different way".

What should this different way then be? Well, our literature review of the Knowledge Base revealed a very interesting paper (Bhat, Gupta, & Murthy, 2006) exactly building on case studies from an Indian IT-services firm where they identified five key strategic factors essential for success using a root-cause analysis:
1. Shared goal
2. Shared culture
3. Shared process
4. Shared responsibility
5. Trust

These five key factors is a major part of what in the literature is coined *social capital*. That is a concept referring to connections within and between people. The concept has been used to study societies, differences between developing and developed countries, and recently to study project teams as we were interested in. Another thing that lead us in the direction of social capital was one of the conclusions from Lacity et al. (2008, p. p. 30): "Our research found that one of the best ways to transfer knowledge is to invest in social capital. Social capital is simply the idea that knowledge and resources are exchanged, work gets done, and value is created through social relationships."

In the concrete we found a very interesting study by Evans and Carson (2005) linking the performance of distributed and heterogeneous teams (equal to virtual teams as we call it in this chapter) to three core processes (communication, social integration and coordination), and social capital as a moderating structural dimension meaning that when social capital is low then distributed teams will be negatively related to group processes and positively related when social capital is high. We have showed the model in Figure 2.
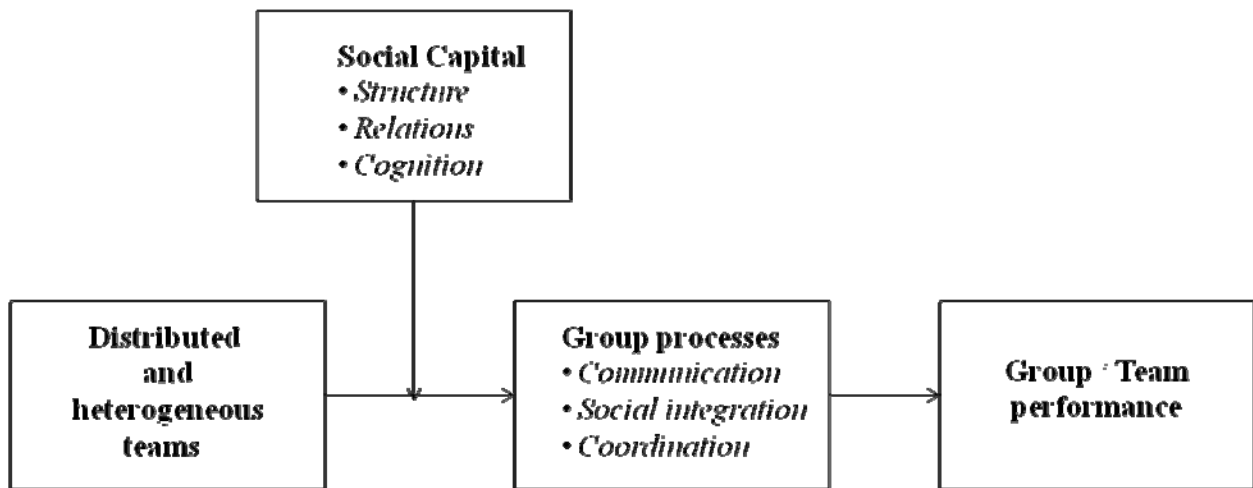
Figure 2: Relationship between group processes, social capital and performance (Evans & Carson, 2005).

The concept of Social capital is relatively new and is an attempt to bring together a number of concepts such as informal organization, trust, culture, social support, social exchange, social resources, rational contracts, social networks, and inter-firm networks (Adler & Kwon, 2002). As a construct social capital can be defined as *the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor*" (Adler & Kwon, 2002, pp., p.23). Social capital has three dimensions, namely a structural dimension, a relational dimension and a cognitive dimension (Adler & Kwon, 2002; Evans & Carson, 2005).

Adler and Kwon (2002) suggest that if opportunity, motivation or ability is missing it will undermine generating social capital. Thus when analysing social capital potential it is necessary to establish to what extends these three factors are present. First "opportunity", here the question is, whether a network that allow for social capital transactions is present; simply applying the idea that ties create an opportunity to act together. Both the quality of the ties (frequency, intensity, multiplicity) and the number and redundancy of internal as well as external ties matter. Especially two aspects of structural configuration has been researched; closure of the network structure; *strong ties* (Coleman, 1988) and sparse network with few redundant ties; *weak ties* (Burt, 1987). Second "motivation" is necessary. Different motivations have been suggested such as trust and associability, socialization and shared destiny (Leana & Buren, 1999), enforced trust (Portes, 1998), career advancement (Graaf & Flap, 1988), or to reduce transaction costs (Baker, 1990). Finally the cognitive dimension focuses on ability – the competencies and resources at the nodes of the network. Thus if social capital includes the resources that any actor could potentially mobilize via their social relations then ability of each tie is important (Adler & Kwon, 2002).

2.3 Interview study

Armed with a request for help on virtual (project) management and a preliminary understanding of the problem as related to social capital we travelled to India for 3 weeks in November 2010. The purpose of the trip was to obtain a better understanding of the problems

related to actual virtual project management in Danske Bank's Development Center India where 480 people from the Indian company ITC Infotech works in the Development Center.

Based on the applicable knowledge we formulated an interview guide as shown in Figure 3.

1. Your background, Education / Experience
2. The project? Scope? / Organization? / Roles?
3. Denmark – India? People on-site in Denmark? / You? / Use of L.O.'s?
4. Communication: Structure: What? / Daily? / Regularly? / Challenges? / Hindrances & obstacles?
5. Teambuilding: How do you build team?
6. Networking: Here? / Across to DK? / Community here at ITC? Bangalore?
7. Project Management,
8. Coordination and Control Formal control and follow-up? /
9. Common vision and mental model? / Informal? /
10. Coordination Mechanisms?
11. Examples
12. Surprises? / Mis-communication / Mis-alignment / Special & different about working here in general?

Figure 3: The interview guide used in interview study in November 2010

To pilot test the interview guide we conducted some interviews in the fall of 2010 with a project manager (in what we using a pseudonym call the BRAVO-project). Some changes and improvements were made from that pilot testing before the interview guide ended up looking as shown in Figure 2.

To obtain a broad understanding of the problem domain we asked for access to interview for example three people with different roles in projects that differed in size, type and scope.

The projects we ended up interviewing in was:

Bravo: Medium-size system management project. Using Scrum as their development methodology with one scrum-team in Denmark and another in Bangalore. Project manager, task manager, business developer, tester + two developers interviewed
Charlie. Smaller system management project. Task manager and developer interviewed.
Golf: Larger 3-year development project with main parts developed in India. 3 people interviewed: Task manager and two developers of which one was newly arrived at DCI (4 months)
Tango: Larger system management project. 3 people interviewed; Task manager and two developers of which one was recently arrived.

Besides interviewing the Indians in DCI in Bangalore we also interviewed five Danish Liaison Officers and the First Vice President. For that we used the same interview guide

All interviews were recorded and careful and detailed minutes produces. Furthermore we observed development using technology such as video meetings and telephone conferences. We also tried the tele presence room for a 2-hour meeting. For all these observation studies we made careful notes as well.

2.4 From interpretive Coding and Analysis to Design

The methodology we adopted was a contextualized, interpretive one, using the technique of case study research (Pettigrew, 1990; Walsham, 2006). Our research can be characterised as being Interpretive research in that we attempted to understand the virtual project management phenomena and the problems therein through the meanings that people assigned to the issues we brought up in the interviews. Thus our access to reality is through social constructions, such as language, consciousness, and shared meanings (Myers & Avison, 2002).

Data analysis also followed the interpretive tradition, using hermeneutics (Myers, 2009). Interviews minutes and observation documents were coded and analysed. First, we found a number of potential problem categories. Then a subsequent, more careful qualitative data analysis (Miles & Huberman, 1994) uncovered a number of underlying problem themes. In this uncovering we followed a process inspired by Goetz and LeCompte (1981). First, we scanned and coded the data and documents. This identified several categories of explanations for virtual management problems as well as attributes of both complex and interwoven relationships between problems. Second, we compared data and categories to uncover all relevant elements of the data. Third, our findings were then presented and discussed in a workshop in November 2010 with all the Danish Liaison Officers in Bangalore and on 5 January 2011 with the whole Indian Management Group in DCI. Finally, in the fourth step, we created our conclusion, in the form of a design of a conceptual framework for virtual project management.

3 Interview study findings

In general we noted that there was a preponderance of engineers at DCI (compared with Denmark), and we noted that most employees have 4-year bachelor degrees rather than master degrees; although figures show that 35% has a Master degree. We also noted that many of the interviewees had a background where they have worked in another Indian company and thereby had experience from another outsourcing arrangement than the one at DCI. For example a number of our interviewees had stayed in U.S. or UK before coming to work at DCI.

Problem #1 – Social ties take time
The first problem area identified is about social ties. The interviewees experience that in general it takes time building social ties, that social ties develops over time, that in virtual projects it takes more time, and that it is considerably harder to forge social ties with someone you have not meet face-to-face. In relation to this problem area we also noticed that the Indians had very few professional and technical specialist networks. In Denmark, for example, developers often attend "on-the-way-.home" meetings and seminars in Dansk IT (The Danish Computer Society), Dansk Projektledelse (The Danish Association for Project Managers) or Tecpoint (Danish Association for companies in the Technical area). We did not find that in India. However, it is done internally in ITC Infotech and DCI by having a Quality month, tech month, etceteras. .

Problem #2 – Not enough trust

The second problem area is trust. Again the interviewees experience that it takes time to build trust, and it takes longer to get confidence at a distance. We (the researchers) found that problem #1 and #2 are related in that social ties and trust are mutually reinforcing.

Problem #3 – Lack of shared vision and language
The third problem area is about shared vision and shared language for product and work. Based on the interviews we found very limited use of a common vision or roadmap in the projects. This may be rooted in the fact that we mainly studied system management projects. Another part of this third problem area is lack of shared language and concepts. Here some of the problems are related to national languages (in contrast to professional vocabulary). Thus if the majority of the project team have another shared language than English they may have a tendency to use this language in meetings and written correspondence which exclude those not mastering that language. In most projects however English is successfully implemented as the common language. Here different accents and sparse language skills occasionally result in miss-communication and discomfort communicating.

Problem #4 – Cultural distance
Problem area 4 is issues related to cultural differences. Examples given in the interviews include: differences in how self-propelled team members are expected to be, when uncertain do you then ask first or investigate/check yourself first, differences in if you follow methods loyally or work out-of-process, differences in how you perceive performance measurements, differences related to management style especially acceptance of formal and hieratical power and the value of seniority.

All our interviewees agree that Danes take many things for granted, that it is important in India to obtain recognition after having finished a task, and that measurement is more acceptable in India. One solution that has been tried with some success is explicit training in cultural differences. Another successful initiative is a metrics program in India, that DCI has build. Several metrics programmes have been tried without success in Denmark over the last 10 years – making it clear the metrics and measurements are difficult in Denmark.

Cultural differences especially come to the surface in relation to management style. In Denmark one is okay having a rotating manager (as in Scrum). In India a team prefers to be configured with a formal leader to work. Seniority is surprisingly important in India, says the Danes illustrating the distance between the two cultures. And Danes have found that DCI offshore teams do not work as well if everyone is at same level; you need the hierarchy in India. It is however not just seniority that counts. DCI have existed in Bangalore for 4 years and it is clear from our interviews that seniority in Danish Bank counts more than seniority in general (e.g. from other companies than DCI).

Problem #5 – Communication Issues
Problem area 5 is about communication issues. Much communication takes place on a daily basis and most of it works quite well. E-meetings work well. Video meetings are used to a great extend. Chat is open and used very frequently for questions. Never the less cost considerations to some extend limits the diffusion of new and potentially valuable technology. Communication works very well in some teams and not so well in other teams. Those who do it (communicates) will have invested a lot of time in it – e.g. meetings every day, chat etc.

Some communication issues are again culturally dependent. For example we were told that Indians have a tendency to answer more on intention and social structure – not as things really are (related to yes/no-issue). Related to this it seems that Danes and Indians are not good at 'reading' each other. And this problem may become more severe when you have only virtual communication.

Problem #6 – Lack of reciprocity
Problem area 6 is about reciprocity. According to Merrian-Webster's Learner's Dictionary reciprocity can be understood as having/giving the same rights to all or an agreement among different parties to do something similar for each other. In teamwork neither rights nor exchange of favours may be stated explicitly but never the less a fair balance is expected.

Team members may do things for others with an expectation that the favour will be returned in some way in the future. In the interviews different examples were given where the interviewees felt a lack of reciprocity: always having meetings in unpleasant timeslots, having individuals take your time asking questions without "paying you back" in different ways, newcomers don't feel they get the same opportunities as those with seniority.

Problem #7 – Not sufficient team identification across sites
Problem area 7 is about insufficient team identification. The interviewees experienced difficulties identifying with the team or realising true team spirit especially if there is only one or very few team members in one location and a larger number of team members at another location.

Two solutions make it easier to identify with the team. One is co-location of the team members at a site. This happened for example in project Bravo. Another important vehicle for creating team identification that we have seen is a video meeting with all team members present.

4 Designing a conceptual framework for developing social capital in virtual projects

Performance of teams is significantly varying. Barry Boehm (1981) in the book "Software Engineering Economics" found a factor 1-to-4 between the best and the worst team – which on paper were equal. And DeMarco og Lister (1999) in the book "Peopleware" found a factor 1-to-5. And 400-500% difference is worth an effort.

Our overall impression from the interview study was that to make virtual teams succeed you need to spend much more *time for* and *emphasis on* it.

Our preliminary focus on social capital was confirmed by the interviews meaning that the dimensions of social capital seem to play an important role. Thus the conceptual framework we designed focus on the project managers ability to facilitate the creation of social capital throughout all phases of a project.

We believe that the interviews and the literature (knowledge base) give strong grounding for a proposition saying.

You need to build social capital in all its aspects through all phases of building a virtual team to ensure successful virtual project management

Below we will explain the conceptual framework we designed in details. First the theoretical basis for the two dimensions in the framework is explained in section 4.1 Phases in the virtual team process and section 4.2 Elements in Social capital. These two dimensions result in a six-by-six matrix which is described in details in section 4.3.

4.1   Phases in the virtual team process

Pries-Heje & Commisso (2010) carried out a literature study on teams. They found four primary things of interest: (1) The Task; (2) Team Roles; (3) Team Working, and (4) The Process. The *task* to be undertaken by the team has an influence. For example, the more complex the task the more there is a need for a balanced team where all the *team roles* are enacted. Number three - *team-working* – is mainly about two things that we also found. It is about the importance of trust (problem #2 above). Trust is really a prerequisite for an effective team. If you do not have trust in each other you cannot work well together. You will show your 'facade' instead of your real self, and facades have never done a good job. And the second thing of importance in relation to team working is to have a common vision within the team (problem #3 above).

Finally, the *process* that the team goes through is very important. We have the 'old' forming-norming-storming-performing model as a main proponent of the team process. In TSP (Humphrey, 2006) we also have the emphasis on a good team start-up in the form of a distinct launch activity. Commisso and Pries-Heje (2011, forthcoming) have developed a model for building team with six phases as described in Figure 3.

Constitute	Team and project constituted. Do we have the knowledge and competence needed; Team gathers; We ARE a team; Who am I
Clarify	Who are the others, Clarify group dynamics; how to communicate; how to decide; rules of conduct; social contract
Commit	Aim and goals, priorities, roles, context, and vision
Carry Out	Working – preferably effectively; continued group dynamics; on-going communication and coordination
Check	How are we; Do we need to go back and repeat – build more social capital; mid way crisis

Conclude	We have come to the end; what did we learn

Figure 3: The Six-C model for team-building (Commisso & Pries-Heje, 2011, forthcoming).

4.2 Elements of Social Capital

According to Evants and Carson (2005) social capital has three key elements; a structural element, a relational element and a cognitive element,. The *structural* element of social capital is the network of ties and relationships possessed by group members and reflect the degree to which groups of individuals openly communicate. The *relational* element concerns the nature and quality of the relationship ties, and refers to the trust that exists among a group. Research findings suggest that network ties that are not strengthened by mutual obligations, trusting relationships, and common language or narratives easily break down (Burt, 2002). The relational element can be decomposed into: identification, trust and reciprocity. The *cognitive* element can be described as the shared language and shared narratives that together form a shared system of meaning. The cognitive dimension of social capital highlights the importance of shared representations, interpretations and systems of meaning among parties, and it can be split into to sub-elements: shared vision and language and concepts. Hence social capital can be understood to have 6 elements:

1. Structure
2. Relation
    a. Identification
    b. Trust
    c. Reciprocity
3. Cognition
    a. Shared vision
    b. Language and concepts

4.3 Designing a conceptual framework for developing social capital in virtual projects

We are now at the point in our design science research where we have a very good an thorough understanding of both the need and the problems as well as the existing knowledge base. After some iterations we ended up with a design combing the Six-C model – as presented above – with six aspects of social capital allowing the necessary building of enough social capital in all phases of a team.

In the concrete the design looked like shown in figure 4.

	Constitute	Clarify	Commit	Carry Out	Check	Conclude
Structure / Social ties	Shield	Human behind What techn.?	Events	Celebrate Create social time	"Light" Retro-spective *	Retro-Spective *
Relation / Iden-tification	Group portrait	Imagine success Confidence	Short feedback loop	Create team pride - talk about success	Process observation * "Light"	Retro-Spective *
Relation / Trust	*Historic trust*	Team game rules	Explore barriers Define roles	Performance and knowl. based trust	Process observation * "Light"	Retro-Spective *
Relation / Reciprocity	*Mindset for virtual work*	*Mindset for virtual work*	*Mindset for virtual work*	Identification trust	Process observation * "Light"	Retro-Spective *
Cognition / Shared vision	Knowledge map *	Hofstede *	Front page SPOT Big Steps Game Plan	Use common vision	"Light" Retro-spective *	Retro-Spective *
Cognition / Language & concepts	Knowledge map *	Teambuilding activities Hofstede *	1. meeting Devl. Model Artic.protocol Common pro-cess&archit.		"Light" Retro-spective *	Retro-Spective *
Other …			Comm. need Stakeholder matrix		Fishbone	

Figure 4: The conceptual framework we designed consist of of a six-by-six matrix combining six parts of team building with six dimension of social capital. The '*' after the name of some techniques means that the techniques is repeated in other fields.

In relation to our interview study it is clear that our conceptual framework covers the problems that we identified:

- Problem #1 – Social ties take time. This is addressed by having a conceptual framework where you go through all the phases of team build-up thereby allowing the time it takes to build social ties
- Problem #2 – Not enough trust. This is addressed by the strong emphasis on trust building; the third row in Figure 4.
- Problem #3 – Lack of shared vision and language. This is addressed by row 5 and 6 in our conceptual framework.
- Problem #4 – Cultural distance. Addressed partly in the fields saying "Hofstede".
- Problem #5 – Communication Issues. As can be seen from Figure 2 better communication is a result of the heightened level of social capital, that is all six rows in all phases in the conceptual framework. Furthermore we have a row 7 "Other" that specifically addresses Communication.
- Problem #6 – Lack of reciprocity. This is addressed by row 4 on reciprocity in our conceptual framework.
- Problem #7 – Not sufficient team identification across sites. This is addressed by row 2 identification in our conceptual framework.

The overall idea in our design follows from the proposition: To be successful you need to build all elements of social capital in all phases of a team. To populate the six-by-six matrix we have chosen techniques that can be used in a team to build a specific part of social capital. In general the techniques included are coming from a number of different sources. The main source were the book "Best Practices for Facilitation" (Sibbet, 2002). The second most important source were Duarte and Snyder (2006). Norm Kerth's book on "Project Retrospectives" (Kerth, 2001) were the main source for the Check and Conclude phases. Furthermore we were inspired by agile techniques especially Scrum (Sutherland & Schwaber, 2010). The remainder of the techniques were taken from Commisso & Pries-Heje (2011, forthcoming). The choice of techniques was not incidental. We carefully discussed each of the 36 fields in the 6-by-6 model. We considered several techniques and we selected techniques that were especially well suited for both being done virtually (for example in a video or e-meeting) and creating social capital best. Research method wise this was our Build and Justify iteration (middle part of Figure 1).

Space does not permit going through all 36 felts in the matrix, but below a fee examples are provided.

Under Clarify and Relation/Identification there is a techniques called *Imagine Success*. What you do here is that:

- Everyone in the team thinks for themselves over the last project they participated in, which was implemented successfully
- You capture the feeling of success and transfer it to an idea of how a successful completion of this project is experienced
- Tell the team what it was that succeeded in your project success and how your success is experienced

- In the middle of a common screen or large piece of paper (seen on video) write: "The look of success" and around the write / draw in everybody's individual perception of success

Under Clarify and Cognition (both shared vision & language & concepts) it says 'Hofstede' (cf. Hofstede, 2001). That is the name of a famous research in national cultures. We use it as a technique giving this advice:

- When high 'Individualism' (as in DK and partly India), use team building to let individuals speak about themselves first and then talk about the cooperation after
- Small 'Uncertainty avoidance' (like DK), talk generally about how the team should work and set details later
- Large 'Uncertainty avoidance' (like India), use team building to precisely and in details specify how you want to work together
- If small 'power distance' (as in DK), use team building to let the individual talk about his background in relation to the team, and use competition-oriented activities where everyone can win
- When large 'power distance' (as India), use team building to let individuals tell about themselves in relation to others and do <u>not</u> use activities that could upset the balance of power and hierarchy

Under Commit and Cognition/Shared language and concepts we urge the teams to use the Danske Bank development model with the following arguments about the advantages:

- Everyone has the same terminology in projects
- It becomes easier to register and understand data and experiences from earlier projects. The method can become a common framework for communication i.e. of successes
- With well defined phases and documentation for each phase management is much easier
- New employees without experience gets a well defined platform to start out from

Under Carry out and Relation / identification there is a techniques called Create team pride – talk about success. This includes:

- As a (Project) Manager you are responsible for telling about team success
- Plan to allow for an early success,
- celebrate it …
- build momentum,
- team pride and team identification,
- and make opponents think; maybe the project actually have the potential to become a success

5 Diffusion and adoption in Danske Bank

We presented the conceptual framework to management in Danske Bank in the last week of November. We clearly linked it to the problems we identified in our interview study as presented in this chapter. The response was very positive. Danske Bank was confident that focusing on building social capital had potential to help them improve their virtual (project) management.

It was then decided that we should teach it to Task managers, Process people and general managers within DCI. That took place in week 1 of 2011. The aim of the five-day course we gave was that after the course the participants should be able to:

- Independently <u>facilitate</u> the start up of and the ongoing work in a virtual project team; that is a team distributed across Denmark and India that have never been together in one physical location
- <u>Choose appropriate techniques</u> for six phases of teamwork to use in and facilitate the building of enough social capital within the team; enough to ensure that the team can work virtually

The evaluation by the participants emphasised the following more general comments:

- Introduced the topics that some consider very vague in a clear and perceivable manner
- Though the techniques that were discussed were familiar, put together as a package it was new, encouraged us to think about what was being done
- Sensitive subject but handles it very well with good examples / tools
- Practical tools given to us will really help in day to day management
- Building social capital is the real value addition (by our conceptual framework)

We realised at the end of this course that it was necessary to give a similar course in Denmark. The resulting course took place on 2 February 2011. Here – again – the evaluation was quite positive and the participants committed to using the conceptual framework.

The conceptual framework is now being used in seven project areas – mainly so-called system management areas. All areas have made concrete plans for how to build social capital for their team. And they have each made a cost-benefit analysis specifically for their own project showing that the benefits of building and ensuring enough social capital are much higher than the costs.

6 Conclusion

Hevner et al. (2004) expressed their view on what constitutes good design science research in the form of seven guidelines that are useful in understanding, executing and evaluating design science and design research.

Design Science Research Guidelines (Hevner, et al., 2004)
1   Must produce a viable artefact.
2   Produces technology-based solutions to relevant business problems.
3   Evaluation that demonstrates of utility, quality, and efficacy.
4   Research contribution of the design artefact, foundations, or methodologies.
5   Rigor in construction and evaluation method.
6   A problem-situated means-ends search for an effective artefact.
7   Communication to both technical and managerial audiences.

Ad. 1: We have produced a viable artefact in the form of the six-by-six conceptual framework.

Ad. 2: We started out with a relevant business problem, namely to improve virtual management in Danske Bank. We detailed it based on an interview study into seven specific problems. To address these problems we build a technology-based – or rather techniques-based – solution.

Ad. 3: The first successful evaluation took place in November 2010 when management in Danske Bank decided to apply the six-by-six conceptual framework. The second successful evaluation took place when the task managers in the course decided to apply the six-by-six concept in their own projects. The efficacy of the conceptual framework was only tried ex-ante (Pries-Heje, Venable, & Baskerville, 2008) in the form of a cost-benefit analysis. An ex-post evaluation can take place after the projects using the conceptual framework have ended or after at least 6 months use.

Ad. 4: The research contribution is the six-by-six conceptual framework. In the March and Smith (1995) notation it is a Model (with techniques in 36 fields) and a Method (of using the techniques through phases of teambuilding). The seven project areas that have committed to using our design are then 7 instantiations.

Ad. 5: As can be seen from this paper we have been very careful and rigorous in every step of our research. We have followed and included all the steps from Hevner et al. (2004); thus making it rigorous designs science research.

Ad. 6: We started out with a problem given by Danske Bank and our whole undertaking was a means-ends search for an effective artefact to deal with specific aspects of the virtual management problem.

Ad. 7: We have communicated it to both managerial and technical audiences in Danske Bank. We are now in this chapter communicating our results to technical and managerial readers outside.

Thus we believe the design created in the form of the six-by-six model artefact is a valuable contribution and a good example of design science research.

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