Transforming Virtual Teams: Translucence and Pitbull Mentality

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Abstract: Investigating virtual team collaboration in industry using grounded theory this paper presents the in-dept analysis of empirical work conducted in a global organization of 100,000 employees where a global virtual team with participants from Sweden, United Kingdom, Canada, and North America were studied. The research question investigated is how collaboration is negotiated within virtual teams? This paper presents findings concerning how collaboration is negotiated within a virtual team and elaborate the difficulties due to invisible articulation work and managing multiple communities in transforming the virtual team into a community. It is argued that translucence in communication structures within the virtual team and between team and management is essential for engaging in a positive transformation process of trustworthiness supporting the team becoming a community, managing the immanent multiple communities, and bringing visibility to articulation work, and that groupware technology should facilitate communication and negotiation instead of implementing the workflows just enhancing existing abilities, practices, and skills.

1 Introduction

Research within CSCW has as its main concern to understand the nature and requirements of cooperative work with the objective of designing computer-based technologies for cooperative work arrangement (Schmidt and Bannon, 1992). The cooperative work arrangement studied in this paper is the specific collaboration of geographical distributed project groups within industry. Global companies are
constructing virtual teams to solve strategic assignments, defining common goal and processes, and deploying the results around the globe. A virtual team is a group of people who interact across space, time, and organizational boundaries through interdependent tasks guided by a common purpose and supported by technology (Lipnack and Stamps, 1997).

In this paper virtual team is investigated as a social phenomenon. Virtual collaboration is perceived as the construction of participants’ perspective and cognition on the collaboration combined with the technology use supporting the mediated practice of the team members. Integration, acceptance or adoption of technology in a virtual team is seen as a process where the technology is being transformed into practice while transforming the practice (Berg, 1998). The construction of a virtual team is therefore a dual process of transforming participant into team members and transforming the technology into a full player in the collaboration enacting in the mediated practice (Bowker and Star, 2002).

Understanding this complex transformation process this study follows the work of Suchman and Gerson and Star and views ‘cognition’ as a social phenomenon (Berg, 1998). It is important to investigate people’s cognition to develop an understanding of their work, if social scientists do not understand people definition of a situation, they do not understand it at all (Bowker and Star, 2002). The team members’ perception and cognition on collaboration in virtual teams is investigated developing an understanding of the transformation process into a virtual team. Complex social organizations are characterized by ongoing negotiations about the nature of the tasks and the relationships between individuals (Star, quoted in Berg, 1998). Thus, investigating virtual collaboration is directed by the research question: how do virtual teams negotiate collaboration?

Answering the research question a grounded theory approach (Glaser and Strauss, 1967) is used, researching how the collaboration in a global virtual team was negotiated. Using grounded theory investigating global virtual teams is inspired by Saker, Lau and Sahay (2001), however when they investigate international teams in educational setting here the teams are situated in industry. Based on the analysis of the empirical case comprising a global virtual teams of five participants located in United States, Canada, United Kingdom, and in two locations in Sweden, this paper argues that translucence in communication structures within the virtual team and between team and management is essential for engaging in a positive transformation process of trustworthiness supporting the team becoming a community, managing the imminent multiple communities, and bringing visibility to articulation work, and that groupware technology should facilitate communication and negotiation instead of implementing the workflows just enhancing existing abilities, practices, and skills.

The rest of this paper has five main sections. First the concepts of transformation, trust, and translucence in virtual team are presented, second the
2 Transformation, Trust, and Translucence

Technology transforms practice and participants in unanticipated ways, and as quoted in Berg (1998), Robinson suggest that a criteria for successful CSCW applications should be that the application allows people to do something they could not do before (a new competence) has a great advantage over an application that enhances an existing ability or practice or skill (ibid, p. 463). Concerning virtual teams and groupware technology we need to understand the transformation of the collaborative practice when being virtual to suggest which kind of new competences the groupware can apply to the practice. This is not something designers can develop sitting in their offices, but this is something we need to investigate out in real life practice. Generic design inscripted in groupware systems applied in use situations can be viewed as resources for virtual collaboration (plans), but they are not equal to the virtual collaboration practice, because in practice the technology is transformed by the use (situated actions) (Suchman, 1987).

The transformation process has analytically two sets of relationships: between people and membership, and between technology and naturalization (Bowker and Star, 2002). People act in various communities. The construction of a virtual team is the construction of a new community with emergent identity, rules, and norms. Through time participants become members of the community, transforming the virtual team. At the same time technology gets transformed becoming naturalized into the community. The technology becomes integrated into the every-day practice of the participants. In this paper both analytically relationships are being investigated.

Research on global virtual teams has argued the importance of trust (Maznebski and Chudoba, 2000). Trust is traditionally based on the conception that trust is build and based strongly on interpersonal relationships (Jarvenpaa, Knoll and Leidner, 1998). Jarvenpaa and Leidner (1999) however suggest using the concept of swift trust when investigating temporal teamwork. Swift trust deemphasizes the interpersonal dimension, arguing that members initially import trust rather than develop trust. Importing trust emphasis the relation between participants and their location in various communities. People are affected by their already establish roles and competences in different communities when entering the transformation of a newly establish virtual team into a community. In this paper investigating temporal teamwork it is argued that trust is not solo imported, but also transformed through the actions of the participants. Thus, trust is neither just imported nor developed, but transformed within the practice of
virtual team. Creating identity within the virtual team, developing membership, participants act interrelated thus transforming trust.

Transforming trust in a virtual team exist in the actions between the participants. It is located in the negotiation of collaboration. Analyzing the negotiation of collaboration in the empirical case presented here, it is argued that one approach for bringing a new competence into the practice of virtual teamwork supporting a new ability may be facilitating translucence in communication structures, thus supporting the positive transformation of trust. The concept of translucence can be explained by bridging visibility (notification of existing communication), awareness (acting according to social behaviour), and accountability (knowing I will be held accountable for my actions) to the communication structure where collaboration is negotiated (Erickson and Kellogg, 2000).

3 Research Method

The research method used in this paper is empirical driven grounded theory (Glaser and Strauss, 1967). Grounded theory builds on a notion that theory should be grounded in data, which will strengthen the relevance and use of suggested propositions to explain a field under investigation. The empirical data was constructed between November 2002 and March 2003 in a global organization of 100,000 employees distributed at sites in Europe, Canada, United States and Asia. The researcher participated in top-management meetings, conducted interviews with the project manager and participants, and did document analysis on reports, presentations, and the content of the Lotus Notes database. All interviews were transcribed, and later formed the foundation of the within-case analysis developing categories and becoming intimately familiar with the unique pattern of the case before pushing for generalizations (Eisenhardt, 1989). Later different relations between the various categories were constructed and compared with the other data sources (e.g. the documents). Throughout the analysis the important storyline of data emerged, the storyline of how collaboration was negotiated in the virtual team.

The storyline was then confronted with literature especially the concepts of transformation, trust and translucence. Confronting the storyline with literature created a storyline with stronger internal validity and wider generalizability on a higher conceptual level, which should not be judged in terms of objectivity and testing (Checkland and Holwell, 1998). However cases (empirical and from literature) which confirm emergent relationships between concepts, enhance confidence in the validity of the relations. Qualitative data are particularly useful for understanding why or why not a relationship exists. The result was an emerged an open-ended scheme explaining the social phenomenon of how collaboration is negotiated in virtual teams.
4 The empirical case

The virtual team investigated had the assignment to develop a common process to do Software Configuration Management (SCM). The team consisted of five participants located in North America, Canada, United Kingdom, and at two different locations in Sweden. The team meets regularly at co-located workshops at the different sites (Toronto, Stockholm, Cleveland, Oregon) between two to five days. Between the co-located workshops the team did releases on the process description getting comments from all local sites and integrated these comments into the next release. Between the two last workshops the team did three pilots (Bangkok, Halmstad and Halifax) of the SCM-process assisting local software development site to integrate the SCM-process in their software development processes.

To support the virtual collaboration the team mostly used e-mail and phone but they also had set up a Lotus Notes database in the beginning but they never managed to naturalize the database into their collaboration.

4.1 The Construction of the Virtual Team

The construction of the virtual team takes place at three different levels. In the first level top management decided to create a virtual team developing and piloting a common SCM-process for doing software development within the whole organization. At that meeting the virtual team was constructed. At the second level top management gave the authority to a project manager to collect participants around the different sites to participate in the virtual team. Here the project manager transformed the virtual team constructed by management into a team of flesh and blood. Then at the third level the actual collaboration within the team began. Participants acted interrelated, while transforming the first and second level construction of the virtual team. Here the dual process of turning people into members and naturalizing objects (technology) into every-day doing began.

The story of the team will begin by elaborating on the second and third level of construction. In the second level the project manager went around the globe choosing participants for the team. He chose people with experience in software configuration management process in various projects and constellations. Ginger was from North America, Sven and Maria was from Sweden, Louis was from Canada, and Michael (the project manager) was from United Kingdom. Ginger knew Louis since they both were in the same distributed division, and Louis was her boss even though they were located at different site in different countries (she being located in US and him in Toronto). Ginger also knew Sven since they both had been working on SCM-process in many years, and they all knew or had meet Michael before. Maria was the ‘goofy-person’ a newcomer to both working on
high-level SCM, and working in an international team. She had experience in a practical level on SCM and was picked out by Michael because the SCM-expert from her site was on maternity leave, so he had suggested Maria to step in.

“And next thing I knew he called me, like on a Wednesday or something, could you be in Toronto on Monday. Ok, doing what? Year you know this group of people we are meeting ... And so I went, and I was sitting there and my head exploded: what am I doing here and how can I contribute” (Team member)

Maria being a newcomer and being less experience compared to the other team members describe herself as a little scared chicken, which impacted her participation in the negotiation of collaboration. E.g. she did not want to push for using a common repository (the Notes database), even though she thought it was needed. The other team members especially Ginger were much more used to work around the globe in many different constellations.

“So I can end up anywhere. There are ten divisions, 34 sites, 12,000 people with some sort of software responsibility across the organization. So anybody can call and that where I will show up next.” (Team member)

Going to the third level of constructing the team, the participants began acting together transforming the community and defining membership. This began at the first co-located workshop in Toronto. First turning to the more formal negotiation process transforming the community, the team began negotiating the assignment from top management.

“The objective we build all together and we build the mandate. (...) Here is what we think we will do; here is the project, we find this process, we tried it out, we decided on the tools – and then we looked at potential costumers, we did team ground rules (...) (Team member)

In the workshop participants negotiated how to collaborate (the ground rules). These rules were grounded in the formal guidelines within the organization and participants’ earlier experience in collaboration. In this way the ground rules can be explained as resources or plans for the future collaboration. Ground rules as plans are not equal to the actual collaboration, which is situated in actions of the participants (Suchman, 1987). In this respect the ground rule for collaboration was re-negotiated throughout the process, both implicitly in the actions of the participants, and explicitly when experienced breakdown in the communication structures. One important aspect of the negotiation of virtual collaboration is the negotiation of how to use the technology - the negotiation and re-negotiation of protocols for use of technology (Bjørn, 2003). In Toronto the team did not explicitly negotiated the use of technology. It was decided to set up a Lotus Notes database, but it was never used. The team never discussed how to use email, but email was a common way of interacting in the organization so they did all their virtual communication using email and to some extent phone. In this way the team never entered the re-negotiation process of how to use groupware. Turning to the informal transformation of participants into members of the virtual team, an essential social aspect emerged: smoker-net.
And I think what prevented me in Toronto taking the first plane back to Sweden was that we smoked together. So I could step outside and Ginger was really nice trying to explain the background information for the next section. So that was really – thank you.” (Team member)

Social aspects gluing the participants together as a part of the transformation process into membership is vital for virtual teams, in the same way as social awareness has been found essential for adoption of groupware (Bjørn and Scopula, 2004). Smoker-net was the beginning of a social relationship between two of the team members, in this way Maria being ‘the goofer-person’ was supported in the transformation of becoming full member of the team by the experienced team member Ginger. Since where were no smoking inside the organization, they went out on the street in the breaks, were episodes from the workshop were discussed.

4.2 Articulation Work becomes Invisible

The transformation process continued in the mediated collaboration after the workshop in Toronto. The situated actions forming this process were grounded in the communication between the participants. When people collaborate they become involved with extra activities such as dividing, allocating, coordinating, scheduling and interrelating activities and tasks between participants. This extra work is referred to as articulation work (Schmidt and Bannon, 1992; Bowker and Star, 2002). The articulation work within the team was closely connected to the definition of tasks and actions. Being geographical distributed using email and phone to mediate the communication and articulation work, while lacking protocols for negotiating mediated, team members felt left out of important discussions. Participants saw assignments, tasks, and actions appearing or disappearing without having access to the negotiation behind these processes.

“(…) and it all kind of ended up in the project schedule all of a sudden. From one day to another. The original was that we were doing pilots in Bangkok and Halmstad (…). And what I can remember al of a sudden Halifax showed up in the monthly power point of some document somewhere. “ (Team member)

The number of pilot projects changes, without the team members have been informed. This gave a feeling that the pilot project in Halifax just suddenly appeared. Strategic discussions resulting in activities disappearing were also invisible the team members.

“I don’t know how this works exactly (…) It just disappear. Or gets re-negotiated, get shuffled or Michael and Louis had some discussion where to push it though another project. There is a strategy discussion going on there that the other three of us doesn’t know about. We just see the action go away.” (Discussion between team members)

The mediation of articulation work without negotiated protocols for communicating resulted in invisible structures of articulation work. The invisible structures prevented team members having access to how the collaboration process was transformed and re-negotiated, which frustrated the participants
affecting a suspicious feeling towards the communication within the team. Imported trust was transformed negatively. The informality in the communication structures decreased the trustworthiness within the team. Team members were informed of important decisions by the coffee machine at the co-located workshops.

“We found out that it [a task] went away, when Michael talks around the coffee machine. From my perspective, it is like that all the team members that don’t participate on equal conditions.” (Team member)

Missing explicit protocols for communicating articulation work resulted in an opaque layer increasing the suspicion and mistrust within the team. Suddenly small incidents were being analyzed in a suspicious perspective.

Team member: “He has interaction with Michael that we don’t know about.”

Interviewer: “How do you know that? Do you just suspect it?”

Team member: “Because while I was on the phone with Michael he said, “can I talk to Sven,” and I give him my cell phone so he can talk to Sven, and I don’t stand there and listen. I know he’s talking to Sven.”

The project manager job (Michael in the above quote) is to communicate between the different participants, knowing about local activities and keeping the ‘big picture’ of the teamwork. However experiencing activities appearing or disappearing with out reason, constructing the opaque layer of the communication of articulation work frustrated team members and created a feeling that ‘things are going on in secrete’. The negatively transformation of trust experienced here could additionally exist in a co-located team, but the conditions for creating mistrust would have been different. Regular up-date meeting for coffee in co-located teams has the effect that team members would create a mutual idea of the project and collaboration. Being geographical distributed, not having regular informal encounters transforming trust positively the physical workshop becomes vital in creating trust dependent on the mutual communication between participants in constructing the community.

“We [in co-located projects] would maybe meet, not necessarily every day, for coffee, but maybe regularly, and you would get an update. That’s at least what I’m used to. The project manager would tell something about what the rest was working on, so everybody had the same idea of what’s going on. We [in the virtual team] met on workshops and most of the there was just frustration involved, and then there’s no good communication.” (Team member)

4.3 Managing Multiple Communities

The toughest issues in information system design are increasingly those concerned with modeling cooperation across heterogeneous worlds, of modeling articulation work and multiplicity (Bowker and Star, 2002). Members of virtual teams are, like everyone else, participating in various communities. However the boundaries between the communities increases when geographical distance is the demarcation line. Team members of virtual teams are both participants in the
virtual community while being participants of the local community in which they are physically located in the daily work. Managing multiple communities is an immanent factor of participating in a virtual team. The physical location of the participants affected the collaborative practice and increased the opaque layer in the communication structures.

One example was the location of management and the project manager. Top management was located in Toronto, Canada and so was one of the participants (Louis) from the virtual team. The project manager (Michael) was located in the Cleveland, UK. When top management wanted to receive information about the virtual team, they usually went to Louis because it was easy than calling up Michael with a five hours difference.

“And they all sit in Toronto, and it’s a hell of a lot more convenient to wander down the hall or to call Louis, than it is to call Michael with this five hour difference.” (Team member)

The physical location of both Louis and Michael in concern of communication between top management and the virtual team affected the position of the project manager. Michael felt he was ‘left out in the woods’ by top management due to opaque communication structures between top management and himself. There were important discussions affecting the work of the team taken place without Michael knowing about it or having access to it. Here it is important to notice that Michael was inexperienced managing international teams compared to Ginger and Louis. One incident illustrating the complex game played in the team is when Michael (the project manager) asks Ginger (experienced member) to assist him.

“So I colored it and send it out [updated a schedule]. And I said if I didn’t get it right let me know. Well he didn’t read it if I got it right, he wrote well if you want to change it, call Ginger, don’t call Michael the project manager. (...) he got all pissed of caused I served his project management authority. So I have never updated another schedule. Off cause he had never send another one either.” (Team member)

Here Michael asks for help, but he does not want to make his inexperience visible to the whole team. He needs the communication to be ‘invisible’. Ginger accepts to assist, but emails the results to all making the communication transparent and Michael reacts. The reaction is moreover grounded in the frustration of being ignored by management when they choose to go to Louis instead of Michael for information.

4.4 Translucence at co-located Workshops

Collaboration within the virtual team is transformed through the actions of the participants, the physical locations of the participants, and implicitly changed by the inconsistence communication structures. Communication was opaque resulting in suspicion and mistrust increasing difficulties in articulation work. This whole scenario came to full play in the co-located workshops, where the different perspectives on collaboration became translucence. As the project
manager stated in an interview, the team worked fine except when being co-located.

“Toronto [the workshop] was pretty good. Everyone came and left so that we had five full days. In Stockholm we bailed early to catch a flight, but all of us left, we were done. In Cleveland people showed up and left whenever they wanted to. (...) Oregon was: Everybody are coming, Michael is not coming. Louis only ended up there on Wednesday, Sven had to leave on Friday. This “come and goes as you please” stuff, this is new to me.” (Team member)

The collaboration process was transformed during the co-located workshops and collaboration decreased throughout the project. In Toronto they collaborated as planned, in Stockholm they used the first whole day to negotiate articulation work for the workshop. In Cleveland the collaboration structure began to fall apart. Everybody was not present at the beginning and after a few days one team member came and changed the whole scenario, which was very frustrating for the other participants.

“Year Sven and I started. He [Louis] came at one time saying I’m not working like that – and changed the whole scenario at the Cleveland site. That was a waste of my time.” “That’s was the worst workshop – that have every happened.” (Two team members’ discussion)

To prevent the difficulties experienced in Cleveland to replicate they decided in Oregon to connect a facilitator. But the lack of preparation before the workshop by the participants combined with people showing up at different times transformed the workshop into a disaster. Effective virtual teams develop a rhythmic temporal pattern of interaction incidents, with the rhythm being defined by regular intensive face-to-face meetings (Maznevski and Chudoba, 2000). Even though the virtual team was engaged in regular co-located interaction incidents they did not manage to develop a deep rhythm for collaboration. Instead their co-located interaction decreased throughout the project period. It could be argued that the various perspectives on collaboration became translucence when being co-located (Erickson and Kellogg, 2000). The collaboration and communication structures which in the mediated collaboration was opaque became visible (they notice all the invisible articulation work), supported awareness (being aware of others actions), and demanded accountability (participants were held accountable for their actions). Due to the translucence tricked by the co-location participants measured each other’s actions accordantly to their own standards, which were not common standards for the community as a whole resulting in the fragmentation of the workshops.

4.5 Naturalization of Technology

Transforming objects such as technology into a community can be described as naturalization (Bowker and Star, 2002). Locating the transformation process of technology in the virtual team it emerged that the groupware technology never was transformed, Lotus Notes never became a member of the community. As argued elsewhere managing the integration of groupware includes a process of
structuring the groupware system and its repository as well as facilitating how to use the system, and this process is seriously constrained if no one fulfills the role of the intermediator (Bjørn and Simonsen, 2005). In the virtual team nobody took on the role as intermediator advocating and facilitating the integration process of Lotus Notes, thus groupware was never integrated.

Instead the naturalization process of technology into the virtual team was the process of transforming email into full member in the community. Email being a known and used technology in the organization was already a vital factor for all the participants, however the use of email was transformed throughout the process. On the organization level there were rules and norms for how to use email, e.g. that every email received should have a response within 24 hours in the receivers’ time zone. These rules were resources or plans for the use of email, however in the actual collaboration between participants the use of email was transformed accordingly to the situated actions of the participants. One example of the transformed use of the 24-hours zone rule was the invention of the ‘awaiting actions folder’ in Gingers’ email box.

“I have an entire ‘Awaiting action’ file folder of E-mails sent to Michael, E-mails sent to Louis with no response that they even got the thing, let alone intended to do any thing about it.” (Team member)

Ginger has transformed the plans for using email in the organization (the 24-hour zone rule) according to the actual use experienced when emailing Michael and Louis (creating the awaiting action folder). Her awaiting actions folder is situated in practice. Transforming technology accordingly to situated actions takes time. It takes time to develop a mutual understanding of cooperative use. One example of this is the transformation of expected behaviour using email in a synchronous way between two participants. The interesting aspect here is that even though the participants began their collaboration in the spring it was first when they reached Thanksgiving in November that the expected behaviour emerged.

“Maria and I have worked together so extensively, that if I’m on the phone, or if we’re doing an E-mail conversation, and one of us has an appointment or a meeting or whatever, there’s an E-mail that says, “got to go now, we’ll finish later!” So that you don’t keep E-mailing and expecting some reply, and there’s no one there anymore. (...) And how long did it take us to get to that? Thanksgiving. November. It was highly amusing, but I’m sitting in Oregon yelling, “expected behaviour, yay!” I know that nobody’s there, so I’m not going to send anything. I’ll just wait till later, that’s much easier.” (Team member)

Reflecting this episode with the concept of translucence, it can be argued that in the situated use of email, Ginger and Maria have succeeded in creating translucence in the very incident. First Ginger located in the US notice that Maria is no longer by her computer in Sweden because Maria explicitly states she is leaving the computer (visibility), then Ginger behave accordantly to this knowledge (awareness), and the reason that Maria even writes she will be away from the computer is that she knows she ‘can be judge’ accordant to her actions: is she just ignoring Gingers emails or is she away from the keyboard
(accountability). Time and actions are important in the naturalization process of technology. It takes time and actions for participants being able to reflect on the observed behaviour and use of technology by others comparing those with their own use and behaviour. Moreover if the participants reach a mutual understanding of the collaboration using technology this will support the translucence in communication structures.

4.6 Struggling to become a Community

Participating in a virtual team the construction of the community does not emerge without effort. It takes a lot of hard work to transform into a community with both social and work related relationship. The social relationship between the team members increased through the collaborative practice. Even though the communication structures in general were opaque when being mediated and only became translucence at the co-located workshops resulting in fragmental disintegration of the collaboration the virtual team actually succeed. They did develop a common SCM-process, piloted it and released it in the end. The virtual team struggled to transform the community and succeed. One most important factor here were the development of the social relationship between the participants. Meeting each other at the workshop they brought gifts for each other and exchanges social knowledge.

“This other interesting thing that this team has that I’ve never seen before, is this international gift thing. When I pack, here’s Louis’s pile, here’s Michael’s pile and by the way Sven wants to see pictures of the new kid, There’s always stuff going or coming in. And Louis brings chocolate. Sven brings liquorice. Michael usually shows up with fudge. We take baby gifts for Michael’s baby. And the latest thing as of the huggy-hugy, kissy-kissy thing, Michael has always done that. Not in Zurich, he kissed me in Toronto though. OK, from Michael you get one kiss, from Louis you get two. It’s like this bee sting we had to go work it out, because how does this work? I’m from the States, we shake hands!” (Team member)

Another important aspect of the transformation into a community in the social manner was developed through the pilot project in Bangkok, were two participants spend 30 days together. Being together not having to manage multiple communities, only being located in one community with a total different culture merged the two into a strong social relationship.

“But you were talking about international teams that typically have social activities together. Trust me! When you spend 30 days in Bangkok, 8500 miles away, and you get up in the morning, you get coffee, you have lunch together, you hang out in the evening, you do the meeting before the meeting, you do the meeting, you do the meeting after the meeting, and occasionally play, there’s enough social interaction to do really well.” (Team member)

The transformation into a community was a struggle, and different aspect could have supported this process e.g. translucence in the communication structures when being geographical distributed, the team did however succeed. Asking the
participants why they succeed even though having so many difficulties the answer was:

“A lot of hard work by stubborn people who went out to do this. Tenacious! It has the stubbornness built in. Tenacious, tenacity. Sort of a pitbull mentality. Now there’s a joke about a software insurance process cleared guy and if he’s got one of your legs in his mouth and the pitbull’s has the other one. Who will let go first? And the joke is that it’s always the pitbull. That’s the kind of tenacity you need to do this kind of stuff.” (Team member)

5. Discussion

Complex organizations are characterized by ongoing negotiations about nature of tasks and relationships between individuals (Star, quoted by Berg 1998). An international virtual is a most complex organization, and the ongoing negotiation of collaboration can be seen as a transformation process where the team become a community and technology is being naturalized into the ever-day doing (Bowker and Star, 2002). A virtual team can be seen as a construction in different levels. As Bijker (1992) sees the construction of the fluorescence light first happing in a management meeting, the virtual team investigated here was first constructed as a concept at the top management meeting. Later when participants were collected to participate (second level of construction) and then acted together at the first workshop they began creating plans for the future collaboration, but it was not before the actual collaboration started (both co-located and virtual) that the plans were transformed into situated actions (third level of construction) (Suchman, 1987). It was in this very transformation process that collaboration and articulation were negotiated.

Learning from the empirical data this transformation process – the negotiation of collaboration and articulation – is a most complex process with risk of transforming swift trust into mistrust. Here it is argued that trust is not merely imported when investigating temporal team (Jarvenpaa and Leidner, 1999), but also transformed. The opaque layer in the communication structures between both team and management, but also within the team constrains the transformation process in concern of trustworthiness. Only when being co-located did the actual frustration and difficulties emerge resulting in fragmental workshops. The communication structures became translucence due to the physically presence of the participants. It took time and effort to naturalize the use of email supporting the collaboration – however when the email technology became a member of the community it supported translucence between the distributed team members. Unfortunately email was only transformed into the community supporting translucence between two of the members.

The data supports earlier findings that re-negotiation of protocols for collaboration and technology-use is essential (Bjørn, 2003). Additionally it is argued here that translucence in communication structures within the virtual team
and between team and management is essential for engaging in a positive transformation process of the team into a community supported by technology. It is essential that there exist a clear line of contacts and authority in decision-making, and it is vital that this line is kept even though the physical location is an obstacle to the line e.g. when there is a four-hour time difference between the project manager of the team and top management. It is also essential that the team not only negotiates protocols for collaboration when being distributed, but also negotiates how to collaborate when being co-located in workshops. Moreover it is important to continuously re-negotiate how to collaborate turning plans into situated actions, and here translucence in the communication structures is vital.

The role of groupware technology more advanced than email may have a central position in the creation of translucence in communication structures. There is however a need for more research on how groupware can facilitate translucence in communication structures. Translucence could be the new competence being offered to virtual team by groupware (Berg, 1998). Here the empirical work indicates that without translucence of articulation work the risk of misunderstandings connected to decisions of changing the work practice increases e.g. the situation about doing a pilot in Halifax. If line of decisions and contact had been explicit and the team members had access to the argumentation behind doing a third pilot the translucence of the communication would have supported team members to understand why the work plan had been changed, which also would have decreased the feeling of suspiciousness and mistrust.

6. Conclusion

CSCW systems should facilitate communication and negotiation about workflows rather than implementing the workflows (Schmidt and Bannon, 1992). Groupware technology should facilitate communication as negotiation of articulation work grounded in situated action rather than implementing plans for collaboration. My work provide knowledge about how communication and negotiation exist in virtual teamwork, how articulation work is situated, which can provide useful information for both the design of groupware and the design of a transformation process facilitating a virtual team in becoming a community. The transformation process creating translucence in communication structures within a virtual team is essential for the development of trustworthiness. Here it is argued that email to support the collaboration was found inadequate due to the difficulties for creating translucence between more than two participants. It could be argued that groupware should aim at facilitating translucence in communication structures, thus providing a new competence for virtual teams instead of just enhancing an existing ability, practice or skill. This paper proposes that translucence in communication structures within the virtual team and between team and management is essential for engaging in a positive transformation process of
trustworthiness supporting the team to become a community, managing the immanent multiple communities, and bringing visibility to articulation work. If groupware can be designed to facilitate translucence in communication structures of virtual collaboration between dispersive participants, then it would increase the possibilities for success even though the team members lack having a pitbull mentality.

References


