

Chapter XVI

Building a Community of Practice: Technological and Social Implications for a Distributed Team

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ABSTRACT

This chapter looks at the work of a team of remote workers and how they have developed into a Community of Practice (CoP). It explores the roles that technology and communication methods have in the formation and development of the community. In telling the story of the progression from a team of individuals to a CoP, the chapter provides a practical guide to others wishing to do the same.

Two aspects of the work of the team are considered in depth:

- *Building communication systems across a Distributed CoP*
- *Building commitment, ownership, engagement and focus in a Distributed CoP*

The team and community on which the chapter is based is one of some 20 people working remotely for Ultralab, a learning, technology and research centre in Chelmsford, UK. The work of the team is online facilitation for the National College of School Leadership (NCSL). The team meet together approximately four times a year, using an online community space, the Facilitators' Forum, as their day-to-day working space.

INTRODUCTION

Wenger argues that 'Communities of practice are everywhere' (Wenger, 1998, p. 6) and goes on to cite the example of the family, neighbourhood and informal workplace grouping, leisure clubs and societies. He further explains that Communities of Practice (CoPs) are central to learning, saying:

"... engagement with social practice is the fundamental process by which we learn and so become who we are" (Wenger, 1998: Abstract).

With the use of new information and communication technologies, remote working is becoming more common. Where workers are engaged in a CoP, it is now possible for this to be distributed, whereas previously a degree of co-location was the norm (Brown & Duguid, 1999.) This chapter is a practical guide focusing upon the key features of the development, work and collaborative support of a geographically distributed team that shows characteristics of a CoP, and that uses new technologies. The focus is on one of the teams at Ultralab, a research and development unit based at Anglia Polytechnic University (APU) in Chelmsford, England. Ultralab's work or 'domain', using Wenger's term, is research into, and creation of, 'delightful' learning experiences using new technologies. This forms the central mission for all Ultralab work and is the focus for collaborative engagement.

Some 60 people work for Ultralab, either full or part-time. Approximately forty of these are based at Chelmsford, working on a large number of projects, either individually or, more often, in teams. The remainder, some twenty people, are remote workers who, with four Chelmsford based staff, work on a project that is developing online learning communities for the National College for School Leadership (NCSL). These communities include Talking Heads, an online community for head teachers (school principals) and communities that provide online support for programmes of professional development.

Ultralab's organizational structure can be described as "The Operating Adhocracy" (Mintzberg & Westley, 1992) where the organization relies on informal "mutual adjustment" as the method of coordinating efforts. Handy (1991) describes both 'task' and 'person' cultures; the former being dynamic, flexible and suitable in creative organizations and the latter being focused upon

individual self-direction, motivation and autonomy. At Ultralab, a particular culture, ‘the way we do things around here’ (Deal & Kennedy, 1983, p. 14) has been developed to suit a flexible, dynamic and creative research and development unit. Staff work collaboratively and are encouraged to work across different projects. Leadership is ‘distributed’ across ‘the lab’ with younger and less experienced staff often taking leading roles in managing and directing projects. Hence, both collaborative task culture and individual person culture are features of the distributed teamwork. The challenges of knitting together a distributed team trying to work in a truly collaborative way more readily associated with co-located workers are formidable. The team has developed a number of work practices and strategies to help it to address the significant challenges it has faced.

In the outline of practical strategies that follows, two issues are dealt with, each in the context of the use of technologies in a distributed CoP:

- 1) Building communication systems
- 2) Building commitment, ownership, engagement and focus

Building Communication Systems Across a Distributed CoP

Establishing the core mission around which team members can engage in a collaborative venture can be seen as the first practical task of building a distributed CoP. Further, as we have shown, there is building a task and person culture that allows teamwork and individualism to flourish. The culture needs to develop autonomy, self-direction and independence yet also build collaboration and teamwork focused upon particular tasks, and distributed among sub-groups. Dynamism and the ability to change and reorganize teams rapidly is essential to match the changing demands of projects and tasks.

With the mission established, the first area that we will discuss here is the building of systems of communication that connect both individuals (one to one) and groups. While being at a distance, these groups and individuals are working on this common mission and set of tasks.

Development of Community Software at Ultralab

The Ultralab team facilitating NCSL communities, from its establishment in the first quarter of 2000, has used collaborative software tools in its daily work. The team’s development towards a CoP was largely, but not exclusively, made possible by the use of such software and the collaboration and communication tools it provides.

This team is known as ‘the facilitation team’. Through its daily working practices over the past three years, it has established a clear domain for its work (school leadership), is engaged in common practices (facilitation) and has reified

and negotiated meaning in these practices (Wenger, 1998). Thus, it shows signs of being a CoP, one that is able to accommodate new members through their Legitimate Peripheral Participation and apprenticeship and interaction with core members.

Having community software available and ready at hand is central to the success of building a distributed CoP. More than this, however, is the willingness to commit to the use of community software for conversations and sharing of information.

Guided by Ultralab, software was developed by Oracle (think.com) and built on the principles of:

- Community creation and ownership by members
- Tools that allow the user to create discussions and other items
- Universal access through any web browser on any machine anywhere in the world
- Scalable size of user base
- The primacy of asynchronous communication

The use of asynchronous rather than synchronous communication allows for reflection and consideration before posting comments. Being web-based and avoiding the need for client software enables access at a time and place of convenience to the individuals in the distributed team. The choice of a 'flat' structure of user privileges empowers and enfranchises community members.

This use of think.com has been complemented by the lab's use of Centrinity's First Class (<http://www.centrinity.com/>) for internal conferencing, e-mail services and synchronous 'chat' facilities.

Table 1: Issues to be Considered When Designing or Selecting Community Software

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| <ul style="list-style-type: none"> • Projected size of the community • Learning architecture - how conversations and resources will be structured • Range of tools available, e.g. styles of conversations, calendars, upload facilities • Projected costs • Software sophistication and resultant training implications for community members and facilitators • Hosting options and resultant hardware and technical support required • Scalability options • Administration of community membership • Is there a sustained history of product development? |
|--|

Other forum, message board and community-ware products are available and many provide adequate to good community environments. It is, however, important that before deciding upon a particular platform the likely community is scoped to ensure that the platform will be able to deliver.

Through the design of our own solutions and the use of proprietary and bespoke software, we have honed our use of online community tools. There is no one choice that would fit all CoPs and compromises may need to be made. Table 1 lists issues for practitioners when choosing community software.

Online Asynchronous Discussion: The Community ‘Bulletin Board’

The work of this team and its development into a distributed CoP has been primarily carried out using think.com. The Facilitators’ Forum (FF), a community space built with the tools of think.com, was the first, and remains the most significant, tool in the work of the CoP. Its purpose is for communication, sharing ideas, and developing understanding: in short, a place of learning.

We have found that it is important to keep a high degree of consistency with the layout of the FF. Changes in the information architecture should be slow and evolutionary, not radical, as this leads to a feeling of dislocation amongst users and, for some, it takes a long time to re-orientate and find those regular accessed resources and conversations.

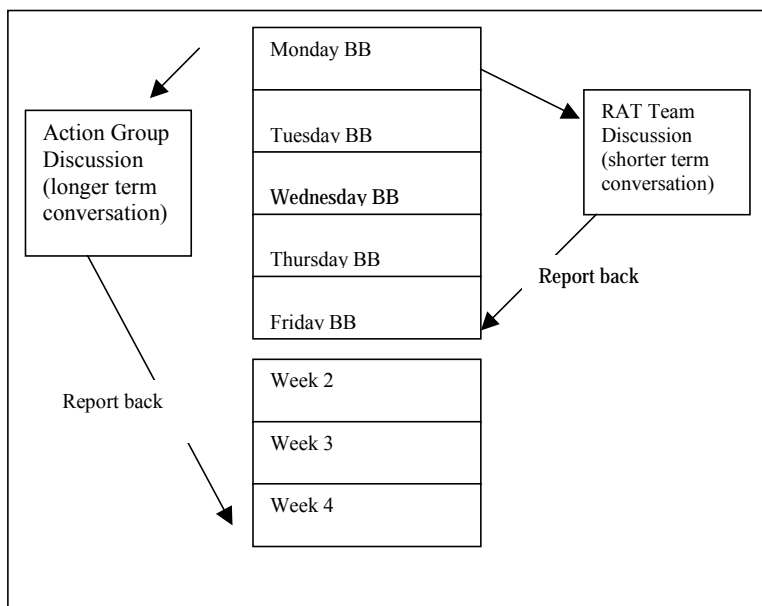
At the heart of this consistency is the daily bulletin board (BB). For many months, this was a simple single-thread asynchronous discussion. After a review, this developed into first three, and then five, threads with which the flow of the conversation is maintained. The BB convention has colour-coded entries depending upon the thread: blue for dialogue about work, green for social interactions, red for “must read”, black for information giving, and purple for items carried forward from “yesterday”, i.e. the previous day’s BB. These categories match the variety of community members’ needs; for example, those who wish to engage in social banter as a part of their daily work can do so.

A key feature of the BB is the breakout discussions and activities that flow from, and return to, it (See Figure 1). Throughout the day, the BB is used to springboard other conversations on a specific topic. These are then included in the top of the BB to run for a period of time appropriate to their context. Thus, asynchronous discussions are used to lead to the formation of either rapid action teams (RATs) or longer-term action groups to undertake the work of the CoP (Figure 1).

The BB requires three kinds of management and facilitation:

- 1) Housekeeping, archiving and tidying. A rota is used for this with individual community members producing daily summaries, with the important “must read” items being carried over into the next day’s BB. An archive is also

Figure 1: Use of the BB for Break-Out Discussions and Teams



maintained of important documents and specific conversations for future reference. Members of the facilitation community find this invaluable for referring back for the detail of past discussions, while those who have not been able to access the FF for a period of time use it to ‘catch up’ with the ‘community history’.

- 2) Facilitation of the conversation, which involves everyone making summaries of ongoing conversational threads, as appropriate, to move the dialogue along, picking up points and so on.
- 3) Leading and structuring the dialogue so that it focuses on key issues and the development of the agenda of the teams, with this leadership role distributed through and across the teams. Strategies for using a tool such as the BB to develop community are listed in Table 2.

The use of the FF is at the heart of the social cohesion and process of negotiated meaning that goes into making the CoP. The FF consists of ongoing and time-limited debates, an archive of summarised knowledge, and is the virtual embodiment of the community. When new staff are employed and join the team, they are inducted into the community through activity in the FF. At first, this will be limited to the use of the BB, but, as the newcomer becomes closer to the core work of the community, they will begin to access all of the tools and resources

Table 2: Strategies for Using an Asynchronous Conversation Tool for Developing Community

- Encourage frequent and regular use as a way of working
- Use for news, updating, sharing as well as discussions and conversations
- Encourage social communication and humour
- Colour code
- House keep for access and navigation
- Involve everyone
- Make sure conversations are completed and lead to action

across the FF space, i.e., as a form of Legitimate Peripheral Participation (Lave & Wenger, 1991).

Synchronous Group Discussion: The Telephone Conference

Telephone conferencing is at the heart of building good communication in the team, with a weekly phone conference attended by representatives of its main working groups. The purpose of the conference is to exchange and update on progress and to discuss team issues. The agenda for the meeting is created by conversation in the asynchronous BB and any papers are made available in the community or by e-mail. In addition, other resources that would be used in a face-to-face meeting or diagrams that may be created on the 'fly' are also circulated; these visual aids to conversations require thought and preparation in advance of the meeting. Phone conferences are used by smaller teams and action groups to convey information to the wider community - often via the central team acting as the 'hub'.

Different phone systems have been experimented with. They fall broadly into two categories, those where the host phones out to the participants and those where the participants phone into a password protected 'meeting room' hosted by a third-party organization. Experience has shown the latter to be a far more efficient, albeit more expensive, option as the onus is on the participants to join the meeting and rejoin themselves, minimising the disruption to the overall meeting should they experience difficulties.

Systems have also been established where phone conferencing is integrated with web-based sharing of documents and interactive whiteboard tools. Frequent phone conferencing helps to connect the team and promotes engagement in team activities rather than the sometimes more isolated world of the text-based bulletin board.

A chair leads the phone conference meeting, balancing the contributions of all the speakers. Identifying each speaker as positions on a clock face allows

Table 3: Lessons from the Community's Use of Telephone Conferencing

- Use frequently
- Chair to ensure contributions from everyone
- Use a clock face to position participants
- Verbally check individual action points and agreements with all present
- Have a minute taker with a hands free telephone
- Set strict time limits
- Circulate agenda with attached discussion documents and other supporting resources and aids to the conversation

participants to have a visual image and the chair not to miss asking for contributions from each person in turn. A minute taker is essential. Minutes are posted, as the meeting progresses, in the same asynchronous conversation that was used for the agenda. The minute taker works at a hands-free telephone, so that they can type and listen. Table 3 lists lessons from the community's use of telephone conferencing.

The phone conference, a relatively recent addition to this team's armoury of tools, is an essential resource for providing the social bond between team members and for establishing the nuances of meaning and purpose that define the community's practice. Supporting the asynchronous work, the phone conference's regularity provides a weekly marker for the team's work.

Synchronous Group Discussion: Text-Based Online Discussions

Synchronous online conversations in text have been used by the community, taking advantage of First Class conferencing software, MSN Messenger and other software platforms. At first, these discussions took place on a weekly basis at a fixed time. This reduced in line with need. No agenda was set; the meetings were seen simply as a means of sharing the week's experiences, both successes and setbacks. These events served to promote the social maintenance of the group, by 'mending fences' where the pressure of the previous week had caused friction. They also played a part in building cohesiveness in the team and reducing the feeling of isolation. Latterly, they have become an informal way of communicating used by small groups of individuals, particularly to solve problems, clarify a point raised in another form of communication or relieve any sticking points in actions that had been planned.

This small group use of synchronous messenger services, which is a form of 'instant messaging', has contributed hugely to reducing feelings of isolation as it increases social awareness. Remote members report benefits as being able to ask questions of colleagues that require rapid answers and to have social conversations. This use can be compared to that of talking to colleagues on an

Table 4: Lessons Learned from the Use of Synchronous Online Discussion

- Encourage synchronous discussion between groups and individuals
- Chair and structure the discussion firmly
- Save discussion text in an archive

adjacent desk, when making a cup of coffee at the machine or in the kitchen or around a water cooler. Many of the remote members log onto the system at the start of the day and leave it running throughout, setting the controls to show whether they are at their computer or 'away'. The presence of others on the system is reported as giving a feeling of 'virtual co-location', supporting the social cohesion of the community. Table 4 lists the lessons learnt from the use of synchronous online discussion.

Synchronous Group Discussion: Full Use of Technology

Monthly meetings are held for all staff at Ultralab. Those at Chelmsford can attend face-to-face, whereas for remote community members the meetings are broadcast live over the Internet. This uses a combination of technology - video/phone conferencing, synchronous chat and, most recently, desktop-sharing applications. Video and audio are streamed using 'iVisit' to provide a 'video wall' of images of several remote workers and a view of the room used for the meeting face-to-face. Applications such as Webex and NetMessenger have enabled sharing of computer desktops between remote workers. These allow numerous participants to give over control of their desktop over to a presenter for demonstrating a piece of software. Further, documents can be worked on collaboratively with these applications. The use of technology in this way is in its infancy and is still not technically robust.

Phone conference kit allows remote workers to participate through audio and an ongoing synchronous chat is maintained in First Class where all can contribute, ask questions and seek clarification. Effective use of this requires 'spotters' in the face-to-face meeting who relay questions and contributions to the whole meeting where appropriate. In addition, a couple of 'writers' keep an ongoing description of points made, agreements, etc. This stream of text forms the basis for a subsequent digest of the meeting.

Other synchronous activities have been used for collaborative working over a short timescale. For example, one exercise was to analyse data collected in a collaborative team research journal. The discussion centred upon creating categories of data. Ideas were shared online, small groups discussed them using instant messenger and telephone, and responses were posted into an asynchronous text-based conversation. A summary of the discussion and action points was drawn out by individual members appointed to the task.

Table 5: Recommendations for the Use of Diverse Technology for Synchronous Discussions

- Invest in technical support
- Invest in good quality equipment
- Use spotters to support the remote participants
- Use writers to capture and summarise the conversations

Video conferencing is being piloted amongst remote members of the facilitation community, being dependent on connections and hardware. It is heavily dependent upon the user's 'bandwidth' (connection speed) for the quality of the user's experience, and broadband access will, in the future, become essential.

Table 5 lists the recommendations from our practice for the use of these diverse technologies.

Synchronous Discussion: The Mobile Phone

Each member of the facilitation community is issued a mobile phone. This enables conversations to take place with clients and contacts in the online project areas, using both text and voice messaging. Members of the community have also found them useful for the retrieval and sending of email, and accessing of the Internet.

Naturally, considerable use of the phones is made for one-to-one discussions between community members. This is felt to be an essential channel of communication, giving access to each other on a 24-hour basis, no matter where in the country they are located.

Table 6 lists the recommendations from our use of mobile phones in developing the social cohesion of the community.

Face-to-Face Meetings

Face-to-face meetings, in the form of conferences, are held bimonthly by the community. They are seen as an integrated whole of the community practice, a natural extension of the overwhelming majority of the community work, which is carried out in a distributed way.

Table 6: Recommendations for the Use of the Mobile Phone

- Use mobile phone technology to connect team members
- Be conscious of the appropriate time to use phone conversations - sometimes it is much better than email or community conversations

Table 7: Purpose of Face-to-Face Conferences

- Integrate face to faces with online activity
- Optimise the use of time at face-to-face meetings by having online discussions before, during and after the event

Asynchronous conversations are used to lead into the face-to-face as preparation and to take further issues and plans following the face-to-face. The agenda is drawn up in negotiation between the remote members of the community and the centrally based project leaders. Striking the balance between the two parts of the community is important so that the whole community has a feeling of ownership of the agenda, while also addressing issues that are more pressing from a project leadership and management perspective. This requires a great deal of discipline by the community, with all members fully engaging in the process. Table 7 lists the purposes of face-to-face conferences.

The face-to-face conference works in the same way as the phone conference in developing the team's negotiation of purpose and meaning. That it does so over a much longer period, and with wider participation, allows the CoP to develop in a much more secure way, with its procedures and purposes reified by all.

Building Commitment, Ownership, Engagement and Focus in a Distributed CoP

The use of technology to build effective communication among distributed workers is not the only area of practical concern. There is also a major area of practical activity focused upon building commitment, ownership and engagement with the core focus of the team's work. These factors affect any team collaboration. Wenger (1998) emphasises the need for engagement in CoPs, but the engagement required here is more complex when a team is distributed and individuals could, potentially, work in isolation.

However, maintaining communities at a distance with a large and diverse project is difficult. We have already outlined how having a mission or focus for our work and building a culture helps to establish commitment, engagement and ownership. In addition, in building this culture, we are concerned with sharing vision and values, planning through involving people, working collaboratively and developing an identity.

Vision and Values

According to Senge (1990, p. 206), 'Shared vision...is a force in people's hearts.' Binding the community together is a sense of purpose and direction,

Table 8: Guidelines for Collaborative Planning

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| <ul style="list-style-type: none"> • Negotiate clear outcomes • Negotiate priorities • Negotiate resources required • Negotiate review process • Negotiate tasks that will achieve outcomes • Negotiate what will count as evidence of achievement • Negotiate who will be involved in each area • Negotiate who will do what by when |
|---|

underpinned by a set of values. In the wider Ultralab team, the commitment is to building and researching delightful learning using new technologies. The facilitation community is committed to working in collaborative partnerships within Ultralab and with other organizations and individuals. The notion of empowering users is central to our work and this extends naturally to the members of the facilitation community itself.

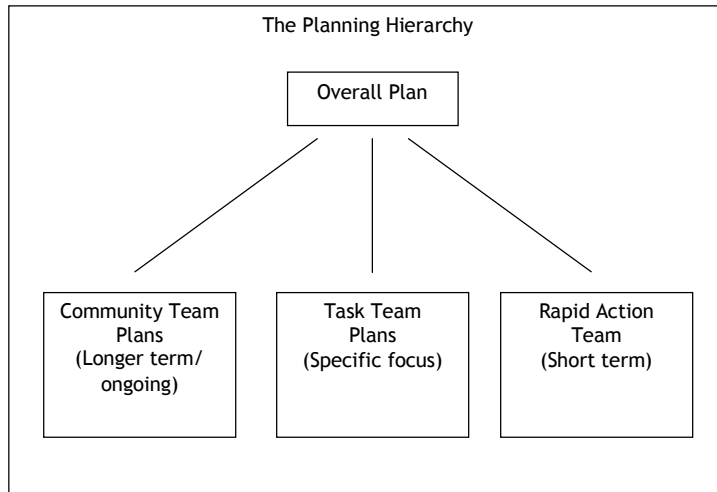
Team meetings, both online and face-to-face, are frequently characterised by discussions about what the facilitation community is trying to achieve and the scope and definition of its work. This vision is established through the description of the community's work to others, and the interpretation and negotiation of these principles in its daily work. This is particularly evident in the processes used for planning.

Planning Through Involvement

One of the major and regular themes in the cycle of discussions is the process of planning. The facilitation community's work is both trying to achieve development of school leadership communities and to research that development at the same time. Central to the approach and a key to gaining involvement and commitment is the process of collaborative planning.

Fullan (1991) refers to the 'meaning' of educational change and sees a process of change focused on developing understanding. In this he argues that plans are important but do not necessarily on their own lead to change. Participants need to understand what their changed practice looks like. Wenger (1998) also regards negotiation of meaning as an important part of the development of understanding practice.

Thus planning in our CoP might be described as a process of negotiation and peer review, where intentions are focused and refocused on the key objectives of what is to be achieved, how it is intended to be achieved, and who is going to do what. The process involves using the technology discussed earlier to debate, dialogue, discuss and indeed argue. In this process, clarification and ownership develops. Guidelines developed from our practice are shown in Table 8.

Figure 2: The Planning Hierarchy

The Planning Hierarchy

Large complex projects, such as that engaged in by the facilitation community, have different levels of planning. We distinguish two or three distinct levels. These levels have developed over time and inform the working practice of the community. Through understanding and sharing in the development of these levels and interactions, remote community members become closer to its core.

Firstly, there is the level of the whole community and this forms the overall project plan. The detail, however, is found in the plans of various sub-groups, for example groups responsible for maintenance and development of school leadership communities, teams focused on specific medium and long-term tasks and rapid action teams (RATs), who are formed to achieve specific goals in short-time periods.

Peters and Waterman (1986, p. 126) regarded the small group as ‘the basic organizational building blocks of excellent organizations’ and valued their flexibility, adaptability and ability to focus on a task. In the Ultralab projects, we observe many small groups and teams, and co-ordinating them all is an issue that is at the basis of the approach to planning.

Clearly, co-ordination between plans of the various groups and the overall plan is a central feature of much of the negotiation. This is facilitated by the ‘central team’ of four Chelmsford-based staff focusing on specific areas, groups and teams, and taking responsibility to co-ordinate these plans with the emerging whole project plan (see Figure 2).

To assist in this process, the community makes use of a range of bespoke and project-specific databases, implemented either in-house using Filemaker Pro

or hosted externally by project partners. These provide all members of the community with collaborative tools, which allow for the sharing and refinement of plans and for the sharing of data.

Collaboration: Research and Writing

Planning actions together, focused upon an agreed mission, leads to collaborative action by the team as a whole, and within sub-groups. The facilitation community has a clearly defined purpose - the development and research of the domain of online learning communities. Focusing this even more, it is engaged in collaborative research and writing, using the asynchronous online environment as a shared journal, archive of data and forum for analysis. A key feature has been the presentation of papers for peer-critical review. This has occurred at face-to-face discussions and in online discussions.

Distributed Leadership

Inclusive and effective leadership is distributed (Miles & Murray, 2001). This is manifested in the community of facilitators by the establishment of numerous working teams and sub-groups. It could be argued that many of these also show signs of being separate CoPs, but that is beyond the scope of this chapter.

These teams and sub-groups have different functions, and they have different leaders. These leaders are coordinated by the central team and are engaged in two-way dialogue to enable this co-ordination. They also feed reports into the weekly meeting process and post them online, inviting the team, the wider facilitation community and Ultralab staff members to comment.

Building a Community and Reducing the Feeling of Isolation: Presence and Identity

Team building and how it fosters a sense of community can be problematic at the best of times and it is, perhaps, more difficult and requires greater attention when distributed. For our community, the particular issues that have arisen are how to minimise the feeling of isolation, how to foster collaborative working and a sense of the integration of the remote and co-located teams. By presence, we mean a sense of audience, feeling of a shared place and development of identity that we take for granted at face-to-face meetings or when we work together in a shared space. As well as work-related tasks, there is also the social maintenance role of this space.

Tuckman's (1965) widely used model for team building, "forming, storming, norming, performing", predicts the stages that a team must pass through as it moves from a loose collection of individuals to a cohesive group. Parker (1990) identifies many features that mesh well with a CoP approach such as the

opportunity for “participation”, “civilised disagreement” and “open communication”. There are however difficulties with seeing a structured ‘formal’ team as a CoP in that their informal nature creates a tension in defining “clear roles and work assignments” (Parker, 1990), or “challenging objectives which everyone understands and wants to achieve” (Honey, 1994).

By definition, participation in a CoP is voluntary; this may be ideal, but it is not an option for an organization basing its organizational and management process around CoP philosophy. The concept of contracting (Cockman, Evans & Reynolds, 1992) when working as a member of a team sits ill at ease with the notion of voluntary participation in a CoP. The concept of Legitimate Peripheral Participation (Lave & Wenger, 1991); that is, an individual’s relationship to the core of a community, whose practice is made accessible by its members, is problematic in a team working towards goals and objectives. The ability to simply withdraw from a conversation or a community and, hence, move away from the core is unhelpful in a workplace situation.

Identity

The use of technologies, working in a remote team and the sharing of domain, practice and community require members of staff to establish an identity as a member of the Community of Practice (Wenger, 1998).

Co-located staff expose their identity in a range of environments including the ad hoc comments about the work in progress, in team discussions and in social interactions. Text-based communication does not always convey a person’s full identity and therefore identity can become an ‘accident of the environment’. Furthermore, identity is located in tasks and therefore can arise from those tasks that we are closely associated with. For example, a ‘training team’ can quickly be associated with a particular identity. There is also the identity the CoP member would like to portray.

Care is needed to ensure that the sparseness of the medium (Bradshaw, Chapman & Gee, 2001) does not give a false impression of the meaning and identity of contributors. The remoteness of the team and the tension between these identities require constant checking and reaffirming of purpose and, hence, identity.

Goal Slippage

Constant peer monitoring and review is a central feature of the distributed community. Distribution can mean, however, that goals can be displaced and focus lost quite easily. This is particularly true in the work of establishing online communities. The software used is based upon the principle of empowering users to create spaces and conversations. We have noted that this ease, although a fundamental principle of the work of the facilitators, can lead to the goal of creating beautiful spaces and activities rather than focusing on the more difficult

task of working with potential participants to ensure that they contribute to the community. We have termed this online goal slippage.

This slippage is accelerated where teams are working remotely, unless the community continually shares and reviews its goals. This is a key function of the central team and a responsibility of all members of the community. This constant review and negotiation can be a source of friction for those members who favour a more autonomous and pragmatic approach to their day-to-day work.

Clarity of Communications and Developing Group Understanding

The harsh nature of typewritten text in an online environment is well understood, and the oft-quoted maxim of always assuming good intent when reading an email or contribution to an online conversation is good enough advice to be repeated as a mantra at every opportunity. Despite this understanding, the community still suffers periodically from misinterpretation and the subsequent discordance that it brings. On the other hand, tension can be good to help unleash creativity (Wenger, 2002) and if a culture of critical feedback is the norm, then messages can be seen as healthy 'plain talking'.

Moving Forward Together

We have also found that careful thought needs to be given when assessing the time taken for particular conversations and therefore progress towards objectives (Bradshaw, Powell & Terrell, 2002).

Our experiences confirm the observations made by Rheingold (2000) that online communities are particularly suited to generating ideas and exploring positions, but less good at achieving consensus or making joint decisions. The ability of individuals to choose to withdraw from conversations and activities and to hide in the anonymity of online space requires explicit checking of agreements. Silence cannot be taken as assent. This tendency, and its subsequent time consumption is countered by the practice of posting direct messages, making it explicit that feedback is required, rather than more general requests, which assume collaborative teamwork will take place.

CONCLUSION

Developing a remote and distributed team into a CoP is a process that takes time and that is aided by the use of technologies. Even when the members of the team are engaged in a common task, the dislocation caused by not working in a common space must be overcome by continually checking on goals and working practices. Of prime importance are the methods of communication employed to

build cohesion and to develop the community's shared understanding of goals, development of knowledge and sense of belonging. Through a combination of synchronous and asynchronous tools, reification of working practice, participation in daily discussions, task teams and distributed leadership, the facilitation team at Ultralab has overcome these challenges. By negotiating meaning in this way, the team shows signs of being a CoP according to Wenger's terms (1998).

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