Some Research Challenges for Studies of Virtual Communities Using On-Line Tells

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ABSTRACT

This article reports on a study of learning and the coordination of activities in a geographically distributed community (a research consortium) using survey / Social Network Analysis methods combined with interviews. This article comments on and expands some of the important issues that were raised. After outlining the wider context, it highlights two broad themes related to research in the area of Virtual Communities: the nature of the communities themselves and the way in which they are studied. Following this, four areas for future research are outlined: the continuing role of face-to-face communication in Virtual Communities; the significance of the dual nature of such groups; the importance (or otherwise) of the structure of such communities; and the role played by exogenous factors. The article concludes with some comments on where this field relates to the debate among social theorists about the role of agency and structure in human activities.

Keywords: Agency, Communities of Practice, Face-to-Face Communication, Geographically Distributed Community, Methodology, Structure, Virtual Communities of Practice

1 INTRODUCTION

The article reports on a study of learning and the coordination of activities within a geographically distributed community (the research consortium) that is involved in conducting and managing collaborative research. The consortium was created by the Canadian federal government to encourage multidisciplinary research and innovation in the area of water related issues such as watershed and ecosystems research, water infrastructure, threats to water supplies and water treatment. It consists of around 140 academics and practitioners dispersed across the country. The academics are drawn from a wide range of disciplines and cover many different research areas; the practitioners include employees from various levels of government, industrial partners, conservation bodies and members of Non-Governmental Organizations. The membership of the community changes over time and with projects and, although a number of the groups engage in face-to-face meetings of various sorts, the group as a whole is described as a Virtual Community of Practice.

Although the research consortium has a number of unique features, it is also an example of the wider phenomenon of virtual (i.e. geographically distributed) groups that work together and are described variously as...
Virtual Teams, Task or Project Groups; Virtual or Electronic Communities of Practice and Knowledge Networks or Networks of Practice (Dubé, Bourhis, & Jacob, 2005; Jarvenpaa & Leidner, 1999; Vaast, 2004; Wasko & Faraj, 2000). The principal objective of this article is to take some of the themes highlighted by Dimitrova and Koku and place them in a wider research context. We will begin by examining two fundamental questions that any research into this area must face.

2 TWO BROAD RESEARCH QUESTIONS RELATING TO VIRTUAL COMMUNITIES

Before looking at the issues raised by Dimitrova and Koku’s article, it is perhaps worthwhile to step back and look at some of the more general problems faced by research into Virtual Communities. Exactly what do we mean by Virtual Communities and what are the most appropriate ways to study them? Although the questions might seem banal, pausing for a moment to reflect on these issues will help to highlight some of the key difficulties that are faced in attempting to examine the themes for future research that are contained in the following section.

2.1 What is the Nature of Such Groups?

People working together as geographically distributed groups is not a new phenomenon as such, however the explosive growth of digital technologies, and the communications revolution that followed (Cairncross, 1997; McLuhan & Powers, 1989), opened the door to the myriad of “new organisational forms” that can be found in the current literature. Although the term “Virtual Community” only came into popular use about a decade ago following the publication of Howard Rheingold’s book (Rheingold, 1993), this new concept has been quickly accepted and has become part of everyday life (Sayago & Blat, 2010). The notion of “Virtual” working has become commonplace.

Although the notion of Virtual Communities may be commonplace, this does not mean that it is fully understood. While co-located, face-to-face groups have been the topic of study and conjecture for many years, their similarities to, and differences from, “Virtual” groups is far from clear. For example, although many of the early studies of Virtual Communities focused on the issue of identity (Bruckman, 1993; Turkle, 1995), understanding how the sense of identity that characterizes the “esprit de corps” of co-located groups (who share the same experiences in the physical world) translates to the virtual world (where the nature of the shared experience is much less tenuous) remains vague.

2.2 How Do We Study Them?

If the way these groups function is not well understood, how then should we study them to improve our knowledge? Geographically distributed groups that rely on technologically mediated forms of communication and computer based communication in particular, offer opportunities to collect data that do not exist in “natural” groups. Because interaction takes place via some form of technology, the traces of that interaction are easily accessible and available in a form that facilitates processing and analysis. However, although messages and patterns of interaction between individuals can be captured in volume and analysed in detail, as with the groups themselves, the limitations of this approach is not always well understood. The lure of quantity and the illusion of accuracy to three decimal places produced by Social Network Analysis (SNA) can sometimes cloud the true value of such data.

The data contained in on-line tells is a by-product of on-line communication, the residue that remains after an activity has taken place, they are not the activity itself and do not tell the whole story. Measuring the frequency of communicative acts may show something is happening but does not tell us much about the nature of that activity and the meaning it holds for the participants. Uncovering these meanings can be problematical both from the point
of view of privacy and from the point of view of convenience. Even if members of a group are willing and able to share this information with others, few will be prepared to spend the time it takes to be interviewed or to fill in a questionnaire and although more traditional social science methods, such as ethnographic studies, can provide some of the missing detail, they are costly and time consuming (Clark, Ting, Kimble, Wright, & Kudenko, 2006).

3 FOUR POTENTIAL RESEARCH THEMES FOR FUTURE WORK ON VIRTUAL COMMUNITIES

Having looked at the broader issues, we now turn to the specific themes for future research that appear in this article.

3.1 The Continuing Importance of Face to Face Meetings

As we have noted, the whole notion of Virtual Communities is relatively new, nevertheless, a recurring theme in the literature on virtual groups is the continuing importance of face-to-face meetings (Akkerman, Petter, & de Laat, 2008; Coakes, Coakes, & Rosenberg, 2008; Jarvenpaa & Leidner, 1999; Kimble & Hildreth, 2005; Kimble, Li, & Barlow, 2000). Why are face-to-face meetings important? One way to find an answer is to look at what happens inside such virtual groups and to contrast the need for coordination between members (the factual exchange of information) with what is required for learning (the sharing of ideas and co-construction of common knowledge).

Carlile (2002) argues that different forms of coordination are found in collaborative working. When a situation is familiar and routine, a simple sign, perhaps only a single word, is all that is needed for a group to coordinate its activities. This type of syntactic coordination can be supported by even the simplest form of electronic communication. As the complexity of the situation increases, the members of the group are faced with the need to establish a common understanding of what is happening. There is a need for greater informational richness in communication, which may require the use of more sophisticated forms of communication. Finally, in situations that involve change, negotiation and compromise, coordination between actors becomes difficult to achieve, as change can prove costly.

In order to learn, most people need time to reflect and a safe environment in which to experiment. By working together over a period of time the members of a group are able to develop a sense of trust and shared identity that increases their ability to share and learn from each other. Once a group develops a sense of trust and mutual respect, then people feel able to share their thinking, the reasons behind their conclusions, and even the doubts that they have about their conclusions. Together they can build on each other’s ideas, create new ideas, and develop new insights (Kimble, 2011). Consequently, most “Virtual” communities tend to operate in multiple modes: sometimes face to face, sometimes via electronic communication, sometimes interacting with each other directly and at other times working as individuals. As Dimitrova and Koku observe, the most intense learning experiences tend to be restricted to face-to-face meetings and workshops.

3.2 The Importance of Structure in Virtual Communities of Practice

Looking at learning leads us to consider the role played by Communities of Practice in this article. The term Communities of Practice was first coined in the book Situated Learning: Legitimate Peripheral Participation (Lave & Wenger, 1991). The book was not really about Communities of Practice as such but about how unstructured and informal learning took place around shared activities in small co-located groups. The relationships in the groups they studied were essentially Master - Apprentice relationships. Lave and Wenger used the term Legitimate Peripheral Participation (LPP) to describe the dynamic of the movement from apprentice to master; “Community of Practice”
was used simply as a convenient shorthand to describe the groups in which LPP took place.

Since then, as Dimitrova and Koku note, the term Community of Practice has now been “developed and refined to encompass the broad reality to which it is now being applied”. Brown and Duguid (1991) took Communities of Practice from their original small, informal setting and placed them within the context of large commercial organizations. Wenger’s later works (1998, 2002) focused increasingly on the structure of the group rather than on how the learning within it took place. New terms such as Constellations of Practice (Wenger, 1998), Networks of Practice (Brown & Duguid, 2000) and Electronic Communities of Practice (Wasko & Faraj, 2000) began to appear. Communities of Practice themselves became CoPs as others struggled to classify the structure of the different types of groups they found. Progressively, new terms such as Virtual Communities of Practice (Dubé et al., 2005), Electronic Networks of Practice (Wasko & Faraj, 2005) and Collectivities of Practice (Lindkvist, 2005) were added to the CoP lexicon.

While there is undoubtedly value in looking at structures, patterns of communications and functional relationships, the question might be asked, “Is there too much focus on the structure of the group rather than on what is happening within it”? For example, what is the qualitative difference between the interactions of the core members and those of the distributed periphery in Dimitrova and Koku’s study? What is the nature of the practice of the community at these different levels?

### 3.3 The Apparent Dual Nature of “Virtual” Groups

While it is important not to lose sight of the raison d’être for the group, one of the advantages of focusing on its structure as revealed in online tells is that it helps to highlight what might otherwise be hidden patterns of interaction within the group, such as the “dual” nature of Virtual Communities of Practice in Dimitrova and Koku’s study. This is not the first time that this type of distinction has been noted, but thanks to the use of SNA based techniques, the scale and scope of the duality can now be put into sharper relief. However, while it has shown that a “Virtual” Community of Practice exists in more than one dimension, it does not address the issue of why this duality exists.

Much of the early work on Virtual Communities focused on the issue of individual identity in virtual environments and the problems this posed for establishing trust relationships (Donath, 1999). From the point of view of the group, identity helps to establish shared meanings through providing a common perspective, without which it becomes difficult to share knowledge effectively as, unless shared meanings can be established, even “common sense” words and terms become open to different interpretations (Duguid, 2005). From theory, we can argue that the dual nature of the groups in this study result from what they are trying to achieve, building the trust and mutual understanding needed to learn as part of a community or simply coordinating a series of events across geographically distributed groups. Validating this theory through empirical observations however poses different problems.

We noted above that different methodological approaches produce different types of data and that focusing on the residue of an activity rather than the activity itself will not tell the whole story. While quantitative techniques such as SNA can provide data about the scale and scope of a phenomenon, we need to turn to qualitative techniques to uncover more detail about what is happening. Ribeiro et al. (2010) used Grounded Theory to show that what appeared on the surface to be a stable Community of Practice actually consisted of several “Quantum” Communities of Practice that repeatedly came into, and disappeared from, view. Such communities could remain quiescent for months at a time and would be difficult to observe and interpret using only techniques such as SNA.
3.4 The Importance of Local (Non-Structural) Factors

The discussion above paints a picture of Virtual Communities in general, and Virtual Communities of Practice in particular, as complex entities where simple epithets such as “Virtual” or “Community” do not do justice to the range of phenomena to which they are applied. While some have sought to address this by attempting to develop ever more refined distinctions between different types of community, this commentary has argued that we should not lose sight of what happens within the community in the struggle to identify its structural characteristics. This final section seeks to argue that even focusing on what happens within the community may not be sufficient to describe its behaviour adequately.

A persistent criticism of the literature on Communities of Practice is that it ignores or underplays the role of exogenous factors such as externally imposed power relationships and presents a neutral and idealised view of the way such groups function. The distinction made between the funders and the funded in Dimitrova and Koku’s study is a clear example of this. Geographically distributed communities such as the research consortium in the study do not exist in a vacuum and the explanation for what happens does not lie solely within the group.

The majority of the literature in this area tends towards what Tsoukas (1996) describes as a taxonomic approach: seeking to discover global, or at least generic, solutions. He claims however that this approach is fundamentally flawed (Tsoukas & Chia, 2002); quoting Boden (1994) he argues that the structures that shape how knowledge is shared are always and inevitably influenced by “immediate circumstances and local agendas” (Boden, 1994, p. 18). He argues that where categories and taxonomies exist, “The stability of their meanings is precariously maintained” (Tsoukas & Chia, 2002, p. 573).

Several studies exist that illustrate this. Teigland and Wasko (2003) note that, for political and professional reasons, groups of professionals will readily share knowledge related to their profession within their own network but will not share this knowledge with outsiders. Swan, Scarbrough and Robertson (2002) and Hislop (2003) observe that Communities of Practice set up to share knowledge can become “silos” where the knowledge they contain never crosses the boundaries of the group. Similarly, Kimble et al (2010) combine two independent studies to show the same dynamic of political interplay between, on one hand, what is acceptable within the group and, on the other, the interests of powerful institutions, groups or individuals outside.

4 CONCLUSION

The goal of this article was to take some of the themes highlighted by Dimitrova and Koku in their article and place them in a wider research context, that of Virtual Communities in general. There is however, another level at which this could be considered. The editorial for this special issue asks the question:

“Is it communities as pre-existent social structures that define the activities members engage in, or is it the activities themselves that generate a community by forming the “glue” that holds together a configuration of people, artefacts and social relations?”

In many ways the arguments that were put forward above could be recast as another instance of the long running structure-agency debate among social theorists such as Giddens and Archer (Archer, 2000; Giddens, 1979): to what extent can human behaviour be explained by external factors such as social or organizational structures and to what extent are humans “free agents” capable of independent thought and autonomous action?

The concepts of structure and agency are theoretically useful but methodologically clumsy. Few would argue that, whatever the structures that surround them, individuals do not retain a certain level of agency, i.e. the ability to choose a different path to that dictated by the
structures they face. Similarly, few would argue that an individual is able to transcend the social and emotional conditioning imposed on them by their surroundings and make truly autonomous decisions. In practice, it is the interplay between agency and structure that is of interest rather than the crude concepts themselves, and it is here that the methodological challenge lies.

By using survey / SNA methods combined with interviews, Dimitrova and Koku placed the emphasis on the structural dimension rather than on the thoughts and motivations of the actors involved. This approach has value in that it has highlighted the size and scope of dual nature of such communities. Although this has been noted in previous qualitative studies, the use of survey and SNA methods provides more tangible evidence of its scale and scope. However as Clark et al. (2006) have demonstrated, quantitative and qualitative data-gathering methods can be used together to enhance our understanding of what is happening in virtual settings; the challenge for future research in this area is find ways to combine these two approaches and throw light on the interplay between the thoughts and motivations of the actors in virtual environments and the constraints and opportunities of the structures that surround them.

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