



**The use of Actor-Network Theory and a Practice-Based  
Approach to understand online community  
participation**

A thesis submitted in partial fulfilment of the requirements for the degree of  
Doctor of Philosophy

Information School  
The University of Sheffield

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May 2013



## Abstract

Participation in online communities is problematic. Take up of community technologies is often patchy and subject to resistance, particularly in organisational settings. Previous literature, mainly influenced by a cognitive tradition, tends to explain this either through features of the technology such as interface design or through individual motivational structures. This study explores the insights Actor-Network Theory (Callon, 1986; Latour, 1986; Law, 1986c; Law, 1986b; Law, 1992) and a practice-based approach (Gherardi, 2000; Orlikowski, 2002; Reckwitz, 2002; Schatzki, 2002; Nicolini et al., 2003; Schatzki, 2005; Gherardi, 2009b; Feldman and Orlikowski, 2011; Nicolini, 2011; Cox, 2012) provide to more fully explain participation in online communities.

The study focuses on the failure to establish an online community supported by a collaborative technology as part of a Human Resources project within a multi-campus University in Mexico. A range of methods for data collection were used, however semi-structured interviews were the main basis for analysis. Initially, analysing communication activity in the community showed low levels of participation, leading to conduct 30 interviews with actors playing different roles during the project; 17 interviews were conducted in the initial stage of the study and 13 interviews in the final stage. Work-related documentation and observation in online meetings were also used as sources of data. Actor-Network Theory (ANT) and a practice-based approach (PBA), both members of the praxeological family of theories (Reckwitz, 2002), were used in sequential order to inform the analyses.

During the first stage of the research, ANT was used to explore how a group of actors aimed to promote participation in the online community by developing different strategies to enrol the collaborative technology supporting participation into their network. By strengthening the relations between the collaborative technology and other relevant actors within the network participation was expected to occur. The analysis reveals that lack of participation arose from an inability of the technology to develop strong relations with key actors; processes of betrayal from human actors to the technology; failure of strategies and lack of political power from the actors sponsoring the community; incomplete internal translation of the technology; and existence of competing actors.

In the second stage of the research, insights from PBA were used to further explore how pre-existing practices shaped participation in the online community. This analysis showed that factors shaping participation included the interconnection of HR practices to other practices of the University; the existence of habits and the sense of routinisation and habituation reflected in HR practitioners' patterns of interaction and media use; the concern of practitioners that participation in the online community did not support the enactment of shared knowings critical in the performance of HR practices; and the features of HR practices being at odds with participation at the online community.

Although offering distinct accounts, the findings of ANT and PBA offered two perspectives that deepen our current understanding of participation by foregrounding the relational and collective, historical and emergent, and highly contextualised character of participation. On the basis of the findings, the study provides a series of considerations that might be of relevance when conducting praxeological research to study organisational phenomena. Bringing power issues to the fore of the analysis, the use of alternative approaches to better deal with power concerns, the use of ethnographic methods, the adoption of different angles from observation, acknowledging the emergent and historically-shaped character of phenomena, and the need to foreground the socio-material character of phenomena are highlighted as relevant considerations.

## Acknowledgement

There are many people to whom I would like to express my gratitude for supporting me throughout my research. Among those, I would like to thank:

My supervisor, Dr. Andrew Cox, for his patient guidance and continuous encouragement, throughout my doctoral study. Thank you Andrew for all the friendly and invaluable conversations we had.

The many employees of *INTEC*, who were willing to be interviewed and without whom this thesis would never have been possible.

The administrative and technical staff of the iSchool for their support throughout my research.

The National Council on Science and Technology of Mexico (CONACYT), and The Secretary of Public Education of Mexico (SEP) through the General Direction of International Affairs, for providing the necessary financial support to undertake this research; their support is gratefully acknowledged.

My friends and colleagues in Sheffield for all the good moments spent together and the helpful conversations; you all helped make my dissertation process a pleasant and valuable experience. I would especially like to thank Dr. Blanca Garcia, who motivated me to study abroad.

My family in Mexico, my mom and dad, my brothers and sisters in law, my nieces and nephews for their love which always has given me strength to face the challenges of life.

Ingrid and Tuuli. Thanks my lovely wife for your care, love, and passion; and for giving me the time and space to work in the 'lab'. Tuuli, my dear daughter, though you are 'on your way', your forthcoming birth itself was a major impetus for the completion of my thesis.

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# **1. INTRODUCTION**

## **1.1 Background and significance**

One of the advantages of the Internet is that it has facilitated the emergence of online communities with a wide range of beneficial purposes. These communities for example, offer people the opportunity to provide emotional and informational support to others with similar diseases (Cummings et al., 2002; Turner et al., 2001); to organise participation of volunteers supporting survivors of natural disasters (Torrey et al., 2007); to work together in the development of open source software of high quality (Lakhani and von Hippel, 2003; Lee and Cole, 2003); to exchange stock-related information (Campbell, 2001; Gu et al., 2007); to discuss their hobbies (Baym, 2000).

Given the benefits people can gain from their engagement in these online communities on the Internet, organisations have seen the potential value from their use to enable sharing information and knowledge across organisational boundaries and geographical distances (Constant et al., 1996; Tiwana and Bush, 2005; Vaast, 2007; Hara et al., 2009). Within the corporate context, the use of technologies supporting online communities has assisted organisations to support their knowledge management initiatives (Ardichvili et al., 2003; Pan and Leidner, 2003; Tiwana and Bush, 2005; Venters, 2010); to strengthen their innovation processes via company-hosted user communities (Jeppesen and Frederiksen, 2006; Jeppesen and Laursen, 2009; Dahlander and Frederiksen, 2011); to build brand loyalty (Porter and Donthu, 2008); to enhance communication during periods of organisational change (Stoddart, 2007). However, despite the increasing interest in online communities clearly reflected in the significant investments different organisations have made to adopt technologies supporting online communities (Jarvenpaa and Staples, 2000), the reality is that once introduced many of these technologies remain unused (e.g., Orlikowski, 1993; Schultze and Boland, 2000; Storey and Barnett, 2000; Bansler and Havn, 2003; Butler, 2003; Landqvist and Teigland, 2005; Baek and Schwen, 2006; Restler and Woolis, 2007).

Those studying online communities have reached a general agreement that members' participation is the biggest challenge and the most critical aspect for online communities to succeed (Butler, 2001; Ardichvili et al., 2003; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007; Ardichvili, 2008). This interest in participation is reflected in the fact that in

the last two decades a considerable number of studies have been conducted in both the corporate context and in non-organisational environments to understand why some online communities fail and others succeed. Participation – for the purpose of this study – is understood as including a range of different activities in which members of the online community can engage. It can be seen as a spectrum including such activities as contributions of content (e.g., uploading documents, posting messages and responding to others' messages), administrative activities (e.g., control and encouragement for appropriate behaviours), and audience behaviours (e.g., consuming the content of the community without necessarily posting or providing contributions) (Blanchard and Markus, 2004; Shah, 2006; Bateman, 2007; Butler et al., 2007; Johnson, 2010).

On the basis of this broad definition of participation, previous studies have sought to explain how individual-related motivations (Rheingold, 1993; Ardichvili et al., 2003; Bock et al., 2005; Kankanhalli et al., 2005; Tiwana and Bush, 2005; Chiu et al., 2006); community-related factors (Wasko and Faraj, 2000; Ridings et al., 2002; Ardichvili et al., 2003; van den Hooff and de Leeuw van Weenen, 2004; Porter and Donthu, 2008); structural characteristics of communities (Butler, 2001; Bateman, 2007; Butler et al., 2007); technology-related issues (Preece, 2001; Ren et al., 2007; Phang et al., 2009; Ren et al., 2010); and the context surrounding online communities (Baym, 2000; Cox, 2007; Gu et al., 2007; Dahlander and Frederiksen, 2011; Wang et al., 2011), affect online community participation.

Firstly, those studies explaining participation on the basis of individual-related motivations have shown, for example, how self-interested behaviours such as the need for individual intrinsic rewards such as recognition, reputation, enjoyment, self-efficacy, sense of accomplishment, and a strong desire for status and prestige, (Rheingold, 1993; Tiwana and Bush, 2005; Wasko and Faraj, 2005; Hsu et al., 2007); or in the need for extrinsic rewards as gaining higher bonuses, salaries, job security, more opportunities of promotion (Bock et al., 2005; Kankanhalli et al., 2005; Chiu et al., 2006), influence online community participation.

Secondly, previous studies have shown how participation is not only motivated by self-based considerations but also by motivations that are group-referent. For example, when knowledge is perceived as a public good, participation in online communities is also motivated by community-related interests such as reciprocity and social behaviours

(Wasko and Faraj, 2000), moral obligation and community interests (Ardichvili et al., 2003) and such aspects as trust, commitment and attachment (Constant et al., 1996; Ridings et al., 2002; van den Hooff and de Leeuw van Weenen, 2004; Porter and Donthu, 2008).

Thirdly, previous literature has also pointed to such aspects as community membership, communication activity (Butler, 2001) and role structure of community members (Butler et al., 2007) as having an impact on online community participation. Fourthly, previous studies have also helped understand how the design and such features as usability and sociability of technologies affect online community participation (Preece, 2001; Ren et al., 2007; Phang et al., 2009; Ren et al., 2010).

Finally, studies have also shown how aspects related to the context and social environment in which online communities are introduced are relevant to understanding participation. In this regard, aspects such as competition between communities (Gu et al., 2007; Wang et al., 2011); online community members' multi-memberships in different communities (Jeppesen and Laursen, 2009; Dahlander and Frederiksen, 2011); and the particular aspects of the professions and social environment where these communities are introduced (Baym, 2000; Cox, 2007), have been found as influencing online community participation.

The richness of these studies is reflected in the diversity of perspectives and informing theories they have adopted to understand participation. To name just a few, theories such as social cognitive theory (Bock and Kim, 2002; Chiu et al., 2006; Hsu et al., 2007); social capital theory (Huysman and Wulf, 2005; Kankanhalli et al., 2005; Chiu et al., 2006); social exchange theory (Bock and Kim, 2002; Kankanhalli et al., 2005; Wang, 2007; Faraj and Johnson, 2011); sunk cost theory (Tiwana and Bush, 2005); the technology acceptance model (Venkatesh, 2000); theories of social networks and Social Network Analysis (Wasko et al., 2004; Toral et al., 2010; Faraj and Johnson, 2011); critical mass theory (Peddibhotla and Subramani, 2007; Raban et al., 2010); and resource-based theory (Butler, 2001), have been used as the basis for analysis in these studies.

In adopting different theoretical perspectives these studies have served to enhance our understanding of the diverse factors influencing participation allowing a general agreement on what shapes participation in online communities to be developed (Faraj et

al., 2011). Though this agreement might have been achieved in theory, in practice, many online communities still fail to attract and retain members in order to remain alive over time, and so provide benefits to their members and the organisations hosting them. This situation in turn suggests the need for further research into which alternative perspectives can be offered through which our current understanding of participation can be deepened.

From a careful examination of previous online community literature, many of these studies seem to work on the assumptions of what has been labelled as cognitive approaches (Marshall, 2008); also referred to as studies following an *homo economicus* tradition (Reckwitz, 2002), or mentalist (Gherardi, 2000) or traditional/conventional (Geiger, 2009) perspectives. For example, previous studies tend to adopt cross-sectional designs that look at snapshots of participation (e.g., Wasko and Faraj, 2000; Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007), thus obscuring our understanding of its evolution and dynamics. Second, previous literature in the field has a tendency to adopt a positivist orientation when collecting and analysing empirical data with the attempt to provide causal explanations in the form of statistical relationships among variables and behaviours (e.g., Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007; Wang, 2007); however, this comes at the cost of abstraction that limits the ability of these studies to reflect the complexity of participation. Third, the tendency of previous studies to predominately focus on understanding what occurs inside the boundaries of communities (e.g., Wasko and Faraj, 2000; Bock et al., 2005; Chiu et al., 2006; Hsu et al., 2007) has also obscured our understanding of participation. Whereas, in fact, online communities are always located within a context which shapes what occurs within it. Moreover, when the context has been given relevance in understanding participation, previous studies have tended to look at it as an inert, container-like setting (e.g., Gu et al., 2007; Wang et al., 2011) thus obscuring the mutually constitution of context and phenomena occurring within it.

This in turn also raises some issues that point to the need to conduct more research in the field, given that participation in online communities, as many other organisational phenomena, has a rather collective, dynamic, historical and social character. Moving away from the cognitive tradition which has been accused for offering individualistic, static and representationalist views of organisational phenomena (Reckwitz, 2002; Marshall, 2008),



this study suggests that, in order to deepen our understanding of participation, there is a need to adopt alternative approaches that are likely to offer distinctive insights of participation in online communities. Approaches belonging to the praxeological family of theories (e.g., Actor-Network Theory, practice-based approach) appear thus as potential candidates to enhance our understanding of online community participation in that they seem to avoid some of the pitfalls of traditional cognitive approaches (Gherardi, 2000; Reckwitz, 2002; Marshall, 2008; Geiger, 2009).

## **1.2 Theoretical resources**

This study uses theoretical resources from ANT and PBA. Both these approaches are members of the “praxeological family of theories” (Reckwitz, 2002:244), and are used as a means to offer alternative perspectives that can enhance our current understanding of participation. These approaches, according to Marshall (2008), can counter some of the weaknesses of studies which have generally followed the cognitive tradition, and offer more holistic understanding of phenomena (e.g., participation) by foregrounding the dynamic, relational, collective, and historically-shaped character of phenomena.

The praxeological family of theories is inclusive of a diverse range of approaches including those such as Actor-Network Theory (ANT), practice-based approach (PBA), and Activity Theory. These approaches in turn have diverse theoretical origins and rather diffuse affinities (Reckwitz, 2002) so that there is an essential need to specify when a particular praxeological approach is used to avoid the substantial differences among them (Warde, 2005). However, they share the interest of giving primary attention to such concerns as context, situation and practice (Marshall 2008). In fact, one of the commonalities among praxeological approaches is that they differ from other types of social theory (i.e., purpose-oriented and norm-oriented theories of action) (Reckwitz, 2002) so that they can be seen as promising alternatives to look at participation from perspectives that can potentially complement the studies influenced by a cognitive tradition.

Within the two stages of the study discussed in this thesis (these two stages and the activities conducted in each stage will be further discussed in Section 1.5 and Section 5.2.2), Actor-Network Theory (Callon, 1986; Latour, 1986; Law, 1986b; Law, 1986d;

Latour, 1987; Law, 1987; Law, 1992) was used as theoretical lens during the first state of this research. As a theoretical lens, it has been widely used to inform technology adoption studies within different contexts. For example, studies informed by ANT have explored how human and non-human actors engage in political processes of negotiation leading to the adoption of such information technologies as Electronic Work Time Registrations Systems (Bartis and Mitev, 2008), Geographical Information Systems (Walsham and Sahay, 1999; Martin, 2000), Nurse Management Information Systems (Wilson and Howcroft, 2002), and Enterprise Resource Planning Systems (Hanseth and Braa, 1998; Scott and Wagner, 2003; Elbanna, 2010).

These studies have been helpful in increasing our understanding, for example, of how the same technology is perceived differently by different groups of employees and how this shapes its adoption (Wilson and Howcroft, 2002; Bartis and Mitev, 2008); how those supporting the adoption of technologies might feel betrayed by the technology itself due to its poor performance (Wilson and Howcroft, 2002) or its performance in ways not previously expected (Hanseth and Braa, 1998); how the adoption of technologies might put at risk the positions of some employees by threatening the status quo (Bartis and Mitev, 2008); how the existence of competing actors (e.g., technologies) might diminish the adoption of particular technologies (Wilson and Howcroft, 2002); how those interested in adopting particular technologies might use their power to sell the technology or to hide problems arising during the implementation (Wilson and Howcroft, 2002; Bartis and Mitev, 2008); how the lack of enrolment of relevant actors might lead to the non-adoption of technologies (Walsham and Sahay, 1999); how when the interests inscribed in particular technologies are not aligned to the interests of potential users influenced the adoption of such technologies (Hanseth and Braa, 1998; Walsham and Sahay, 1999); and how the adoption of technologies is highly affected by the negotiations taking place between relevant actors (Elbanna, 2010).

The usefulness of ANT to explain the above issues affecting the adoption of technologies is particularly relevant within the context of this study in which a collaborative technology is introduced to support online community participation. Although it has been suggested that ANT is useful to understanding processes of knowledge sharing within the corporate context (Hall and Goody, 2007), the approach has rarely been applied to empirical data and thus its power as a theoretical lens to examine the adoption of technologies

supporting online communities still remains under-explored. Within the literature only a few studies have used ANT to explore how participation takes place in online communities, or how technologies supporting these communities are adopted (e.g., Tabak, 2008; Beekhuyzen et al., 2011). However, only the study by Tabak (2008) was conducted within the corporate context, while the study by Beekhuyzen and colleagues (2011) focused on a radically different environment (i.e., underground online music communities).

In the second stage of this research, a practice-based approach (e.g., Gherardi, 2000; Schatzki, 2001; Orlikowski, 2002; Reckwitz, 2002; Schatzki, 2002; Nicolini et al., 2003; Østerlund and Carlile, 2005; Gherardi, 2009b; Feldman and Orlikowski, 2011; Nicolini, 2011; Cox, 2012) was adopted as the theoretical lens. Although an ongoing multivocality within the practice-based approach exists (Cox, 2012), theoretical resources from PBA have been fruitful in understanding the adoption and use of technologies and how this is shaped by the practices in which these technologies are introduced. Specifically within the corporate context, studies have adopted PBA to better understand the adoption and use of knowledge management systems (Schultze and Boland, 2000; Vaast, 2007; Venters, 2010); intranet systems (Vaast and Walsham, 2005); collaborative technologies such as Lotus Notes (Orlikowski, 2000; Yates and Orlikowski, 2002); Internet-based self-service technologies (Schultze and Orlikowski, 2004); Enterprise Resource Planning Systems (Boudreau and Robey, 2005); and technologies supporting participation in online question and answer communities (Rosenbaum and Shachaf, 2010).

These studies have shown how potential users might reject the adoption of technologies because they might find it difficult to break their old habits of using existing systems (Boudreau and Robey, 2005); how new technologies might reinforce, enhance, or transform existing communication practices and therefore face resistance from potential users (Yates and Orlikowski, 2002); how the use of technologies is not fixed but emerges in practice (Feldman and Orlikowski, 2011); how the expectations of technology use will differ from how they are actually deployed (Schultze and Orlikowski, 2004; Boudreau and Robey, 2005; Vaast, 2007); how intranet systems will be only used when actions are socially shared and repeated (Vaast and Walsham, 2005); and how the use of technologies might be undermined if these technologies do not fit the routinised working activities of practitioners (Orlikowski, 2000; Schultze and Boland, 2000; Schultze and Orlikowski, 2004).

In giving primary attention to the practices that surround technologies, the practice-based approach has the potential to inform participation - supported by collaborative technologies - in online communities. Furthermore, from this perspective, aspects such as relations between practices, the historical context of practices, the particular flavour of practices and aspects such as routinisation and perpetuation, recurrence and collectiveness are given special attention, offering thus the potential for a fruitful perspective of participation in online communities.

Other concepts and approaches were also considered to inform the study discussed in this thesis. Initially, the concept of multiple inclusion (Bogenrieder and van Baalen, 2007) was taken into account as a theoretical resource. This notion assumes that the actions of individuals within a group are not isolated but are related to other group memberships. It is thus suggested that engagement within a practice is interrelated with participation in other practices which may influence participation within a CoP. The notion of multiple inclusion appeared to be a valuable resource to explore how HR professionals were exposed to multiple memberships and the effect that this could have on their willingness to participate in the online community. However, this concept pays particular attention to human behaviour and how peoples' multi-memberships shape their actions, and tends to under explore the role played by technologies.

Activity Theory (e.g., Vygotsky, 1978; Leont'ev, 1981; and Engeström, 1987) was also considered as a theoretical alternative to inform the work discussed in this thesis. The core idea of Activity Theory argues that individuals participate in several activities which shape their personality and identity. Thus, it is suggested that in order to understand the individual it is necessary to identify all the activities in which these individuals participate. This view of activity appeared to be relevant in understanding HR professionals' choices of the use of media (e.g., the technology supporting the online community). However, without neglecting its potential value of Activity Theory to inform the current study, preference to the family of Practice Theories was given. The expertise of the supervisor of this work influenced this choice. An initial concept within the family of Practice Theories that was considered as theoretical lenses to inform the study was the concept of communities of practice (Lave and Wenger, 1991; Wenger, 1998). However, given that that the online community, the focus of this study, did not materialise, the notion of communities of practice became less relevant. Critiques made to this concept about its over emphasis

given to the term community and its tendency to obscure the practice side of the concept (e.g., Contu and Willmott, 2003; Roberts, 2006) also contributed to the decision of disregarding its use.

In contrast to the three concepts mentioned above, ANT and PBA were likely to offer distinctive accounts from those offered by cognitive studies to look at participation in the online community, the focus of this study. Furthermore, the value of these two approaches reflected in their ability to explore the complexities of adoption and use of technologies within the corporate context also influenced this choices. Adopting ANT and PBA ended up thus providing an opportunity to foregrounding the dynamic, collective, relational and historical character of participation. Having introduced the topic, the problems with existing research, and the theoretical resources to be used, the following section turns to briefly introduce the site where the study was conducted.

### **1.3 Research site**

Given the relevance of online communities within the corporate context, and having identified the need to conduct further research to enhance our current understanding of participation, the study discussed in this thesis focuses attention on an HR online community within the context of a 'multi-campus University system in Mexico' (from now on also referred to as *INSTECH*). The initiative to support the emergence of an 'online community', the focus of this study, (from now also referred to as *the community*) was initially sponsored by a senior HR officer of the HR direction of *INSTECH* in May 2009.

When the senior HR officer envisioned a new performance measurement approach to be deployed and implemented across all 31 campuses of *INSTECH* in March 2007, he felt there was a need to cultivate an online community to support interaction and collaboration between all members of the HR community during the implementation. To support interaction and knowledge sharing between members of the community during the implementation, he allocated resources to customise a 'collaborative technology' in July 2007 (from now on *CODECO*) to be further used as the core platform supporting participation in *the community*.

After two years of ongoing 'implementation of the HR project' (from now also referred to as *the implementation*), *CODECO* was formally introduced to all HR staff in May 2009 with the expectation that it will become "the exclusive media to be used during the implementation...to support the deployment of the project" (Interview with the HR *president*). This expectation was shared by the HR *vice-president*, who believed "the features of [*CODECO*] would give people responsible for [*the implementation*] the possibility of sharing knowledge and experiences on a frequent basis" (Interview with the HR *vice-president*). However, despite their expectations, 'participation in *the community*' (from now also referred to as *participation*), never took place as it was expected by its promoters and the collaborative technology - *CODECO* - was virtually abandoned. From the views expressed by HR practitioners (people responsible for *the implementation* in each campus of *INTEC*) and the empirical data collected from June 2009 to February 2011 the online community ended up as a failure. With regard to *the implementation*, when the last set of data collection took place during January 2011 and February 2011, it had been partially deployed among all campuses of *INTEC*.

#### **1.4 Research aim and research questions**

On the basis of the need to conduct more studies to better understand online community participation, and on the potential of ANT and PBA to offer alternative perspectives to those offered in previous studies, the aim of this research was defined as follows:

To explore - through the lenses of Actor-Network Theory and a practice-based approach - what shapes participation in an online community within the context of HR in a Mexican multi-campus University.

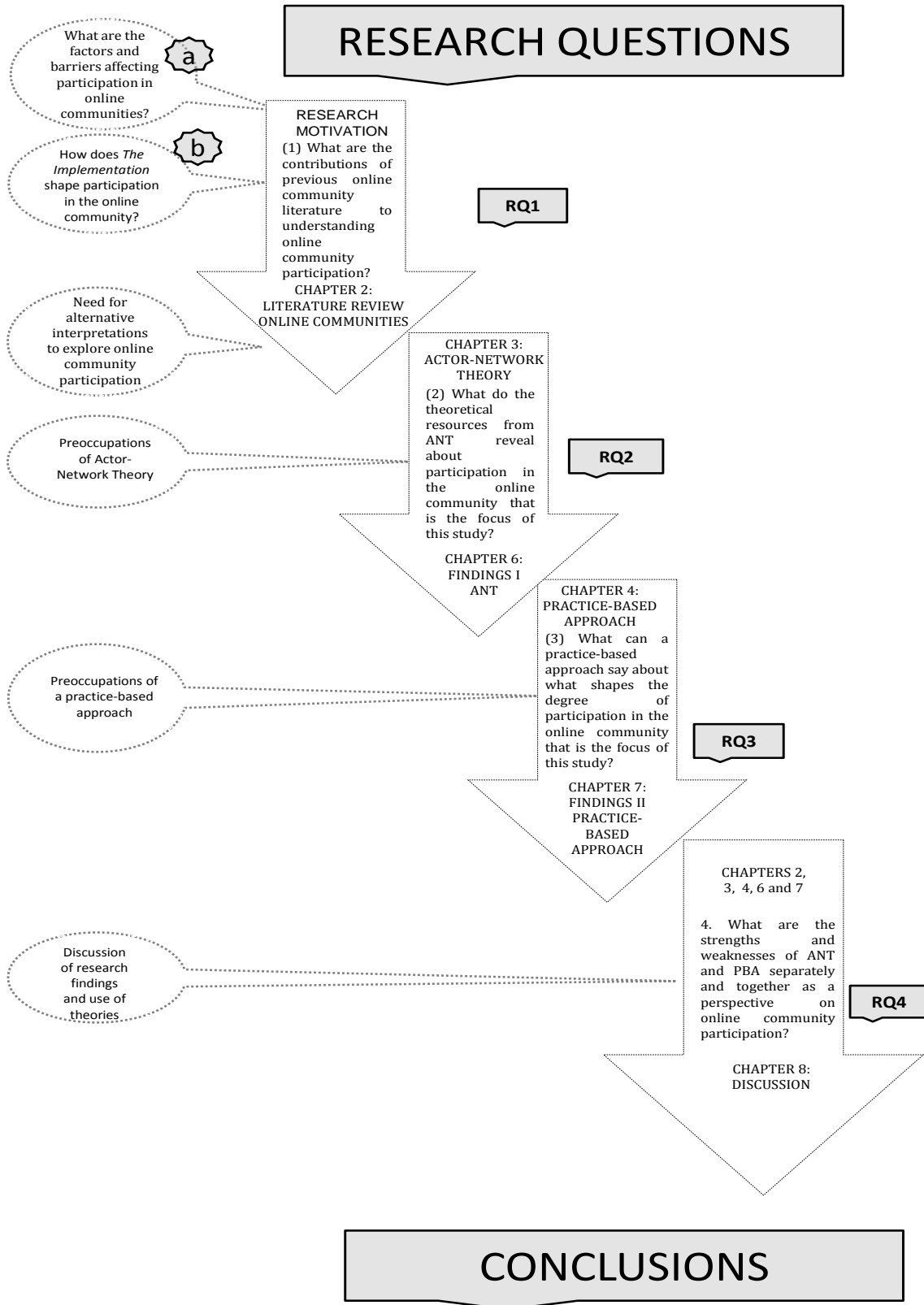
In order to achieve this aim, the following research questions are addressed and serve as the basis to guide the study:

- (1) What are the contributions of previous online community literature to understanding online community participation?
- (2) What do the theoretical resources from Actor-Network Theory reveal about participation in the online community that is the focus of this study?

- (3) What can a practice-based approach say about what shapes the degree of participation in the online community that is the focus of this study?
- (4) What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?

### **1.5 Introductory note to methodology**

Section 1.5 provides an introductory note to introduce the methodological choices of the current study. An attempt is made to ground the reader in the research process followed in this study, and to anticipate the methodological implications for this study, once its interpretive character is acknowledged. Figure 1.1 illustrates the evolving nature of the study and how the research questions emerged during the research process. Among other things, it shows a shift from two initial exploratory research questions ('a' and 'b') to a theoretically informed approach entailing research questions consistent with the particular preoccupations of Actor-Network Theory and practice-based approach ('RQ2', 'RQ3' and 'RQ4').



**Figure 1.1: Evolution of the research process**



The study discussed in this thesis was conducted in two main stages. During the first stage conducted from October 2008 to July 2010, initial empirical data were collected and analysed. At this stage the study was initially conceived as an exploratory attempt to look at the factors shaping online community participation and to explore how *the implementation* influenced *participation*. Semi-structured interviews were conducted to 17 HR practitioners (July and August 2009). Other methods for data collection were used to a lesser degree, namely: observation of communication activity in the online community (June 2009 to July 2010), attendance at online seminars and meetings (July 2009-October 2009), and access to project-related documentation (June 2009-October 2009). On the basis of an emerging research problem the following exploratory questions were suggested:

- (a) What are the enabling factors and barriers affecting participation in online communities?
- (b) How does *the Implementation* shape participation in the online community that is the focus of this study?

Initially conceived as a fully inductive study, the use of theories in the first stage of the research was not considered in the initial design. As such, the initial data collection process was informed by three main concerns, namely:

- the interest to address research questions (a), and (b);
- the issues identified in previous online community literature that could potentially undermine aspects relevant to understanding participation (these aspects addressed the first research question of the current study: '*What are the contributions of previous online community literature to understanding online community participation?*');) and
- the opinions of HR practitioners about *the community*.

However, as the research evolved, the research questions, the scope of the research, the methods used for collection and analysis, the theoretical choices, and the understanding of the phenomenon, did so too. Once the initial data collection process took place, ANT was adopted to make sense of the data collected during the initial stage of the study. This choice was informed by previous research using ANT as a lens to examine the implementation of projects entailing the use of technologies (e.g., Hanseth and Braa, 1998;

Walsham and Sahay, 1999; Wilson and Howcroft, 2002; Bartis and Mitev, 2008; Elbanna, 2010). As a consequence, the preliminary research questions evolved, moving from broad research questions '(a)' and '(b)' interested in exploring the factors shaping participation, to a theoretically informed question: (2) *'What do the theoretical resources from ANT reveal about participation in the online community that is the focus of this study?'*. This research question became the second one of the current study.

By the time the first stage was finished, in July 2010, there were still some aspects that appeared as relevant in the shaping of participation but were not fully explained on the basis of ANT (e.g., aspects such as routinisation and habituation, and the particular flavour of HR practices in shaping *participation*). Theoretical resources from PBA appeared to have the potential to make sense of these concerns and were therefore adopted to inform the processes of data collection and analysis during the second stage of the study. New research questions emerged: (3) *'What can a practice-based approach say about what shapes the degree of participation in the online community that is the focus of this study?'*; and (4) *'What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?'*. In the end, questions '(1)', '(2)', '(3)', and '(4)', became the research questions of the current study reflecting its overall aim: to explore throughout theoretical resources from Actor-Network Theory and a practice-based approach what shapes participation in an online community within the context of HR in a Mexican multi-campus University.

The above paragraphs briefly summarise how the four research questions of the study emerged, to show how the research process evolved. They also help anticipate some of the key features of the design of the study to be discussed further in Chapter five:

- The study consists of two main stages. In the first stage, from October 2008 to July 2010, data were collected in the light of questions "a" and "b". However, data analysis was informed by theoretical resources from ANT. In the second stage, from August 2010 to December 2012, both data collection and analysis were informed by theoretical resources from PBA.
- Research questions emerged and evolved during the research process. In overall terms, research questions '(1)' and '(2)' were answered in the first stage of the

study; research questions '(3)' and '(4)' emerged, and were addressed, in the second stage of the study.

- This study could be better described as an interpretive theoretically-informed study. It is interpretive because it embraced elements and principles such as an emergent design, the use of qualitative methods, an inductive logic followed during the processes of collection and analysis, and a view of reality as being socially-constructed. It is theoretically informed in that the processes of collection and analysis were informed by the particular preoccupations of ANT and PBA.

### **1.6 Personal motivation**

Professional experience and career expectations encouraged this research. Particularly, the interest to undertake this study was underpinned by the researcher's involvement in the customisation of the collaborative technology to support the online community focus of this study. Before commencing his PhD in October 2008, the author of the study discussed in this thesis worked as an associate consultant at the "Center for Knowledge Systems" (<http://sistemasdeconocimiento.org/en/>); a research and consultancy Institute in Mexico. Among other duties, the researcher took part in a project aimed at 'customising' a collaboration technology to be further used by HR practitioners of a multi-campus University system in Mexico. The project lasted twelve weeks from May 2007 to July 2007 and consisted of meetings between the consultancy group and a group of potential users of the online community. Being involved in this project was a valuable source of learning; however, once the project ended, the online community was immediately used to support the working practices of HR practitioners. Later on, it was announced that the online community was going to be launched in May 2009. This opened the opportunity to gain a better understanding from a 'real life situation' of how online communities are used within the corporate context and what shapes the way they are actually used. Research interests were discussed with the stakeholders of the online community and an agreement was made to conduct the study discussed in this thesis to examine participation at this particular online community.

As the research was continuously evolving, new interests emerged during the process mainly encouraged by an initial motivation to understand online community participation,

but also influenced by different areas of knowledge and theories that came across. The choices of Actor-Network Theory and a practice-based approach to inform the interpretations provided in this study were not made at the very beginning of the study but emerged during the research process. The research questions provided above reflect this intellectual journey.

## **1.7 Outline of the thesis**

Starting a PhD embraces the beginning of an intellectual journey. It entails (among many other things, situations, feelings, discussion, decisions, etc.): 1) the development of a research aim and research questions through which the phenomenon will be explored; 2) an awareness and understanding of what is already known on the phenomenon under investigation; 3) the development of an understanding of the tools, methods and theories available to conduct rigorous research; and 4) the provision of contribution(s) to field(s) of knowledge. Having presented the background and significance as well as the aims, the research questions to be addressed, and the motivation for this study, what remains in this chapter outlines the overall structure of the thesis.

Chapter two contains a literature review of online community participation studies. This chapter, together with Chapter three and four, informs the development of the research questions addressed in subsequent chapters. Chapter two discusses previous online community literature and identifies five main perspectives that have been taken in previous studies of online community participation. It starts by introducing some of the key features that characterise online communities, and highlighting participation as the most critical resource for online communities to succeed. A few examples of how online communities have been used within the corporate context are highlighted. The chapter concludes by acknowledging the contributions of previous online community literature but identifies some pitfalls within this body of literature. It is suggested that some of the limitations found in previous studies resonate some of the drawbacks that have been found in studies following a cognitive tradition. These have tended to offer individualistic, static and representationalist understanding of participation. The use of two praxeological approaches (i.e., ANT and PBA) is suggested as a means to provide alternative perspectives likely to offer distinctive insights capable of foregrounding aspects obscured in previous studies. These in turn can increase current understanding of online community

participation. The content of this chapter provides an answer to research question (1): *'What are the contributions of previous online community literature to understanding community participation?'*.

Chapter three introduces theoretical resources from Actor-Network Theory as devices to inform the data analysis of the first stage of the research. It focuses on discussing the sociology of translation and such notions as actor, actor-networks, control, etc. In the light of previous studies using ANT to explore the use and adoption of technologies within the corporate context, the chapter introduces some lines of inquiry relevant to take into account during the analysis during the first stage of the research. This chapter finishes by examining some of the critiques made of ANT and anticipates possible ways to overcome these critiques.

Chapter four discusses a set of theoretical resources from the practice-based approach to be further used as informing devices for the second stage of the research. In the light of the multivocality of the approach, the chapter introduces a bricolage of theoretical resources including such themes as the relational thinking of PBA, emergence and routinisation, recurrence and collectiveness, knowing in practice, and differentiation among practices. After acknowledging the potential of PBA to bring relevant aspects neglected in previous literature to the fore, the chapter introduces a series of initial lines of inquiry to be considered in the processes of data collection and data analysis during the second stage of the study. The chapter finishes by discussing some of the critiques and challenges the practice-based approach faces and how these might be overcome in the current study.

Chapter five sets out the design of the empirical investigation and the methods adopted to answer the research questions. It starts by discussing ontological, epistemological and methodological issues. Based on this discussion, the study is defined as an interpretive theoretically-informed study standing in opposition to positivist studies. The chapter further describes the key characteristics of the study and the two stages of the study. Then, it justifies and describes the methods employed for data collection and analysis, and discusses ethical concerns arising from the research. The chapter finishes by justifying, describing, and applying a set of criteria to assess the quality of the study.

Chapters six and seven introduce the findings of the study theoretically informed by ANT and PBA respectively. These two chapters answer research questions (2) 'What do the

theoretical resources from ANT reveal about participation in the online community?’ and (3) ‘What can a practice-based approach say about what shapes the degree of participation in the online community that is the focus of this study?’, and are the basis for the discussion in Chapter eight, that answers research question (4). Although both were aimed at providing an interpretation of what shapes *participation*, the data collection and analysis processes of the two chapters were conducted sequentially and independently from one another.

Chapter eight integrates the salient points of the research findings provided in Chapters six and seven and discusses the significance of the findings. It discusses how ANT and PBA help in bringing to the fore the relational and collective, emergent and historically-shaped, and highly contextualised nature of participation. The content of this chapter also readdresses the challenges and limitations of the theories discussed in chapters three and four in order to clarify how these shaped the study. Finally, it suggests some considerations that might be of relevance when conducting research informed by praxeological approaches. An answer to question (4) ‘What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?’ is provided. In order to answer this broad research question, three subsidiary questions are developed and answered, namely:

- In the light of the theoretically-informed interpretations provided in Chapters six and seven of this study, what have been learnt about participation?
- To what extent did the challenges and limitations of ANT and PBA shape the current study and the understanding of the researcher?
- In the light of the findings and the use of ANT and PBA, what would be relevant considerations to take into account when conducting future research informed by approaches within the praxeological family of theories?

Chapter nine introduces a final commentary by summarising the research and its main findings. This is followed by an analysis of the contributions to current knowledge at the empirical, theoretical and methodological level, and the practical implications of the study. The chapter concludes by acknowledging the research limitations of the study as well as identifying the scope for further research.

## **2. LITERATURE REVIEW: ONLINE COMMUNITIES**

### **2.1 Introduction**

This chapter presents a review of previous online community participation literature. It begins by briefly introducing some key features that characterise online communities (Section 2.2), and discussing how online communities have been used within the corporate context (Section 2.3). It then highlights how participation is seen as the most critical resource for online communities to succeed (Section 2.4), and identifies five main perspectives that previous online community participation studies have adopted (Section 2.5). Based on this review, contributions of previous research to current understanding of factors affecting participation are acknowledged, and five issues suggesting further research within this body of knowledge are identified (Section 2.6). It is then argued that adopting alternative perspectives that can potentially give more consideration to previously neglected topics can enhance current understanding of online community participation in organisational settings (Section 2.7). Section 2.8 presents a brief conclusion of the chapter.

The following procedure to conduct the literature review discussed in this chapter was followed. Initially, highly cited papers in the online community and online community participation literature were identified. The search terms used to locate relevant material were primarily “online community”, “online communities”, “virtual community”, “virtual communities”, “virtual communities of practice” and “participation” as variants used in the databases Web of Knowledge and Scopus. Among other journals, the Journal of Information Science, Information Systems Research, Journal of Knowledge Management, Journal of Strategic Information Systems, MIS Quarterly, Knowledge and Process Management were used as sources of peer reviewed papers. (See Appendix fourteen for a list of the journals from which most previous research was discussed in this study). These set of papers provided an overview of the field and its current state and tendencies. The five main perspectives mentioned above were identified through a critical review of these papers. Within each perspective, studies that adopted different approaches to analyse participation in online communities were reviewed, discussed and reported in this chapter. Contradictory findings within this body of literature were also discussed and reported. To include recent literature in the field, the literature review discussed in this chapter was updated during the last year of the study discussed in this thesis.

## 2.2 Key features of online communities

Online communities have been defined in many ways and thus no consensus of the term exists (Komito, 1998; Lee et al., 2002; Ellis et al., 2004; Porter, 2004; Hansen, 2007). Howard Rheingold was the first to coin the term 'virtual community' and defined it as "social aggregations that emerge from the net when enough people carry on public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (Rheingold, 1993:5). Since then, a large number of definitions have been provided in different studies to describe what online communities and their main features are. However, Cox (2008) has noted that the common usage of the concept of online community has rather been weak in that when the concept is used, it often narrowly refers to the provision of technologies for users to add content onto a web site. This in turn has led some previous research on online communities to provide accounts that fail to capture the complexity of this phenomenon (Baym, 2000; Wang, 2007; Cox, 2008).

Rather than offering a definition of online community, this study identifies elements from three well-acknowledged conceptualisations of the term 'online community'; i.e., Herring (2004), Preece (2000), and Baym (2000), and uses them as a means to establish a common understanding of the term. Herring's (2004) characterisation of online communities provides six key features of these social arrangements (2004:355):

- active, self-sustaining participation; a core of regular participants;
- shared history, purpose, culture, norms and values;
- solidarity, support, reciprocity;
- criticism, conflict, means of conflict resolution;
- self-awareness of group as an entity distinct from other groups;
- emergence of roles, hierarchy, governance, rituals.

While this conceptualisation stresses online communities are active, self-sustained entities maintained by a core of participants, who in turn can develop social behaviours and have shared purposes, culture, norms, history, etc., the definition provided by Preece (2000) - consisting of four keys components (i.e., people socially interacting, a shared purpose providing a reason for the community, policies guiding members' interactions,



and computer systems supporting and mediating these interactions) - highlights the use of technologies to support the interactions taking place in the community. Finally, to complement Herring's (2004) and Preece's (2000) characterisations of online communities, Baym (2000) argues that in order to understand what occurs within an online community (e.g., how participation takes place), there is a need to understand the shared practices being supported in these spaces, and the offline context surrounding the online community.

As will be further discussed, prior research in online community participation has focused attention on some of the features of online communities introduced above, but the relevance of others has been neglected. For example, within the corporate context, explanations of online community participation have undermined the key role of working practices being supported by these spaces, or at a more general level, the offline contexts surrounding these communities.

Hence, the decision not to adopt a particular definition of online community for this research, and instead to highlight some of its key features, is threefold. First, it allows a common ground for the term 'online community', to be established based on the features identified by these authors. Second, it offers the opportunity to review in this literature studies of online communities embracing - to one degree or another - the elements identified by Baym (2000), Preece (2000), and Herring (2004). Third, it calls for one reader and the researcher to bear in mind that while online communities can share many common features, there are many characteristics that need to be considered which give each community unique personalities (Dubé et al., 2005; Dubé et al., 2006).

### **2.3 Online communities in organisational settings**

Within the context of organisations, an increasing interest in online communities is clearly reflected in the significant investments different organisations have made to adopt online communities (Jarvenpaa and Staples, 2000). Examples of how public and private, national and multinational, manufacturing and service companies, have enjoyed the advantages of online communities are immense and reflect the general agreement that these social arrangements have demonstrated the provision of powerful opportunities for interaction and collaboration never seen before. To name just a few, multinational organisations such as Toyota (Dyer and Nobeoka, 2000), Siemens (Tiwana and Bush, 2005), Xerox (Mahar,

2007), IBM (Gongla and Rizzuto, 2001; Mahar, 2007), Hewlett Packard (Davenport, 1996), Caterpillar (Ardichvili et al., 2002; Ardichvili et al., 2003), the United Nations (Stoddart, 2007), and the British Council (Venters, 2010), have made online communities a key organisational tool to support different initiatives. For example, organisations have used online communities to facilitate their knowledge management strategies (Dyer and Nobeoka, 2000; Ardichvili et al., 2003; Pan and Leidner, 2003; Tiwana and Bush, 2005; Bogenrieder and Baalen, 2007; Stoddart, 2007; Usoro et al., 2007; Venters, 2010); to strengthen their innovation processes via company-hosted user communities (Jeppesen and Frederiksen, 2006; Jeppesen and Laursen, 2009; Dahlander and Frederiksen, 2011); to build brand loyalty (Porter and Donthu, 2008), etc. However, despite the interest in online communities within the corporate context, and the considerable published work studying this phenomenon, many technologies supporting online communities still remain unused (e.g., Schultze and Boland, 2000; Storey and Barnett, 2000; Bansler and Havn, 2003; Butler, 2003; Landqvist and Teigland, 2005; Baek and Schwen, 2006; Restler and Woolis, 2007).

## **2.4 Participation in online communities**

Members' participation has been acknowledged as both the key resource and the biggest challenge for the survival of online communities (Butler, 2001; Ardichvili et al., 2003; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007; Ardichvili, 2008). Regardless of their purpose, type, or environment in which they reside, online communities' survival largely depends on their ability to attract and retain members who are willing to actively participate in their communities (Butler, 2001; Wang et al., 2011).

Assuming the critical relevance of participation for the survival of online communities, previous online community studies have largely been conducted with the aim of understanding what motivates people to participate in these social spaces. To inform their explanations, they have relied on the use of such theories as social cognitive theory (Bock and Kim, 2002; Chiu et al., 2006; Hsu et al., 2007); social capital theory (Huysman and Wulf, 2005; Kankanhalli et al., 2005; Chiu et al., 2006); social exchange theory (Bock and Kim, 2002; Kankanhalli et al., 2005; Wang, 2007; Faraj and Johnson, 2011); sunk cost theory (Tiwana and Bush, 2005); the technology acceptance model (Venkatesh, 2000); theories of social networks and Social Network Analysis (Wasko et al., 2004; Toral et al., 2010; Faraj and Johnson, 2011); critical mass theory (Peddibhotla and Subramani, 2007;

Raban et al., 2010); and resource-based theory (Butler, 2001). Through these theories, previous studies have provided different perspectives influenced by such areas as psychology, sociology, information technologies, organisational studies, human-computer interaction, etc.

The following section discusses previous online community literature in which the theories mentioned above have been used to guide, inform, test, or explain their findings. Within this review, studies are categorised into five main categories, namely those highlighting how:

- 1) Individual-related motivations such as extrinsic and intrinsic benefits shape participation.
- 2) Community-related factors such as trust, reciprocity, sense of community, commitment, attachment and social relationships affect participation.
- 3) Structural characteristics of online communities such as membership size, communication activity, membership composition, and roles and participation levels influence peoples' willingness to participate.
- 4) Technology-related issues including such aspects as features of sociability and usability, technical characteristics, accessibility, personalisation, etc. affect participation; and
- 5) context-related factors including aspects such as competition between online communities and members' multi-memberships, online and offline interactions, social context surrounding online communities, and nature of work environment to which online communities belong, shape participation.

Although the current study is mainly interested in organisational online communities, studies conducted within non-organisational settings are also reviewed in that they have provided light that have enhanced our understanding of participation in online communities. Studies reviewed in this literature looked at participation in online communities which embrace - to one degree or another - the elements identified by Baym (2000), Preece (2000), and Herring (2004) discussed in Section 2.2.

## **2.5 Factors shaping online community participation**

### **2.5.1 Individual-related motivation studies**

A frequent research interest of online community literature focuses on individual motivations and benefits affecting participation (Faraj and Johnson, 2011). These studies highlight that participation in online communities is often driven by self-interest and self-centred behaviours, and suggest that unless tangible or intangible returns are in place, people will be willing to participate in their communities (Wasko and Faraj, 2000).

#### **2.5.1.1 Extrinsic rewards as motivation for participation**

Previous research shows one of the reasons why individuals participate in online communities is due to different extrinsic rewards (i.e., information-related benefits, personal learning benefits, economic rewards) they can get from their participation in online communities (Wasko and Faraj, 2000; Hall, 2001; Bock and Kim, 2002; Lerner and Tirole, 2002; Ardichvili et al., 2003; Gallivan et al., 2003; Lakhani and von Hippel, 2003; Bock et al., 2005; Kankanhalli et al., 2005; Chiu et al., 2006; Shah, 2006).

In a study of three electronic online communities, Wasko and Faraj (2000) found that individuals were more likely to participate in their communities when their participation provided them with tangible returns such as access to useful information and knowledge to get answers to specific questions that otherwise would be difficult to find. Similarly, when people see their communities as useful problem-solving tools through which they can get specific solutions to their problems, quicker access to information, or up-to-date information such as keeping informed of general developments of their professions (Ardichvili et al., 2003), or when they perceive their online communities as sources of learning and personal development (Wasko and Faraj, 2000; Hall, 2001; Lakhani and von Hippel, 2003; Chiu et al., 2006), they will be more likely to actively participate.

Economic rewards provided as motivators to enhance online community participation have been another aspect found to influence peoples' willingness to participate (Wasko and Faraj, 2000; Bock and Kim, 2002; Lerner and Tirole, 2002; Gallivan et al., 2003; Bock et al., 2005; Kankanhalli et al., 2005; Shah, 2006). Kankanhalli et al. (2005) found that when people contributing to knowledge repositories share the same interests as their organisations they are more motivated by personal rewards (i.e., gaining higher bonuses,

salaries, job security, more opportunities for promotion) to actively contribute. In open source software development communities it has been found that programmers benefit materially from their contributions in cases where they can potentially become employed by corporations (Lerner and Tirole, 2002; Shah, 2006). Supporting these findings, other studies have shown that when incentive systems promoting participation are discontinued, participants will be less likely to maintain their participation (Heier et al., 2005). However, while some studies have shown that providing employees with such economic rewards could be beneficial, other studies have found the existence of contradictory and detrimental effects when using economic incentives as a means to promoting peoples' participation in online communities (Bock and Kim, 2002; Gallivan et al., 2003; Bock et al., 2005).

#### 2.5.1.2 *Intrinsic rewards influencing participation*

A considerable number of studies have shown that individuals' willingness to participate in their online communities is not only affected by extrinsic incentives they could get from their contributions but is also influenced by intrinsic rewards such as recognition, reputation, enjoyment, self-efficacy, and sense of accomplishment (Rheingold, 1993; Kollock, 1999; Wasko and Faraj, 2000; Lerner and Tirole, 2002; Ardichvili et al., 2003; Wasko et al., 2004; Kankanhalli et al., 2005; Tiwana and Bush, 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Jeppesen and Frederiksen, 2006; Shah, 2006; Wang and Lai, 2006; Hsu et al., 2007; Jeppesen and Laursen, 2009).

An early study of online communities by Rheingold identified a strong desire for status and prestige as critical motivations for individuals to contribute to their online groups (Rheingold, 1993). Further studies within organisational settings have supported this position (Lerner and Tirole, 2002; Ardichvili et al., 2003; 2004; Tiwana and Bush, 2005; Wasko and Faraj, 2005). For example, Wasko et al. (2004) found that communities that do not leverage the importance of their members through reputation mechanisms will be less likely to sustain valued contributions. The effect of reputation on participation was also found and confirmed by Ardichvili et al. (2003) and Wasko and Faraj (2005), whose findings show how those employees who have established themselves as having a good reputation (e.g., being considered as experts) will be more motivated to contribute their knowledge to their peers in their online communities. In the context of open source

software development, Lerner and Tirole (2002) also found that reputational benefits (such as giving credit to authors or highlighting someone's name as being one of the 'most committed contributors') strongly influenced members' motivation to contribute with their innovations. Similarly, within the context of engineers, it was found that those who have developed strong reputations by investing large amounts of effort and time in their communities tended to increase their intentions to remain active (Tiwana and Bush, 2005). While most of the studies within this category have found positive correlations between reputation and participation, a study of a JAVA-related community showed that reputation was not a significant influential factor for knowledge contributions (Wang and Lai, 2006).

Recognition has also been used as a mechanism in online communities to motivate members' participation. Previous studies have found two main sources of recognition. On the one hand, studies have shown that individuals will be driven to participate when peer recognition is provided (Lerner and Tirole, 2002; Jeppesen and Laursen, 2009). On the other hand, it has been suggested that online communities using such intangible rewards mechanisms as rankings of best knowledge contributors (Hsu et al., 2007), or providing recognition via a company's public acknowledgment of members' innovative work and contributions (Jeppesen and Frederiksen, 2006), can raise individuals' attitudes towards participation.

Another personal intrinsic reward for participation found in the literature is that of enjoyment in helping others (Wasko and Faraj, 2000; Kankanhalli et al., 2005; Shah, 2006). Those individuals who enjoy supporting others by providing helpful advice (Wasko and Faraj, 2005), or those who derive enjoyment from working in tasks they find challenging, interesting and useful to others (Shah, 2006), will increase their motivation to contribute in online communities.

Other studies have suggested that people meet and interact online for the sake of achieving self-efficacy (Kollock, 1999; Wasko and Faraj, 2000; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Wang and Lai, 2006). For example, when individuals are confident of their ability to contribute (Wasko and Faraj, 2000; Kankanhalli et al., 2005; Wang and Lai, 2006), or when they have a feeling that their contributions have a strong impact on their communities (Kollock, 1999), they will be more motivated to participate. While these studies show consistency, a study by Wasko and Faraj (2005) did not find self-

rated expertise as significantly influencing knowledge contributions. Moreover, Chiu et al. (2006), in a study of an IT-oriented online community, found that personal outcome expectations (e.g., sense of accomplishment, closely related to self-efficacy) had a negative but insignificant effect on knowledge contributions.

### **2.5.2 Community-related motivation studies**

While the studies discussed in Section 2.5.1 focus on self-centred motives and interests, the studies reviewed in this section focus on discussing motivations that are group-referent, in which interactions and relations are prioritised over individual motives and personal interests. Studies focusing on these aspects generally maintain that online communities are subject to a dilemma over public good (Kollock and Smith, 1996), meaning that an individual making a public good contribution (e.g., knowledge) does not undermine the ability of others to use the same resource. This also means that individuals have the privilege of gaining benefit from others' contributions, while at the same time offering benefits to others, thus avoiding the costs associated with active participation.

#### **2.5.2.1 Trust**

Many online community studies have acknowledged trust to be a multidimensional construct (Ridings et al., 2002; Ardichvili et al., 2003; Sharratt and Usoro, 2003; Chiu et al., 2006; Hsu et al., 2007; Usoro et al., 2007; Porter and Donthu, 2008; Wu et al., 2010). However, most of these studies agree that trust is a belief based on another's behaviour demonstrating benevolence, integrity, and competency (Ridings et al., 2002; Ardichvili et al., 2003; Porter and Donthu, 2008). These studies have found that online communities will experience greater participation when trust, in its different conceptions, is to be developed, as it has been conceived as a key means to enhance knowledge sharing in virtual environments (Ridings et al., 2002; Ardichvili et al., 2003; Chiu et al., 2006; Hsu et al., 2007).

In general, people will be more willing to participate in an online community when they develop two different types of trust (Ardichvili et al., 2003). First, online community members need to develop institution-based trust which consists of the belief people have about the integrity of the organisation and the competence of its members (Ardichvili et al., 2003; Sharratt and Usoro, 2003; Usoro et al., 2007). This trust is based on the belief

that existing organisational structures are in place and will protect individuals from negative consequences and ensure trustworthy behaviour (Ardichvili, 2008). For example, some members will be more willing to post information if they trust that the other members will not misuse it; similarly they will be less hesitant to participate if they trust that the information in the online community is reliable and objective (Ardichvili, 2008). When people have expressed fear of possible criticism or fear of posting misleading information (Ardichvili et al., 2002), competence-based and benevolence-based trust may have a role in overcoming such fears (Sharratt and Usoro, 2003; Usoro et al., 2007). Similar findings by Porter and Donthu (2008) showed that repeatedly finding quality content in an online community increased people's future willingness to participate, or when having the belief that the information they posted will not be used in inappropriate ways or given away to unauthorised people (Hsu et al., 2007).

Second, individuals also need to develop knowledge-based trust (Ardichvili et al., 2003). This kind of trust emerges over time through repeated social interactions between trustor and trustee, and is present when individuals get to know one another and are able to predict how the other will behave in a specific situation (Hsu et al., 2007; Ardichvili, 2008). This sort of trust is expressed, for instance, when past positive experiences and interactions in online communities can assure positive attitudes and behaviours among participants (Wu et al., 2010), or when based on familiarity among people the sense of risk, fear or uncertainty is reduced and thus their behaviours can be predictable (Hsu et al., 2007).

Recognising the importance of trust in enhancing online community participation also requires acknowledgment that apart from being time-consuming to engender in online communities, trust is also fragile and easily destroyed (Hsu et al., 2007). An example provided by Agterberg et al. (2010) shows how when top management promoted commitment and organisational learning as means to foster participation in an intra-organisational network of practice but did not act upon it themselves, trust was diminished and online community participation reduced.

#### 2.5.2.2 *Reciprocity*

Within the context of online communities the norm of reciprocity is expressed when people who have received help from their communities in the past (e.g., using



contributions posted in an online community), feel they should contribute something in return (Kankanhalli et al., 2005). Consequently, once they have contributed to their online communities, they expect a future reciprocal return from other community members. In general terms, reciprocity has been characterised as being present in those mutual exchanges that are perceived by the parties as fair (Chiu et al., 2006). Its relevance as fostering online community participation has been acknowledged in many studies (Kollock, 1999; Wasko and Faraj, 2000; Lakhani and von Hippel, 2003; Fulk et al., 2004; Joyce and Kraut, 2006; Shah, 2006; Faraj and Johnson, 2011). Among other benefits for online communities, reciprocity has been suggested to be a key reason for online community survival (Faraj and Johnson, 2011), in that reciprocity norms help both reduce the possibilities of free riding behaviours (Fulk et al., 2004) and increase the willingness of participants to continue participating in their communities (Joyce and Kraut, 2006). For example, within the context of open source software development communities, software developers provide assistance because they want to cultivate others who might be able to assist them on future occasions (Shah, 2006). In a study examining knowledge sharing in three different online communities, Wasko and Faraj (2000) found members' willingness to help others was mainly motivated by the belief that they will receive help in return in future; not necessarily from the same individual, but from the community as a whole. This sense of generalised reciprocity has been also found in other studies. Constant et al. (1996) for instance, found that people who consider themselves as 'strangers' to each other, would invoke a norm of generalised reciprocity because they can provide expert technical advice and meet important needs of others. Similarly, norms of reciprocity have been found in contexts where people just want to help others even when they do not know the person they are helping (Lakhani and von Hippel, 2003).

While in general, reciprocity has been found to be a motivator for participation, some studies have found different results (Constant et al., 1996; Wasko and Faraj, 2005; Chiu et al., 2006). For example, it has been found that reciprocity does not have a significant impact on the helpfulness of knowledge contributions in electronic networks of practice (Wasko and Faraj, 2005). Nor does it influence the quality of knowledge shared in professional communities (Chiu et al., 2006), or predict incidence or usefulness of answers when providing technical advice (Constant et al., 1996). An explanation for these findings can be that when pro-sharing norms are strong (i.e., norms intended to facilitate knowledge sharing in the organisation), online community members do not look for

reciprocity; but on the contrary, when pro-social norms are weak, reciprocal behaviours are present and expected (Kankanhalli et al., 2005).

### 2.5.2.3 *Commitment and attachment*

In the context of online communities, commitment conveys a sense of duty, obligation or responsibility to help other members of the community on the basis of shared membership (Wasko and Faraj, 2005), while attachment is experienced when people develop an affective connection of feelings towards an online community to which they are members (Ren et al., 2010). Previous studies have found that members participate in online communities due to a sense of moral obligation and feelings of participants to start giving back to their communities (Wasko and Faraj, 2000; Ardichvili et al., 2003). For example, a study by Constant et al. (1996) showed how people were motivated to provide more expert technical advice because they had a sense of obligation to their organisation. Prior research has also shown how different kinds of commitment influence members' participation in their online communities. In a study of a consultancy firm and a staffing agency, van den Hooff and de Leeuw van Weenen (2004) found that affective commitment influences the willingness to contribute knowledge to an organisational intranet. While commitment to their organisations led users to participate in the intranet primarily as a consultation medium, commitment to their own department influenced their willingness for more active participation such as contributing. Accordingly, Bateman et al. (2006) found that while content provision behaviour was shaped by affective and continuance commitment, community citizenship behaviour was found to be driven by affective and normative commitment. Unlike the majority of these studies, a study in virtual networks of practice found a negative relationship between commitment and helpfulness of contributions (Wasko and Faraj, 2005).

### **2.5.3 *Studies focusing on online community's structural characteristics***

Online community literature has also given primary attention to structural mechanisms that shape online community participation (Faraj et al., 2011). Unlike the studies presented above which dealt with individuals and community-related interests and motivations, this section discusses previous research that has focused its attention on community-level features and processes of communities that influence online community

participation. Among such structural mechanisms are membership size (Butler, 2001; Wasko et al., 2004; Butler et al., 2007; Gu et al., 2007; Wang et al., 2011), communication activity (Butler, 2001), and role structure and levels of participation (Butler et al., 2007). While the studies presented above highlight the role of individuals, these studies prioritise the role of the community and thus, rather than the individual, the unit of analysis is often the community.

#### 2.5.3.1 *Membership size*

According to a resource-based theory viewpoint, membership size has been considered as a fundamental structural feature of communities and the main component of resource availability to the sustainability of an online community (Butler, 2001). However, findings of different studies have shown community size has both positive and negative consequences for participation, either by increasing the ability of communities to attract more members or decreasing their ability to retain existing members (Butler, 2001; Butler et al., 2007). For example, Butler and his colleagues (2007) found that larger online communities are more likely to be able to find members to perform leadership roles, while at the same time increasing the membership size of a community might bring potential difficulties in encouraging proper behaviour and reducing undesirable attitudes.

Among the studies which found positive consequences of larger communities are those that found size of communities is positively associated with higher participation continuance intention and higher levels of participation intensity (Faraj et al., 2006; Johnson, 2010). In contrast to these findings are those studies which have found that increasing the size of community membership might have adverse effects on the community. Among the negative associations between group size and participation are those suggesting that larger communities find it more difficult to grow than do smaller communities (Wang et al., 2011); more participation makes it more difficult to maintain the quality of information in investing-related online communities (Gu et al., 2007); and that larger size of community membership complicates the use of systems to provide recognition and reward, thus undermining peoples' decisions to maintain their participation (Wasko et al., 2004).

### 2.5.3.2 *Communication activity*

Closely related to community size is the communication activity taking place in online communities. It is through the process of communication activity that online communities provide benefits to their members, by facilitating more information sharing, interactions, and co-ordination (Butler, 2001). As membership size is often determined by the activity taking place in a community, people will be willing to participate in their communities so long as they receive more benefit than cost from their membership (Butler, 2001). However, online communities with greater volumes of contributions will demand more time and attention from their members to process that content (Wang et al., 2011), and thus they will be more likely to abandon their communities. Interestingly, in a study of lurking behaviours it was found that lurkers abandoned their lurking behaviours and left their communities because either there were too many or too few contributions (Nonnecke and Preece, 2001). Contrasting this finding, other studies have found that, even when efforts were made by members to adopt strategies such as responding to simpler messages and generating simpler responses, when facing information overload they might leave their communities anyway (Jones et al., 2004).

Previous studies have also suggested that only when online communities rise to a 'critical mass' of members that embrace contributing and audience behaviours, will the value of a community be perceived (Nonnecke et al., 2004a; Wasko and Faraj, 2005; Honglei, 2006). For example, a study by Wasko et al. (2004) showed that the more the knowledge contributed to an electronic network of practice, the greater the motivation of its participants to remain, as more contributions would lead to ongoing interactions. However, quantity is not always preferred over quality. Other studies have suggested that benefits provided by communication activity are not equally valued by individuals and thus some could perceive communication activity as providing benefits while others could perceive it as noise (Butler, 2001). Sometimes people value their communities not by the quantity of participation as such, but by the quality of contributions exchanged and the connections made through participation (van den Hooff et al., 2010). Other studies have shown that when the volume of activity is greater, the time and attention needed to process content is higher and consequently the cost of participation increases the possibility of members leaving their communities (Wasko and Faraj, 2000; Butler et al., 2007). Similarly, once participants faced overloading of mass interactions (Jones et al.,

2004), or felt overwhelmed with the volume of contributions (Gray, 2004), they were more likely to end their active participation in their communities. In the same way, prior studies of lurking behaviours have suggested that peoples' willingness to contribute with content to their communities can be discouraged because lurkers can also experience information overload, (e.g., at a specific point of time there were already too many contributions and in turn their reading behaviours will be reduced (Nonnecke et al., 2004a)), that sometimes can lead to lower levels of social capital development (Rafaeli et al., 2004).

### 2.5.3.3 *Participants' roles and levels of engagement in their communities*

Another important aspect embedded in the structure of online communities, and the focus of previous online community literature, is the roles participants play within their communities and the levels of engagement while participating (Lazar and Preece, 2002). Important to notice here is the observation made by Faraj et al. (2011) that people might not necessarily play the same role over time: roles can be adopted by different people, and the same individual may play different roles. The same principle can be applied to participation levels.

This literature review reveals three main roles of participants within online communities (Blanchard and Markus, 2004; Bateman, 2007; Butler et al., 2007; Johnson, 2010) critical for their survival. First, the most basic sort of engagement in an online community is content contribution behaviour. In online communities this sort of participation means posting messages, responding to other members' messages, uploading videos, photos, movies, etc. Many studies have recognised the attraction and retention power of content contributions for the survival of online communities (Butler, 2001), and a generalised acknowledgement of its importance is present in most online community literature. Most of the literature cited above has focused its attention on this sort of behaviour.

Second, while the creation of content is essential for community success, this sort of participation only represents one side of the communication equation (Bateman et al., 2006). Nonnecke and Preece (1999) were amongst the first to observe that most of the online community literature developed, is based on observations of those who post, and that knowledge of lurkers would be valuable to better understand participation in online communities. Previous work initially defined lurkers as free-riders and were characterised by their lack of public participation and their self-centred use of resources without giving

back to the communities (Kollock and Smith, 1996). Since then, however, many studies have criticised previous literature which neglected the role of audience behaviour and have been helpful in deepening our understanding of lurking behaviour. More recently, a general agreement on the fundamental role of audience behaviour has been achieved, and it has been widely accepted that in order for online communities to remain viable, members providing content contributions are not sufficient, but members are also needed to look at the contributions that others provide (Butler, 2001; Bateman et al., 2006; Butler et al., 2007). This interest is reflected in the literature that has focused attention on measuring lurking levels in communities (Nonnecke and Preece, 2000); understanding why lurkers lurk (Nonnecke and Preece, 2001; Nonnecke and Preece, 2003; Preece et al., 2004); finding out the strategies lurkers use to deal with the content of their communities (Nonnecke and Preece, 2003); identifying strategies to provide social and technological support for lurkers (Nonnecke et al., 2004a); and discussing similarities and differences among lurkers and those participants of online communities who post (Nonnecke et al., 2004b). Overall, these studies have led to a conception of audience behaviour as being fundamental for the survival of communities rather than seeing them as 'second-class members' with a selfish free-riders attitude (Preece et al., 2004). Moreover, lurkers are also helpful in maintaining the vitality of their communities; in a similar way in which peripheral participants of a practice may move toward full participation of that practice after some time (Lave and Wenger, 1991), lurkers in an online community may engage into a more active participation.

Third, it has also been found that in order to maintain the vitality of online communities different activities are required, apart from those of actively contributing with content and those of engaging as audience members consuming the content others provide. Referred to in the literature as community citizenship behaviour (Bateman et al., 2006), community-building work activities (Butler et al., 2007), activities conducted by community leaders, founders and moderators (Lazar and Preece, 2002) or hobbyists (Shah, 2006), these activities have been also identified as fundamental for the functioning of online communities (Zboralski, 2009; Johnson, 2010). Among these activities are those of control and encouragement, infrastructure administration and external promotion (Butler et al., 2007), developing and propagating informal rules and guidelines for appropriate behaviours (Bateman et al., 2006), and doing maintenance work (Shah, 2006).

#### **2.5.4 Technology-oriented studies**

Another avenue of literature relevant to an understanding of online community participation has been examination of the impact of technologies and other technological issues in communication activity in online communities. This stream of research suggests that the technology used must be carefully designed to afford interaction and promote participation (Preece, 2000; Bishop, 2007; Ren et al., 2007; Ren et al., 2010). Despite the relevance of these studies, it is important to bear in mind that in order to understand how online communities are sustained, only a partial answer can be offered from the technological viewpoint, in that while these tools make communication activity possible, it is social behaviours that sustain them (Butler et al., 2007).

A PhD dissertation on online communities by Li (2008) identified different models that have been used to explain user acceptance and use of technologies: Diffusion Innovation Theory, Theory of Plan Behaviour, Technology Acceptance Model, Social Cognitive Theory. However, the author observed that use of these theories has resulted in conflicting arguments over what the main constructs are, and contradictory findings that have undermined the provision of a deeper understanding of how technologies can affect online community participation. Here no attempt is made to discuss and review these theories. Instead relevant studies using some of these models and their constructs are presented and discussed. Moreover, whereas the literature reviews conducted by Li (2008), and many others conducted in the online community literature have included studies focusing on the adoption of technologies in general, this section only discusses studies focusing on technological issues within the online community literature. It excludes studies of adoption and use of Enterprise Resource Planning systems, decision support systems, Customer Relationships Management systems, etc.

Within this line of research, a common focus of studies seeking to understand participation is sociability and usability. This was initially acknowledged by Preece (2000) and further developed and applied in other online community studies (e.g., Preece, 2001; Lazar and Preece, 2002; Maloney-Krichmar and Preece, 2005). Although in practice these two concepts are closely related (Preece, 2001), they have a clear conceptual distinction. While the concept of usability is primarily concerned with the interactions between users and technology, the notion of sociability is mainly related to interactions among community members through the supporting technology (Preece, 2000; Preece, 2001; Phang et al.,

2009). Since its initial acknowledgement, a great number of studies have reached an agreement that online communities with embedded features that increase their sociability and/or usability will be more likely to attract and retain members for their survival.

Different facets of sociability have been found to influence online community participation. Aspects such as presence of an adequate environment for interactions and governance, trust and security, and registration (Preece, 2000); maintenance of a coherent focus of members' interactions within the intended domain (Phang et al., 2009); enhancement of social presence to foster the formation of common bonds (Farzan et al., 2011); increase of user awareness of relational portfolios (Tiwana and Bush, 2005); support to develop identity-based and bond-based attachment (Ren et al., 2010); creation of online environments pleasant to interact with other members of the community (Preece, 2001); and support to social interactivity (Phang et al., 2009), have been found to positively influenced online community participation.

With regard to usability, elements such as good navigation, user access, and information design (Preece, 2000); web site reliability and flexibility, access convenience, and ease of use, visual appearance (Lin and Lee, 2006); ease of use, reliability and knowledge tracking fulfilment (Phang et al., 2009); perceived usefulness and perceived ease of use (Venkatesh, 2000); dialogue and social interaction support, information design, navigation, and access (Preece, 2001); comfort with use (Jarvenpaa and Staples, 2000; Sharratt and Usoro, 2003), have been found to increase online community members' participation.

Other studies have not explicitly referred to sociability and usability. However their findings are related, to one extent or another, to these two multidimensional concepts. Within these studies aspects such as technical issues, accessibility, anonymity and privacy, security and confidentiality, and personalisation and design have been found to be influential in peoples' decisions to participate in online communities.

Technical issues affecting online community participation have been reported frequently in the online community literature (Gray, 2004; Preece et al., 2004; Carr and Chambers, 2006; Koh et al., 2007; Guldborg and Mackness, 2009). For example, two studies of professional online communities of practice promoting workplace learning and teacher professional learning found members often experience frustrations such as slow bandwidth and slow computers that undermine their active participation (Gray, 2004;



Carr and Chambers, 2006). Similar findings within the context of teachers found different levels of frustration due to problems such as resolution differences, freezing screens, downloading content, resolution dilemmas (Baek and Schwen, 2006), and problems with navigation (Guldborg and Mackness, 2009). Similarly, Preece et al. (2004) reported that one of the top five reasons for lurking was that people could not get software to work due to its poor usability.

Access to the site itself has also been found to influence online community participation (Gray, 2004; Baek and Schwen, 2006; Carr and Chambers, 2006). Studies have shown how individuals reduced their participation because they had to log in to a separate password-protected web site (Gray, 2004), or because the log in process to the community was unnecessarily complex (Carr and Chambers, 2006). Supporting this idea, some studies have found how listserv technologies that automatically send messages to their member's email addresses can potentially increase their likelihood of participation (Teigland and Wasko, 2004; Hew and Hara, 2007).

Personalisation of the online community for one's preferences and members' involvement in the design of their communities have been found to be influential in online community participation (Teo et al., 2003; Tiwana and Bush, 2005; Lin and Lee, 2006; Sharma et al., 2006). Previous studies have suggested that in order to support online communities' viability, both designers and users should be co-creators of the online community (Ardichvili, 2008), but always exercise caution in providing extensive personalisation capabilities to users (Tiwana and Bush, 2005). Previous studies have found, for example, that when leaders of different online communities have access to accurate, timed, useful, complete and customised information (Lin and Lee, 2006) they will increase their participation. However, some contradictory findings have also been found. While a study that investigated critical system design issues for online communities found that personalisation of the system dramatically improved the perception of usefulness and ease of use by offering users options (Teo et al., 2003), another study found that people who invested time and effort in personalising their community features reduced their intentions to continue participating (Tiwana and Bush, 2005).

Issues related to technological competence have also been found to affect the success of online communities (Wasko and Faraj, 2000; Guldborg and Mackness, 2009). For example, Wasko and Faraj (2000) found that people did not participate in their communities

because they did not feel comfortable with their level of expertise. To overcome these problems previous studies have suggested the provision of initial training, periodic formative feedback, continuous improvement of technologies being used, and community-centred design need to be put in place (Preece, 2000; Lazar and Preece, 2002; Ardichvili, 2008).

The use of social controls has also been acknowledged as an important element affecting online community participation. It has been suggested that online communities unable to leverage the importance of personal reputations and to punish misbehaviours are less likely to motivate their members to contribute (Wasko et al., 2004; Butler et al., 2007) as opposed to those more successful communities that have increased the use of formal and informal incentives to attract and retain members (Lerner and Tirole, 2002; Jeppesen and Frederiksen, 2006).

Online community technologies offering anonymity and privacy have been found as bringing positive, negative, and positive and negative consequences to promote knowledge sharing in online communities. Whereas some studies have found the lack of social clues can led to richer communication (van den Hooff and de Leeuw van Weenen, 2004), or that anonymity is a desirable feature of online communities (Sharma et al., 2006), other studies, however, have found that in some cases incorporating tracking mechanisms into the design of communities seems to reinforce participation more than in those communities where anonymity is pursued (Tiwana and Bush, 2005; Wasko et al., 2009). Moreover, it has also been found that while the lack of clues can motivate educators to share their knowledge freely in that having a feeling of anonymity lets them focus on dealing just with the question at hand regardless of the people asking, at the same time this lack of clues can put them at risk of being misunderstood (Hew and Hara, 2007).

### ***2.5.5 External environment of online communities***

So far the studies observed earlier in this chapter have focused their efforts on understanding how self-interest individual motivations, individuals' community-related motivations, community structural characteristics, and technological factors, affect online community participation. Complementing these studies, this section discusses prior literature in which special attention is given to what occurs outside the boundaries of online communities, thus moving beyond the explanations that see participation as highly

dependent on individual motivations, communities and their internal dynamics, and technological features of communities. Accordingly, these studies highlight the importance of the environment (e.g., competition between communities and alternative media, social context surrounding online communities, working practices being supported by communities, existing power structures) in shaping what occurs within the boundaries of communities (i.e., participation).

#### 2.5.5.1 *Competition between communities and multi-memberships of participants*

Competition among online communities and its consequences for online community participation has been acknowledged in some recent studies (Gu et al., 2007; Wang, 2007; Wang et al., 2011). These studies have shown how the fluid nature of online communities is what characterises their permeable boundaries and the flexibility and fluctuation of their memberships (Faraj et al., 2011). These thus provide members with the possibility of joining and exiting online groups easily (Wang et al., 2011), or offer them the opportunity to simultaneously participate in multiple communities to meet different needs (Dahlander and Frederiksen, 2011).

For instance, two studies by Wang (2007) and Wang et al. (2011) that examine participation in 240 newsgroups from an ecological perspective, found that the presence of other communities with similar content and shared members represents a threat for online communities. This is because after participating in other communities, members reduce their likelihood to return and participate again in their pre-existing communities. Another study by Gu et al. (2007) explored how online communities grow and compete with each other. They argue that competition between communities can highly influence online community participation in specific communities. Their findings showed that peoples' decisions to stay in, or move from, a certain community to another depend on the difference between the value received by participants and the costs which they incur. While members' value-perceptions of their communities were found to increase with high-quality postings, at the same time, the costs of participating in the community increased with membership size.

Closely related to the issue of competition between communities is the notion of multi-memberships of participants. Although the consequences of multi-memberships developed by online community members has been a topic neglected in much of the prior online

community literature, it has been recently acknowledged that the fluidity and the permeable boundaries of communities allow people to enter and leave their communities with relative ease, and thus increase their opportunity to have multiple memberships simultaneously (Faraj et al., 2011; Wang et al., 2011).

This simultaneous development of multiple memberships can either bring benefits, or lead to tensions and conflicts experienced by those who develop multi-memberships (Bogenrieder and Baalen, 2007). This has an impact on online community participation. For example, a study by Bogenrieder and Baalen (2007) looked at the context of a consultancy firm in which consultants who participated in an online community also had other memberships beyond the online context that extended to their offline contexts as well. In their study, they showed how consultants simultaneously participate in different communities to satisfy different individual interests, and how this leads to participants facing tensions and conflicts due to the different practices and identities they develop in different groups. Before members decide to participate in a community, the authors argue, members must bear in mind the possible consequences this might have on their future work and career. They concluded that considering a community as an isolated entity may lead to false explanations based on the individual (i.e., motivation) or communal level (i.e., trust, psychological safety), that ignore the interrelationships presented within the communities and the context in which they are embedded.

Other studies, however, have also found positive consequences of multi-memberships for online community participation. Members who participate in several online communities (e.g., boundary spanners) are more prone to share knowledge in their online communities (Jeppesen and Laursen, 2009). Similarly, Dahlander and Frederiksen (2011) found that participants who are 'cosmopolitan' - i.e., people spanning multiple communities - are more likely to contribute innovative ideas because they can assimilate and draw on more divergent ideas taken from other communities than those being 'too core' in a particular community.

#### 2.5.5.2 *Online/offline interactions and online communities*

People who participate in online communities also sustain their communication activities via face-to-face interaction or by using alternative media (Nardi and Whittaker, 2002; Woerner et al., 2004; Watson-Manheim and Belanger, 2007; van den Hooff et al., 2010).

Firstly, in a comparable way to how similar online communities compete for members to survive, when technologies that support online communities are introduced to support specific practices, their usage and adoption are often threatened by competing media that already exist within the context where they are introduced. It has been acknowledged that although the use of multiple media in organisations is common practice (rather than the use of one medium isolated from others) (Nardi and Whittaker, 2002; Watson-Manheim and Bélanger, 2007; Woerner et al., 2004), there is still little understanding of how this combination of media use occurs, and how the existence of competing media may shape participation in online communities.

Secondly, when online communities are introduced within a particular context, it is generally the case that the interactions of potential online community participants are not only sustained online but also supported via offline interactions (Ardichvili et al., 2003; Dubé et al., 2005; van den Hooff et al., 2010). In a study focused on the launch of online communities, it was found that members of an online community, who went from being a face-to-face community to an online community, felt the need to maintain their face-to-face interactions, otherwise their online community would disappear (Dubé et al., 2005). This is supported in a study of four networks of practice by van den Hooff et al. (2010) who found that while people preferred to use their online communities to support the creation and exchange of task-related information, they were more inclined to communicate face-to-face as a means to support the creation and maintenance of their previous connections. On other occasions, however, rather than the use of multiple channels for communication being perceived as complementing each other, the introduction of a online community could be seen as redundant. This is because potential users already rely on, and prefer to communicate with, their pre-existing networks of contacts, especially those who have been with the organisation for a long time (Ardichvili et al., 2003).

#### 2.5.5.3 *Social context and work environment in which online communities reside*

Despite the critical role of the social context surrounding online communities and the working practices being supported by these communities in shaping online community participation, only a few studies (e.g., Baym, 2000; Baek and Schwen, 2006; Cox, 2007; Cox,

2008) have given primary attention to how the wider environment of communities shapes participation in these social spaces.

A series of studies by Dubé and her colleagues (Dubé et al., 2005; Dubé et al., 2006) proposed a typology to understand the structuring characteristics that affect the success or failure when launch online communities within the organisational context. These highlight how different elements of the organisational environment, such as availability of support provided by management, allocation of resources, degree of institutionalisation of online communities, educational and occupational backgrounds of potential members, diverse modes of operations and variation in working practices of organisations can potentially impact the launch of online communities. Despite the practicality of this typology consisting of 21 structuring characteristics (some of them referring to the external environment), it has been used to describe stable elements of an online community as “if one wanted to take its picture at a given point in time” (Dubé et al., 2006:71). Thus, studies using this typology have focused their attention on characterising differences in the nature of these communities, rather than in understanding how these ‘structuring characteristics’ (of which, according to these studies, the external environment is one) shape participation in online communities.

Within non-organisational settings, Baym’s study (2000) has shown the critical role of the offline context in shaping online community participation. She studied an online community devoted to soap operas and revealed the continuous interactions between offline life of participants and their participation in an online community. She argues that the medium used for communicating is not the only force that influences interactions in the online community. The topic, the purpose, the participants, and the offline contexts where people live also play a part.

One of the few examples found in the literature that gives appropriate relevance to the context in understanding online community participation within the organisational setting is provided by Cox (2007, 2008). He studied a community of web production professionals in UK higher education. Here he found that characteristics of their own particular environments as practitioners’ local roles and organisational positions, the degree of their involvement in technical innovation, their orientation towards marketing or IT, the type of university which they belong to, the degree of organisational embedding or marginality, and the access to availability of resources, shaped web production professionals’

participation in an online community. For example, it was found that those who were locally isolated, those new in their job positions, those with fewer local resources, and those having less control over the web and their professional situation within their own Universities, were more orientated to participate in the online community as a means to decrease their isolation. In contrast those with more resources and power, tended to have a lesser degree of participation.

The study by Hall (2004) also analysed participation by focusing on the external environment in which online communities are introduced. Her study shows how the success of an online community largely depends on the other actors with which the online community is associated in the environment surrounding the community. Another study by the same author has also pointed to the role that existing power relations within the environment in which online communities are introduced play a critical role in the shaping of participation in these communities (Hall and Goody, 2007).

Similarly, two studies within the context of teachers by Baek and Schwen (2006) and Carr and Chambers (2006) give primacy to the shaping effects of the surrounding environment of online communities. They found that the online communities focus of their studies failed because teachers' offline culture was at odds with their participation, in that among other things they had 'crammed' daily schedules, had a culture of independent rather than collaborative work, lacked a culture of shared reflection about their practice, lacked familiarity and experience using collaborative technologies, had concerns about external requirements that led to some teachers seeing the community as a distraction, with pre-existing mistrust between teachers and promoters of the community, and had a preference for 'human touch' and face-to-face interactions. Similar results were found by Gray (2004) who conducted a study within the context of adult leaning co-ordinators. He found that people more willing to participate in an online community were motivated to do so as a way to reduce isolation inherent to their job situations and work environments, by connecting with peers who shared similar working situations.

## **2.6 Relevance of, and critique to previous online community literature**

The studies reviewed in Section 2.5 have been useful to enhance our understanding of how participation takes place in online communities and what factors influence participants' choices to engage in online communities. These studies have revealed that individuals are

willing to participate in online communities when they are driven by self-interested motivations and benefits that can derive from their participation (e.g., Wasko and Faraj, 2000; Lerner and Tirole, 2002; Ardichvili et al., 2003; Bock et al., 2005; Kankanhalli et al., 2005; Chiu et al., 2006; Jeppesen and Frederiksen, 2006; Shah, 2006; Wang and Lai, 2006). Self-related motivations such as gaining a wide range of intrinsic and extrinsic rewards have also been found as influencing peoples' decisions to participate in online communities. Moreover, motivations leading people to engage in participation are not necessarily guided by purely personal interests, but also by community-related motivations emerging from the relations people sustained with other members of their communities, or as a consequence of their interest to keep their communities alive. Aspects such as trust, reciprocity, commitment, and attachment have been found to influence members' willingness to participate in online communities (e.g., Constant et al., 1996; Kollock, 1999; Ridings et al., 2002; Lakhani and von Hippel, 2003; Wasko et al., 2004; Wasko and Faraj, 2005; Usoro et al., 2007; Porter and Donthu, 2008; Wu et al., 2010).

Similarly, another group of studies has helped explain participation on the basis of the internal dynamics of communities and their structural characteristics (e.g., Butler, 2001; Nonnecke and Preece, 2001; Blanchard and Markus, 2004; Nonnecke et al., 2004b; Dubé et al., 2005; Bateman, 2007; Butler et al., 2007; van den Hooff et al., 2010). Aspects such as roles and types of participation, community size and communication activity, have been found to have an influence on the degree of participation observed in online communities. Studies focusing on technology-related matters such as sociability, usability, personalisation, accessibility, technological competence, etc., have also highlighted that the design of technologies is a critical element in sustaining online communities (e.g., Preece, 2000; Preece, 2001; Lazar and Preece, 2002; Maloney-Krichmar and Preece, 2005; Ren et al., 2007; Phang et al., 2009; Ren et al., 2010). Finally, more recently a few studies have highlighted the importance of the external environment in shaping online community participation (e.g., Baek and Schwen, 2006; Carr and Chambers, 2006; Bogenrieder and Baalen, 2007; Cox, 2007; Gu et al., 2007; Jeppesen and Laursen, 2009; Dahlander and Frederiksen, 2011; Wang et al., 2011). Aspects such as competition between communities, multi-memberships of community members, social context surrounding online communities, and interaction between offline and online contexts have been given primary attention.



These studies have significantly contributed to enhancing our understanding of online community participation. However, despite some have suggested an increasing consensus on what motivates people to participate in online communities is being achieved (Faraj et al., 2011), others have observed that the motivational forces that affect people's decisions to participate in online communities still need to be better understood (Ridings et al., 2002; Ardichvili et al., 2003; Ardichvili, 2008).

This study agrees on the idea that further studies are required to deepen current knowledge of participation, and identifies the critical role of context in shaping participation as a potential avenue to contribute to this body of literature. The need for further studies looking at the shaping role of context in participation emerges from the tendency of previous studies to neglect the relevance of the context surrounding communities in shaping participation. This is reflected in three main features of previous studies, namely:

- 1) The attempt to provide causal explanations in the form of statistical relationships among variables and behaviours (e.g., Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007; Wang, 2007); implying that findings can be easily generalised from one context to another.
- 2) The tendency of previous studies to predominately focus on understanding what occurs inside the boundaries of communities (e.g., Wasko and Faraj, 2000; Bock et al., 2005; Chiu et al., 2006; Hsu et al., 2007); under-exploring the mutual interaction and shaping effects between participation and context.
- 3) The tendency to adopt cross-sectional methodologies (e.g., Wasko and Faraj, 2000; Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007); obscuring the relevance of the historical context and missing the opportunity to explore the evolving nature of participation.

A possible explanation for these features can be found in the research traditions that have informed these studies. As suggested in Section 1.1, some of the previous online community studies resonate some of the drawbacks that have been observed within studies following a cognitive tradition (Marshall, 2008) (also referred by Reckwitz (2002)

as *homo economicus* tradition, or by Huizing and Cavanagh (2011) as subjectivist traditions) in which similar features have been observed, namely:

- A tendency to display an individualistic bias; thus suggesting that phenomena can be solely explained on the basis of individual, motivations, actions and interests.
- A tendency to provide a static portray of phenomena.
- A tendency to adopt a positivist orientation when collecting and analysing data; thus:
  - Relying on experimental and simulation approaches.
  - Tending towards reductionism at the cost of simplification and abstraction limiting their ability to reflect the 'messy complexity' of phenomena.
  - Isolating factors and treating them as discrete and independent variables.
- A tendency to treat context simply as a static container-like backdrop within which activities occur.

It is important to acknowledge however that not all studies reviewed in this chapter adhere to the same narrow perspective found in the orthodox view of the cognitive tradition. However, a considerable number of previous studies display some of the attributes found within studies informed by a cognitive tradition. Adopting any of these avenues has the potential to undermine the ability to understand the role of context in the shaping of online community participation.

Firstly, by treating individuals' motivations as discrete variables, these studies have tended towards reductionism missing the opportunity to reflect the complex nature of participation. Thus instead explain participation in terms of causal explanations in the form of statistical relationships among variables (e.g., how the existence of trust predicts or explains online community participation). In so doing, previous studies assume or imply that their findings can be generalised to other online communities residing in different contexts. This thus neglects the relevance of the surrounding context in the shaping of participation. Moreover, adopting the individual - or sometimes groups of individuals - as their unit of analysis, previous studies have looked at participation as being solely determined by individuals' attitudes, intentions, motivations and interests. They therefore obscure how other forces (e.g., the context surrounding online communities) can affect participation.

Secondly, the tendency of previous studies to focus specifically on understanding what occurs within the boundaries of communities obscures the importance of the larger context of communities and the external forces that can affect online community participation. While these studies have been useful to understand how the internal environment of communities and their structural characteristics shape participation, adopting this perspective is at odds with the highly contextualised nature of online communities. As such, these studies can potentially obscure understanding. This because within organisational settings the role of the social context and the practices supported by specific online communities have been found to influence the degree of participation in online communities (e.g., Baym, 2000; Gray, 2004; Baek and Schwen, 2006; Carr and Chambers, 2006; Cox, 2007; Cox, 2008; Dahlander and Frederiksen, 2011). Among other aspects of the surrounding context that might be underestimated and thus threaten our understanding of what shapes participation, are the existence of competing communities and/or media that can potentially hinder (e.g., Gu et al., 2007; Wang, 2007; Wang et al., 2011) or positively influence participation (Jeppesen and Laursen, 2009; Dahlander and Frederiksen, 2011). This is reflected in the existing literature that has considered participation as an activity that takes place in a particular online community isolated from other entities (i.e., online communities, other media) and thus disregards how the existence of alternative communities and media can affect peoples' decisions to participate (van den Hooff et al., 2010) .

Thirdly, adopting cross-sectional designs to look at participation in online communities potentially neglects the importance of the historical context (both internal and external) of online communities, and how this may impact participation. Two problems emerge from here. Firstly, looking at participation as a one-time static event independent of previous interactions that have occurred within the boundaries of a particular community is at odds with the dynamic and evolving nature of participation. Secondly, ignoring the external historical context (e.g., before an online community is introduced within a specific context there are already existing patterns of interactions and media usage) can inhibit an understanding of how participation may be also shaped by the historical context.

## 2.7 Conclusion

Prior research has contributed to our knowledge of the online community participation. The five perspectives identified in the literature reviewed in this chapter from which online community participation has been studied have helped explore how individual- and community-related motivations (such as intrinsic and extrinsic rewards, trust, reciprocity, etc); structural characteristics of communities (such as size, communication activity and roles of participants); and features of the technologies supporting online communities can influence the degree of participation in online communities. However, some aspects mainly related to the context surrounding online communities, still remain under-explored and require further inquiry: only a few studies have been identified in which primary attention has been given to how the context surrounding communities plays a critical role in the shaping of participation. The general tendency of previous studies to neglect the relevance of the context surrounding online communities have suggested that participation in online communities can be studied as if it were an individualised, static, and isolated phenomenon. These views resonate with some of the drawbacks that have been observed within studies informed by a cognitive tradition to study participation. Such a reductionist conception of participation has been mainly reflected in the literature in three different ways, namely: 1) the attempt of previous studies to generalise their findings thus implicitly minimising the relevance of context in shaping participation; 2) the tendency of previous research to focus on what occurs within the boundaries of communities thus overlooking how what occurs outside the boundaries of communities can influence participation; and 3) the tendency of previous studies to adopt cross-sectional designs thus potentially neglecting the importance of the historical context in influencing participation.

This situation in turn, has undermined our ability to fully understand participation. It is thus suggested that approaches members of the praxeological family of theories are capable of offering alternative perspectives that focus attention on what previous studies, many influenced by a cognitive tradition, have obscured. This observation is particular relevant in the context of this study, since many of the studies reviewed in this chapter have worked with the assumptions of a cognitive tradition. Informed by the value of praxeological studies to explore the complexities of adoption and use of technologies within the corporate context as initially shown in Section 1.2, the following two chapters

will introduce theoretical resources from Actor-Network Theory (e.g., Callon, 1986; Latour, 1986; Latour, 1987; Law, 1992) and a practice-based approach (e.g., Gherardi, 2000; Schatzki, 2001; Orlikowski, 2002; Reckwitz, 2002; Schatzki, 2002; Østerlund and Carlile, 2005; Gherardi, 2009b; Feldman and Orlikowski, 2011) to be used as sensitising devices to examine participation in the online community, the focus of this study.

Adopting such approaches offers thus an opportunity to enhance our current understanding of participation by foregrounding the dynamic, collective, relational and historical character of participation.

### **3. ACTOR-NETWORK THEORY**

#### **3.1 Introduction**

Actor-Network Theory and the practice-based approach were introduced in Chapter two. They can be seen as members of the same “praxeological family of theories” (Reckwitz, 2002). However, it has been observed that this unifying label “masks a not insignificant degree of internal differentiation between approaches” (Marshall, 2008:418). This chapter introduces core theoretical resources from Actor-Network Theory (ANT), which are deployed in Chapter six to inform the process of analysis during the first stage of the research. Chapter four further introduces theoretical resources from PBA to be used in Chapter seven to inform the processes of data collection and analysis during the second stage of the study.

This chapter introduces a set of conceptual resources from ANT to be used as informing lens for analysis during the first stage of this study given the usefulness of ANT to explore how human and non-human actors engage in processes of negotiation leading to the adoption of particular technologies (see Section 1.2). In particular, the ‘sociology of translation’ (Callon, 1986), which entails the concepts of problematisation, interesement, enrolment and mobilisation, accompanied by the concepts of control, actor, actor-networks, inscriptions and envelopes (Law, 1986c; Law, 1986b; Law, 1987; Law, 1992) are discussed and further used in Chapter six to explore online community participation in terms of technology use.

The process followed to conduct the ANT literature review started by reading seminal works of ANT by Bruno Latour, John Law and Michel Callon. Having gained an understanding of the approach, further studies applying the ideas of ANT to analyse the adoption of technologies were reviewed. Among the search terms used to identify this material were “ANT” and “adoption of technologies”; “ANT” and “information systems adoption”; “ANT” and “technology adoption”. To complement these studies, subsequent attention was primarily given to studies that have criticised the ANT approach and how it has been used. The databases Web of Knowledge and Scopus were used as sources of peer-reviewed journals. High-impact journals such as *Organization*, *Organization Studies*, *Organization Science*, and *Management Learning* were mainly used as sources of high quality studies (See Appendix fourteen).

The chapter begins by introducing the core proposition and three principles underlying the ANT approach (Section 3.2). It then focuses attention on introducing the concepts of control, actors, actor-networks, envoys and envelope (Section 3.3), and the four moments of the 'sociology of translation' (Section 3.4). Next, by referring to previous studies informed by ANT, the chapter argues for the value of these theoretical resources to make sense of the data collected during the first stage of the study. A set of propositions to be considered during the analysis are suggested as initial lines of inquiry for the first stage of the research (Section 3.5). Finally, the chapter introduces some controversies and debates which ANT has been subjected. It also outlines potential problems and challenges that may emerge, and how these are addressed (Section 3.6). Section 3.7 summarises the content of the chapter.

Overall, the conceptual ideas of the sociology of translation and its related concepts serve as analytical devices to explore: 1) how the HR project (*the implementation*) took place; and 2) how the collaborative technology (*CODECO*) supporting the online community (*the community*), which is the focus of this study, was aimed to be enrolled into the network supporting *the implementation*. While at the end of this research *the implementation* had been successfully deployed in the multi-campus University system (*INTEC*), *CODECO* was not adopted as expected by its promoters; thus undermining *participation* in *the community*.

### **3.2 Core proposition and principles of ANT**

Actor-Network Theory appeared first in the field of Science and Technology Studies (e.g., Callon, 1986; Latour, 1986; Law, 1986d; Latour, 1987; Law, 1992). Initially, ANT was concerned with how scientists achieved the support of others for their propositions about scientific facts, and how power and resources were acquired to perform their work (Van House, 2003). The main proposition of ANT is concisely described by Law:

"This, then, is the core of the actor-network approach: a concern with how actors and organisations mobilise, juxtapose, and hold together the bits and pieces out of which they are composed; how they are sometimes able to prevent those bits and pieces from following their own inclinations and making off; and how they manage, as a result, to conceal for a time the process of translation itself and so turn a network from a heterogeneous set of bits and pieces each with its own inclinations, into something that passes as a punctualized actor" (1992:386).

As the above quotation suggests, the basic idea of ANT is to understand how actors – both human and non-human - are brought together in stable, heterogeneous networks of aligned interests (Law, 1992). By tracing the transformation of these heterogeneous networks, ANT explores how these networks of actors and their relations emerge, are maintained, and compete with other networks of aligned interests (Tatnall and Gilding, 1999).

Overall, three main principles underlie the ANT approach: generalised symmetry, agnosticism and free association (Callon, 1986). Firstly, the principle of generalised symmetry is reflected in the radical (and controversial) way ANT defines actors (Van House, 2003). According to this view no distinction between human and non-human actors should be made. Both should be analysed in the same terms without making any discrimination (Callon, 1986; Law, 1986c; Law, 1987). In so doing, this principle maintains that both human and non-human actors have the ability to take actions, and can be anyone or anything (Law, 1986a).

Secondly, the principle of ‘agnosticism’ suggests that the observer of the actor network, needs to be impartial, and requires that all interpretations be unprivileged. This principle requires researchers to systematically avoid censoring any interpretation provided by the actors studied when they speak about themselves or other actors (Callon, 1986), even when their interpretations fail to accord with the views of the researcher (Law, 1986b). Censoring interpretations can potentially hinder an in-depth understanding of the phenomenon under investigation.

Thirdly, the principle of ‘free association’ requires the abandonment of all *a priori* relationships that could be assumed to exist between human and non-human actors (Callon, 1986). In any analysis, the actors’ relationships and the way they explain their worlds must be allowed to fluctuate. Rather than imposing these relationships upon the actors, they must be the focus of the analysis, not the point of departure (1986:201). As Law notes:

“It is important not to start out assuming whatever we wish to explain...we might start with interaction and assume that interaction is all that there is. Then we might ask how some kind of interactions more or less succeed in stabilizing and reproducing themselves: how it is that they overcome resistance and seem to become “macro-social” (1992:380).



These three principles serve as the basis to introduce the ‘sociology of translation’ and related concepts. They are also used in this study to trace the creation and evolution of an actor-network which aimed to enrol the technology that supported the online community, and the many other human and non-human actors. The following sections discuss the Law’s perspective of control (Section 3.3) and the sociology of translation (Section 3.4).

### **3.3 Law’s perspective on control**

The notion of control as proposed by John Law (e.g. Law, 1986c; Law, 1986b; Law, 1987; Law, 1992) comprises the concepts of control itself, actors, actor-networks, inscriptions and envelopes. It suggests that those who wish to exercise control on others need to create an actor-network. This is shared by Callon (1986) when he suggests that when an actor-network takes form, the result is a situation in which certain entities control others. As will be further shown in more detail in Section 3.4 below, it is through the processes of translation that networks emerge and are transformed.

#### **3.3.1 Actors**

Actors are individual entities who take actions through which they can “exert detectable influence on others” (Law, 1987:132); Law also puts it as: “an actor is anything/anyone that acts upon others” (Law, 1986a:16). The principle of generalised symmetry embraces this position in which humans are not given any priority over non-humans on their ability to take actions (Law, 1992).

Thus, the notion of ‘actor’ must be equally applicable to all actors within an actor-network: people, technologies, animals, texts, money, buildings, etc. Among the actors that might be persuaded by a controlling actor during the emergence of an actor-network are the following: 1) actors who are not identified by the objectives of the network, but are enrolled once agreement on the purposes proposed by the controlling actor is achieved; 2) actors who might be resistant to the roles they are supposed to play; 3) actors who are disruptive and thus act against the interests of the network; and 4) actors that exercise control on behalf of the controlling actor. The entities that do not influence the process of control of a particular network are not actors of that specific network.

### **3.3.2 Actor-networks**

While actors are individual entities, actor-networks (or simply networks) are groups of actors: networks of heterogeneous materials linked with one another through different relationships, and whose resistance has been overcome (Law, 1992). For a new network to emerge, the controlling actor - and those exercising control on its behalf - needs to enrol other actors in order to align their interests, and weaken the presence of other actors that might act against the goals of the network. To accomplish this goal, negotiations need to take place between the controlling actor and those who they seek to enrol. Once the controlling actor has translated the interests of others to achieve its aims, the actor-network becomes stabilised.

Through the process of simplification of networks known as “punctualisation”, an actor-network can be seen as acting as a single and coherent actor with relatively few apparent parts; as Law notes: “it is that something much simpler [...] comes, for a time, to mask the networks that produce it” (1992:385). Furthermore, once punctualised, an actor-network can be more or less taken for granted, no longer questioned or tested (Callon and Latour, 1981), but “a black box whose behaviour is known and predicted independently of its context” (Callon, 1991:152). Thus, it can be said that through the process of “black boxing”, sub-networks disappear (Van House, 2003:14), and actor-networks become actors.

However, the process of punctualisation is always precarious (Law, 1992:385). Thus, a punctualised actor-network always has the potential to change and evolve, since the relationships linking the actors of the network may be weakened, or because other actors (e.g., other actor-networks) external to the actor-network can threaten its stability. As such, when a network faces resistance or competition, it can become a failing actor-network with the potential to appear again as a complex network of actors. Only when a network is formed of a range of durable materials can it be seen as relatively stable (Law, 1992:387).

### **3.3.3 Control**

For a controlling actor to exercise control over others, it must develop different strategies to persuade others to play particular roles. Once other actors have been persuaded, their actions can assist the controlling actor in achieving the goals set for the actor-network.

Moreover, a controlling actor cannot exercise control alone, as Law highlights when discussing how the process of transformation of networks is achieved:

Texts of all sorts, machines or other physical objects, and people, sometimes separately but more frequently in combination, these seem to be the obvious raw materials for the actor who seeks to control others at distance (1986c:255).

However, those 'raw materials' needed by the controlling actor to exercise control and those aimed at being controlled, more often than not, pose different sorts of resistance and struggle (Law, 1992) that can come from different sources and at different moments during a translation process. Should these two not be overcome, the controlling actor might fail in its attempt to create a successful actor-network.

### ***3.3.4 Inscriptions/envoys***

A controlling actor cannot exert control on its own. Instead, it needs the support of other actors; human, non-human or both. One of these types of actor is called 'inscription'. Inscriptions are critical to the process of control (Law, 1986b) because they facilitate action at a distance (Van House, 2003:15). They often take the form of devices that contribute to the control process by posing themselves as "durable and mobile emissaries" (Law, 1986b:22). When they act as emissaries or envoys (Law, 1986c; Law, 1986a), they become crucial for long distance control (Law, 1986c) because they can be used to prescribe - or sometimes force - others to behave in certain ways in order to achieve specific goals or protect certain interests aligned to those of the controlling actor.

However, saying that inscriptions are relevant for control is not saying that any given inscription/envoy will facilitate control. Its ability to influence how other actors take actions will depend upon the context in which they are introduced, and its degree of mobility and durability (Law, 1986b). In the light of Law's perspective of control, the context in which inscriptions are introduced is formed by the envelope surrounding the inscription (see Section 3.3.5). Therefore, for inscriptions to ensure their compliance with the network, they need to be surrounded by a strong envelope. However, inscriptions can also dissolve in the face of stronger adversaries who are better able to associate with, and be associated to, other actors. This is to say that inscriptions are also the outcome of successful translations.

As for mobility and durability concerns, their importance lies in the fact that these two features of inscriptions shape the relationships they sustain with other actors of their environments. The more an inscription is capable of maintaining its relational patterns for longer, the more durable it is. The more an inscription is capable of making a link between the core (e.g., the controlling actor) and the periphery (e.g., other actors), the more opportunities there are for an inscription to become mobile. Thus, when inscriptions become mobile and durable, they can be seen as 'black boxes', as actors supporting the co-ordination of work across space and time (Latour, 1987:227).

Furthermore, inscriptions often develop properties of irreversibility. When this happens, inscriptions increase the degree to which it is impossible to go back to a point where other alternatives exist. In consequence, inscriptions become more difficult and expensive to modify; as Latour suggests: "the phenomenon we are tackling is not inscription per se, but the cascade of ever simplified inscriptions that allow harder facts to be produced at greater cost" (1990:40). Moreover, despite inscriptions being expected to maintain their loyalty to the controlling actor without being influenced by others, there is always the risk for inscriptions to become "double-agents" (Law:1986c:256); thus acting against the interests of the controlling actor. Surrounding inscriptions by strong envelopes could be an effective strategy to ensure the fidelity of these inscriptions. The final aim would be, as Law (1986a:17) put it:

"that the network which is generated must make it possible for envoys to move in safety from the centre to the periphery, exercise force upon their surroundings, retain their shape, and return unscathed one more to the centre".

### ***3.3.5 Envelopes***

To understand how inscriptions are involved in the process of control they need to be seen in the light of the relationships they sustain with other actors forming the network. The relevance of these relationships can be incorporated in the concept of an envelope. According to Law (1986) envelopes are composed by those actors that an inscription has a relationship with (e.g., human actors, non-human actors, other inscriptions), and by the components of the inscription itself.

The relationships maintained between inscriptions, their components and other actors will influence the ability of inscriptions to take specific actions. In general, envelopes can

influence the capacity of the inscription to act in two different ways. Firstly, actors included in the envelope can assist the inscription's ability to take specific actions. As Law notes: "The right documents, the right devices, the right people properly drilled – put together they would create a structured envelope for one another that ensured their durability and fidelity" (Law, 1986c:254). Secondly, actors of the envelope might undermine the inscription's capacity to exercise control on others by imposing some limits in its actions.

In summary, in order for an inscription to accomplish its aim, an appropriate envelope is required. This envelope must be capable of embodying heterogeneous actors from the inscription's context, allowing the inscription to impose itself on others less mobile and durable than itself (Law, 1986b:34) in order for the inscription to serve the purposes to which it was inscribed (Law, 1986c:241).

### **3.4 The sociology of translation**

The sociology of translation, complemented by the notion of control and its related concepts, helps understand how networks emerge, and are transformed, through processes of translation. A translation process entails four interrelated moments: problematisation, interessement, enrolment and mobilisation (Callon, 1986).

In ANT, networks are continuously evolving and transforming through processes of translation in which a temporary actor-network progressively takes form, and eventually certain entities end up controlling others (Callon, 1986; Law, 1986c). Those playing the role of the controlling actor develop different strategies to drive the translation in order to enrol and mobilise other actors (Blackburn, 2002). During a successful translation, those being controlled are obliged to remain faithful to the objectives of those who control, and those exerting control are given the right to represent those mobilised (Callon, 1986).

Moreover, a process of translation not only entails some actors establishing themselves as spokesmen, but also requires processes of displacement to take place. Being the spokesperson means that certain actors can express what others say and want in their own language. Being displaced means for an actor that its state has been changed (Callon, 1986:223). Nevertheless, translation processes are not always successful. When those who drive the process of translation fail to get other actors to comply with them, a process of

dissidence, rather than a successful translation, takes place. Thus, those aimed at to be mobilised question or refuse the roles imposed upon them by the controlling actor (Callon, 1986).

Below the process of translation and its four interrelated moments - problematisation, interessement, enrolment and mobilisation (Callon, 1986) – are outlined. It is important to highlight that the perspective taken in this study sees the moments of translation as having the potential to overlap, sometimes in a disorderly and iteratively fashion. Translation is not a linear, one-way process.

### ***3.4.1 Problematisation***

In the ‘problematisation’ stage, one or more key actors attempt to frame the nature of the problem in their own terms (Tatnall and Burgess, 2002; Sarker and Sidorova, 2006). They also identify and involve a number of actors whose roles and relationships configure an initial problem-solving network (Linde et al., 2003). At this stage, the identities of other actors must be defined. Once the controlling actor configures an initial actor-network (Linde et al., 2003), it is crucial for it to define the problem in its own terms by establishing it as an Obligatory Passage Point (OPP) through which it renders itself as indispensable (Callon, 1986). Thus, by establishing an OPP the controlling actor imposes its view on others. It thus suggests that the problems of others would only be resolved by passaging through the OPP (Law, 1986b). Should other actors wish to pass through the OPP, they first need to modify their current interests and to align them to those of the controlling actor. Only by imposing its propositions as OPPs, will the controlling actor be successful.

### ***3.4.2 Interessement***

The second moment of translation is ‘interessement’. Interessement embraces a group of actions by which an actor interests others sufficiently to agree with its proposal (Callon, 1986). Through this process, those supporting the emerging network incite actors into fixed places (Tatnall and Burgess, 2002), and weaken the influence of other actors that may disestablish the developing network (Linde et al., 2003). As Callon points out:

Interessement is the group of actions by which an entity [a controlling actor] attempts to impose and stabilise the identity of the other actors it defines through its problematisation...to interest other actors is to build devices that can be placed between them and all other entities who want to define their identities otherwise. A interests B by

cutting or weakening all the links between B and the invisible (or at times quite visible) groups of other entities C, D, E, etc. who may want to link themselves to B. (1986:207-208).

At this stage, those being targeted for interessement might be simultaneously implicated in the problematisation stage of other networks, and therefore might define their identities and priorities in a manner at odds with the interests of the emerging network. Thus, in order for the controlling actor to achieve a successful interessement, different strategies and tactics need to be deployed (Sarker and Sidorova, 2006). A common strategy is to build devices and place them between the controlling actor and those being interested. The use of representatives is another strategy, in which the controlling actor negotiates interessement with those who “speak in the name of the others” (Callon, 1986:214). Rather than convincing all the actors that are part of a network, these who ‘represent’ the masses become the spokesmen of the controlling actor. Independently of the strategies, the final goal is to isolate those being enrolled by impeding any other possible alliance that may challenge the legitimacy of the OPP. Finally, for interessement to be successful, it needs to achieve enrolment (Callon, 1986:211). This is discussed below in Section 3.4.3.

### ***3.4.3 Enrolment***

Interessement does not necessarily lead to successful alliances and eventually translations; it needs to be reinforced by enrolment (Callon, 1986). The process of enrolment consists of “negotiations, trials of strength and tricks that accompany the interessements and enable them to succeed” (Callon, 1986:211). If the necessary alliances are to succeed, a definition of roles played by those actors to which control is being exercised is devised according to the scheme proposed in the OPP (Law, 1986a; Linde et al., 2003). Furthermore, negotiations not only need to take place between the actors target for enrolment, but also with those actors who can potentially threaten network stability. However, negotiations are not always needed. This is because some actors are enrolled without any resistance (e.g., those who are very close to, and share, the problematisation statement). To fulfil a successful enrolment, alternatives such as “physical violence (against the predators), seduction, transaction, and consent without discussion” (Callon, 1986:214) can be used. Independently of the approach used to enrol others, it is through these series of negotiations that the identity of the actors is tested.

#### **3.4.4 Mobilisation**

Finally, the last moment of translation is mobilisation of allies. Here the controlling actor needs to “accumulate enough allies in one place to modify the belief and behaviour of all others”(Latour, 1990:60). During this stage, the controlling actor “borrows the force of the passive agents that it has enrolled by turning itself into their spokesman and talking on their behalf” (Law, 1986a:16). An even larger network of absent entities that support the proposed solution is created, and thus gains wider acceptance (Tatnall and Burgess, 2002:185). Hence, at this stage the controlling actor might have developed a relationship with only those who represent the masses, assuming that those represented will follow their representatives.

However, since the process of representation takes place in a “cascade manner” - using chains of intermediaries who “little by little reduce the number of representative interlocutors” (Callon, 1986:216) - it becomes more complex. Whether a successful translation takes place depends upon how strong the cascade relationships are.

Moreover, there will be always the possibility that those represented will not follow their spokesmen, but instead might challenge or refuse it. When this situation occurs, new spokesmen are heard, but this time their actions divert those actors enrolled in the past through the original OPP. As Callon puts it: “Translation continues but the equilibrium has been modified...reality begins to fluctuate” (Callon, 1986:224) and new translation processes start to occur; however, this process of ordering is never completed (Callon, 1986).

#### **3.5 Feasibility of ANT to this study and exploratory lines of inquiry**

The theoretical resources of the sociology of translation and its related concepts can enhance our understanding of two issues relevant for the study discussed in this thesis, namely: 1) how the implementation of the HR project (*the implementation*) took place; and 2) the adoption of information technologies (in general), and technologies supporting knowledge sharing through online communities (in particular). First, as the technology supporting the online community (*CODECO*) was aimed at supporting knowledge sharing and collaboration during *the implementation*, it becomes critical to understand first, how the HR project was implemented, and the strategies developed by the controlling actors to



achieve a successful implementation. Second, once an understanding of how *the implementation* took place is achieved, the use of *CODECO* to support participation in *the community* can then be seen as a strategy deployed by the controlling actor to successfully implement the HR project, whereas *CODECO* can be seen as a non-human actor with the ability to influence its own adoption and use.

Unlike other alternative approaches and concepts such as communication media repertoires (Watson-Manheim and Bel nger, 2007), media toolbox (Woerger et al., 2004), and multiple inclusion (van Dongen et al., 1996), ANT was seen as a valuable approach to deal with both, how the project implementation took place, and how the technology aimed at developing relations with other actors so as to be used during *the implementation*. While ANT was seen as a powerful approach to analyse the implementation and the adoption of *CODECO*, the concepts of communication media repertoires, media toolbox, and media toolbox were ill-equipped to analyse the implementation of projects. These concepts were mainly focused on understanding how communication media can be used in combination within the organisational setting. Another limitation of these concepts was that they seem to be developed to analyse how *existing communication media* can be used in combination. Unlike this view, the study discussed in this thesis found ANT as a more valuable resource to allow for exploration of media that is introduced, rather than already existing.

What follows, discusses a series of studies relevant to understanding the implementation of projects and the adoption and use of technologies to argue the case for the notions of translation and its related concepts as suitable theoretical devices for this study.

Previous studies using ANT to examine the implementation of projects - where the role of technology is critical in either facilitating or threatening their success - are numerous in the literature. For example, studies have shown the value of theoretical resources from ANT being used to examine IT-mediated change projects as management-change projects (Linde et al., 2003); projects supporting the adoption a wide range of information systems (Hanseth and Braa, 1998; Walsham and Sahay, 1999; Martin, 2000; Scott and Wagner, 2003; Cho et al., 2008; Elbanna, 2010); and projects supporting the implementation of total quality programmes (Harisson et al., 2001).

These studies, through the lens of ANT, have shed new light on how projects are implemented. For example, it has been shown: how despite the deployment of different

strategies to gain support from relevant actors during the implementation of a management-change project, the project faced many problems and enormous delays so that it was never fully implemented (Linde et al., 2003); how continuous negotiations between actors of different medical groups were necessary to implement a health information system that otherwise would not have been inscribed into the medical practices of those involved (Cho et al., 2008); how projects implementing new information systems failed because the relations between the system itself and its potential users were never fully strengthened (Bartis and Mitev, 2008); how projects might fail because the technologies implemented are at odds with the values of the project's shareholders, or because the technologies develop strong properties of irreversibility that are not well-aligned to the interests of the emerging network (Walsham and Sahay, 1999); and how projects taking place simultaneously within one particular organisation may compete for resources, thus reducing the rhythm of implementation or threatening particular initiatives (Elbanna, 2010).

Furthermore, previous studies using ANT to better understand the adoption of technologies are of particular relevance to this study. Such studies have focused attention on looking at how a range of information technologies such as intranets (Hall, 2004), electronic work time registrations systems (Bartis and Mitev, 2008); geographical information systems (Walsham and Sahay, 1999; Martin, 2000); health management information systems (Wilson and Howcroft, 2002; Cho et al., 2008); and enterprise resource planning systems (Hanseth and Braa, 1998; Scott and Wagner, 2003; Elbanna, 2010) are adopted.

What all these studies have in common is a concern with how human and non-human actors persuade each other to align their interests towards a common goal. Moreover, these studies have shown how actors develop specific relations between them and embrace certain strategies in ways that they themselves can hold together long enough to achieve a particular purpose - to become an stable actor-network; a technology used in practice. Thus, in line with these concerns, the following statements - together with those mentioned below - were considered as initial lines of enquiry to be used during the process of data analysis for the first stage of the research:

- a. The existence of powerful actors whose strategies can mobilise other actors is required for producing acceptance of new technologies, (Linde et al., 2003).

- b. The emergence of competing actor-networks, or actors acting as key opponents, might diminish the adoption of particular technologies (Wilson and Howcroft, 2002; Linde et al., 2003; Cho et al., 2008).
- c. Among others, work practices, actors situated outside the boundaries of a particular actor-network, and other actor-networks, can be seen as powerful actors that can enforce or weaken a particular network (Avgerou, 2008; Cho et al., 2008).
- d. The adoption of technologies might be undermined when they threaten the *status quo* by putting at risk the positions of some employees (Bartis and Mitev, 2008).
- e. There is the possibility that those interested in adopting particular technologies might use their power to sell the technology or to hide problems arising during the implementation (Wilson and Howcroft, 2002; Bartis and Mitev, 2008).
- f. Technologies and technical issues can be seen as powerful actors that might enforce or weaken a network (Avgerou, 2008; Cho et al., 2008). For example, they can carry inscriptions and interests that privilege some potential users but constrain others (Hanseth and Braa, 1998; Walsham and Sahay, 1999; Avgerou, 2008). New technologies might also have poor performance (Wilson and Howcroft, 2002), or perform in ways not previously expected (Hanseth and Braa, 1998) so that those supporting their adoption might feel betrayed and therefore change the alignment of their interests.
- g. Different perceptions of the same technology by different groups of employees might exist and play a role in shaping its adoption (Wilson and Howcroft, 2002; Bartis and Mitev, 2008).
- h. Technologies must not be considered in isolation; rather their adoption must be seen as shaped by the relations they develop with other actors (e.g., concepts, interests, other technologies) (Munir and Jones, 2004).
- i. The adoption of technologies can be highly affected by the lack of enrolment of relevant actors (Walsham and Sahay, 1999) and the lack of negotiations taking place between relevant actors (Elbanna, 2010). Moreover, actors' interests can be mobilised and aligned to the interests of a particular network; however, they might continuously shift as they are subject to ongoing translations (Hanseth and Braa, 1998; Cho et al., 2008).

The studies highlighted above are highly relevant to the work undertaken for this doctorate since they used ANT to explore what shapes the adoption of technologies within

the organisational context. However, the use of ANT to understand the use of technologies to support online communities has been under-explored. This situation was seen as an opportunity for ANT to be used as theoretical lens to inform such studies. Since only a few studies have suggested the use of ANT for understanding knowledge management implementations via collaborative technologies (e.g., Hall and Goody, 2007), or have actually examined participation in online communities from an ANT perspective (e.g., Tabak, 2008; Beekhuyzen et al., 2011), there was potential for ANT to be used as a framework to enhance understanding of online community participation. Based on these few, but valuable, pieces of literature that have used ANT within these contexts, the following statements join those mentioned above to be considered as initial guidelines for analysis in the first stage of the study:

- a. Those supporting the adoption of particular technologies (e.g., technologies supporting online communities) may not command sufficient social and political power within the organisation to motivate its widespread adoption (Hall and Goody, 2007:183).
- b. Knowledge management implementations might be regarded as actors-networks that compete (e.g., with other computer systems, or organisational initiatives), and are subject to limitations of available resources (e.g., office space, corporate sponsorship, organisational attention) (Hall and Goody, 2007:184).
- c. A fragmented actor-network supporting the adoption of a collaborative technology might find it difficult to sustain when its own staff have effectively joined competing networks, or created new ones (Hall and Goody, 2007:186).
- d. Implementing technologies to support knowledge sharing not only requires dealing with technical issues, but also entails institutional negotiations (Hall and Goody, 2007:183).
- e. Human actors (e.g., project leaders, senior sponsors, 'ordinary staff') and non-human actors (e.g., documents, policies, instructions, technology artefacts such as the online community and its constituent components, concepts) - both internal and external to a particular network - must be given relevant attention when looking at the adoption of particular technologies supporting knowledge management initiatives (Hall and Goody, 2007:184, 185).
- f. There is a need to acknowledge that, when promoting knowledge sharing in 'imperfect' environments, there is always the possibility that practitioners will

adhere to *ad hoc* practices rather than adopt new corporate systems (e.g., intranets, technologies supporting online communities) (Hall and Goody, 2007:186).

- g. The introduction *per se* of an online community does not necessarily lead to its success. For online communities to be successful, they need to align themselves to important actors (both human and non-human) in the context surrounding them; aspects such as management sponsorship, extensive promotion and consultation with potential participants are critical for their institutionalisation (Tabak, 2008).
- h. To enable the success of online communities, potential participants need to be able to translate their interests (e.g., to inscribe their information behaviours) and align them to those of their online communities (Tabak, 2008).

### **3.6 Acknowledging challenges and limitations of ANT**

What has been discussed so far favours the notions of translation and control being seen as theoretical resources with the potential to provide an insightful and novel interpretation of what shapes the use of the technologies supporting online communities. However, at this point it also becomes necessary to acknowledge the critiques and potential challenges of some of ANT's controversial claims. How these critiques and challenges shaped the study outlined in this thesis is discussed further in Chapter eight.

Despite the fact that some of the proponents of ANT have suggested that these controversies are mainly based on misunderstandings (Callon and Latour, 1992; Latour, 1999). There is a need to identify these concerns and anticipate potential problems that might emerge during the research process. In so doing, the stance taken should be made clear when using ANT (Whittle and Spicer, 2008). Four main concerns about the ANT approach were pertinent to consider in this study, namely: the principle of generalised symmetry; the risk of adopting an objective and un-reflexive stance when using ANT; the Machiavellian orientation of ANT; and the flat ontology of the approach. These critiques of ANT are mainly built on those identified in previous works by Munir and Jones (2004), Calas and Smircich (1999), Whittle and Spicer (2008), Gad and Bruun Jensen (2010), Walsham (1997), and Amsterdamska (1990).

The first, and probably the most controversial debate surrounding ANT, is the principle of general symmetry. This ascribes agency to both human and non-human actors. The basis

of this principle argues that humans and non-humans must be seen as active entities. Accordingly, technologies must not be seen as neutral, or inert, but as actors that cannot be taken for granted. Collins and Yearley (1992) were among the first to criticise this principle, arguing that the symmetrical treatment to human and non-humans is intellectually and morally problematic because it removes humans from their pivotal role (Munir and Jones, 2004; Whittle and Spicer, 2008). However, those supporting ANT suggest that the symmetrical stance seeks to overcome the over-emphasis given to human agency that is favoured in sociological studies. However convincing this may be, the idea that this principle challenges the unique richness of human agency is a problem. For example, one of the avenues that this criticism has taken, is reflected in the critics of ANT claiming that it adopts a-moral and a-political stances (Walsham, 1997), to which Latour has responded: "We are left with the accusation of immorality, apoliticism, or moral relativism...[However] in order to make a diagnosis or a decision about the absurdity, the danger, the amorality, of the unrealism of an innovation, one must first describe the network"(1991:130).

In relation to this question, the research discussed in this thesis adopts a stance that acknowledges that the extreme position of symmetry is difficult. However, it is also acknowledged that assuming a symmetric stance towards humans and non-humans has the potential to examine critically the key role of technology that supports the online community can play in its own adoption. In so doing, this research is aligned to the aim proposed by Latour and Callon (1992) of using this principle as a means to develop a 'symmetric metalanguage' to refer to humans and non-humans with an 'unbiased' vocabulary, and to adopt it as an analytical stance, not as an ethical position (Law, 1992:383).

Secondly, another relevant critique questions the reflexive approach of ANT (Murdoch, 2001; Cordella and Shaikh, 2006; Whittle and Spicer, 2008). This stance takes two main avenues for criticism. In the first, critics argue that there is a tendency to adopt an objective stance, in the sense that the vocabulary that ANT analyses tend to use fails to match the descriptions and explanations that research participants would provide themselves (Murdoch, 2001). In adopting this position, Whittle and Spicer (2008) note that those taking ANT as their theoretical lens seem to suggest the theory is capable of offering a superior or expert view that implies members' explanations might be naïve or

wrong. In the second avenue of these criticisms, Whittle and Spicer (2008) argue that in the use of ANT, there is a danger of unreflectively applying the four stage model of translation in an attempt to verify the universality of the theory. As a consequence, there is a risk that those using ANT treat the claims of others as relative while representing their own interpretations as the product of absolute truth (2008:619).

To avoid assuming members' explanations might be naïve or wrong, and the claim that the findings of the study are the absolute truth, there is acknowledgement that: 1) reality is a process of construction and interpretation in which the researcher plays a key role; and 2) the potential of multiple other interpretations is not only possible but also desirable. Second, rather than engaging in a deductive approach to test or refute the conceptual tools provided by ANT, these analytical devices are adopted as sensitising ideas to explore the phenomenon under investigation in the light of the particular preoccupation of the approach. No attempt to test or prove the theory is made.

Another controversy surrounding ANT concerns its Machiavellian orientation (Amsterdamska, 1990) through which ANT pays most interest in understanding how things become aligned and centred (Calas and Smircich, 1999). In this regard, ANT has been criticised for putting an over-emphasis on control and management. This is exemplified in the focus of ANT studies on privileged, strong actors who aim to create stronger networks, and its (supposed) blindness towards other possible ways in which networks might develop (Gad and Bruun Jensen, 2010). This is also reflected in the fact that those who exercise power are very often humans portrayed at the centre of the network, obscuring the claim of ANT that power is a function of networks rather than actors (Whittle and Spicer, 2008).

To counter this problem, it has been suggested that researchers must make an effort to maintain "sensitivity to complexity" (Gad and Bruun Jensen, 2010:59). Bearing in mind the distinction made by Latour (1986), and summarised by Fox (2000) between a diffusion model of power and a translation model of power, seems to be a strategy that can help as sensitising devices to acknowledge complexity issues. This research clearly adopts the translation model of power. Fox summarises these two views:

"The former assumes that a successful command issues from a central source, through the chain of command and is implemented. A macro-actor such as a president or manager, representing the will of the state, the people, the organization, speaks and action simply

follows. In contrast, the translation model looks at the links in the chain and notes that at each point there is local agency" (2000:861).

A final relevant controversy has been around the "flat ontology" of ANT (Reed, 1997). This refers to low attention ANT pays to how broader social structures influence the local (Walsham, 1997). This is clearly reflected in the emphasis put on arguing that nature and society are effects of networks, not causes, or the view that "social structure is not a noun but a verb" (Law, 1992:385). Those arguing against ANT suggest that its ontology tends to neglect the regulating role that social structures play in shaping and giving consistency and continuity to relations developed among actors. As Reed puts it:

They feel no need to look beyond these micro-level processes and practices, because as far as their advocates are concerned, there is nothing, ontologically or analytically 'there' flat ontologies and miniaturised local orderings construct a seductive vision of our social world in which everything and everybody is constantly in a 'state of becoming' and never in a condition of 'being'" (1997:29).

Moreover, adopting this perspective implies, at the same time, the rejection of the existence of a context. Among those who have extensively discussed this issue, Schatzki (2002) argues that ANT is nominalist in nature. This means that from an ANT viewpoint sociality can be explained solely through the relations between actors of a network. This is because ANT radically assumes that there is no such thing as society, but only actors and their relations (Munir and Jones, 2004). Schatzki continues by saying that adopting this perspective neglects the existence of a context that acts as "a setting or backdrop that envelops and determines phenomena" (2002:xiv). For ANT theorists, Schatzki notes that, when the word 'context' is used, it is employed to designate just more networks; apart from networks, nothing else exists; as Latour, cited in Schatzki (2002), claims: "networks are immersed in nothing" (1999:128).

This view (i.e., assuming that there is no such thing as society, or rejecting the existence of a context that shapes phenomena), again is consistent with the low attention paid to how social structures play a role in influencing local phenomena. Latour for example, has tackled the issue of not paying due regard to the social structures in shaping the course of local action by suggesting that "the macrostructure of society is made of the same stuff as the microstructure" (1991:118) and thus this problem can be overcome. Moreover, Latour goes further to argue that ANT allows moving between different levels of analysis, thus assisting with the investigation of both the macrostructures and the microstructures using the same methodological approach. This viewpoint is also supported by Callon and Latour



(1981), who argue that “all differences in level, size and scope are the result of a battle or a negotiation” (1981:279).

To avoid this when studying information technologies, Walsham (1997) has suggested combining the methodological and conceptual ideas of ANT with insights from other social theories. In line with this suggestion, this research adopts theoretical resources from another social theory: the practice-based approach (PBA). PBA was used to explore participation in the online community during the second stage of this research.

Criticisms of ANT are found frequently in the literature. However, there are means of tackling these concerns, firstly by acknowledging their existence, and secondly by clarifying the stance of the study discussed. Even among those who have fiercely criticised ANT (e.g., Amsterdamska, 1990; Reed, 1997; Whittle and Spicer, 2008; Gad and Bruun Jensen, 2010), the usefulness of the theory is acknowledged to enhance our understanding of how actors are enrolled in networks to achieve particular goals (e.g., the use of a particular technology), and how humans and non-humans enable organised action (e.g., participation in an online community).

### **3.7 Conclusion**

The literature review discussed in Chapter two suggested the need to adopt alternative approaches to analyse participation in online communities. This chapter has introduced theoretical resources from the sociology of translation which will further inform the analysis during the first stage of this research (Chapter five). Informed by a series of studies that have used ANT to examine the implementation of projects and the adoption of technologies, the concepts from ANT are particularly relevant for the purpose of the study discussed in this thesis to explore online community participation in terms of technology use. Accordingly, it is suggested that participation in the online communities will take place only if the collaborative technology is used.

Thus, the deployment of the sociology of translation serves to analyse participation in the online community as entailing a process in which human and non-human actors take part in negotiation processes to achieve particular goals (i.e., persuade others to participate in the online community). Accordingly, the theoretical resources discussed above are first used in Chapter five 1) to make sense of how *the implementation* took place, and 2) to look

at how a focal actor aimed to persuade others to participate in *the community* as a means to support their interactions and knowledge sharing activities during *the implementation*. Among other insights from ANT, the following are relevant ideas to consider when exploring the adoption of the collaborative technology to support participation in the online community, as is the focus of this study:

- An exploration of how human and non-human actors persuade each other to align to particular interests in order to achieve particular goals.
- The role played by existing power structures and the political power required within the organisation to gain the necessary resources to support the widespread adoption of the technology that supports participation.
- The identification of the different interests that actors might have towards the adoption of a technology, and how this can constrain, enable or resist the adoption of that particular technology. The critical role played by human and non-human actors and the relationships they develop between each other.
- The strategies developed by actors supporting the adoption of technologies to persuade and enrol others into particular networks.

Despite the value that the deployment of ANT to examine online community participation brings to this study, the debates and critiques surrounding ANT must be borne in mind when it is used as lens for analysis. Care is needed to ensure that the voice of non-human actors is fairly represented once the principle of generalised symmetry is adopted. The concept of moments of translation should only be used as appropriate, rather than unreflectively applying the concept of moments of translation to the empirical data collected. Due to the emergent view of context supported by ANT, Attention must be paid to aspects related to the historical context of phenomena, which appear to be problematic to make sense of them via the theoretical resources from ANT. Another risk related to the view of context as emergent of ANT lies in the inability of the approach to fully explore the role of social structures in the shaping of phenomena, as the critiques of its flat ontology of ANT have pointed. Given these challenges, the use of alternative approaches that pay special attention to these concerns are required. The following chapter will introduce the theoretical resources from PBA to be used in Chapter six as theoretical lenses during the second stage of this study. It is argued that the deployment of the PBA can potentially deal with some of the challenges and limitations of ANT discussed above.

## 4. A PRACTICE-BASED APPROACH

### 4.1 Introduction

As initially suggested above in Section 1.2, theoretical resources from a practice-based approach (PBA) have the potential to shed light on how working practices play a role in the shaping of participation. This chapter provides the theoretical resources from PBA that were further used for informing the processes of data collection and analysis in the second stage of the research discussed in this thesis. In the light of these theoretical devices, an alternative perspective to those offered in previous studies mainly informed by a cognitive tradition is provided. Moreover, PBA also appears as an approach with the potential to foreground some of the aspects obscured by ANT. These include those related to the flat ontology, ANT's weakness for exploring the critical role of context in shaping participation, and how aspects such as routinisation of patterns of interactions and media use shape participation in online communities.

The literature review discussed in Chapter two suggested that, although prior research has contributed to an understanding of participation in online communities, this still remains under-explored. The context surrounding online communities is an area for investigation. Adopting PBA as theoretical lens sheds light on context as a site in which a mesh of practices are carried out on a day-to-day basis. Moreover, HR practices are highly interconnected to other practices performed within this site. Accordingly, *participation* – as other engagements, actions, tasks or projects - might be better understood when we look at the practices of which *the community* is part and the interconnectedness of these practices (and their elements) to other practices being performed at *INSTEK*.

The chapter starts by arguing that despite its multivocality, the practice-based approach can be used in online community participation studies. Although PBA has been applied in different fields, it has not yet been extensively used within the online community literature (Section 4.2). It then discusses how PBA presents itself as an alternative approach to existing theories and thus opens up potential opportunities to provide new fruitful interpretations that can improve our understanding of participation (Section 4.3). Before introducing the theoretical resources from PBA used in this study, the choices of the main sources informing the PBA used in the second stage of the study are justified (Section 4.4). This is followed by a discussion of the core themes of the practice-based approach

(Sections 4.5, 4.6, 4.7, 4.8, and 4.9). Section 4.10 discusses how, by adopting PBA, certain issues neglected in previous online community literature can be tackled. Reference is made to a number of studies informed by PBA to suggest its value, and a set of statements is put forward to be used as initial lines of inquiry in the second stage of the research. Section 4.11 acknowledges and discusses the main challenges, limitations and critiques that accompany the adoption of PBA. Finally, a conclusion of the chapter is offered in Section 4.12.

## **4.2 Welcoming the practice-based approach and its multivocality**

The practice-based approach, beginning in the thinking of Bourdieu and Giddens (as well as Heidegger, Wittgenstein, and Garfinkel), and more contemporarily advanced by Schatzki (2001, 2002), has gained increasing prominence to study the corporate context (Reckwitz, 2002; Geiger, 2009). Its success is reflected in its application in fields such as strategy (e.g., Jarzabkowski, 2004; Chia, 2006); knowledge sharing, learning and communities of practice (e.g., Wenger, 1998; Cook and Brown, 1999; Gherardi, 2000; Brown and Duguid, 2001; Gherardi, 2001; Østerlund and Carlile, 2005; Gherardi, 2009a; Corradi et al., 2010; Nicolini, 2011); information behaviour and information science (e.g., Savolainen, 2007b; Savolainen, 2007a; Veinot, 2007; Lloyd, 2009; Lloyd, 2010; Huizing and Cavanagh, 2011; Cox, 2012). In fact, the notion of Communities of Practice (Lave and Wenger, 1991; Wenger, 1998) which in many ways embraces the core themes of PBA - has been widely adopted within organisational studies. This study acknowledges the relevance of the notion of Communities of Practice. However, it adopts more recent developments of the practice-based approach (see Section 4.4) since they appeared to be more relevant for the purpose of this study given that the online community focus of this study failed to materialise.

Despite the increasing interest in, and application of, PBA within the corporate context, the practice-based approach is still 'a relatively unsettled intellectual landscape with multiple sources, influences, and instances' (Feldman and Orlikowski, 2011) that cannot yet be said to be surrounded by the agreement of its own exponents (Schatzki, 2001; Feldman and Orlikowski, 2011). This is reflected in the fact that PBA 'has never been systematically elaborated' (Reckwitz, 2002:243). There is a lack of common agreement on the conception of the term 'practice' itself (Gherardi, 2009b) and different emphasis given by practice

theorists to core aspects of the approach, such as embodiment, routine, materiality, open-endedness, and knowing (Cox, 2012). As such, no authoritative unified version of PBA exists (Nicolini et al., 2003; Warde, 2005). This results in the application of PBA in significantly different ways (Geiger, 2009).

However, despite the multivocality and variations in flavours of the approach, PBA has some common central issues that have made the approach an attractive alternative for researchers interested in understand the role of practices in shaping human activity. This is precisely one of the central arguments among practice theorists: the idea that the domain of study of the social context “is neither the experience of the individual actor, nor the existence of any form of social totality, but social practices ordered across space and time” (Giddens, 1984:2).

This central argument of the practice-based approach has been recently adopted in studies that seek to understand how practices shape the adoption and use of information technologies (Schultze and Boland, 2000; Yates and Orlikowski, 2002; Schultze and Orlikowski, 2004; Vaast and Walsham, 2005; Vaast, 2007; Venters, 2010). These studies have helped better understand what shapes the use of such technologies. At the same time, they have demonstrated the power of the practice-based approach as an informing lens to do so. However, the use of PBA in the online community literature (for example, technologies supporting online communities) is less common. One the objectives of the study discussed in this here was to export the theoretical resources of PBA to the context of online communities with the hope that through the lens of PBA, the understanding of online community participation can be enhanced.

The rest of this chapter outlines the central themes and concerns of the practice-based approach. These are further considered as sensitising ideas to explore what a practice-based approach can say about the shaping of participation in the online community, the focus of this study.

### **4.3 Establishing the practice-based approach as an alternative to traditional approaches**

One of the main reasons the ‘practice turn’ has attracted a considerable amount of attention among different fields is because PBA presents itself as an alternative to

traditional approaches to conduct research in organisational studies (Reckwitz, 2002; Schatzki, 2002; Nicolini et al., 2003; Østerlund and Carlile, 2005; Schatzki, 2005; Geiger, 2009; Gherardi, 2009b; Feldman and Orlikowski, 2011). Geiger (2009), Reckwitz (2002), and Schatzki (Schatzki, 2002, 2005) shed light on how PBA is different from other approaches. They do so by arguing how PBA criticises other approaches (Geiger, 2009), making clear the differences between PBA and other cultural theories (Reckwitz, 2002) and by illuminating what PBA is and what it is not (Schatzki, 2002).

According to Geiger (2009), PBA has emerged as a critique of positivistic, cognitivistic and rationalistic conceptualisations of organisations. First, a practice-based approach is critical of any positivistic positions that suggest that knowledge is something abstract and located 'out there' waiting to be discovered. Instead, knowledge must be seen as "socially constructed, situated in particular practices and always provisional" (2009:133); as generated "within practices through practicing" (2009:134), and therefore as continuously produced and reproduced. Second, the practice-based approach is critical of cognitivism (2009:134) in that it argues that knowledge is not solely situated "in the brain of the human body" as Gherardi (2007:318) put it. It also encompasses ways of wanting, feeling and desiring certain things and avoiding others, bodily expressions, sensations, tacit skills, knowing how, and aesthetic judgments of taste (Reckwitz, 2002; Strati, 2007; Geiger, 2009; Gherardi, 2009b). Similarly, when the concept of knowledge is broadened, practices are seen as performed with emotion, passion, affect and attachment (Gherardi et al., 2007). These are also considered types of knowledge. Third, in opposition to a rationalistic view of knowledge that sees knowledge as the outcome of rational decisions, the practice-based approach adopts the notion of knowing as an activity. Thus knowing as an activity - rather than knowledge as a thing - is seen as "a process of continuous enactment, refinement, reproduction and change" (Geiger, 2009:134).

Whereas Geiger presents PBA as "a new method for studying organisations beyond the formal, quantifiable and abstract" (2009:129), Reckwitz (2002) distinguishes the approach from two classical figures (i.e., 'the *homo-economicus*' and the '*homo sociologicus*' traditions) and locates PBA as a differentiated form of cultural theory. On the one hand, Reckwitz notes 'the *homo-economicus*' tradition explains action as purpose-oriented; where social order is the consequence of the combination of single interests, in which the primacy of individual choice prevails. On the other hand, Reckwitz observes the '*homo*

*sociologicus*' tradition presents a norm-oriented model of action. Here, social order is the product of normative consensus. Unlike these two approaches, the practice-based approach is neither individualistic nor holistic (Warde, 2005). Rather, as Cox suggests, the power of the approach "lies in its sociological grasp of the context within which social life unfolds, without turning that context into a totalising structure, so allowing for individual action to count and also making room for change and contingency" (2012:182).

Finally, Schatzki (2001, 2002, 2005) suggests that the practice-based approach aims at moving away from "current problematic dualisms and ways of thinking" (2001:1). He proposes the 'site ontology' as an alternative to what he calls individualistic approaches and non-individualistic accounts. Accordingly, social life is inherently tied to a context (site) in which "some of what occurs or exists [in it] are inherently parts". In arguing this, his 'site ontology' firstly opposes individualism in that the latter considers social reality to be "nothing but interrelated individuals" (2005:468). Thus the constitution of the social can be decomposed into, and explained by, properties of individual people (2005:466) and their direct interactions (2001:1; 2002:126). This is based on the assumption that individuals exist in some contexts, but are not inherently part of them. Secondly, as far as societism is concerned, the site ontology of Schatzki differs from societist ontologies (also labelled by Schatzki as non-individualistic approaches) that believe that context "helps determine what occurs within it by subjecting people to certain conditions and outfitting them with particular interests and motivations" (2005:469). This view, Schatzki observes, assumes the social and the individual are fundamentally different. Therefore individuals cannot be seen as being inherently part of those contexts.

#### **4.4 Bricolage of theoretical resources from the practice-based approach**

So far PBA has been introduced as an alternative approach to existing theories. However, it has been shown that PBA might be better described as a relatively unsettled intellectual landscape with no unified nor authoritative version (Nicolini et al., 2003; Warde, 2005; Feldman and Orlikowski, 2011; Cox, 2012). Despite this 'ongoing multivocality' of practice theories (Cox, 2012:182), previous studies that have used theoretical resources from PBA have been valuable in providing insightful interpretations of the adoption and use of technologies. This in turn opens up the possibility to export the use of theoretical

resources from PBA to look at online community participation from an alternative perspective and that can potentially enhance our current understandings.

This research discussed in this thesis did not adopt one particular 'practice theory'; rather, it adopted a more pragmatic approach in which different theoretical resources that were potentially relevant to understanding online community participation were chosen. Initially, the literature review discussed in this chapter was conducted, as suggested by the supervisor of the work discussed in the thesis, by looking at seminal works on Practice Theory. To do so, highly cited research was identified mainly in the database Web of Knowledge. This helped gain an overall perspective of the approach and its main tenets. Once a general understanding of PBA was gained, special attention was given to research conducted in studies looking at the adoption of technologies through the lenses of PBA. Similarly, studies that have pointed to the limitations and challenges of the PBA were reviewed. Peer-reviewed journals such as *Management Learning*, *Organization*, *Organization Studies*, and *Organization Science* were mainly used (See Appendix fourteen). A continuous review of literature took place along the research process to ensure the quality and relevance of the material included in the current chapter. Some examples of the search terms used to conduct this literature review were "practice theory", "practice-based approach", "PBA", "practice lens", "theories of practice", "practice theories" "practice-based studies", etc.

The works of Theodore Schatzki (Schatzki, 2001; Schatzki, 2002); Silvia Gherardi and her colleagues (Gherardi, 2001; Nicolini et al., 2003; Gherardi et al., 2007; Gherardi, 2009b; Gherardi, 2009a); and Wanda Orlikowski and co-authors (Orlikowski, 2000; Orlikowski, 2002; Feldman and Orlikowski, 2011), are used as key practice-based sources. However, other relevant studies are considered to a lesser degree (e.g., Reckwitz, 2002; Warde, 2005; Nicolini, 2011; Cox, 2012). The decision to use this work was made on the following basis:

- a. Schatzki has been recognised as one of the most relevant contemporary philosophers of the practice-based approach (Cox, 2012). In his 2000 book *The site of the social: A philosophical exploration of the constitution of social life and change* introduces his ontology as a practice theory. According to Schatzki himself, his approach, in comparison to other approaches, "more successfully



resists the drive to totalise, recognises greater multifaceted change in social life in addition to greater consistency and openness, and/or perceives more clearly both the significance of arrangements and the contribution of entities other than people to the character and progression of social affairs” (2002:xii). The relevance of his account among practice theorists is clearly reflected in studies that have criticised, discussed, adopted, and developed his work (e.g., Reckwitz, 2002; Warde, 2005; Feldman and Orlikowski, 2011; Cox, 2012). Due to its philosophical perspective, some have considered his account to be idealised and abstract (Warde, 2005). However, it still has the advantage of presenting a well-articulated version of the practice approach (Cox, 2012).

- b. Silvia Gherardi has been the major figure in the last two decades in the development of the ideas of the practice-based approach within the corporate context<sup>6</sup> and more specifically in the area of knowing and learning (e.g., Gherardi, 2001; Nicolini et al., 2003; Gherardi et al., 2007; Gherardi, 2009a; Gherardi, 2009b). These two areas are closely related to the object of study of this research. Whereas Schatzki’s ontology has been criticised for being too abstract (Warde, 2005), Gherardi’s work has been seen as better in capturing ‘the feel of practice’ (Cox, 2012:177).
- c. The work of Wanda Orlikowski and her colleagues is especially relevant for this research because it has focused attention on the use and adoption of technologies within organisational settings (Orlikowski, 1993; Orlikowski, 2000; Woerner et al., 2004; Orlikowski, 2007; Orlikowski, 2010; Feldman and Orlikowski, 2011) and knowing-in-practice (e.g. Orlikowski, 2002). These are both relevant areas in this study. These studies have been highly influenced by conceptions from the practice-based approach, mainly influenced by Giddens’ structuration theory and more recently by Schatzki’s (2002) ontology.

The notion of Communities of Practice (Wenger, 1998, Lave and Wenger, 1991)–a particular version of PBA - for instance, is less relevant for the purpose of this study, given the fact that the online community studied did not materialise as initially expected from those who sponsored and promoted the community. Moreover, in the light of the literature reviewed in Chapter two, the need to further explore the role of working practices surrounding the online community was identified. This in turn suggests that favouring theoretical resources from PBA in which attention to ‘practices’, rather than to

'communities' is privileged helps both 1) provide deeper insights to explore the role of practices in shaping participation; and 2) avoid some of the critiques of Communities of Practice that have pointed to the overtones of warmth and consensus among practices implied when the term 'community' is used (Brown and Duguid, 2001; Contu and Willmott, 2003; Roberts, 2006)

#### **4.5 Relational thinking in the practice-based approach**

One of the core principles permeating the practice-based approach is 'relational thinking' (Østerlund and Carlile, 2005). Four main aspects of the relational thinking of PBA appear as relevant to enhancing an understanding of participation in online communities. First, the relational thinking of PBA stipulates interconnectedness in the sense that no phenomenon can be understood in isolation or taken to be independent of other phenomena (Schatzki, 2002; Østerlund and Carlile, 2005; Feldman and Orlikowski, 2011; Nicolini, 2011). Thus, only when looking at the totality of interconnected practices, events and entities, can one grasp the meaning of human action (Nicolini et al., 2003:8). Three different cases serve to reflect the interconnectedness between practices, events and entities. Firstly, for a practice to be considered as 'core' or 'supportive', its meaning will depend on how this practice is related to the whole practices performed in the organisation. Secondly, when actions are performed in isolated ways or enacted only by a particular individual, these actions will remain isolated and will only make sense when repeatedly or collectively practised (Vaast and Walsham, 2005). Thirdly, the meaning a technology has in a practice largely depends on the relations this technology sustains with other elements of such practice (Orlikowski, 2000). These three examples reflect how the relational thinking of PBA permeates different levels within a site and how relations might be established between different elements of a site. Whether or not a particular 'technology' will become an element of a 'practice' will largely depend on the actions taken by the 'practitioners' of the practice.

Second, in the light of the relational thinking, PBA overcomes problematic concepts treated dichotomously in other theories (Bradbury and Bergmann, 2000; Nicolini et al., 2003; Østerlund and Carlile, 2005; Feldman and Orlikowski, 2011). Thus, in looking at practices as "the locus for the production and reproduction of relations" (Østerlund and Carlile, 2005:92), some of these concepts could be seen as entailing relations of mutual

constitution and recursive interaction. Elements such as structure and agency (Giddens,1984); the ostensive and the performative aspects of routines (Feldman and Pentland, 2003); the social and the material (Orlikowski, 2007); knowledge and knowing (Cook and Brown, 1999); knowings and practices (Nicolini, 2011); mesh of practices and social orders (Schatzki, 2002), embrace these sorts of mutually and recursively constituted relations.

Third, the relational thinking of PBA allows us to see organisations as arenas of interconnected practices (Nicolini et al., 2003; Schatzki, 2006; Corradi et al., 2008; Gherardi, 2009a; Nicolini, 2009). Schatzki's (2002) definition of 'site' and his notion of 'mesh of practices' clearly reflect the relational thinking of PBA. Whereas 'site' is defined as an "immense mesh of practices and orders" (2002:151) in which "human coexistence transpires as arrangements of people, artifacts, organisms and things" (2002:149), the notion of 'mesh of practices' suggests the existence of a "web of interweaving practices amid interconnected orders" (2002:154). It is relevant to highlight that when practices are seen as interconnected within a site, these practices and their elements can overlap, enable or constrain each other (Schatzki, 2002; Warde, 2005).

Fourth, the relational thinking of PBA acknowledges that relations between humans, and between humans and the material, are what sustain practices. Huizing and Cavanagh observe that "practice theorists look in astonishment at how we have separated objects and subjects conceptually" (2011:7) and argue that humans and non-humans must be seen as co-constituting each other through the medium of practice. Therefore interactions must be 'stretched' to incorporate both humans and non-humans. Different stances toward these concerns are present. On the one hand, Schatzki's (2001) account can be considered as highly human-orientated and thus giving primacy to certain sorts of relations (e.g., between humans); on the other hand, Orlikowski (2007) has suggested the notion of socio-material practices to signify "the constitutive entanglement of the social and the material in everyday organizational life" (2007:1438). What is clear from the relational thinking of PBA is the acknowledgement that "subjects, social groups, networks, or even artefacts develop their properties only in relation to other subjects, social groups, or networks", as Østerlund and Carlile (2005:92) put it. As it will be evident in later sections, this relational thinking permeates many of the ideas of the practice-based approach.

#### **4.6 Emergence and routinisation: Degrees of practices' potential to change**

Aspects of 'emergence' and 'routinisation' reflect different degrees of the ability of practices to change, and comprise one of the core themes underlying the practice-based approach. However, different views towards these issues are present among practice theorists. Whereas some highlight the 'productive' emergent aspect of practices, others emphasise the 'reproductive' historically-constituted features of them (Østerlund and Carlile, 2005).

In the research discussed in this thesis, the two perspectives are seen as a continuum rather than as opposing views. The accounts by Schatzki (2001, 2002), Gherardi (2007, 2009a, 2009b) and Wenger (1998) are among those found at one end of the continuum (Cox, 2012). For instance, Schatzki defines practice as "a temporally evolving, open-ended set of doings and sayings" (2002:87). Similarly, Gherardi and her colleagues acknowledge that the vocabulary of PBA is characterised by words that denote "uncertainty, conflict and incoherence" (Nicolini et al., 2003:23), seen as intrinsic features of practices producing "innovation, learning and change" (Corradi et al., 2008:17). This temporal and emergent nature of practices is also reflected in her further work in which the ongoing evolution of practices and the constant negotiations required while being practised is emphasised (2009a, 2009b).

Whereas these accounts highlight the productive, emergent and temporally evolving aspect of practices, on the other end of the continuum are those perspectives that emphasise the reproductive quality of practices that highlight aspects such as habituation and routinisation. Bourdieu's (1990) definition of 'habitus' as "a system of durable, transportable dispositions, structured structures predisposed to function as structuring structures" (Bourdieu, 1990:53) is clearly on this side of the continuum. Reckwitz, for example, also stresses the element of routine in his definition of practices:

"For practice theory, the nature of social structure consists in routinisation. Social practices are routines: routines of moving the body, of understanding and wanting, of using things, interconnected in a practice...[and] social order is thus basically social reproduction" (2002:255).

Nevertheless, he also acknowledges that change can take place in "every crisis of routines". Cox has observed that at this end of the continuum "[t]here is less emphasis on open-endedness and evolution here, and greater stress is laid on embodiment and the material"

(2012:178-179). Similarly, Geiger (2009) noted that the embodied and tacit character of practices make them to a large part non-reflexive and consisting of unspoken *a priori* principles practiced by competent individuals without their awareness (2009:134). A clear view of these two sides of the continuum is offered by Nicolini:

“While for [the reproductive aspect] change is a “variation” stemming from unexpected events in the reproduction process, for the [productive aspect of practices] change is constitutive of practice itself... [while] the former emphasize the power of tradition; the latter stresses expansion, creativity, tension and unease” (2003:24).

In summary, while these two perspectives put different emphasis on the same aspect of practices (i.e., their ability to change), there is a general agreement among practice theorists that practices entail, to different degrees, elements of routinisation, habituation, and perpetuation, and aspects embracing evolution, change and innovation. This agreement is reflected in the view expressed by Warde (2005), who suggests that practices have a set of established understandings, procedures and objectives that govern conduct within practices. At the same time, they always are, to some degree, contested and thus contain the “seeds of constant change” (2005:140-141). In the research discussed in this thesis neither of these views is privileged *a priori*. Rather, both are explored in the empirical data.

#### **4.7 Recurrence and collectiveness: becoming and being a practice**

For practices to be recognised as practices they need to be recurrently and collectively practised. According to Orlikowski, a practice is a “recurrent, materiality bounded, and situated social action engaged in by members of a community” (2002:256). If a practice is not recurrent - that is, repeatedly practised - and instead, certain actions take place as a one-time event, those actions will not become a practice. Thus, in order for a practice to emerge, repeated changes in how practitioners act are required (Vaast and Walsham, 2005). Once a practice has become recognised as such, it is the repeated same understandings, repeated rules, repeated emotions that sustain, and slowly modify, a practice (Schatzki, 2002:105).

Moreover, to become a practice, actions not only need to be repeatedly practised, but also collectively enacted. When an action is performed in isolation by a single individual and is not enacted by other members of a community, this action will not become a shared practice (or part of a practice). Therefore to be a practice (or an action as an element of a

practice), it needs to be socially recognised and sustained. The definition of practice by Gherardi reflects this character of collectiveness as being a “socially sustained activity” (Gherardi, 2009b:546); a “collective, situated activity” (Gherardi, 2009b:538); and “ways of doing things together” (Gherardi, 2009b:547).

Both aspects - recurrence and collectiveness - find echoes in the relational thinking of the practice-based approach discussed above in Section 4.5. From this, it then emerges that if an action (e.g., participation in the online community) remains isolated and independent from other actions (e.g., participation enacted either routinely or collectively), this action will not make sense and therefore will not become (part of) a practice. Nevertheless, just because practices are recurrently and collectively practised does not necessarily mean singularity and uniformity (even though this is certainly one possibility). Instead, practices must be seen as exhibiting regularities and embracing irregularity, uniqueness, and constant change (Schatzki, 2002:74). This is what makes practices “internally differentiated” (Warde, 2005:138), (see Section 4.9).

#### **4.8 Knowing-in-practice**

Practice theorists criticise the positivistic, cognitive and rationalistic views of knowledge (Geiger, 2009). These critiques are reflected in the move from understanding knowledge as an object, to understanding knowing as an activity. This was first proposed by Cook and Brown (1999) and further acknowledged and developed by others (e.g., Gherardi, 2001; Orlikowski, 2002; Gherardi et al., 2007; Gherardi, 2009a).

Four aspects of knowing that might be of relevance for this study are highlighted here. Firstly, although the concepts of knowing and practice share many similarities, they entail different ideas. The distinction made by Nicolini is useful to understanding their difference. He suggests seeing practices as the site of knowing, and knowing as manifesting itself in, and transpiring through, the accomplishment of practices (2011:603). Thus, when looking at practices as the site of knowing, the latter can be seen “as a collective and distributed ‘doing’, ... as an activity situated in time and space, and therefore as taking place in work practices” (Gherardi, 2009a:353). Moreover, and of relevance for this study, “the site of knowing is never a single practice but a set or nexus of interconnected practices” (Nicolini, 2011:614).

Secondly, the notion of knowing emphasises the essential role of people to get things done (Orlikowski, 2002). It is through the enactment of knowings that practitioners demonstrate their competence by solving practical problems that emerge in the complex web of practices they perform (Gherardi, 2001; Nicolini et al., 2003; Corradi et al., 2008; Nicolini, 2011). Thus, knowing becomes a “knowledgeable activity, a knowing-in-practice” (Corradi et al., 2008:26) that shows practitioners’ “feel for the game”; their sensitivity to feel what is appropriate and what is not within a practice (Nicolini et al., 2003:16).

Thirdly, as observed earlier, the notion of knowing assumes that knowledge is not an abstract idea solely situated “in the brain of the human body or the organisation” (Gherardi et al., 2007:318). Instead, knowing-in-practice also embraces passion, emotion and desires (Gherardi et al., 2007), attachment to the object of practice (Gherardi, 2009b), ‘aesthetic’ or sensible knowledge (Nicolini et al., 2003), emotion and affectivity (Strati, 2007), and routinised bodily movements and ways of wanting and feeling (Reckwitz, 2002).

Fourthly, the potential of knowings to being contested and conflictual is permanent, and thus their ability to change is always present (Orlikowski, 2002). Nevertheless, once conflicts among knowings are temporarily resolved, routinisation begins to appear (Nicolini, 2011).

#### **4.9 Differentiation among practices**

The notions of knowing and taste highlight differentiation within, and between, practices. Although practices are clearly different, using the notions of knowing and taste to differentiate one practice from another is helpful to an understanding of how practices shape participation in an online community, i.e., the focus of this study. The following comment by Gherardi serves to introduce the notions of knowing and taste:

“When it is said that practices are sustained by a shared understanding, or that they are shared ways of doing things, this is not to say that there is total agreement or perfect consensus on them, but rather the contrary: namely, that minimum agreement is necessary for the practice to continue to be practiced, and that constant negotiation among practitioners on the best or most elegant way to perform that practice is the dynamic that progressively refines and innovates its practicing” (2009a:357).

Firstly, as Gherardi suggests, practices are not enacted in identical ways by practitioners. Rather than looking at practices as well-structured routines repeatedly and collectively

practised in a uniform manner, practices must be seen as invariably exhibiting regularities but also embracing “irregular, unique, and constantly changing doings/sayings, tasks, and projects” (Schatzki, 2002:74). Thus, practices are “internally differentiated” (Warde, 2005:138). This means that different and dispersed ways of knowing-in-practice can be present when scrutinising a practice (Nicolini, 2011). The degree of intentionality and emotionality (Reckwitz, 2002), the style of performance (Cox, 2012), and the practical intelligibility (Schatzki, 2002) embraced by practitioners when enacting a knowing-in-practice, show how there is room for diversity within a particular practice every time it is enacted.

Secondly, acknowledging that practices are “internally differentiated” can also generate debates about taste (Warde, 2005:139). Once acknowledged that practitioners might enact their practices in different ways and that there is no need for “total agreement of perfect consensus” (Gherardi, 2009a:357) of practising, it is also important to highlight that, as Gherardi puts it, “minimum agreement is necessary for the practice to continue to be practiced” (Gherardi, 2009a:357). It is this minimum agreement among practitioners that characterises the specific taste of a particular bundle of practices.

In this study, taste is defined as “a sense of what is aesthetically fitting within a community of practitioners” (Gherardi, 2009b:535). It shows “a preference for ‘the way [practitioners] do things together’” (Gherardi, 2009b:535). Furthermore, taste, or as Cox puts it, this “common sense of practice” must not necessarily be observed only in a single practice but can be extended to a bundle of practices (2012:181). It follows that while different knowings can be enacted within a (bundle of) practice(s), they all most probably share the same taste. Thus, whereas knowings may embrace those features of irregularity and uniqueness their enactment must fit the taste of a particular practice or bundle of practices to suit “what is thought to be a correct or incorrect way of practicing within the community” (2009a:357; 2009b:536). In turn, as Nicolini (2011) suggests, when shifting sites or bundles of practices, a different set of knowings will transpire.

In summary, the relationship among knowings and taste within a bundle of practices is as follows: knowings are ongoing social accomplishments that do not need be identical ways of performing but share a similar taste. The enactment of these knowings recursively interacts with the taste permeating practices, allowing the shaping of each other. This recursive interaction between knowings and taste shape the way that practices are



performed. Whereas practices are to be seen as the house of knowings, taste is to be seen as the colour of the house.

#### **4.10 How a PBA can be useful for understanding online community participation**

The theoretical resources from PBA discussed above sections provide powerful devices to explore online community participation. Rather than looking at the multivocality of PBA and its permanent evolution as a lack of agreement and development in the approach, there is an opportunity to explore online community participation from a novel perspective, i.e., one in which the practices to which the technology supporting the online community is introduced, are given primary attention.

Previous studies have engaged in similar endeavours but within different contexts or looking at different technologies. The underlying interest of these studies has been in understanding how practices to which these technologies are introduced shape their further use; hence their relevance to the current study.

Four aspects of this body of literature are highlighted so as to provide potential initial lines of inquiry during the second stage of this research. First, these studies share an interest in understanding the adoption of technologies by looking at people's everyday activities. The focus of these studies is on "what people *'actually'* do rather than on what they say they do or on what they ought to be doing" (Schultze and Boland, 2000:194). Adopting this position has provided researchers the opportunity: to look at practices in situation and their micro-level dynamics (Vaast, 2007); to study the micro-level issue of how practices change with IT use (Vaast and Walsham, 2005); and to observe how the macro-level phenomena is created and recreated through the micro-level actions taken by practitioners (Schultze and Orlikowski, 2004).

Second, previous studies that adopt PBA as a lens for analysis agree that the use of a particular technology is a highly contextualised phenomenon. As such, these studies have tended to look at technologies not as isolated entities, but as elements of a bundle of practices; the latter potentially affecting the use of such technologies. In this sense, studies informed by PBA have looked, for example, at how only when the use of, and contributions to, a knowledge management system becomes integrated into the regular routine of practitioners' work will information technologies be adopted (Vaast, 2007). Similar studies

have found: how the use of a new Internet-based technology that is at odds with the working practices of sales representatives can be undermined by the reluctance of users to adopt this technology (Schultze and Orlikowski, 2004); how the same technology is enacted differently across various contexts and practices (Orlikowski, 2000); how people do not use a particular technology because its use can be against institutional practices (Orlikowski, 2000); how the democratisation of access to information that KMS facilitates is at odds with the competitive intelligence analysts' privileged access to information and therefore the use of the system is minimised (Schultze and Boland, 2000).

Third, practice-based studies of technology adoption have helped understand how human activity (e.g., participation in an online community) is a historically-shaped and constantly evolving phenomenon. For instance, previous studies have shown that some technologies do not support the maintenance of embedded relationships developed in the past, the credibility of these technologies might be questioned by their users (Schultze and Orlikowski, 2004), or how the adoption of technologies can be challenged when people find it difficult to break their old routines (Boudreau and Robey, 2005). Similarly, practice-based studies have shown how practices can be altered over time when new technologies become increasingly used and transformed by such use, and how processes such as habituation and routinisation might hinder change (e.g., the adoption of a new technology) (Vaast and Walsham, 2005).

A study by Orlikowski (2000) for instance, offers a clear example of how different degrees of routinisation permeate practices. She looked at the adoption of the same technology in different contexts, and found how some practices reflect: 1) a greater ability to change (e.g., when new technologies are adopted to transform their existing practices); 2) a lesser degree of change when routinisation and inertia are present (e.g., when there is a reinforcement and preservation of the *status quo* in the use of technologies and no evidence of change in practices is observed); and 3) an intermediate level of change (e.g., when technologies are adopted to refine existing ways of doing things).

Fourth, studies adopting a practice-based approach tend to look at practices, rather than at individuals, as the unit of analysis. In so doing, they avoid exploring the adoption of technologies as if they were determined by individuals' attitudes, intentions, motivations and interests. Rather, these studies highlight that the use of technologies is informed by

shared collective understandings, and collective ways of doing things within practices; not by individual isolated motivations or interests.

In summary, these studies have shown the potential of the conceptual ideas of PBA to inform how new technologies are used (or abandoned), and how this use is shaped by the practices to which these technologies are introduced. Furthermore, since the use of PBA in the online community literature has been neglected, there exists the possibility that theoretical resources from PBA might help in offering an account that can potentially deepen our current understanding of participation. Moreover, adopting theoretical resources from PBA also offers the possibility to move away from previous participation studies that have followed a cognitive tradition which have tended to be criticised for providing static, functionalist, and individualistic accounts of phenomena.

Together with the theoretical resources discussed above, the following statements are considered as sensitising ideas to be used during the second stage of data collection (to develop the interview schedule) and data analysis (to explore certain aspects):

a. Relational thinking.

1. The use of information technologies (e.g., technologies supporting online communities) is often complemented with the use of other communication tools such as email, telephone, fax, etc. (Schultze and Orlikowski, 2004).
2. Once technologies are installed and left to operate they can hinder social action in a similar way as social structures do (Boudreau and Robey, 2005).

b. Emergence and routinisation: ability of practices to change.

3. During the implementation of new technologies, potential users might reject their adoption because they might find it difficult to break their old habits, and instead they might recreate the use of previous systems (Boudreau and Robey, 2005).
4. When collaborative technologies are introduced, they might have consequences for the practitioners' existing communication practices (i.e., reinforcing, enhancing, or transforming) (Yates and Orlikowski, 2002).

5. Changes in organisational practices may occur at every occasion users enact technologies in response to their local experiences and needs (Boudreau and Robey, 2005).
  6. The operation and outcomes of technologies are neither fixed nor given *a priori*, but always temporarily emergent through interaction with humans in practice (Feldman and Orlikowski, 2011).
- c. Becoming a practice: recurrence and collectiveness.
7. In order for a practice to change (e.g., common ways of communicating), there must be a repeated change in how agents act; if actions remained isolated, these actions will not contribute to change in a practice (Vaast and Walsham, 2005).
  8. The use of, and participation in, technologies that support online communities will take place when actions are socially shared and repeatedly practised (Vaast and Walsham, 2005).
- d. Differentiation among practices and knowing-in-practice.
9. *practitioners* will adopt intranet systems if they serve the accomplishment of practitioners' professional goals (e.g., being a good professional seller) (Vaast and Walsham, 2005).
  10. The use of, and contributions to, information technologies is enhanced when they become integrated into the regular routine of practitioners' work (Vaast, 2007).
  11. The use of technologies can be undermined if these technologies do not fit the routinised working activities of practitioners, such as the need to maintain embedded relationships, the practice to maintain privileged access to information, or the alignment to existing institutional practices (Orlikowski, 2000; Schultze and Boland, 2000; Schultze and Orlikowski, 2004).
  12. Sometimes, when users perceive a new system to be inflexible to change, they might tweak the system to make it respond to their needs (Boudreau and Robey, 2005).
  13. Often there are differences between what is expected from the implementation of an information technology, and how these

technologies are actually used (Schultze and Orlikowski, 2004; Boudreau and Robey, 2005; Vaast, 2007).

#### **4.11 Challenges and potential limitations of the practice-based approach**

The adoption of the practice-based approach as a theoretical lens brings with it some challenges and critiques. In this section, these challenges and critiques are discussed, the stance taken toward these concerns in this study is offered, and the existence of potential limitations is acknowledged. Five main aspects are discussed, namely: issues of power, difficulty to make sense of change, the difficulties of transporting the philosophical elements of PBA into empirical analysis, methodological concerns, and the multivocality of practice-based approach. Only by attending to the issues raised, and by acknowledging the potential limitations of the approach, can the real value of PBA be reflected in the research process.

Firstly, the practice-based approach has been criticised for neglecting the theme of power (Fox, 2000; Contu and Willmott, 2003; Marshall and Rollinson, 2004; Handley et al., 2006; Kuhn and Jackson, 2008). According to Marshall and Rollinson “[p]ractice-based approaches do partly acknowledge the importance of power and politics in knowledge processes, but tend not to extend this to its logical conclusions” (2004:574). These concerns have been acknowledged by the proponents of the practice-based approach (e.g., Lave and Wenger, 1991; Corradi et al., 2008). For example, Schatzki (2002:267) explicitly acknowledged that the issue of power was not directly addressed in his book *The site of the social: A philosophical exploration of the constitution of social life and change*; and Brown and Duguid (1991:41) noted that their conception of communities of practices needs to include the issue of unequal relations of power more systematically in their analysis.

These criticisms have taken different avenues to suggest that PBA tends to neglect issues of power at different – but complementary - levels of analysis. On the one hand, there are those studies which have criticised PBA for neglecting the issue of power within particular communities. For example, Fox (2000) has observed that Communities of Practice (COP) Theory “accepts that there are unequal, triadic, power relations within COPs, but it basically leaves these unanalysed” (2000:864). Similarly, Contu and Willmott have strongly criticised (when using the notion of community) practice theorists who tend “to

assume, or imply, coherence and consensus in its practices” (2003:287). Similar critiques have suggested the overtones of warmth and consensus when referring to the notion of community (Roberts, 2006).

With reference to these criticisms, it has been suggested that considering the adoption of other accounts which are more explicit in their treatment of power can complement practice-based studies (Marshall and Rollinson, 2004). The suggestion by Fox that ANT can contribute to theories of practice in the way the issue of power is addressed seems to be particularly relevant in this respect, especially to deal with power concerns, in a political sense. This might be relevant to better understand how particular members of a community can align the interests of many in a chain and how they come to speak for many, or represent the intent of the multitude (2000:862).

Other critics of PBA on power have pointed that PBA neglects issues of power at a higher level. First, Kuhn and Jackson (2008) have observed that those who use PBA tend to over-examine patterns at the micro-level ignoring the organisational imperatives that guide practices, or make simplistic assumptions about intra-community consensus that silence issues on power (Kuhn and Jackson, 2008). Second, others have pointed out that while PBA is concerned with those relations of power within a community of practitioners, it is not as concerned with relations of power in which the community is embedded, such as capitalist production and employment relations (Contu and Willmott, 2000; Handley et al., 2006).

In the light of these criticisms, the main concern is on the role of context in shaping social life might potentially be undermined; thus under-exploring how the broader socio-cultural context shapes practices (Contu and Willmott, 2000; Contu and Willmott, 2003; Handley et al., 2006). To help deal with these concerns, the study discussed in this thesis adopts the notion of site seen as “the context or wider expanse of phenomena” (Schatzki, 2002:147) that “surrounds or immerses something and enjoys powers of determination with respect to it” (Schatzki, 2005:468). In adopting this notion, practices are to be seen as practised within a context in which other practices are performed and where certain conditions pertain. Thus, what occurs within a practice (or a bundle of practices) is not only shaped by the internal dynamics of such a practice (see Section 4.9), but is also determined by what characterises the site in which the practice is performed.

Secondly, another critique of PBA has been its inability to make sense of change in practice or of the contribution of individual agencies to processes of change (Fox, 2000; Miettinen et al., 2012). While Fox (2000) has observed that PBA tells little about how practitioners change or innovate their practices, Miettinen et al. (2012) have suggested that practice theories tend to privilege the collective dynamics of social processes at the cost of dissolving the self, thus missing the opportunity to supply accounts by which individuals contribute to change. To help PBA in dealing with this concerns, Fox (2000) and Miettinen et al. (2012) have suggested the use of alternative approaches such as ANT or Activity Theory. On the one hand, Fox (2000) has suggested that PBA can benefit from the sociology of translation in that the latter provides a set of concepts capable of exploring processes of local struggle and how actors (both human and non-human) enrol and mobilise others to build networks which achieve certain aims. The symmetrical treatment given to human and non-human actors helps accomplish this aim by giving both the capacity to enable or resist change. On the other hand, Miettinen et al. (2012) have suggested that unlike PBA, Activity Theory gives special attention to how individuals can influence change in the way they face emerging problems and contradictions in their practices.

Thirdly, another set of critiques asserts that applying the philosophical elements of a practice-based approach into empirical analysis is not an easy task (Geiger, 2009; Feldman and Orlikowski, 2011; Cox, 2012). One of the debates in these matters focuses on the vocabulary of PBA. Fox, for example, has pointed out that “practices are almost always more interesting and varied than the theories attempting to ‘explain’ them” (2006: 442). This in turn suggests the difficulties in finding and using the appropriate lexicon to express the dynamic, enacted and relational character of practices (Nicolini et al., 2003; Gherardi, 2009a; Feldman and Orlikowski, 2011), without ending up with the risk of providing an “undesirable set of indefinite, fuzzy, and equivocal ‘practice-related’ concepts incapable of withstanding any serious analysis”(Nicolini, 2011:603). With regard to the debates, the difficulty of expressing such philosophical elements of the theory is acknowledged. However, once this vocabulary is adopted, it can offer a powerful tool to appropriately reflect the complexity of the phenomenon under investigation.

The difficulties in applying the philosophical elements of PBA suggest a second problem of the approach. This refers to the difficulties of defining the boundaries among practices;

that is, “where one practice ends and another starts” (Cox, 2012:183); and to differentiate context from practice. Acknowledging these challenges, this research adopts the definition of site, so as to differentiate context from practices. Whereas ‘site’ is seen as the context surrounding practices and enjoying powers of determination with regard to them, ‘practices’ are seen as organised sets of actions performed by a group of practitioners within a site. In a similar way to that in which practices are seen as the ‘house of knowings’ (Nicolini, 2011), site is seen as the context in which a bundle of practices are performed (Schatzki, 2002).

Fourthly, Kuhn and Jackson (2008) note that most criticisms of PBA raise methodological concerns. They not only refer to techniques and methods, but also to the meta-theoretical assumption to design investigations. Others have also highlighted the problems of coherence between philosophical positions and methodological tools used for collection and analysis (e.g., Charreire Petit and Huault, 2008). As suggested by Nicolini, Gherardi and Yanow “A practice-based approach directs the researcher’s attention to what people do and say, to the world of life made of the details and events that constitute the texture of everyday living and organizing” (2003:28). These concerns in turn suggest a preference for methods that embrace a strong involvement in the context of the actors being researched (Carlile, 2002; Charreire Petit and Huault, 2008; Feldman and Orlikowski, 2011). Among these methods, ethnography is seen as “the key methodology with which to observe social and situated practices” (Corradi et al., 2008:23). These considerations are relevant for this study, since conducting methods such as ethnography is not always possible, although desirable.

Fifthly, using PBA as informing lens for analysis is also a challenging endeavour due to the different emphasis given to key aspects of the theory (Nicolini et al., 2003; Cox, 2012). As an approach, PBA can be seen as an “unsettled intellectual landscape” (Feldman and Orlikowski, 2011) that has been applied in significantly different ways (Geiger, 2009) so that no authoritative version of PBA exists (Nicolini et al., 2003; Warde, 2005). This “ongoing multivocality” (Cox, 2012:182) of PBA is reflected for example in the lack of agreement of the term ‘practice’ itself (Gherardi, 2009b).

In this research, rather than looking at these differences in emphasis as a weakness, these are seen as opportunities to exploit, that is, as sensitising mechanisms used to collect and analyse empirical data in a flexible way. This is to facilitate the acknowledgement of



complexity and ambiguity (Feldman and Orlikowski, 2011). Thus for example, both emergence and routinisation within HR practices will be explored and open for analysis; empirical data will inform this. While the theoretical devices previously discussed have provided the basis to accomplish this goal, the aim of the study discussed in this thesis will be to explore both possibilities.

These are thus five challenges and limitations that can be faced when adopting PBA as a lens for enquiry. The content of this section has aimed at showing awareness of these debates, and anticipating how to deal with these issues. Section 8.3.2 and 8.3.3 further discusses the strategies used by in the current study to deal with these concerns, and how the challenges and critiques identified in this section ended up shaping the study.

#### **4.12 Conclusion**

This chapter positions the practice-based approach as a perspective that can provide theoretical resources to deepen an understanding of online community participation. Given that the theoretical resources from ANT discussed in Chapter 3 faced some challenges and limitations, the PBA is suggested as an alternative approach that can help in dealing with these concerns so that an understanding of participation can be deepened. Rather than adopting a particular 'practice theory', this study adopts a more pragmatic approach in which a set of theoretical resources that appear to be particularly relevant to understanding online community participation are chosen.

Five main aspects were discussed to delineate the core ideas of PBA namely: the relational thinking of PBA; the ability of practices to change; the recurrent and collective aspects of practices; the notion of knowing as activity; and differentiation among practices.

Among other sensitising ideas, the deployment of the PBA as the methods for analysis suggests that:

- *Participation* must be seen as taking place within a site in which different practices are performed. These practices are interconnected and shape each other. As such participation is not seen as being solely shaped by the internal dynamics of the community but rather as being influenced by the particular features and taste of the practices surrounding the community and the interconnectedness among these practices and other practices within the site.

- By shifting attention from individuals to practices, participation is understood on the basis of collective performances. As such participation is rather seen as being shaped by collective understandings, collective ways of doing things.
- *Participation* must be seen as a historically-shaped phenomenon that is in constant evolution. Looking at participation in this light requires exploring both the emergent aspect of practices but also the routine character that permeates practices, and how the two influence participation.

Despite the valuable contribution of the PBA, the critiques and challenges that entail the need to conduct ethnographic methods, the ability to deal with power issues at the institutional level, and the ability to make sense of change in practices are -considered as potential threats for the study. –

The following chapter introduces the methodological basis that informed the processes of data collection and analysis during the two stages of the study discussed in this thesis.

## **5. METHODOLOGY**

### **5.1 Introduction**

Chapter one established a series of research questions to be explored in this study. These questions reflect the interest in exploring the factors that shape online community participation according to the particular preoccupations of Actor-Network Theory (ANT) and a practice-based approach (PBA). Chapter two examined the literature of online community, and identified the need for alternative approaches. Praxeological approaches were suggested as suitable to offer distinctive accounts that can enhance our current understanding of participation. Chapters three and four introduced the theoretical resources from ANT and PBA. These works inform the process of data analysis conducted in the first stage (ANT), and the processes of data collection and analysis in the second stage (PBA), of the study. This chapter continues the account of the research understanding by introducing the rationale of the methodology and the research design of the study.

The chapter is divided in five main sections following the introduction. Section 5.2 characterises this study as a two-stage interpretive theoretically informed research, and discusses its main features. This section discusses two leading approaches in social science – positivism and interpretive research – and their ontological, epistemological and methodological bases (Section 5.2.1). The chapter further highlights five main features of the current study (Section 5.2.2), and introduces its two stages (Section 5.2.3).

Section 5.3 describes the practicalities of the study. It starts by discussing the methods used for data collection (Section 5.3.1), and how access was gained to the site (Section 5.3.2). It then presents a descriptive account of the processes of selection of research participants, piloting the interviews, conducting the interviews, and ethical considerations (Section 5.3.3). Section 5.4 describes the rationale, and the process of data analysis. Finally, a set of criteria to evaluate the quality of the study is justified, and then further applied in Section 5.5.

## **5.2 Characterising the study: A two-stage interpretive theoretically informed research**

Here the current study is characterised. Two paradigms and their ontological, epistemological and methodological concerns are discussed (Section 5.2.1). The two stages of the current study are introduced (Section 5.2.2) and the five features of this interpretive study are discussed. (Section 5.2.3).

### ***5.2.1 Positivistic and interpretive studies: ontological, epistemological and methodological concerns***

Ontological, epistemological and methodological concerns reflect the research paradigm, and how the world of research participants is studied (Creswell, 2007). In general terms, ontological assumptions provide an answer to the question ‘what is the nature of reality?’. Epistemological assumptions establish the relation between the researcher and the researched by exploring whether it is possible to neutrally observe the social world without contaminating what we see. Methodological concerns reflect how to investigate the phenomenon of interest (Creswell, 1994). Furthermore, the way in which these questions are answered will impact upon how the investigation is evaluated.

Two leading paradigms from a list of existing approaches used to inform and guide inquiry are discussed below. The positivist approach is generally associated with the use of quantitative methods. The interpretive paradigm tends to promote the use of qualitative methods (Creswell, 1994). The positions of each of these towards ontological, epistemological and methodological concerns are discussed. This discussion serves to further highlight the interpretive flavour of the study discussed in this thesis. This is reflected in its emergent design, the use of qualitative methods, the inductive logic followed during the processes of data collection and analysis, the strategies used for recruitment of research participants, and the view of reality that sees it as being socially-constructed, as will be seen in the later sections of this chapter.

#### **5.2.1.1 *Ontological concerns***

Ontological assumptions are concerned with what it is assumed to exist i.e., whether the world is assumed to be ‘out there’ and therefore independent of humans, or subjective and

hence socially-constructed, created and recreated by those involved in the research process (Orlikowski and Baroudi, 1991). On the one hand, positivistic adherents believe that reality exists 'out there', independently of the individual's appreciation of it (Iivari et al., 1998:173). They see facts constituting social reality as 'positively given' - hence positivism (Johnson et al., 2006). This is to say that "reality exists whether or not we are aware of it or take any interest in it" (Smith, 1983:8).

On the other hand, interpretivists use the term 'constructivism' to denote that social reality is a 'social construction' with no independent status (Johnson and Duberley, 2000). The subject and object of the research process, perceived by positivists as two elements, become one to constructivists. This implies that what is investigated is not independent from the research process (Smith, 1983). From this stance, "multiple and sometimes contradicting realities" (Guba and Lincoln, 1994:111) - the realities of the research participants, the realities of the researcher, and the realities of the audience interpreting the study - are accepted and reported (Creswell, 2007).

#### 5.2.1.2 *Epistemological concerns*

Epistemologically, positivists believe that it is possible to separate the researcher from the researched (Clarke and Dawson, 1999). Therefore, observations of the empirical world can be neutral, value-free, and objective (Johnson and Duberley, 2000). This logic assumes that observations of the world are made by a passive knower who "can easily adopt an objective stance and remain detached from the phenomenon under study" (Clarke and Dawson, 1999:39). Observations by the individual are independent from the process of observation, in which values and biases are prevented from influencing the outcome of the research (Guba and Lincoln, 1994). Since crucial importance is given to what is taken to be observable reality, positivists share the assumption that non-observable mechanisms should be rejected because they only represent speculations that go beyond the realm of science (Johnson and Duberley, 2000).

In contrast, interpretivists suggest that understanding the social world involves getting inside the world of those generating it (Rosen, 1991). Knowledge is created through interaction between the researcher and the researched as the research proceeds (Guba and Lincoln, 1994). Therefore, it is important to be as close as possible to research participants (Creswell, 2007) in order to understand the actors' viewpoints (Clarke and

Dawson, 1999). In contrast to positivists, interpretivists acknowledge the legitimacy of human subjectivity. They argue that any observer, implicitly or explicitly, influences what is observed by his previous interests, beliefs, sentiments, values, dispositions, theories, background knowledge, and expectations (Smith, 1983; Johnson and Duberley, 2000).

#### 5.2.1.3 *Methodological concerns*

Methodologically, positivists follow an experimental logic imported from the natural sciences primarily based on quantitative hypothetic-deductive methods (Buchanan and Bryman, 2009). Variables representing theoretical constructs (Pickard, 2007) are used to create and empirically test hypotheses to further verify them (Guba and Lincoln, 1994:10). Prediction and control of variables and events are sought (Smith, 1983; Johnson and Duberley, 2000). As positivists are expected to adopt an objective stance, they use a number of 'appropriate' research methods such as multivariate statistical analysis, large scale empirical surveys, and detailed laboratory experiments (Morgan and Smircich, 1980) to limit their interaction with the phenomenon under investigation. To control bias, systematic sampling techniques are employed (Clarke and Dawson, 1999). Their belief is that following these 'appropriate' methods is the only way to acquire valid knowledge (Orlikowski and Baroudi, 1991).

In contrast, interpretivists generally require access to qualitative, rather than quantitative, features of the subject under investigation (Morgan and Smircich, 1980). As knowledge is socially constructed, direct interaction with the phenomenon is needed to obtain an inside view of it (Clarke and Dawson, 1999). There is reliance, as much as possible, on the participants' view of the situation (Creswell, 2007). During the process of research, inductive reasoning is followed, and an emergent design used (Creswell, 2007). Unlike positivistic researchers who use a well-defined set of constructs and instruments to measure the social world, interpretivists derive their constructs by in-depth examination of the phenomenon of interest (Orlikowski and Baroudi, 1991). Whereas the overall purpose of positivists is explaining and predicting relationships between objects and events (Smith, 1983), the purpose of interpretivists involves reporting multiple perspectives, and identifying the complex interactions involved in the phenomenon under investigation (Creswell, 2007).

## 5.2.2 Stages of the research

This section describes the activities that took place during the two stages of the study. Figure 5.1 shows a chronology of the activities that took place during each of the two stages. Although the two stages are introduced separately, activities performed in each stage continuously overlapped during the research process (e.g., stage one highly influenced the decisions made in stage two, whereas stage two looked back at stage one in order to answer research question four).

		October November December	January February March	April May	June July August	September October November December	January to July	August to December	January February	March to December	January to October	
		2008			2009				2010		2011	2012
STAGE 1	1 Access to the research site											
	2 Online community literature review											
	3 Identification of broad research questions											
	4 Piloting initial interviews											
	5 Data collection 1											
	5a Semi-structure interviews											
	5b Observing communication activity											
5c Attendance at online meetings												
5d Access to HR documentation												
5e Access to online seminars												
6 Discussing the selection of approaches (ANT)												
7 Data analysis 1												
STAGE 2	1 Discussing the selection of approaches (PBA)											
	2 Piloting second set of interviews											
	3 Data collection 2											
	4 Data analysis 2											
	5 Bringing content together											

Figure 5.1: Research activities during the two stages of the study

### 5.2.2.1 Stage one

Seven broad activities were carried out at this stage:

1. Gaining access to the research site (March 2009)
2. Identification of contributions and limitations of previous online community literature (October 2008 – May 2009)
3. Identification of (broad) research questions (October 2008 – May 2009)
4. Piloting the first set of interviews (June 2009)
5. Conducting an initial data collection process, which entailed the use of different methods
  - a. 17 semi-structured interviews (July 2009 and August 2009)

- b. Observing communication activity in the online community (June 2009 – June 2010)
- c. Attendance at online meetings (July 2009, August 2009, and October 2009).
- d. Access to HR documentation (June 2009 – October 2009)
- e. Access to online seminars (July 2009)
- 6. Discussing the selection of ANT (and considering other approaches and concepts) to be used as lenses to analyse the empirical data collected in the first stage of the study (August 2009 – November 2009)
- 7. Carrying out the first data analysis as informed by theoretical resources from ANT (July 2009-July 2010)

The identification of contributions and limitations of previous participation studies helped answer research question (1): *'What are the contributions of previous online community literature to understanding online community participation?'* Activities three and four collected empirical data to be further analysed (activity seven), in order to answer the research question (2): *'What do the theoretical resources from ANT reveal about participation in the online community that is the focus of this study?'* Questions one and two also served to further inform questions (3): *'What can a practice-based approach say about what shapes the degree of participation in the online community that is the focus of this study?'*, and (4): *'What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?'*

During stage one of the study discussed in this thesis, other alternative approaches and concepts, apart from ANT, were considered to inform the empirical data collected at this stage. Initially, the concepts of multiple inclusion (Bogenrieder and van Baalen, 2007) and policontextuality (Engestrom et al., 1995) appeared as a valuable lens to analyse how HR practitioners could deal with some of the problems faced by their multiple memberships in communities. However, these concepts became less relevant to analyse how practitioners and information technologies could interact with each other by shaping their use and actions. Given that the goal of the study was to explore the factors shaping participation and not the multiple and sometimes conflicting processes faced by practitioners, these two concepts were not adopted in the study.

The concepts of communication media repertoires (Watson-Manheim and Bel anger, 2007) and media toolbox (Woerger et al., 2004) were also considered and discussed as potential



theoretical resources to inform the analysis in the first stage of the study. The core proposition of these two concepts argues that people use multiple media to communicate to perform their practices, rather than one single medium used in isolation. This situation was clearly reflected in the empirical data collected during the initial stage of this study. However, these conceptual resources work on the assumption that media already exist in the organization and practitioners use these diversity of media to accomplish their ongoing work. This differed from the situation analysed in the current study, since the online community, the focus of this study, was a new initiative that brought with it the use of a new information technology.

It is thus that ANT was adopted as lenses to inform the analysis conducted during the stage one of the study. On the one hand, ANT was seen as a powerful theoretical device to analyse the emergence of relations between humans (practitioners) and non-human (information technologies) and how these relations can enable and constrain their actions (Callon, 1986; Law, 1986c). On the other hand, the sociology of translation of ANT was also seen as valuable to explore how a new initiative could take place and the negotiations and strategies required for the initiative to succeed (Law, 1986a; Callon, 1986; Linde et al., 2003). Moreover, previous studies using ANT to analyse the adoption of technologies (e.g., (Hanseth and Braa, 1998; Walsham and Sahay, 1999; Martin, 2000; Scott and Wagner, 2003; Cho et al., 2008; Elbanna, 2010) also suggested ANT could be valuable to provide new light on the factors shaping participation in the online community.

#### 5.2.2.2 *Stage two*

The findings provided in stage one of the study offered evidence to show that *CODECO* was not used as expected by its promoters. The use of theoretical resources from ANT provided relevant insights about the factors that shaped the lack of use of *CODECO* (collaborative technology supporting participation in the online community). However, the theoretical resources from ANT were ill-equipped to 'make sense' of all the empirical data collected during the initial interviews. This suggested a need for additional theoretical resources.

Therefore, in the second stage of the study, theoretical devices from PBA were adopted to inform the processes of data collection and analysis. The potential of PBA to make sense of aspects such as routinisation and habituation of media use and to explore deeper the role of HR practices in shaping participation influenced this choice. The theoretical resources

from PBA thus informed the answer to question (3): *'What can a practice-based approach say about what shapes the degree of participation in the online community that is the focus of this study?'*. At this stage, an answer to question (4): *'What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?'* was also provided.

Overall, five main activities were performed at this stage:

1. Discussing the selection of PBA and other theoretical resources to be used during the second stage of the study (August 2010 – December 2010)
2. Piloting the second set of interviews (November 2010)
3. Conducting the second stage of data collection, using interviews as the main source of empirical data (January 2011 - February 2011)
4. Analysing empirical data collected at this stage in the light of PBA (February 2011- December 2011).
5. Bringing the previous content together to further reflect on the use, strengths and weaknesses of ANT and PBA as theoretical resources to deepen the understanding of participation (January 2012 – October 2012).

### ***5.2.3 Five key interpretive features of this study***

Based on what has been discussed in Section 5.2.1, and the theoretical resources from ANT and PBA discussed in Chapters three and four respectively, the five features that permeate this two-stage interpretive study can be identified, namely:

- 1) the emergent nature of the research design;
- 2) the use of qualitative methods;
- 3) the strategy used for recruitment of research participants;
- 4) the inductive logic followed during the processes of data collection and analysis;  
and,
- 5) the perception of reality being socially constructed.

### 5.2.3.1 *Emergent design*

The interpretive flavour of this study is reflected in the emergent design that shaped the research process. The introduction chapter of this thesis presented a brief description of the evolution of the research, including its goals, the research questions to be explored, and the research focus. To support this continuous evolution, the adoption of an emergent design was required. Discussion on research design was needed to be taken during the research process for the sake of answering the research questions of the study. The flexibility to make decisions 'on the way' contributed to the study to:

- Move from two broad questions aimed at exploring the factors and barriers affecting participation, to a set of four research questions that reflect both empirical and theoretical interests.
- Collect data during the initial stage of the research without the use of any *a priori* theory, and later on adopt theoretical resources from ANT to make sense of the data collected at this stage.
- Adopt PBA during the second stage of the study to better understand emerging findings not fully explained by ANT.
- Adopt methods for data collection and analysis according to the needs of the research (e.g., while in the first stage of the research, observing communication activity in the online community was used to observe patterns of contributions; the lack of participation led to the adoption of interviews to further explore the factors that influenced the lack of activity in the online community).

### 5.2.3.2 *Use of qualitative methods, and strategies for recruitment of research participants*

This study mainly used qualitative methods for data collection and analysis. In opposition to positivistic studies where large scale surveys or experiments are often used, this study adopted interviews as the main method for data collection. Other methods such as observing communication activity in the online community, attendance at online seminars and meetings, and HR-related documentation, were also used to a lesser extent.

The interpretive character of this research was also reflected in the strategies adopted to recruit research participants. In contrast to the strategy followed by positivists, of

randomly selecting their subjects of study in order to generalise their findings to other contexts; this study selected interviewees with the aim of capturing examples of 'polar types' (Eisenhardt, 1989) in which maximum variation could be observed. The aim of this sort of engagement was to reflect the complexity of the phenomenon under investigation, not to generalise findings.

Consistent with the interests of ANT, adopting this type of strategy assisted in selecting participants who had different and contradictory interests during the process of network formation. This avoided the risk of giving primacy to the voices of more powerful actors. Similarly, in the second stage of the study, informed by PBA, an attempt was made to select HR practitioners who play different roles in the performance of HR practices.

#### 5.2.3.3 *The inductive logic followed during the processes of data collection and analysis*

This study followed an inductive and emergent logic during the processes of data collection and analysis. The data collection processes, though based on a set of relevant themes to be explored, followed an emergent logic that helped conduct the interviews with flexibility and awareness.

In terms of analysis, the study can be best described as following an inductive logic, informed by theoretical resources from ANT and PBA. Saying that the study is theoretically informed by ANT and PBA is meant to make clear that the phenomenon under investigation was observed from two particular perspectives. This means, nevertheless, that no preconception of particular outcomes was made during the analysis. Following a deductive logic in which hypotheses are provided to be further tested was avoided. Thus, the theoretical resources were used as sensitising mechanisms towards aspects relevant to understanding online community participation in the light of the particular preoccupations of the approaches.

In the case of ANT for example, four moments of translation were seen as taking place in an ongoing and disorderly process, rather than looking at them as theoretical categories to prove their universality. In the case of PBA, the multivocality of the approach assisted in exploring, for instance, the productive and the reproductive aspects of practices, rather than privileging one aspect over another in the analysis.

#### 5.2.3.4 *Knowledge is socially constructed*

This research subscribed to the belief that data is created in concert by the researcher and the research participants (Walsham, 2006). Two instances reflect the stance taken towards this concern. First, the data collected via interviews was a way of seeing participants' reality as expressed by each participant. To accomplish this, efforts to assure that the voice of research participants was privileged were made (Creswell, 2007). This is to say that findings were seen as relative and context-specific (Orlikowski and Baroudi, 1991). Thus multiple and potentially contradictory realities were acknowledged to exist (Guba and Lincoln, 1994).

Second, by adopting ANT and PBA as lenses to inform the analyses, the findings are seen as co-constructed. This means that the interpretations provided not only reflect the view of the research participants, but also the interests, expectations and background knowledge of the researcher (Johnson and Duberley, 2000). This in turn required the acknowledgment that the interpretations provided in this study were just two among many other possible interpretations.

### **5.3 Practicalities of the study**

Section 5.3 introduces the practicalities of the study. It starts by describing the process of gaining access to the research field in Section 5.3.1. It then describes and justifies the used data collection methods in section 5.3.2. Section 5.3.3 describes the selection of research participants, the interview process and ethical considerations.

#### ***5.3.1 Gaining access to the research setting***

The initial interest of this study was to understand the factors shaping online community participation. This required access to particular settings where these communities existed. A Knowledge Management consultancy firm, where the researcher previously worked, offered the opportunity to conduct the study discussed in this thesis. Among other duties, the author of the current study was directly involved in a project involving the customisation of a collaborative technology to support an online community prior to his PHD studies in July 2007. A few months after the study discussed in this thesis started, it was found that the technology supporting the online community was going to be

introduced in May 2009 to support the implementation of a HR project within the HR area of a private University (*INSTECH*). This appeared to be a potential site to look at participation in an online community, and the possibility of conducting this research within this context was explored.

To negotiate access to the site, the HR *president* of *INSTECH* was contacted by email. The HR *president* was sponsoring both *the implementation* and the use of *CODECO* - via email. An appointment for a telephone conversation to provide details of the doctoral research was set up. During this conversation, the exploratory nature of the initial research question was clarified. It was made clear that the research focus could evolve over time. The HR *president* took this as an opportunity to receive valuable feedback from the project, and expressed his keenness to support the research by providing access to the site. Agreement was reached, and a letter of confidentiality was signed by the researcher in March 2009.

At the time that access was granted, the online community had not yet been launched: The launch was scheduled for April 2009. Before the launch of *CODECO*, a twelve-hour online seminar was attended by all HR staff of University with the aim to introduce the overall goal of the project – which would further entail the use of *CODECO* - and its deployment. The twelve-hour seminar was subsequently attended (online) by the author of the work discussed in this thesis once ethical approval was granted (24<sup>th</sup> of June 2009). Attendance to this seminar provided with an initial understanding of the context surrounding the online community. On the 5<sup>th</sup> of July 2009 access was given to a two-hour online session where *CODECO* was formally introduced to all HR practitioners within the University. Similarly, access was given to the official HR-related documentation. Further negotiations took place to arrange the first set of interviews to be conducted during July and August 2009, and later on during January and February 2011.

### **5.3.2 *Methods for data collection***

This section describes and justifies the data collection methods chosen in the study, and how they were used. Interviews were used as the main method to collect empirical data. However, other secondary methods were considered to a lesser degree - analysing communication activity in the online community, observation in online meetings, HR documentation, and access to audio visual material. Two main aspects influenced the choice of data methods used in this study, namely:

1. The possibility of adopting particular methods in the light of access and availability of resources. A lack of resources and time to spend periods of observation in the field led to the adoption of interviews as the main method to collect empirical data.
2. The usefulness of the methods to answer the research questions. As the study entailed an emergent design, the continuous evolution of the research questions required access to different sources of data (for example, initially, access to the online space was required to observe participation in *the community*: As virtually no participation was observed, the use of interviews thus became critical to examining the factors shaping online community participation).

#### 5.3.2.1 *Interviews*

In praxeological approaches where a strong involvement in the context of research participants is preferred (Carlile, 2002; Nicolini et al., 2003; Charreire Petit and Huault, 2008; Nicolini, 2009; Feldman and Orlikowski, 2011; Huizing and Cavanagh, 2011) ethnographic methods are generally adopted. However this study adopted interviews as the main method for data collection. The use of interviews is consistent with the interpretive nature of this research (Morgan and Smircich, 1980; Creswell, 1994; Creswell, 2007) in which the interview knowledge is seen as socially constructed (Orlikowski and Baroudi, 1991; Johnson and Duberley, 2000), as created in interactions between the interviewer and the interviewee (Guba and Lincoln, 1994). One of the advantages of the use of interviews is that they give “voice to common people, allowing them to freely present their life situations in their own words” (2006:481), and to understand the actors’ viewpoints (Clarke and Dawson, 1999).

Face-to-face semi-structured interviews – rather than structured or unstructured interviews – were used in the study. As opposed to structured interviews, semi-structured interviews offered the flexibility to capture the research participants’ points of view without predetermining their opinions through a *a priori* selection of questionnaire categories (Patton, 2001). In contrast to unstructured interviews, semi-structured interviews offered the possibility of flexibly exploring relevant and emergent topics. ‘*Interview schedules*’ were used to create an adequate balance in the flow of the interviews

to ensure that aspects relevant to answering the research questions were discussed (see Appendices three and four). However, a continuous commitment to privilege the voice of research participants – and not that of the researcher - was made.

Ideally, through the use of interviews the researcher “gets the interview subject to talk a lot – openly, trustfully, honestly, clearly, and freely – about what the researcher is interested in” (Alvesson, 2003:17). However, potential problems can emerge during the interview process. On the one hand, one must be reflective and have the sensitivity to be aware of his/her involvement in the interview process (Bryman and Cassell, 2006). Common problems could be asking leading questions, or imposing the researcher’s view when exploring relevant aspects of the phenomenon under investigation (Alvesson, 2003). On the other hand, an interviewee must be seen as “a political actor rather than ‘truth teller’” (2003:27). When being interviewed, interviewees might want to give a good impression of themselves and their institutions, they might cheat or lie, or say things which favour them (Alvesson, 2003). To avoid such problems different strategies were adopted, such as a commitment to building rapport and trust (Alvesson, 2003); adopting an attitude of respect that showed research participants that their experiences, knowledge, and feelings were important and respected (Patton, 2001); and not taking for granted what was said in the first instance (Further details on the strategies used to avoid potential problems during the interview process are discussed below).

#### 5.3.2.2 *Use of other complementary methods*

The use of interviews was complemented by the adoption of other methods:

- Observing communication activity in the online community (See Appendix 10 and Figure 7.1). Over a period of a year (from June 2009 to July 2010), activity taking place in the online community was observed on a monthly basis starting in June once ethical approval was granted. This was done to examine the type of interactions taking place within the online community. Since relatively a low level of participation was observed, the need to adopt interviews became critical. However, this period of observation was useful to look at:
  - The activity taking place, consisting of a relatively low level of activity in three main functionalities of the collaborative technology supporting the online community.



- Relevant project-related documentation and documentation related to the use of the technology supporting the online community.
- Observation at three virtual HR Committee Meetings with the role of observer (July 2009, August 2009 and October 2009). Observations are generally conducted with the aim of directly collecting data about a specific phenomenon or situation in a “naturally occurring context” (Silverman, 2006:21) and are often used in combination with other methods (Patton, 2001). In this study, observation was conducted during three HR Steering Committee meetings lasting 180 minutes each; field- notes accompanied these short periods of observation.
- Audio-visual materials and HR-related documentation.
  - Eleven project-related seminars, recorded by staff from the HR Direction, were accessed during the first week of July 2009. These online seminars were used by the HR Headquarters’ staff to formally introduce the HR project to all HR practitioners within all the campuses of *INTEC*. Each seminar lasted 60 minutes. These seminars were insightful to develop an initial understanding of the HR project. During these seminars, different activities required to accomplishing the aims of the project were discussed, and the competency-based model to be used and relevant documentation to support the implementation were introduced. The content of the seminars was not transcribed, although it was used as a source to provide contextual information on *the implementation*. Samples of the material used during the seminars and other HR-related documentation can be seen in Appendix 9.
    - Access was also given to a two-hour seminar in which the technology supporting the online community (*CODECO*) and its different functionalities were introduced to HR practitioners. When it was first introduced, a group of about 15 people attended the seminar. However, the seminar was recorded to give a further opportunity for those who did not attend to access it. Attendance at this seminar helped observe how the launch session took place and the reactions from HR practitioners towards the technology supporting the online community. Note-taking by accompanied the attendance to meetings on the 5<sup>th</sup> of July 2009.

### 5.3.3 *Conducting the research*

The purpose of this section is to provide a descriptive account of the research process. It focuses attention on describing how research participants were selected, how interviews were conducted, and how ethical issues were tackled in the study. Although the empirical data was collected through different methods, this section mainly discusses interviews. This is because the findings of Chapters six and seven were mainly drawn from interview data. However, reference to the use of other qualitative methods - observation, browsing the online community (e.g., observing communication activity in the online community), and access to audio-visual material – is made when relevant.

#### 5.3.3.1 *Selection of research participants*

This section describes how research participants were selected in the first stage of the study. It shows how no attempt was made to randomly select informants. Rather, an attempt was made to maximise the diversity of opinions that could be relevant to understanding the factors shaping: 1) the rhythm of the HR project implementation; and 2) online community participation. Thus, purposeful sampling was pursued in which informants were chosen on the basis of better understanding the issues of major importance to the phenomenon under investigation (Creswell, 2007). Moreover, at this initial stage, research participants were chosen with the support of the HR *president* to ensure certain criteria were met. In the second stage, research participants to be interviewed were chosen following similar criteria. The strategy of purposeful sampling, and the categorisation defined in the initial stage of the research (described below), were used in the second stage.

Given the newness of the site, the selection of research participants in the first stage of the study relied on the HR *president's* knowledge. During a telephone conversation, it was explained to the HR *president* the strategy that would be used to select informants, in which selecting examples of 'polar types' (Eisenhardt, 1989) was required. This strategy required effort to maximise the diversity of opinions from participants in order to represent the widest possible range of perspectives. This strategy was complemented by previous empirical data gained through browsing the online community (observing and analysing communication activity in the online community; e.g., participation). With

support from the HR *president*, three main categories of potential participants were identified, namely:

- People working at the HR General Direction of *INSTECH (Headquarters)*. The members of this group of practitioners were involved in strategic HR issues, and were responsible for the long-term improvement of HR Practices at *INSTECH. the implementation* and the proposition to use *CODECO* were initiatives that emerged from this group. Their viewpoints appeared to be potentially insightful to examine the origins of the online community, and to offer an overall perspective of the project being supported by *CODECO*.
- Human Resource Directors of each campus (*directors*). This group was composed of 30 to 35 HR Directors who acted as the head of each HR Direction at each campus of *INSTECH*. Their main responsibility was to maintain the day-to-day operation within their own campuses, and to implement new projects launched by the *Headquarters*. As *INSTECH* comprised campuses of different sizes, the HR *president* observed that *directors* could have different duties and responsibilities, depending on the size of each campus. Therefore, their perceptions towards the project and the online community could differ. I thus ensured that *director* from small, medium and large campuses were selected.
- Other HR staff working at every campus of *INSTECH (staff)*. In some campuses (generally small- and medium-sized campuses), *director* were directly responsible for the implementation of the HR project. However, in other cases (generally in large-sized campuses), *staff*, and not *director*, were responsible for *the implementation*. Research participants from this group were also selected.

According to this categorisation, 17 and 13 HR practitioners were selected to be interviewed during the first and second stages of the study respectively. To facilitate access, I gave preference to people located in campuses within the Central part of Mexico to interview. Research participants working at campuses located in cities difficult to reach were interviewed during the piloting exercise (see Section 5.3.3.2). Once research participants elected, an email was sent by the HR *president* to all potential participants explaining the purpose of the research, and to invite them to take part in the interviews. Table 5.1 shows the research participants interviewed at each stage of the research

according to the rationale described above. Full details of research participants, including demographic information, can be found in Appendices five and six.

<b>CATEGORY</b>	<b>STAGE ONE</b>	<b>STAGE TWO</b>	<b>TOTAL</b>
<i>headquarters</i>	3	2	5
<i>director</i>	10	8	18
<i>staff</i>	4	3	7
<b>TOTAL</b>	17	13	30

**Table 5.1 Summary of research participants**

#### 5.3.3.2 *Piloting interviews*

Before conducting the face-to-face interviews (24 in total; 14 during the first stage, and 10 during the second stage of the study) six telephone interviews (three in each stage) were carried out during a piloting exercise. The piloting exercises were conducted in June 2009 and November 2010. These pilot interviews were preceded by the design of preliminary interview schedules, and were useful to:

- a. Anticipate potential problems that could emerge during the interview process (e.g., talking too much rather than letting participants talk; asking questions in inappropriate ways so that participants could not understand what was being asked; etc.).
- b. Calculate the length of interviews.
- c. Get initial insights on potential areas to further explore during the face-to-face interviews.
- d. Additionally, some questions were reformulated and others added and removed.

#### 5.3.3.3 *Interview schedules*

During the two stages of the study, prior to conducting the face-to-face interviews, interview schedules were developed (the final version of the interview schedules used in each of the two stages of the research can be seen in Appendices three and four). The interview schedules were mainly used to maintain the focus on relevant areas to be explored and to conduct the interviews in a flexible way, thus avoiding the need to ask specific questions in a particular order.

#### 5.3.3.4 *Conducting interviews*

The collection of empirical data through interviews was carried out in two stages. A total of 30 interviews were conducted. Research participants from 19 campuses: 24 on a face-to-face basis, and six telephone interviews as part of the piloting exercises participated in the interview process. The schedule of the interviews was arranged with support from the HR *president*. A few days in advance, prior to each interview, an email was sent to each research participant to confirm the date, time and place of the interview.

On the day of the interview, the arrival at the location was from 30 to 60 minutes early. All interviews took place in the offices of research participants (except those in the pilot exercises). After a personal introduction to interviewees, all interviews began by briefly describing the purpose of the research project, and how their collaboration by taking part in the interview was critical for the study. While explaining how the study emerged, the previous relation of the researcher to the University was always mentioned, as both a student and an employee. Doing so proved to be an effective strategy to create an appropriate atmosphere as the researcher was seen as part of 'the Tec community'. This was a first step to establish rapport with interviewees. For instance, in a few interviews it was found out that both the interviewer and the interviewee knew people in common working at *INSTECH*; thus the former was not seen as a complete stranger. Similarly, it was noticed that conducting the interviews in their offices made research participants feel comfortable.

Before formally initiating the interviews, the voluntary nature of the interviews was highlighted and mentioned to research participants their right to withdraw at any time. Issues of confidentiality and anonymity were also addressed, and participants were asked to sign a consent form, particularly designed for the study (see Appendix seven). At the beginning of each interview, permission was asked to record the interview; all interviewees agreed to be recorded.

The interviews started by asking HR practitioners about their general responsibilities in their jobs. At all times, genuine interest to what interviewees were saying was shown by concentrating and listening carefully. Guided by the interview schedules, the initial conversations during the first set of interviews were followed by questions exploring their experiences during the HR project implementation.

Understanding how HR practitioners communicated, and the media they generally used to do so, was critical given the main interest to explore how *CODECO* had been used to support knowledge sharing and collaboration during *the implementation*. Only a small number of HR practitioners mentioned *the community* and the technology (*CODECO*) supporting it during the conversations. When this occurred, questions to further explore their opinions about the online community were asked. When interviewees did not mention the online community, they were explicitly asked about it.

The use of the interview schedules offered the flexibility to prompt questions without the need to follow a sequential order. Rather, a conversational style was used. Doing it this way, though, also required full attention to ensure all themes stated in the interview schedules were explored. However, using the interview schedules did not prevent from exploring emerging issues that appeared to be relevant to understanding participation in the online community. Moreover, having previously taken part in the project-related online seminars and the HR Committee Meetings, allowed the use of the everyday language of participants to avoid imposing views on HR practitioners.

In comparison to the first set of interviews when conducting the interviews in the second stage was more comfortable. Previous experience during the first stage, familiarisation with HR practitioners' jobs, and a clearer focus for the study enhanced confidence and facilitated the flow of the conversations. Although being familiar with the theoretical resources of PBA, including theoretical terms in the vocabulary that could have been unclear to research participants was avoided. Rather, the theoretical resources from PBA were used as sensitising ideas to raise appropriate questions to explore the day-to-day activities of HR practitioners; thereby allowing gain new understandings of how HR practices shaped participation in the online community.

Similarly, once more experienced with interviewing, the use of less-structured interviews was opted. By adopting this style, it was easier to get participants to talk extensively about their daily activities, which was consistent with the particular concerns of PBA. The long conversations were particularly relevant, for instance, to capture the taste of HR practices. An argument can be made against this strategy, suggesting that adopting the use of less-structured interviews could potentially lead to straying away from the main focus of the interviews; however, the interview schedule served as a guide to ensure relevant aspects informed by the particular preoccupation of PBA were addressed.

Moreover, despite all interviews being broadly guided by the same interview schedule, each interview was different. There was an increasing awareness of different issues permeating HR practices, so that these concerns were explored in more depth. For example, it was sometimes perceived how interviewees avoided talking about a particular conflict, or deliberately emphasised certain aspects. This was taken as an opportunity to explore these particular issues during the interview. When this could not be achieved, it was ensured those aspects were explored in further interviews. Aspects frequently mentioned such the lack of resources, the sense of being marginalised, and the comradeship environment permeating HR practices, were clear examples.

Overall, interviews ranged in length from 50 to 90 minutes. The average interview time was about 60 to 65 minutes. The decision to stop interviewing was made when all the key aspects outlined in the interview schedules had been covered. Before finishing the interviews, research participants were asked whether they could be contacted again if required. Each research participant was offered a symbolic present, and an email expressing gratitude was sent the same day as the interview.

#### 5.3.3.5 *Ethical considerations*

The study discussed in this thesis involved working with human subjects. Therefore ethical issues such as anonymity, confidentiality, informant consent, and privacy had to be addressed throughout the research process (Patton, 2001). To begin with, in December 2008, the ethics application forms to the Ethical Committee of the Information School of the University of Sheffield were submitted. Ethical approval for the study was granted in June 2009 (see Appendix seven), and the process of data collection commenced.

An initial email was sent to the HR *president* of *INSTECH* introducing the research project in detail. Once access was gained to the site, a letter to assure the University that all data collected would be treated in confidence and kept private was signed. All participants were informed of the purpose of the study before commencing the interviews, and were also informed of their right to withdraw from the interview at any time. It was further assured to all participants that their data would be treated in confidence and kept private. Informed consent was received from all participants; copy of the 'Participant Information Sheet' was given to them, and the 'Consent Form' was signed by all participants (see Appendix seven).

Issues of strict confidentiality and privacy during the interviews were reiterated when needed in order to give confidence to research participants to freely express their thoughts. This was critical given that all interviews were recorded. Establishing rapport was another strategy used to give confidence to research participants. Once the interviews conducted, empirical data was kept securely in a password-protected folder. The researcher was the only person with access to this folder. When reporting findings, codes to ensure total anonymity were used. The codes for each research participant can be seen in Appendices five and six. To explain the key used in Chapter six and seven, three examples are provided in Table 5.2 below:

<b>CODE</b>	<b>Position held</b>	<b>Order of interviewee</b>	<b>Campus Size</b>	<b>Gender</b>	<b>Order of interview</b>	<b>Interview line</b>
D11SF 18-202	<b>D:</b> Director	<b>11:</b> The 11 <sup>th</sup> Director interviewed	<b>S:</b> Small	<b>F:</b> Female	<b>18:</b> The 18 <sup>th</sup> interview	<b>202:</b> Quotation taken from interview line 202
D15MM 25-325	<b>D:</b> Director	<b>15:</b> The 15 <sup>th</sup> Director interviewed	<b>M:</b> Medium	<b>M:</b> Male	<b>25:</b> The 25 <sup>th</sup> interview	<b>325:</b> Quotation taken from interview line 325
S6LF 27-350	<b>S:</b> Staff	<b>6:</b> The 6 <sup>th</sup> Staff interviewed	<b>L:</b> Large	<b>F:</b> Female	<b>18:</b> The 27 <sup>th</sup> interview	<b>202:</b> Quotation taken from interview line 350

**Table 5.2: Key used for research participants**



## 5.4 Data analysis

### 5.4.1 Analysis of interviews

This section describes the procedure followed in the analysis of interviews. Interviews were collected and analysed over two different periods: during the first stage, 17 interviews were analysed in the light of the particular preoccupations of ANT, while in the second stage, the remaining 13 were carried out and analysed in the light of PBA (See Appendix eight for samples of coded interview data). Though the two set of interviews were interpreted through the lenses of different theoretical devices (i.e., ANT and PBA), the same rationale for analysis was followed. The two data analysis stages:

- Were guided by an interest in answer the research questions of the study.
- Were theoretically informed. However, the theoretical lenses were not used as theories to be tested, or with the aim of proving their universality, but as resources to explore online community participation from two different perspectives.
- Aimed at identifying themes representing the ‘core meaning’ of what research participants expressed about the phenomenon under investigation.
- Were highly informed by the analytical procedure of Braun and Clarke (2006) to conduct thematic analysis.

#### 5.4.1.1 Use of thematic analysis

Thematic analysis has been widely used as an analytic method in interpretive studies, and so it has been suggested that it can be seen as a “foundational method for qualitative analysis” (Braun and Clarke, 2006:78). This analytic method is generally used “for identifying, analysing and reporting patterns (themes) within data” (Braun and Clarke, 2006:79) through “careful reading and re-reading of the data” (Rice and Ezzy, 1999:258).

Two main types of thematic analysis can be identified in the literature: a more inductive approach, mainly data-driven, and a more deductive approach, generally driven by previous theories, assumptions or hypothesis (Braun and Clarke, 2006). On the one hand, in an inductive approach, the analysis is conducted without paying much attention to issues or themes that previous research might have found to be relevant. It is rather “a process of coding the data without trying to fit it into a pre-existing coding frame” (Braun and Clarke, 2006:83). In this approach “findings emerge from the most frequent, dominant

or significant themes inherent in raw data” (Thomas, 2006:238), thus allowing the theory to emerge from the data (Strauss and Corbin, 1990). Data analysis is thus mainly guided by the research question. Although this inductive logic is mainly data-driven, it is important to note that “data is not coded in an epistemological vacuum” (Braun and Clarke, 2006:84), as anybody can free himself from his/her own preconceptions, preferences, and assumptions (Creswell, 2007). On the other hand, deductive thematic analysis is driven by “prior assumptions, theories or hypotheses” formerly identified (Thomas, 2006:238). Here, previous theories can be used to interpret and make sense of raw data. In so doing, researchers can avoid the possibility of not having captured important aspects of the situation under study that sometimes occurs when a-theoretical inductive methods are used (Sarker and Sidorova, 2006).

This study adopts a hybrid process of inductive analysis to identify themes within data and make sense of them through the lenses of ANT and PBA. It incorporates both the data-driven inductive approach suggested by Braun and Clarke (2006), and a more theory-driven analysis guided by the particular preoccupations of ANT and PBA. By combining these two approaches, an attempt was made to allow relevant themes to emerge directly from the data, while at the same time making sense of the empirical data through the theoretical resources of ANT and PBA.

#### 5.4.1.2 *Conducting the analysis*

Data analysis was mainly based on the six-step analytical procedure suggested by Braun and Clarke (2006) to conduct thematic analysis. The steps suggested are as follows: data familiarisation, generation of initial codes, searching for themes, defining and naming themes, reporting findings. It is important to highlight is that these steps were not always followed in a linear way. Rather, this process was iterative and reflective, and moved back and forth across the empirical data and the theoretical resources as required. For the sake of exemplifying the analytical procedure followed, a detailed description of the process of data analysis conducted during the second stage of the study is described in detail. In this stage, PBA was used as a lens to inform the analysis. A similar analytical procedure was followed during the initial stage of the study in which resources from ANT were used.

#### 5.4.1.2.1 Familiarisation with the data

The process of familiarisation started with the data before the interviews were conducted. Alternative sources to gain initial insights about the project implementation were used; i.e., attendance at online seminars; observation of HR practitioners' levels of participation in the online community; previous knowledge gained from the interviews conducted during the initial stage of the study. Familiarisation with the data continued during the interview process and the transcription process.

Once interviews were transcribed, repeated readings of the transcripts to gain a holistic sense of the whole set of empirical data collected were done. A list of ideas relevant to understanding participation on the basis of the particular preoccupations of PBA was generated. To different degrees, these initial ideas also reflected those initial lines of inquiry introduced in Section 4.10. These ideas were further used during the analysis as a reminder about relevant aspects that might have otherwise been neglected. At the end of the analysis, most of these initial thoughts were reflected in the findings; though many others were included as the analysis continued.

#### 5.4.1.2.2 Generation of initial codes

The generation of initial codes consisted of three main phases. Firstly, once familiarised with the data by doing multiple readings of the transcripts, three interviewees representing examples of polar types (Eisenhardt, 1989) were chosen for the sake of maximising the diversity of opinions to be included in the initial process of developing codes. From these interviews, a set of open codes was generated. It sometimes happened that a particular inductively-generated segment was linked to different codes. From this process, a list of 50 initial codes was produced. In the second phase, two more interviews were coded in an independent manner, setting aside the initial set of open codes developed in the previous phase. During this process, a new list of 44 codes was generated. However many of the codes were repeated from those developed in the previous stage. Coding at these two stages was done using pen and paper. Thirdly, the codes developed in the two previous phases were put together and exported this list of codes to NVivo to be further used as the initial structure for coding all interviews (see appendix thirteen). Before coding all the interviews (i.e., the three interviews representing examples of polar types, the two interviews coded later on, and the remaining eight interviews; 13 in total) a

brief definition of each code was provided to ensure consistency in the coding process. In the process of coding all interviews, each segment was checked again, and sometimes the choices were reconsidered by giving a segment multiple codes, fully removing a segment to a different code, or creating new codes. The codes that overlapped or had similar content were double-checked by looking at the definitions of, and the segments included in, each code; a decision was then made either to keep them separate or put them together.

#### 5.4.1.2.3 Searching and reviewing for themes

At this phase of the analysis, the focus of attention shifted from looking at particular codes, to exploring how different codes could potentially be integrated into themes. Regular supervisory meetings took place during the process of data analysis and were helpful in providing alternative views to be considered in the analysis. Looking back and forth at the theoretical resources and the empirical data also proved to be a good strategy to explore potential themes. As the process evolved understanding of the data did so as well so that a series of core aspects relevant to understanding online community participation started to become more evident. The list of ideas initially developed in stage one 'Familiarisation with the data' was also used to look at how the developing themes could explain these initial ideas. At this stage, for example core aspects highlighted by PBA were not only reflected in each theme but also across themes. For example, the 'essence' of the themes 'routinisation of media usage' and 'shared knowings' was clearly reflected in the existing codes and the fragments included in each code. It also became apparent these themes shared some of their elements: 'routinisation of media use' was not an individual phenomenon but was expressed by the collective of HR practitioners; 'shared knowings' were not only collective but also routinely practiced.

#### 5.4.1.2.4 Naming themes and reporting findings

Seven main themes were defined in stage two, namely: features of HR practices, availability of existing communication media, interconnection between practices, routinisation of media usage, shared knowings, fitting the taste of HR practices, and supporting shared knowings. An effort to select extracts from the interviews that capture the essence of each theme was made during the presentation of findings with the

commitment to provide a coherent, logical and interesting account (Braun and Clarke, 2006).

#### ***5.4.2 Analyses of complementary material***

As mentioned in Section 5.3.2.2, other complementary methods, apart from interviews, were used to collect empirical data. This section briefly describes how the data collected through a) observation of communication activity in the online community, b) HR official documentation and online seminars, and c) online meetings were analysed.

Firstly, it was initially through the observation of communication activity in the online community that low levels of participation were observed. Three main functionalities supported by the collaborative technology were systematically observed between June 2009 and July 2010. These functionalities supported the following corresponding activities in the online community:

- Creation of discussion forums
- Calendaring events and activities
- Uploading relevant documentation to the community library

The analyses consisted in reporting the degree of activity supported by the three functionalities in a monthly basis (given the low levels of activity observed, a single table was used to report the analysis, See Figure 7.1). Within the period reported, only two discussion forums were created. Three HR practitioners had an input in the forums either by asking and answering a question. The functionality of calendaring events and activities was never used, though its availability in the online community. Finally, the activity of uploading documentation to the online repository was used by 15 HR practitioners. From all the documents uploaded, 75% of the documents were uploaded by three HR practitioners. Appendix ten shows two snap-shots of the communication activity taking place in the online community.

Secondly, the analysis of HR official documentation (between June 2009 and October 2009) and online seminars (July 2009) provided contextual and detailed information regarding the HR project implementation and the policies and functionalities of the

collaborative technology that supported communication activity in the online community. The analysis of documents consisted in reading the content of each document to gain an initial understanding or clarification on: 1) the objectives, main activities and participants' responsibilities of the HR project implementation, and 2) the functionalities and policies of participation of the online community (Appendix nine shows samples of the documents analysed and Appendix eleven provides samples of the forms used to report the analysis of the online seminars attended). Similarly, the attendance to these seminars provided light to understand 1) the objectives, main activities and participants' responsibilities of the HR project implementation, and 2) how the launch of CODECO took place, and how the functionalities and policies of participation were formally introduced to HR practitioners. Thirdly, three online meetings were attended in July 2009, August 2009, and October 2009. Note-taking accompanied the observation during the three meetings. Data related to the following matters was collected and further use mainly for clarification purposes after interviews were conducted in the first stage of the study (See Appendix eleven for samples of notes taken from the researcher's diary, in which the notes that accompanied the observations were also reported).

## **5.5 Standards of quality and research evaluation**

Section 5.5 concerns the criteria used for evaluating the quality of the study. Section 5.2 has defined the current study as an interpretive theoretically informed research. Therefore, the need for criteria for evaluation appropriate to the nature of this study is required (Klein and Myers, 1999). Although efforts have been made to guide interpretive researchers in judging the quality of qualitative research (Seale, 1999), there is still a tendency to import notions such as objectivity, validity, reliability and generalisability into the assessment of non-positivistic research (Johnson et al., 2006). These criteria, as observed by Johnson and his colleagues "tacitly articulate positivist philosophical assumptions" (2006:133).

Blindly following the criteria derived from the natural sciences to evaluate social sciences is a common but inappropriate practice (Morgan and Smircich, 1980; Johnson et al., 2006). This study considers that those criteria proposed by Klein and Myers (1999), Whittemore et al. (2001), Golden-Biddle and Locke (1993), Seale (1999), and Creswell and Miller

(2000) are far more appropriate to fairly evaluate the quality of the current study. The following section discusses the evaluative guidelines of these criteria, and the strategies followed to achieve quality in this study. These criteria are not applied in a mechanistic fashion, but rather with judgment and discretion (Klein and Myers, 1999). For clarification purposes, 'criteria' are defined as the standards to be upheld as appropriate in interpretive research; whereas 'strategies' are seen as the methods and techniques employed in the study to diminish research quality threats (Whittemore et al., 2001:528).

### ***5.5.1 Evaluating the study***

Research credibility requires research practices be visible and auditable, so that the audience can follow and track the research process (Silverman, 2000). It also requires that findings be presented with clarity (Seale, 1999.) With the aim of accomplishing credibility in the study, an audit trail was used. The audit trail consisted of different documents developed during the research process to keep track of the decisions made, and the activities conducted during the research process (Creswell and Miller, 2000). In this study, important documentation was systematically organised to make the research process transparent when reported. Presentations, agendas, 'records of supervision', copies of emails with potential, and selected participants, electronic copies of data collection, and analysis procedures and tools together provided a means for tracing the study in support of credibility (Whittemore et al., 2001). These documents (See Appendix eleven) ended up being part of the content of different sections of this study. For example, Section 5.3.3 and Section 5.4 presented a detailed description of the procedures to collect and analyse data, thus enhancing the rigour of the research by making the processes followed in the study transparent. Documents created in the research process in support of credibility are shown in Appendices eight, nine and eleven.

Closely related to credibility are the criteria of trustworthiness and authenticity. These, among other things, need to establish confidence that an accurate interpretation of data is offered (Whittemore et al., 2001), so as to ensure that the results of the research accurately portray the meanings and experiences of participants (Lincoln and Guba, 1985; Whittemore et al., 2001). Different strategies to address these concerns were followed. For example, all interviews were audio-recorded. This meant that the analyses were conducted on the basis of an honest representation of the voices from research participants (Seale,

1999). Similarly, as discussed in Section 5.3.3.1, efforts were made to interview practitioners from different groups, thus ensuring that all the different voices were fairly represented (Clarke and Dawson, 1999; Klein and Myers, 1999). Acknowledgment of possible differences in perceptions among participants was also reflected when efforts were made to explore emergent issues that appeared to be controversial to some interviewees. A commitment to develop rapport during the interviews helped accomplish this aim. Other strategies such as member checking to ensure participants' responses were fairly represented and avoid researcher bias was not conducted due to practical concerns.

The significance of the research was another relevant criterion to evaluate the quality of the current study. This study contributes to current knowledge in different areas, especially those of online communities and praxeological studies. (Chapter nine further provides a series of empirical, theoretical, and methodological contributions, and their practical implications for different areas of knowledge)

Criticality was another criterion that became relevant in this research. Among other aspects, it required developing a critical and reflective attitude during the research process (Creswell and Miller, 2000). To be critical, there is a need to clearly state how *a-priori* knowledge, background, preferences, and biases could impact upon the research process (Creswell, 2007), but also needs to constantly make efforts to fairly represent the stories of research participants. As Schwandt (2000) has observed, accepting the fact that our prejudices shape how we understand the world and govern how we interpret it, does not mean that we have to recreate our biases in our interpretation. Rather we must be committed to considering alternative explanations, recognising and exploring inconsistencies and ambiguities that could emerge during the research process (Whittemore et al., 2001).

Previous sections have already discussed some of the strategies adopted in this study to meet the criteria for evaluation relevant to the study. For example, it was acknowledged how the overall findings of the study were a process of construction between the research participants, the researcher and the theoretical lenses used in the research.

The criterion of criticality is closely related to the principle of dialogical reasoning in which it is required to be sensitive to possible contradictions between initial theoretical preconceptions that guide the original research design, and the actual findings that emerge



through the research process (Klein and Myers, 1999). The principle of dialogical reasoning can be observed in different aspects of the study. For example, once interviews during the first stage of the study were conducted, the need to interpret data collected led to the adoption of ANT. Initially, ANT was perceived as offering powerful devices to make sense of the data collected. However, as the process evolved, insights suggested the need to adopt other theoretical devices, since the use of ANT appeared not to fully explain how aspects such as routinisation and habituation shaped online community participation. Therefore the initial preconceptions guiding the study were questioned, and PBA was adopted as a lens to give relevant attention to aspects obscured when ANT was used to make sense of the empirical data.

Triangulation of methods and theories was another strategy used to enhance the quality of the study. Some interpretive researchers have restricted themselves to use the term 'triangulation', as it initially arose within a realist paradigm to measure validity in quantitative studies (Seale, 1999). However, the notion of triangulation is insightful to look at how the use of multiple methods for data collection, and theoretical lenses serve to enrich our understanding of online community participation.

First, it needs to be acknowledged that each type and source of data has its own strengths and weaknesses (Patton, 2001). The effectiveness of triangulation rests on the fact that by using a combination of data sources, the strengths of one approach can compensate for the weaknesses of another approach (Jick, 1979; Patton, 2001). As mentioned in Section 5.3.1.2, this study adopted the use of different methods to collect data. When browsing the online community showed there was a general lack of participation that needed to be further explored, the use of interviews became essential to understanding the factors that shaped practitioners' participation. Similarly, the attendance at online seminars proved to be insightful to provide background for *the implementation*, and to prepare the interview schedules before the interviews were conducted. In these examples, the use of multiple methods not only helped mutually compensate for the weaknesses of each method, but also helped to capture a more holistic and contextual portrayal of the phenomenon under investigation (Jick, 1979).

Second, the benefits of triangulation were also reflected in the study in that the use of multiple theories offered the opportunity to deeply understand the phenomenon under investigation: by providing the option to explore it from multiple perspectives (Patton,

2001); by allowing the possibility to examine overlapping or different facets of a particular phenomenon (Greene et al., 1989); and by examining the potential complementarity of theories wherein paradoxes, contractions and fresh perspectives can potentially emerge (Greene et al., 1989). Chapter eight focuses attention on these aspects by exploring how ANT and PBA converged in some topics that were relevant in understanding participation (Section 8.2), or how ANT and PBA helped deal with power issues at different levels of analysis (Section 8.3.3).

Finally, meeting the criteria of sensitivity requires the research to be conducted ethically (Whittemore et al., 2001). Section 5.3.3.5 has discussed how ethical concerns were addressed. Among other activities, all participants were informed of the purposes of the research; confidentiality, anonymity and privacy were maintained; freedom to withdraw at any time was given to research participants; and informed consent was received from all participants prior to the interviews (See Appendix seven).

## **5.6 Conclusion**

This chapter has introduced the research design and data collection and analysis methods to answer the research questions of the study. The study privileged the use of qualitative methods for data collection and analysis to investigate what shaped participation in the online community. HR professionals that played different roles in the HR practice were interviewed. To contextualise and clarify some of the data collected via interviews, other qualitative methods such as observation, analysis of documents, attendance to online seminars and meetings were used. The use of multiple methods provided the opportunity to present a chronological narrative of the implementation (Section 6.3) and perceptions of how the collaborative technology was introduced into the HR practices (6.4) as a means to support knowledge sharing and collaboration during the implementation. The battery of methods used in the study also served to illuminate how HR practices shaped participation in the online community (Chapter 7).

To demonstrate good practice in the way that results were generated different activities to achieve quality research (e.g., make research practices transparent, ensure different voices were taken into account, triangulation of methods and theories) were reported as conducted during the research process. This to achieve certain criteria (authenticity, credibility, criticality, sensitivity) consistent with qualitative research.

The following chapter introduces the findings of the first stage of the study in which theoretical resources from ANT were used to explore both 1) how *the implementation* took place; and 2) how the failed attempt to enrol *CODECO* into *the implementation* network ended up undermining *participation*. The methods used and the processes of data collection and analysis from which the findings introduced in Chapter 6 come from, followed the rationale discussed in Sections 5.2, 5.3 and 5.4.

## 6. FINDINGS I: AN ACTOR-NETWORK THEORY INTERPRETATION

### 6.1 Introduction

This chapter provides an overview of the findings of the research derived from the interviews conducted during the first stage of the research. It addresses research question (2) of the study: *'What do the theoretical resources from ANT reveal about participation in the online community that is the focus of this study?'*. The analysis was informed by the sociology of translation and its related concepts as discussed in Chapter three. Prior to tracing the main findings of this stage of the study, Section 6.2 describes the multi-campus University system (*INSTECH*) as being composed of different actor-networks (e.g., Campuses, Functional Areas, Research Centres, etc.). Accordingly, these networks comprise other actor-networks (e.g., the HR Direction network and its actors: HR staff, procedures, technologies, information systems, etc.).

Sections 6.3 and 6.4 focus attention on two different levels of analysis, as the ANT approach allows to do. Section 6.3 looks at the macro-level and was concerned with understanding how *the implementation* took place at *INSTECH*. This section offers a chronological narrative of how *the implementation* took place over a period of five years. It also serves as the basis to introduce the findings of Section 6.4, in which primary attention is given to how the focal actors attempted to enrol the technology supporting participation into *the implementation* network.

As the main goal of this research was to understand what shapes 'participation in the online community' (*participation*) supported by a 'collaborative technology', (*CODECO*), Section 6.4 looks at the translation process of *CODECO*, and how this process took place during *the implementation*. This shows how the emerging network to support *the implementation* attempted to enrol *CODECO*. Special attention is given to the emerging relationships between *CODECO* and other relevant actors that influenced its further use. The findings show how an incomplete translation of *CODECO* and its inability to evolve, its late enrolment and the existence of competing and disrupting actors, and the weak envelope surrounding *CODECO* undermined *participation*. It is important to note that the themes discussed in Section 6.4 span diverse and disconnected times within the chronology of *the implementation*.

Section 6.5 highlights five main avenues in which the theoretical resources from ANT helped in understanding *participation*. These are to examine that the use of the technology that supports the online community was 1) a political process; 2) a process characterised by tensions between the actors involved; and 3) a process having a relational and emergent nature. The use of the ANT approach also helped in 4) identifying the interests of relevant actors and how the diversity of interests influenced *participation*; and 5) investigating technologies as active actors. This is based on the findings provided in sections 6.4 (and to a lesser degree in 6.3).

Three observations must be considered when reading this chapter:

- a. In the light of the theoretical resources from ANT, *participation* was mainly explored in terms of technology use. In other words, the use of the 'technology supporting the online community' (*CODECO*) was equalised to 'online community participation' (*participation*). This is because those using *CODECO* did so via *participation*.
- b. *the implementation* entails the emergence of an actor-network. A number of heterogeneous human and non-human actors are enrolled to the network supporting *the implementation*. *CODECO* (the technology supporting the online community) is one among many others. Accordingly, *CODECO* is not seen as an isolated entity. Instead, it is part of the emerging network; and can be influenced by, and interconnected to, other actors.
- c. At the same time, *CODECO* – and thus *participation* – also embraces the emergence of an actor-network with its own translation process. The main goal of the network supporting *CODECO* was to persuade other actors to use *CODECO*. Then, it was hoped, *participation* in *the community* could take place, and the use of the technology would become taken for granted. For *participation* to take place, *CODECO* needed to strengthen its relations with other actors, and align its interests to those of a larger network, i.e., the network supporting *the implementation*.

## 6.2 The multi-campus University system as an actor-network

*The implementation* was an initiative taking place at *INTEC*. *INTEC* is a private University that comprises 31 campuses geographically dispersed across Mexico. A number of High Schools and Research Centres also belong to *INTEC*. Each campus is diverse in student

and staff populations. For example, the largest campus has a student population of about 25,000 students, some small campuses have fewer than 1,000 students. The staff population varies accordingly. On average, the proportion of students to staff is five to one. Approximately 25,000 employees work at *INSTEC*.

A Steering Committee manages *INSTEC*. Its main function is to provide overall guidance and direction. Strategic decisions that have an institutional impact on *INSTEC* must be discussed and approved by the Steering Committee. A Chancellor is chosen by the Steering Committee, as responsible for the overall functioning of *INSTEC*. Beneath the Chancellor are a number of *presidents*. They are in charge of overseeing the different functional divisions at the system level such Marketing Affairs, Human Resources, Student Affairs, Academic Division, Finance Division. Together, the Chancellor and the *presidents* of Divisions form the system-level administration of *INSTEC*. The HR *president* (from now on *president*), who initiated and sponsored *the implementation* and the launch of *CODECO*, belongs to this Steering Committee.

Each of the *INSTEC* campuses has its own administration board. A Rector (from now on *Rector*) heads the administration board of each campus and is supported by the Directors of different areas (e.g., Director of Human Resources, Director of Finance, Director of Academic Affairs, etc.). Rectors have a high degree of freedom to manage their own particular campuses; though they are subordinated to the Steering Committee, and subject to the same *INSTEC* institutional policies.

The HR Direction of each campus is headed by a HR Director (*director* labelled here). Depending on the size of each campus, a number of HR Staff (*staff* from now on) perform the HR practices on a day-to-day basis. Together, *director* and *staff* of each campus are responsible for *the implementation* on their own campuses. Table 6.1 shows the *INSTEC* actor-network, and the actor-networks that comprise it that are relevant to this study.

Actor-network	Actor(s) (-networks) included	Main aims
<i>INSTEC</i>	<ul style="list-style-type: none"> <li>○ Steering Committee</li> <li>○ 31 Campuses</li> <li>○ Functional Divisions</li> <li>○ 66 Research Centres</li> <li>○ 1 Hospital</li> <li>○ Institutional Vision</li> <li>○ Procedures and Policies</li> <li>○ Technologies and Information Systems (e.g., institutional email)</li> </ul>	The multi-campus University system aims at creating people with integrity and ethics, committed to the development of their communities by providing high-quality education and research.
Steering Committee	<ul style="list-style-type: none"> <li>○ Chancellor</li> <li>○ <i>presidents</i> of Functional Divisions (e.g., HR <i>president</i>)</li> <li>○ Technologies and Information Systems (e.g., institutional email)</li> </ul>	Provide overall guidance and direction by designing and overseeing the implementation of strategies within <i>INSTEC</i> .
Campuses	<ul style="list-style-type: none"> <li>○ Rector</li> <li>○ Directions (e.g., HR Direction)</li> <li>○ Academic staff</li> <li>○ Administrative staff</li> <li>○ Students</li> <li>○ Classrooms</li> <li>○ Research centres</li> <li>○ Technologies and Information Systems (e.g., institutional email)</li> </ul>	Through the provision of high-quality education and research, every campus of <i>INSTEC</i> aims at developing human beings with a humanistic vision and internationally-competitive attitude able to engage in their professional areas to support the well-being of their communities.
Human Resource Direction ( <i>INSTEC</i> -level)	<ul style="list-style-type: none"> <li>○ HR <i>president</i> (<i>president</i>)</li> <li>○ HR <i>vice-president</i> (<i>vice-president</i>)</li> <li>○ 31 HR Directions (one for each campus)</li> <li>○ HR strategies and policies</li> <li>○ Procedures, methods and guidelines related to hiring, payroll, training, etc.</li> <li>○ Technologies and Information Systems (e.g., institutional email, <i>CODECO</i>)</li> </ul>	To develop the required strategies and policies governing HR practices, making sure that each campus of <i>INSTEC</i> is provided with high-quality Human Resources.
Human Resources	<ul style="list-style-type: none"> <li>○ HR Director (<i>director</i>)</li> <li>○ HR Staff (<i>staff</i>)</li> </ul>	To provide employees with the necessary opportunities for

Directions (Campus-level)	<ul style="list-style-type: none"> <li>○ HR practices</li> <li>○ Procedures, methods and guidelines related to hiring, payroll, training, etc.</li> <li>○ Technologies and Information Systems (e.g. institutional email, CODECO)</li> </ul>	development during their professional career, and to deliver all necessary support to enable the provision of a high-standard of education and research.
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**Table 6.1: Actor-networks at INSTEC**

As can be seen from Table 6.1, some actors span different actor-networks. For example, all *directors* belong to the HR Direction (system-level), and to their campus actor-network, where they head their own HR Direction (campus-level). This also means that the relationships they maintain with other actors differ in nature. On the one hand, for instance, within each campus, each *director* is linked to the *Rector* of that campus through formal lines of authority. Within the HR Direction of each campus, similar lines of authority govern the relations between *directors* and their supporting *staff*. On the other hand, at the System level, *directors* are linked to *president*, but no formal lines of authority guide these relationships. Rather, only when new HR projects, or HR strategic initiatives, need to be implemented, will communication and collaboration take place between these actors.

Non-human actors also span different actor networks. The institutional email, for example, is used at each campus of *INSTEC*. Similarly, procedures, methods, and guidelines related to hiring, payroll, training, etc., are shared among *directors*, and embraced across all campuses. Other non-human actors from *INSTEC* are also subject to similar relations.

### **6.3 Chronological narrative of the implementation**

Section 6.3 presents a chronological narrative of how *the implementation* took place. It describes in a linear fashion a series of events that occurred during a five-year period from mid-2005 to mid-2010. This account is useful to understand how a set of controlling actors aimed to enrol other actors to successfully implement the HR project. It also briefly introduces the efforts made by the controlling actors to enrol *CODECO* into the network supporting *the implementation*. The source of the narrative is the analysis conducted during the first stage of the study discussed in this thesis, and includes empirical material from interviews, official documentation, online seminars and attendance to online meetings.



To understand the lack of *participation* (reflected in the (non-)use of *CODECO*) this narrative is later complemented by Section 6.4, where three themes are introduced to provide evidence of what shaped the non-use of the technology intended to support the online community.

### 6.3.1 The HR project implementation

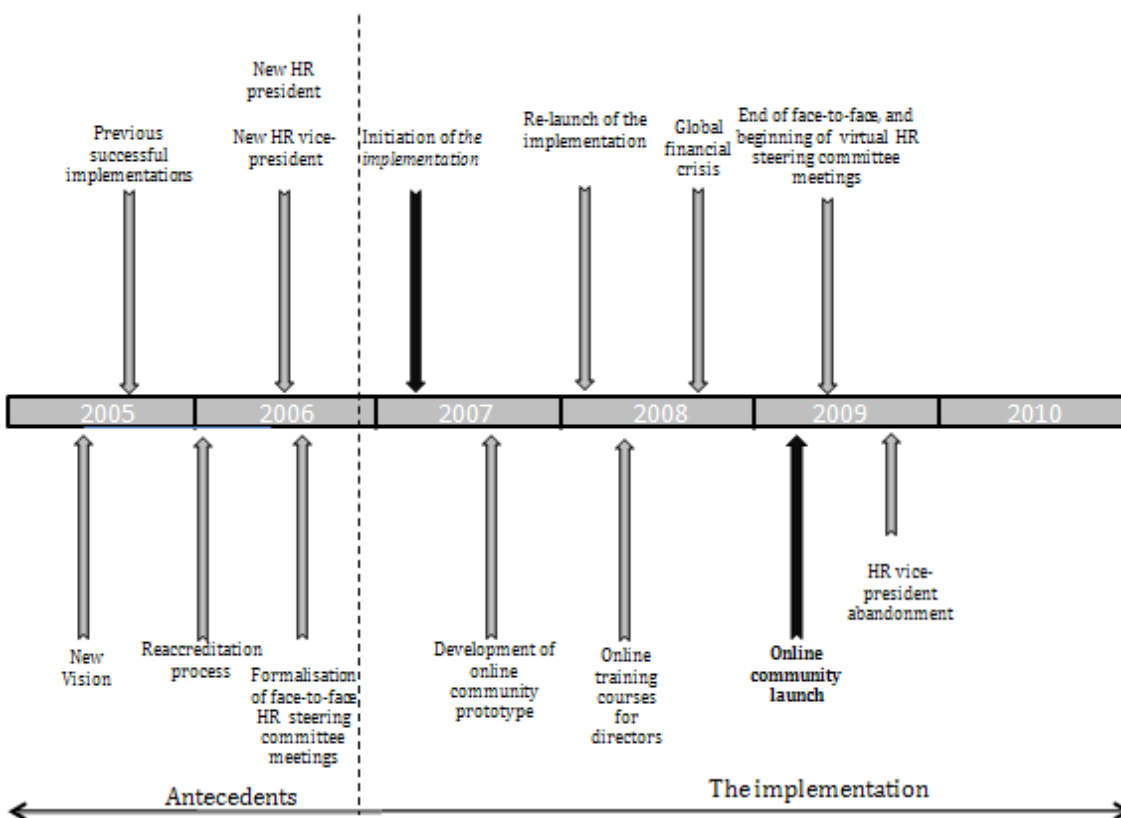
When *president* took his new role at *INTEC* in 2006, he became the controlling actor leading *the implementation*, and started to create a new actor-network to support *the implementation*. A successful translation of *the implementation* network would strongly depend on the ability of *president* to identify and enrol relevant allies, and to strengthen the relationships among them. Table 6.2 shows the most relevant actors that needed to be enrolled in order for *the implementation* to be successful. It also shows the actors that played key roles in the shaping of the use of *CODECO*.

Actor-network	Human - Non-human actors	Actors included
<i>the implementation</i> network	<ul style="list-style-type: none"> <li>○ Human actors</li> <li>○ Non-human actors</li> </ul>	<ul style="list-style-type: none"> <li>○ HR <i>president</i> (<i>president</i>)</li> <li>○ HR <i>vice-president</i> (<i>vice-president</i>)</li> <li>○ HR Directors (<i>directors</i>)</li> <li>○ HR staff (<i>staff</i>)</li> <li>○ Employees from every campus (<i>employees</i>)</li> <li>○ Rectors from every campus (<i>rectors</i>)</li> <li>○ Directors of Areas involved in <i>the implementation</i> (<i>directors of Areas</i>)</li> <li>○ Competency-based model (<i>model</i>)</li> <li>○ Technology supporting the online community (<i>CODECO</i>)</li> <li>○ Available ICTs (email, telephone)</li> <li>○ Job descriptions</li> <li>○ HR Steering Committee Meetings (<i>meetings</i>)</li> <li>○ Existing HR practices</li> </ul>

**Table 6.2: Relevant actors during *the implementation***

### 6.3.1.1 Antecedents of the implementation

The initiation of *the implementation* can be traced back to four earlier events: 1) the arrival of a new HR *president* (*president*); 2) the development of a new vision at *INSTEC*; 3) previous successful implementations of similar projects at five *INSTEC* High Schools; and 4) the need for re-accreditation to validate studies at *INSTEC* requested by an international certification institution. Figure 6.1 shows how these and other relevant events occurred during *the implementation*, among others the launch of *CODECO*. The events highlighted in Figure 6.1 are discussed below as the chronology of *the implementation* is introduced.



**Figure 6.1: Chronology of *the implementation***

Firstly, when *president* took his new position, he found “... a low level of sophistication of HR practices in which most of the previous work in terms of training and development had focused on academic staff; thus neglecting the development of other employees in the community of the University...” (HPM 12-140). This in turn, led him to envision a new way of managing HR at *INSTEC*, rather than aligning himself to the previous way of performing HR.

*The implementation* was the initiative taken by *president* to improve the way HR practices were performed at that time. To fulfil his goal he hired a Human Resources *vice-president* (*vice-president* from now on) immediately after his arrival. *vice-president* had previously implemented similar projects at *INSTECH*.

Secondly, the Steering Committee of *INSTECH* had just declared in 2005 a new Institutional Vision and called for the need to re-evaluate current performance. This challenged the HR direction and the way HR practices were performed. Thirdly, through previous similar short-scale implementations, *president* and *vice-president* had gained valuable experience and knowledge to launch *the implementation* at an institutional level. Fourthly, the need for “reaccreditation” (the process to validate studies at *INSTECH* by an external institution so that they can be recognised as valid by other Universities) was a final antecedent leading *the implementation*. This reaccreditation required four *INSTECH* Divisions (Libraries, Marketing, Student Affairs and Administrative Work) meet certain requirements in order to make their operations transparent. One of the requirements requested was to make public the job descriptions used within these Divisions, as a way to identify, develop, evaluate, and promote *employees* in these areas. Coincidentally, one of the first steps during *the implementation* was the development of job descriptions, and therefore different presidents of functional divisions saw in *the implementation* an opportunity to meet this requirement.

Taken together, these four events made the initiation of *the implementation* at *INSTECH* possible. The *president* and *vice-president* soon realised that in order to succeed in their initiative, they needed to establish *the implementation* as the Obligatory Passage Point (OPP) of the emerging network supporting *the implementation*. Among many other actors to be enrolled, *CODECO* would be one of them, and would be used to support knowledge sharing and collaboration during *the implementation*.

### **6.3.2    *Initiation of the implementation***

During the initiation of *the Implementation*, beginning in March 2007, *president* and *vice-president* problematised the way HR practices were to be carried out at *INSTECH*. To do so, they proposed a competency-based approach as a new paradigm to inform the performance of HR practices at *INSTECH*. Their proposition would require the development, and further use of, a competency-based model (from now on *model*). In turn, *model* would

prescribe a set of new procedures, policies, and activities governing the performance of HR practices at *INSTECH*.

To be able to institutionalise *model* across all *INSTECH* campuses, they started the development of a new actor-network to support *the implementation*, making this the OPP for the emerging network. *President*, *vice-president* and *model* would be the initial supporters of the network. At this initial stage, they engaged in a series of preliminary efforts to launch *the implementation* at *INSTECH*. However, the launch of *the implementation* was rushed, and resulted in future delays and misunderstandings occurring during this initial stage.

#### 6.3.2.1 *Establishing the implementation as OPP*

Once *the implementation* was defined as the OPP for the emerging network, *president*, *vice-president* and *model* became the controlling actors of the network. At the same time *vice-president* and *model* were acting as the envoys of *president* to protect the interests of the emerging network at distance. Together, they would persuade other actors to join the emerging network to supporting *the implementation* in each campus at *INSTECH*.

One of the first strategies taken by the controlling actors was the formalisation of face-to-face HR Steering Committee Meetings (*meetings* from now on). Members of the HR Steering Committee (e.g., *president*, *vice-president* and *directors* of the largest campuses) attended *meetings*, where strategic issues were mainly discussed. During one of the first *meetings*, *president* and *vice-president* introduced *model* to the members of the Steering Committee, and started to communicate their interest to institutionalise *model* via *the implementation*. When *model* was first introduced, the *president* stated:

“What I am expecting from [*the implementation*] is to see Human Resource Practices within a new paradigm; one that is based on competencies. What I mean by this is not to see the Competency-based model simply as a project, but rather as the natural way of doing things” (HPM 12-67).

A general positive perception from *directors* towards *the implementation* was observed during the initial *meetings*. By passing through the OPP, different relevant actors involved in *the implementation* would achieve their own interests: *president* and *vice-president* would integrate all HR practices based on the concept of competencies thus improving the overall performance of the HR Division (HRVM 13-32); the organisational environment at

*INSTEK* would be improved (D1LF 1-161); *directors* would make the selection process of new candidates more clear (D6MF 9-175); *directors* would easily identify training needs for their *employees* (D10SF 17-153); the performance appraisal process would be more transparent (D2MF 3-356); *employees* themselves would know if they have the required competencies for their jobs (D3SF 4-212), therefore they would focus on what they really needed in terms of personal development and training (D5LM 6-308); the new practices after *the implementation* would help *staff* become more organised (S1LF 2/156); *model* would achieve its own goal to developing a high performing group of *employees* previously neglected (HPM 12-56); the Functional Divisions involved in *the implementation* would meet the requirements to be re-accredited (S3LF 15-36); *staff* and *employees* would learn and improve their skills and competencies (D8LF 11-363); and directors of functional divisions would be able to communicate their staff what is expected from them (D6MF 9-77).

However, by passing through the OPP, actors would also have to deal with some tensions and conflicts associated with *the implementation*. *Staff* would feel insecure about how to lead the sessions to develop job descriptions (S3LF 15-278); *directors* and *staff* would feel the project requires more time than the time they can expend in the project (D2MF 3-233); *directors* would not be able to solve all their worries and uncertainties regarding *the implementation* (D8LF 11-341); *directors* would feel ignored by their representatives when making important decisions about *the implementation* (S4LF 16-128); and *employees* would be under stress because they ignore the purpose of new evaluations (D8LF 11-275).

#### 6.3.2.2 *Issues during the initial stage that shaped the rhythm of the implementation*

Once *the implementation* was established as the OPP, and the new network started to emerge, the controlling actors acknowledged the importance to identifying other relevant actors and persuading them to align their interests to those of *the implementation* network. However, despite *president* and *vice-president* assumed the responsibility for identifying and enrolling other key actors, there were some omissions to enrol relevant actors. This is because *the implementation* was rushed. Similarly, some misunderstandings and feelings of betrayal occurred and *the implementation* started solely with the support of the *presidents* of functional divisions without notifying other relevant actors of *the implementation*. Not fully enrolled in the initial stage of *the implementation* were *directors*,

*rectors, employees* of functional divisions involved, and other non-human actors such as *model* itself. Furthermore, there were enormous delays during *the implementation* caused by the current HR practices that were not necessarily aligned to the interests of *the implementation* network.

### **6.3.3 Re-launch of the HR project implementation**

While *the implementation* started solely with the support of the *presidents* of Functional Divisions, *president* and *vice-president* needed to create interest, and negotiate the enrolment of other relevant actors to lock them into the right places to support *the implementation*. For example, they acknowledged the key role of *directors* and *staff* for *the implementation* to succeed. They also realised *Rectors* of each campus could play a critical role in allocating resources to support *the implementation*. Similarly, a need to improve communication with *employees*, who would receive the benefits of *the implementation*, was acknowledged. Moreover, *model* found itself in a ongoing development. This meant that *president* and *vice-president* realised that *model* needed to be further developed to avoid delays and misunderstandings during *the implementation*.

Once relevant actors were identified, *president* and *vice-president* needed to develop different strategies and incentives to align the interests of all relevant actors to those of *the implementation* network. Far from a straightforward initiative, *the implementation* turned out to be complex and requiring continuous processes of negotiation and enrolment of actors.

#### **6.3.3.1 Interessement and enrolment strategies**

In their attempt to enhance the stability of *the implementation* network, *president* and *vice-president* developed different strategies to gain the support of relevant actors. They had to negotiate with them, and translate their interests to support *the implementation*. One of the first strategies developed by *president* was to use *vice-president* as an envoy to be in charge of *the implementation* on his behalf. *vice-president* was thus allocated to support *directors* and *staff* in a full-time basis, in matters related to *the implementation*.

Four main strategies to create interessement and enrolment were developed along *the implementation* during this stage. Firstly, during a period of six months (from April 2008 to

September 2008) - and for the first time since the arrival of *president* in mid 2006 - *model* was introduced to key actors (e.g., *directors, staff, presidents* of functional divisions) via online seminars, where *president* and *vice-president* communicated the aims, benefits and entailing activities of *the implementation*. These online seminars were recorded and made available for future access; one *director* commented on the benefits she gained from her attendance at the seminars:

“These online courses have helped us a lot because, for the first time, we have a clear picture of the overall project. Before we used to listen to some ideas, but sometimes [these ideas] appeared to be a bit isolated, and sometimes confusing...As you know, we are very busy dealing with the day-to-day work, so we don't have time to focus on things that are still under development...However, we now have a clear idea of what the intentions of the HR (General) Direction are” (D10SF 17-165).

Secondly, *president* and *vice-president* visited some campuses to provide support and assistance to *directors* and *staff* during *the implementation*, and to persuade *rectors* to allocate resources for *the implementation*. *vice-president* explained:

“I used to go to the campuses to meet Rectors [of each campus], and their heads of departments, to try to sell them the concept of [*the implementation*]; to explain why it is important, and to ask Rectors to allocate people, resources and time... I used to do that sort of promotional activity... The first thing [I used to do] was to talk to Rectors and their staff; if they bought the idea, we continued. If they did not, we stopped. [However], we did not go to every campus, as not all campuses asked us to go” (HVPM 13/284).

Thirdly, to reflect *the implementation* was a priority for *president* and *vice-president*, they started discussing *the implementation* as an essential topic in the agenda of *meetings*. Such aspects as co-ordination activities and strategies to prevent potential breakdowns during *the implementation* were regularly discussed. Similarly, during the monthly *meetings* discussions on current developments of *model*, and time to listen to experiences from *directors* and *staff* during *the implementation* in their campuses were allocated at the in a regular basis. One *staff* commented on how *the implementation* became a priority at the *meetings*:

“Once [*president* and *vice-president*] began offering the online seminars [where *model* was introduced], we also started talking about different topics of [*the implementation*] in the monthly meetings that previously had not been discussed ... I think these were two of the initiatives that added weight to [*the implementation*]” (D7MF 10-177).

Finally, once *the implementation* was under way, continuous efforts to improve *model* were made at the HR headquarters. Among other improvements, new systems for *directors* and *staff* to facilitate *the implementation* in their campuses were introduced. New project-

related documentation including standards and procedures of operation were also developed. New courses were also made available to support *the implementation*. *Vice-president* commented:

“Now [July 2009] that [*the implementation*] is running, we receive feedback [from *directors* and *staff*] and share experiences during [Meetings]; so that we now have the opportunity to continue improving the [*model*]. For instance, we are not using Excel sheets anymore; instead, we have a system that calculates the gaps [of competencies] automatically...We have improved the job descriptions a lot...and have created training courses according to the requirements of [*the implementation*]” (HVPM 13-100).

Altogether, these strategies repositioned *the implementation* in the Human Resources' agenda at *INSTECH*. *President* and *vice-president* reconsidered their previous decisions that led to previous pitfalls during the initial stage of *the implementation*, and engaged themselves in the development of incentives and strategies to gain the support of key actors in the beginning of 2008. However, the full enrolment of critical actors was challenged; the emergence of new actors threatened the network stability; and the abandonment of key actors in August 2009 required the re-allocation of actors within the network supporting *the implementation*.

#### 6.3.3.2 *Disrupting actors, the abandonment of key actors, and the launch of CODECO*

The world financial crisis disrupted *the implementation* in October 2008 despite the efforts made by *president* and *vice-president* to fully enrol key actors into *the implementation*. Top management' decisions to reduce expenses in all *INSTECH* campuses were made, and the opportunity for *Rectors* to allocate resources to *the implementation* was diminished. In some extreme cases, some campuses needed to dismiss some *staff* (and other *employees* within the different Functional Divisions of *INSTECH*).

This further resulted in the abandonment of the face-to-face *meetings* in May 2009. Instead, *meetings* were held in a virtual format. Similarly, *president* and *vice-president* cancelled their visits to campuses to reduce operational costs. Other initiatives previously developed, such as annual HR conferences that took place in different campuses, were also cancelled soon after the world financial crisis occurred. Overall, the rhythm of *the implementation* slowed down, mainly as a consequence of a lack of resources.

It was during this period, that *president* and *vice-president* perceived the stability of *the implementation* network was in danger. They thus decided to introduce *CODECO* to



support knowledge sharing and collaboration during *the implementation*. With this initiative, they expected *CODECO* would replace, to a certain degree, previous forums of interaction. *CODECO* became available by the end of 2008 and its formal launch took place in May 2009. In an online videoconference led by *vice-president* and one member of the HR Headquarters *CODECO* and its main functionalities were introduced. During this session, a policy of participation was declared. People were expected to participate at least three times a week. However this policy was not followed. *President* explained his expectations from the online community as supported by *CODECO*:

“Once I took responsibility for the Human Resources Central Direction, I was notified of the existence of an online collaboration tool, [*CODECO*,] which was available to all areas [of *INTEC*]. I saw this tool as a great opportunity, and decided to adopt it as the exclusive media to be used during [*the implementation*]. Although it would be a new collaboration tool, and one not previously used within the [HR] Direction, we believed it would be very useful as a mean to support the deployment of [*the implementation*]” (HPM 12-170).

Once *CODECO* was launched, *the implementation* continued. However, communication and co-ordination in *the implementation* were mainly supported by the existing media (e.g., email, virtual monthly meetings, telephone, and sometimes face-to-face interactions). This undermined the use of *CODECO*. After a few months, the policy of participation previously declared, in which participation in *the community* was expected to take place at least three times a week, became no more than an anecdotal statement.

#### **6.3.4 Conclusion**

The chronological narrative described above shows how the implementation took place over a period of five years. President and vice-president led the initiative to implement the HR project. However, the implementation was rushed and some actors were not fully enrolled. To strengthen the actor-network supporting the implementation, the focal actors developed different strategies to enrol actors who had previously been neglected. In a further stage, allocation of resources to the HR project became an issue after the world financial crisis in 2008. Meetings were held in a virtual format rather than face-to-face; and visits to campuses were cancelled. Given these conditions, president and vice-president perceived the stability of the implementation was in danger, and decided to introduce *CODECO* with the expectation that it would replace – in some degree – previous forums of interaction. As such, the main purpose of introducing *CODECO* was to support knowledge sharing and collaboration during the implementation. The following section introduces a

series of findings that shed light on what shaped the use of CODECO during the implementation.

#### **6.4 The implementation and CODECO**

Section 6.4 identifies and discusses three aspects that help understand the lack of use of *CODECO* during *the implementation* which in turn undermined *participation*, namely: 1) the incomplete translation of *CODECO* and its inability to evolve; 2) the late enrolment of *CODECO* and the existence of competing and disrupting actors; and 3) the weak envelope surrounding *CODECO*. According to *president*, *CODECO* was thought to be “the exclusive media to be used during the implementation...to support the deployment of the project” (HPM 12-170). This expectation was shared by *vice-president*, who believed “the features of [*CODECO*] would give people responsible for [*the implementation*] the possibility of sharing knowledge and experiences on a frequent basis” (HVPM 13-212). However, despite their expectations, this section shows that in practice, *president* and *vice-president* failed to enrol *CODECO* into the network supporting *the implementation*, thus undermining participation in *the community*.

Three main features distinguish this section from Section 6.3. Firstly, unlike Section 6.3, which was presented in chronological order, this section does not follow a sequential order. Secondly, whereas Section 6.3 aimed at understanding how *the implementation* took place, this section’s main interest is to understand how *CODECO* attempted to enrol into *the implementation* network. Thirdly, whereas Section 6.3 paid special attention to how *president* and *vice-president* played significant roles during *the implementation*, the focus of this section falls on understanding the relationships *CODECO* (failed to) develop(ed), and maintain(ed) with other relevant actors, and how these shaped *participation*.

##### **6.4.1 Incomplete translation, and inability of CODECO to evolve**

Firstly, *the implementation* was seen as a heterogeneous network of human and non-human actors, changing and adapting themselves to comply with the interest of their network. Actors not able to adapt, or to align to the network were excluded and isolated. Such was the case of *CODECO* which unlike other actors enrolled to *the implementation* network, failed to evolve and align itself to the needs of *the implementation*.

To be enrolled into *the implementation* network some human and non-human actors underwent changes over time. For example: *model* integrated new tools, systems and concepts to facilitate its enrolment; *meetings* evolved in format when the allocation of resources at *INSTEK* became an issue; *directors* and *staff* learnt new concepts and procedures during *the implementation*; *president* allocated a new actor to take on *vice-president's* responsibilities when the latter left *INSTEK*. Overall, these actors were capable to take on their new roles, and ending up being enrolled into *the implementation* network. They became punctualised, and taken-for-granted by other actors.

Unlike these actors who were capable to evolve in order to adapt and align themselves to *the implementation*, *CODECO* had a different posture. Rather than becoming indispensable to other actors, *CODECO* developed properties of irreversibility that were not fully aligned to the interest of other relevant actors. It opted for a rushed punctualisation that further undermined its ability to enrol to *the implementation* network.

When promoters of participation in *the community* aimed at turning *CODECO* as a taken-for-granted actor to further knowledge sharing and collaboration between actors *CODECO* found itself in an internal process of translation that was never completed. Although some of the applications that comprised *CODECO* were not fully developed (e.g., instant messaging, video conferencing), a decision to launch *CODECO* was made in *May 2009*, as *vice-president* commented a few months after the launch of *CODECO*:

“For example, the video conferencing functionality still needs to be developed. I know that the more applications [*CODECO*] offers to its users, the greater the chances of its success, but for now we have decided to launch [*CODECO*] with just the features that it has to date” (HVPM 13-222)

Although promoters of *CODECO* acknowledged the need to further develop other applications of the technology, they failed to involve actors who had the capacity to facilitate its development, as mentioned by an IT staff three months after the launch of *CODECO*:

“The problem here is that we do not have enough resources to work in collaboration with the HR area to finish the development of [*CODECO*]. Initially, we did participate in the development of the prototype, but the resources came from the HR area itself; this was how we got involved ... It was not really our initiative, but an initiative of those interested in adopting [*CODECO*] ... Here we have an overwhelming number of projects to deal with, and there are priorities we have to follow” (Extracted from a short conversation with a staff member of the IT department).

*CODECO* ended up with the initial applications it started with, when it was first launched. This was due to the lack of support from powerful actors to further develop *CODECO* in line with the needs of *the implementation*. This situation generated false expectations amongst those leading *the implementation* in each campus at *INSTECH* (e.g., *directors* and *staff*). This was because when *CODECO* was first launched, a promise was made by *president* and *vice-president* to further include other applications within it:

“When we got to know about [*CODECO*] for the first time, [*president* and *vice-president*] told us some applications would be added and others refined; however, I never heard about these changes again; indeed I never heard anything about [*CODECO*] again” (S2LF 7-348).

Moreover, among all the different features of *CODECO*, only the document repository application was used. *Directors* and *staff* from different campuses sporadically used this application to upload standard job descriptions to make them available to other *staff* and *directors* involved in *the implementation*. However, the use of the document repository application became problematic, as expressed by one *director* in the following comment:

“During the first stage of the project implementation, we needed to develop job descriptions for all the relevant employees participating in [*the implementation*]. From my point of view, the way job descriptions were stored at [*CODECO*] made the process of downloading very time-consuming, and even sometimes frustrating. If you look at [*CODECO*] and try to find a specific job description, you will understand what I am talking about” (D4LF 5-200).

#### **6.4.2 Late enrolment of *CODECO* into the implementation, and existence of competitors**

The second key aspect that undermined the use of *CODECO* was a long delay between the initiation of *the implementation* (early 2007) and the launch of *CODECO* (May 2009). During this time human actors involved in *the implementation* adopted pre-existing technologies for communication and co-ordination purposes, so that when *CODECO* was introduced its use was neglected:

“I see no real need to use [*CODECO*]. In terms of communication concerning [*the implementation*], I am perfectly satisfied with the forums we already have. I believe that the introduction of [*CODECO*] was a little too late. Perhaps things would have been different if [*CODECO*] and [*model*] had been implemented simultaneously” (D3SF 4-343).

When *CODECO* was introduced, the pre-existing media (e.g., email, telephone, virtual meetings) posed themselves as non-human actors difficult to ignore or abandon in favour of something new. Thus, they were strong established competitors that disrupted the

ability of *CODECO* to strengthen its relations with key actors to become part of *the implementation* network. Indeed, some human actors perceived little need for *CODECO* to be used at all, since the existing media were helpful in supporting their communicative practice:

“I think all technological effort has to meet a need; thus what [*president* and *vice-president*] would have to sell is not [*CODECO*] itself, but the need that it aims to satisfy. From my point of view, I do not feel uninformed or isolated. On the contrary, I have a range of media already available to communicate with [people working at the HR headquarters] and with all HR people.. What I mean is that I currently receive all the support I need in terms of help and knowledge for [*the implementation*]” (D7MF 10-412).

Another example that shows how *CODECO* was perceived as redundant by other actors is given by one *director*, who expressed how *meetings* and other existing media helped address her current information needs, and thus affected her willingness to use *CODECO*:

“It generally works in the following way. During the monthly Committee Meetings, we discuss strategic issues, not just about [*the implementation*], but about everything we do in the HR area. In the specific case of [*the implementation*], it is during these meeting that we define timescales and set dates, and assign responsibilities and tasks. So far, that has worked very well for deploying [*the implementation*]...When we come out of these meetings, we bring our agenda with us of activities to be done and communicated to [*staff*] on our own campuses. At this point, it really depends on us how we do it. Some of us use videoconferences, others use email. But no one, as far as I know, has ever used [*CODECO*] for this purpose. Or, to be absolutely honest, I have never heard of anyone ever using it.” (D9LF 14-436).

### **6.4.3 Weak envelope surrounding *CODECO***

Thirdly, after the global economic crisis became apparent, *president* and *vice-president* relied on *CODECO* to support knowledge sharing and collaboration between themselves and other relevant actors to ensure the maintenance of communication during *the implementation*. As such, *CODECO* acted as an envoy to be used by the controlling actors to support *the implementation* at a distance. However, the envelope that surrounded *CODECO* failed to make it indispensable to other actors, and thus failed to enrol *CODECO* into *the implementation* network.

Among the relevant actors who conformed the envelope of *CODECO* were the launch session at which *CODECO* was initially introduced; the policies of participation declared by its promoters; the documentation in which the purposes and main features of *CODECO* were made explicit, and accessible to all actors involved in *the implementation*; and the

efforts made by *president* and *vice-president* to promote the use of *CODECO*. Also elements of the envelope of *CODECO* were the components of *CODECO* itself (Section 6.4.1 has shown how the incomplete translation of *CODECO* influenced its use).

Firstly, the launch session of *CODECO* that took place via videoconference in March 2009 was the only formal initiative taken by *president* and *vice-president* to persuade other actors to use *CODECO*. Of all *directors* and *staff* from the 31 campuses of *INTEC*, only about 20 HR practitioners attended the videoconference. To inform about *CODECO* to those who did not attend the launch session, the latter was further made available online for future access.

Despite the good intentions of *president* and *vice-president* to formally introduced *CODECO* and its main functionalities via a launch session, many Directors and Staff agreed that the session could have allowed for more interaction amongst promoters and potential users to discuss *CODECO*'s use and benefits more in depth. This need was reflected in one of the comments made at the end of the launch session. Here one of the Headquarters Coordinators demanded that *vice-president* clarify the reasons and objectives to adopt *CODECO*. He commented:

"It would be important to talk about the motivation [to use *CODECO*], its objectives, goals and the benefits this initiative would bring to *the implementation*" (Observation extracted from launch session).

By the time this observation was expressed, the launch session was finishing and no later discussion on these matters took place. In an interview with the Headquarters Coordinator who raised the comment, he was asked to expand on his observation made during the launch session. He commented:

"Actually I think the idea [of introducing *CODECO*] that [*president* and *vice-president*] are proposing is interesting. However, we must examine it and see how it works. And as to concerns about the launch session, from my point of view - and I think it is a shared opinion because I talked about it at the end of the session with several colleagues - the presentation left more questions unanswered than we had at the beginning. The session over ran, so that there was no time for questions; it would certainly have been very beneficial to have the opportunity to raise questions on issues that needed to be discussed" (HCM 8-280).

Secondly, the launch session was further accompanied by official documentation in which (among other things) the features of *CODECO* and policies for participation were described and made explicit. However, rather than helping to persuade other actors to use *CODECO*, this documentation, and the policies for participation stated in such documentation, were

ignored. The following comment expressed by *vice-president* shows the purpose of this documentation:

“In this documentation, users can see all the applications available in [CODECO]. We realised the launch session on its own was not a sufficient introduction to [CODECO]. So this documentation was written with the purpose of reinforcing what was presented during the [launch] session” (HVPM 13-228).

Access to this documentation was given via the library section of CODECO under the name ‘*Policies and Procedures for the Competency-based model Virtual Community*’. Apart from describing the available applications and how to use them, this ‘manual of use’ contained a series of policies stating the frequency of use and activity required within CODECO. One of the policies stated that participation in *the community* must take place at least three times a week. However in practice none of the human actors followed the policy, even those who initially established it:

“It was ‘suggested’ to us we must take an active participation in [CODECO]. I do not remember exactly, maybe three or five times a week. But to be honest, I do not even remember the last time I logged in into [CODECO]. Since it was introduced, I have [used CODECO] about three or four times, no more than that ... Let’s see [[She opens her email, finds her password, logs in to CODECO and browses for some time, and finally says]]... ‘look, even [vice-president] has not used it at all” (S4LF 16-285).

Among other policies, there was one that declared: ‘*Within the discussion forums, all questions and queries will be answered in no more than two days*’ (extracted from official documentation). However, when *directors* and *staff* were asked about this documentation and its related policies, statements such as “...I do not know where exactly I can find it” (S1LF 2-373); “I did not know such documentation existed” (D5LM 6-350); “Well, what is the point of looking at it if I have never used [CODECO] anyway” (D7MF 10-443); were common among *directors* and *staff*. This shows their lack of awareness of the existence of such documentation. To explicitly ask about this documentation, in some interviews, the documentation was showed to interviewees and they were asked about their opinions towards it; during one interview, one *director* stated:

“Yes, I remember that policy of participation; it did not make much sense to many of us...I remember we talked about it a long time ago and wondered who was going to follow that policy; and how they were going to measure our participation? What would have happened to those not following the policy? Nothing I suspect. So, as you can see, the policy may be there in the documents, but in practice we do not use [CODECO]” (D1LF 1-345).

Thirdly, the lack of use of *CODECO* by other actors involved in *the implementation* was also influenced by the actions taken by *president* and *vice-president* themselves. Although they initially supported *CODECO* by promoting its use in the launch session, and by creating a ‘manual for use’ called ‘*Policies and Procedures for the Competency-based model Virtual Community*’, their own actions were at odds with their intentions to make of *CODECO* the main media to support knowledge sharing and collaboration during *the implementation*.

Three main instances reflected how *president* and *vice-president*’s actions weakened the potential for *CODECO* to become part of *the implementation* network. First, after some time *CODECO* was launched, even *president* and *vice-president*, who were initially promoting its use, betrayed its adoption by abandoning *CODECO* and shifting to the use of other media. Whilst on the one hand, they were promoting the use of *CODECO* (e.g., throughout the activities mentioned above), on the other, they diminished its use in that when they had the opportunity to interact with others via *CODECO*, their actions did not reflected their support to *CODECO*. As one *staff* commented:

“Look, this is what I am talking about, and it clearly reflects the situation regarding [*CODECO*]. Once I posted a question asking for the availability of some job descriptions. My query was never answered. The following day, I received the job descriptions I asked for, but [*vice-president*] sent them to me via email” (S4LF 16-317).

Second, *president* and *vice-president* mainly used pre-existing media to communicate during *the implementation*. This was reflected in the following comment that shows how *president* and *vice-president* opted for the use of other media rather than the use of *CODECO* to support knowledge sharing and collaboration with those involved in *the implementation*:

“What [*president* and *vice-president*] did was to sell the idea. They persuaded us that [*the implementation*] was a good option for us. [However], how did they go about it?: they certainly did not use [*CODECO*] to do it! [Instead], they came to our campus and talked to us, they organised virtual sessions and workshops...they maintained communication via email, and there was always a [telephone] line available...but they never actually used [*CODECO*]; no [they definitely did not]” (HCM 8-308).

Third, when *president* and *vice-president* participated in *meetings*, which were also attended by some *directors*, the use of *CODECO* was not promoted. This problem was reinforced when face-to-face *meetings* moved to a virtual format where any discussion or conversation at all referred to *CODECO*:



“When [*the implementation*] was discussed - for approximately 15 minutes – the discussion focused on the progress made during this period [September 2009-October 2009], and on planning future actions for [*the implementation*]. At no time during this meeting was any reference made to [CODECO]” (Taken from notes of the researcher, October 2009).

“When attendees at this Meeting discussed the competency-based model, they presented and compared indicators and goals that have been achieved during [*the implementation*]. The need to enrol the [*presidents*] of all the areas involved in [*the implementation*] was emphasised, as a means to facilitate the progress of the project in each campus. [CODECO] was not mentioned during this meeting” (Taken from notes of the researcher, July 2009).

“Neither [*the implementation*], nor the use [CODECO], were part of the agenda during this monthly Meeting” (Taken from notes of the researcher, August, 2009).

#### **6.4.4 Conclusion**

The findings discussed above show that participation did not take place as it was initially expected by its promoters. From an ANT viewpoint, three main themes accounts for the lack of participation in *the community*: 1) the incomplete translation and inability of CODECO to evolve; 2) the late enrolment of CODECO into *the implementation* network and the existence of competing actors; and 3) the weak envelope that surrounded CODECO.

These findings have shown that the incomplete translation of CODECO was reflected in the under-development of some of the applications of the technology. This was due to the inability of the focal actors to gain the necessary resources to further develop the applications of CODECO. HR professionals also neglected the use of CODECO because other media acted as disrupting actors. These media were supporting the interactions among HR practitioners so that when they had the alternative to use CODECO, they perceived little need of using it at all. Finally, it has been shown that the strategies used, the commitment shown, and the supportive documentation to introduce CODECO were not fully aligned to the needs of CODECO. For example, the formal launch session was perceived by many as lacking the sort of interactions where actors could have discussed the benefits and uses of CODECO. The documentation was unknown or ignored by the majority of HR professionals since it was seen as ‘not making sense’ to many of them. The actions of the sponsors of CODECO contrasted their intentions to make of CODECO part of *the implementation* network. For example, rather than taking an active role in *the community*, they themselves were using existing media rather than CODECO.

In the light of these findings, the following section discusses the value of using ANT in enhancing our understanding of participation. The limitations that remained from the

deployment of ANT to analyse participation are further discussed in Sections 8.3.1 and 8.3.3.

## **6.5 How ANT was insightful in understanding online community participation**

Five main avenues in which the adoption of ANT and its particular preoccupations helped in understanding online community participation are highlighted; namely: 1) looking at the use of the technology supporting the online community as an evolving process characterised by tensions between the actors involved; 2) as a political process based on negotiations; and 3) as a process having a relational and emergent nature. The use of the ANT approach also helps in 4) facilitating the identification of interests of relevant actors and how the diversity of interests influenced the use of *CODECO*; and 5) looking at technologies as active actors.

### ***6.5.1 Adoption and use of technologies as a process characterised by tensions between the actors involved***

Firstly, the notions of translation and control are crucial to examine the tensions between the actors involved during the process of adoption and use of *CODECO*. In the light of ANT, the use of *CODECO* was seen as entailing the development and evolution of an actor-network supporting its adoption. The findings show that this process was characterised by resistance from, betrayal of, and competition between actors. This thus had an impact on the formation of relations between actors during the translation process that ended up shaping participation in *the community*. Three different instances from the case study exemplified how actors faced different tensions created by resistance, betrayal and competition. Firstly, the findings show how different strategies were designed and implemented over time to interest actors in adopting *CODECO*. While some actors were persistently reluctant to use the technology, others posed a lesser degree of resistance and were successfully persuaded to participate in *the community*, albeit only temporarily. Secondly, the findings also show how processes of betrayal took place during *the implementation*, for example between the controlling actors and *CODECO*. The findings show how those who initially supported the adoption of *CODECO* by sponsoring its launch and promoting its use, later betrayed *CODECO* by neglecting its use, and instead used existing technologies to support their interactions during *the implementation*. Thirdly, the

findings show that other actors (e.g., technologies supporting similar processes to those supported by *CODECO*) continuously acted as competing against the interests of *CODECO*, by offering *practitioners* alternatives to support knowledge sharing and collaboration during *the implementation*. Moreover, the findings also show that these tensions caused by resistance, betrayal, and competition came from different sources: from those initially supporting the use of *CODECO*; from those being persuaded to adopt the technology; from those disrupting actors acting against the adoption; and from *CODECO* itself.

### **6.5.2 Adoption and use of technologies entailing political processes**

Secondly, ANT has helped in looking at political processes where continuous negotiations between actors were required during the adoption of technologies. Consistent with this line of thought, ANT helps understand how in order for *CODECO* to be used, the actors, who proposed its adoption, needed to develop different strategies to mobilise other actors to use *CODECO* such as training, promotion, and sponsorship,. For example, it has been shown how *president* and *vice-president* visited different campuses to persuade *Rectors* to allocate resources for *the implementation*. Similarly, the findings show how a lack of political power amongst those launch *CODECO* led to the failure of negotiations to get the necessary resources to further develop *CODECO*.

### **6.5.3 Use of technologies as a process having a relational and emergent nature**

Thirdly, ANT has also been useful in highlighting the relational and emergent nature that characterised the adoption of *CODECO*. The relational nature of the process of adoption of *CODECO* has been reflected in different ways in the findings. For example, ANT has helped framed at the overall process of adoption of *CODECO* as a relational process in which the use of *CODECO* was determined by the relationships developed by *CODECO* with other relevant actors of its network. In this light, the findings show how the lack of ability of *CODECO* to strengthen its relations with potential users, with those composing its envelope, and with those having the capacity to work on its development, undermined its use.

Moreover, the process of adoption was also characterised by its emergent nature. For example, by following the principle of free association (not making any a priori

assumptions about the relations between actors) the adoption of *CODECO* is also seen as entailing continuous negotiations in which the emergence of new relations between actors was always a possibility. The emergent nature of the process of adoption and use of *CODECO* is also reflected in how the actors' interests were always temporal and emergent, as shown when the initial support of those launch *CODECO* ended up in a process of betrayal.

#### **6.5.4 Diversity of actors' interests**

Fourthly, the sociology of translation has helped identify the diversity and evolving nature of interests of relevant and influential actors, and how this affected *participation*. As *CODECO* was not seen as an isolated actor, but as an actor interrelated to other human and non-human actors, its adoption was highly influenced by the interests of the actors related to *CODECO*. For example, while some actors focused their efforts on achieving a successful translation that could lead to the adoption of *CODECO*, other actors had an influential role by posing resistance to adoption, or having conflicting interests towards the use of *CODECO*. The final goal of those supporting the adoption was thus to align the interests of different actors to those of the network supporting *CODECO* via different processes of negotiation and enrolling strategies. Moreover, ANT has also helped highlight that the interests between actors were not static but continuously evolving. In this regard, the findings show how the actors who initially backed up the use of *CODECO*, further betrayed its adoption by opting for the use of other technologies which were competing against the interests of *CODECO*. This evolving nature of interests was also reflected when some actors initially used *CODECO*, but in not finding *CODECO* useful disregarded its further use.

#### **6.5.5 Technology as an actor**

Fifthly, the sociology of translation has been insightful for considering technologies as active entities, rather than neutral and inert actors. The technology that supported the online community was seen as a non-human actor subjected to control by others. Simultaneously it had the ability to exercise control over others. Departing from the principle of general symmetry in which both human and non-human actors are seen as having agency, the use of ANT helps highlight the active role of technologies in shaping online community participation. Accordingly, participation in *the community* was highly

influenced by the actions taken by certain technologies and *CODECO* itself. For instance, the findings show how *CODECO* developed irreversible properties that were not aligned to the interests of other relevant actors. Thus it constrained itself in its potential to become indispensable to other actors, and therefore opposed to its own adoption.

The findings that reflected the competing and disrupting role that other technologies played when *CODECO* was first introduced is also insightful to understanding the active role of technologies. The findings show how while *CODECO* did not support knowledge sharing and collaboration as expected, other technologies already in place were used instead; thus the latter playing an active role in constraining the ability of *CODECO* to strengthen its relations with other actors.

## **6.6 Conclusion**

The analysis of the data collected during the first stage of the research provides light on how *CODECO* was introduced across the HR direction to support knowledge sharing during the implementation of a HR project. This analysis has provided an answer to research question (2) of the study: *'What do the theoretical resources from ANT reveal about participation in the online community that is the focus of this study?'*. Participation was seen in terms of technology use. In other words, the use of 'the technology supporting the online community' (*CODECO*) was equated to 'online community participation' (*participation*) since in order to participate in *the community*, practitioners had to use *CODECO*.

The findings show that *CODECO* became one of the many actors attempted to be enrolled into the *implementation*. Despite an initial strong commitment from the side of those sponsoring the use of *CODECO*, HR practitioners neglected the use of *CODECO*, and instead, kept using the existing media to support their communication practices during the implementation of the HR project.

Data gathered from different sources including interviews to HR professionals, attendance to online seminars and meetings, and documentation show how sponsors of the community failed to persuade others to use *CODECO*. This low use of *CODECO* was consistent with the under-development of some of the applications of *CODECO*. The

interviews show that when practitioners did not perceive the continuous development of CODECO, they neglected its use. This was also apparent in the actions of the sponsors, who ended up using existing media rather than CODECO. Moreover, the documentation that accompanied the launch of CODECO was unknown to many contributing to the lack of participation in the online community.

In light of the evidence presented above, the chapter also highlights the value of ANT, and how it serves to enhance our understanding of participation. Five relevant aspects were highlighted, namely:

1. ANT helped in analysing the use of CODECO as a process characterised by tensions between the actors involved, and entailing processes such as resistance, betrayal, and competition between actors.
2. ANT helped in looking at how the use of CODECO entailed political processes of negotiation between actors in which some actors persuaded others in order to achieve their goals (e.g., introduced *CODECO* as the main media to support sharing of knowledge and collaboration during *the implementation*).
3. The theoretical resources from ANT highlighted the relational and emergent character of the use of CODECO by pointing to how *participation* was shaped by the 'emergent relations' that occurred during the translation processes of *CODECO* and *the implementation*.
4. ANT helped in identifying relevant actors and the diversity of their interests and how these influenced *participation*. While some actors supported the use of *CODECO* by promoting *participation* via different strategies, others undermined its use by posing resistance to participate or competing against the interests of *CODECO*.
5. ANT was helpful to look at technologies as active actors with the ability to exercise control on others by constraining or enabling the performance of some actions but not others (e.g., existing technologies allowed the use of certain media rather than CODECO)

Despite the valuable contribution of ANT to improve an understanding of participation, some empirical data remained unanalysed. This in turn provided an indication that the use of an alternative approach to explore further these data can potentially enhance an understanding on what shapes participation in the community. The following chapter

provides a second set of findings and offers an alternative interpretation in the light of the theoretical resources from the PBA. The source of the empirical data is mainly 13 interviews to HR professionals conducted during the second stage of the study discussed in this thesis. It is further discussed in Chapter 8 how the findings introduced in Chapters 6 and 7 can work together to provide a more holistic view on participation. How this study responds to critics of ANT and PBA is also discussed in Chapter 8.

## 7. FINDINGS II: A PRACTICE-BASED APPROACH INTERPRETATION

### 7.1 Introduction

The findings of the previous chapter provide an interpretation that helps enhance an understanding of ‘participation in the online community’ (*participation*). However, as will be further discussed in Chapter eight, being informed by the theoretical resources from ANT obscured two aspects that influenced the shaping of *participation*.

Firstly, the empirical data collected in the first stage of the study also pointed to the relevance of the context surrounding the community in shaping participation. For example, the particular ways of “doing” HR at the multi-campus University (*INSTEC*) and the features that characterise HR practices appeared to have been influential in the shaping of *participation*. These concerns were not fully explored due to the flat ontology of ANT that pays little attention to context and how it shapes local phenomena. Moreover, the empirical data collected (which mainly focused on understanding how the Implementation took place) also suggest the need for further investigation.

Secondly, aspects as habituation and routinisation of media use and interaction patterns developed over time were left under-explored when ANT was used as theoretical lens. This is due to how ANT was used in this study in which participation was explained as being shaped by the relations that the collaborative technology (*CODECO*) developed with other actors within the time-frame of *the implementation’s* translation process. This resulted in a failure to recognise the existence of a historical context. Phenomena cannot be solely explained on the basis of emergent relations.

This chapter provides an alternative interpretation from the one informed by ANT provided in Chapter six. The interpretation offered in this chapter introduces an overview of the findings that emerged from the second set of interviews conducted during the research in which thirteen HR practitioners were interviewed. The findings are theoretically informed by a practice-based approach (PBA), as discussed in Chapter four.

At this stage of the research, it had become clear that participation in *the community* - supported by *CODECO* - did not take place as expected by its promoters. Thus, this chapter aims to shed light on how the mesh of HR practices – and the interconnectedness of these practices to other practices performed at *INSTEC* – into which *CODECO* was introduced,



shaped HR practitioners' nature and degree of *participation*. Similar to how Schatzki views an academic department as the site of a bundle of practices and material arrangements (Schatzki, 2005), *INSTECH* is seen as the site where HR practices occur and interconnect to other practices.

After a brief introduction in Section 7.1, the chapter goes on to discuss, in Sections 7.2 and 7.3, two themes that help characterise HR practices. Whereas Section 7.2 introduces three main features permeating HR practices, Section 7.3 identifies a set of knowings that are collectively and routinely enacted by 'HR practitioners' (from now on *practitioners*; when the word '*practitioners*' is used in this chapter, it refers to the members of the HR Direction from each campus of *INSTECH*, including both *directors* and *staff*). These two sections shed light on how and why HR practices are performed in the way that they are. Once HR practices are characterised, the remaining sections of the chapter shed light on what shaped *participation* and how PBA helped enhance our current understanding. Four themes that are relevant in shaping the nature and degree of *participation* are discussed. These are: 1) the enactment of shared knowings not being supported by *participation* (Section 7.4); 2) the availability of existing media and the interconnectedness of HR practices with other practices performed at *INSTECH* (Section 7.5); 3) routinisation of media use (Section 7.6); and 4) *participation* not fitting the taste of HR practices (Section 7.7). Section 7.8 discusses how PBA was insightful to understand *participation*.

It must be made clear from the start that the themes discussed in this chapter do not represent an exhaustive analysis of HR practices performed at *INSTECH*. Instead, they are a set of categories relevant to making sense, from a PBA perspective, of what shaped the degree and nature of *participation*. Furthermore, the fact that they are introduced in an independent manner does not mean they can be taken in isolation. Instead, they are interrelated to, and shape each other. A clear example of this interrelation is reflected, for instance, by the themes 'Routinisation of media usage' and 'Shared knowings'. While the former pays special attention to how *practitioners* tend to perpetuate the use of certain media, the latter reflects how shared knowings tend to be routinely enacted by *practitioners*. Moreover, despite the distinctiveness of each theme, they share similarities. (Some of) their elements are collectively practised, embedded into HR practices, reflected in the actions that compose HR practices, and routinised over time.

Overall, this chapter provides a series of findings informed by PBA that offer an alternative interpretation from that provided in Chapter six. By adopting PBA to inform the findings as reported in this chapter, primary importance is given to what other studies have minimised, or sometimes ignored, when looking at participation in online communities: the practices online communities are part of. In so doing, it is argued that this interpretation provides valuable insights to better understand how the context surrounding online communities shapes the degree of participation in these online spaces.

## **7.2 Features characterising HR practices**

Section 7.2 identifies three main features that characterise HR practices, namely: 1) variation, work overload and time constraints; 2) marginalisation in the HR area; and 3) HR practices as a source of contradictory feelings and emotions. These features show that *practitioners'* experiences of 'being a HR practitioner at *INSTECH*' are similar in many ways, regardless of the differences that exist among *practitioners* and the particular conditions of their campuses (e.g., age, gender, seniority, scope of activities and responsibilities, hierarchical positions, geographical aspects of their campuses), and show the preference for the way *practitioners* perform HR Practices. The features discussed in this section are not an exhaustive study of HR practices, but those that emerged from an analysis of the data completed in an attempt to understand *participation*.

### **7.2.1 A typical day at work for practitioners: work variation, work overload and time constraints**

*Practitioners* permanently suffer from work overload and time constraints. This is what characterises a typical day at work of *practitioners*. In addition, variation of work activities was the rule rather than the exception when HR practices were performed. *practitioners* were asked about the different activities that they typically performed. Their responses showed that their activities were much more complex and varied than just following a set of formalised rules, procedures and standards decreed by the HR Headquarters across each campus of *INSTECH*. The following excerpt reflects the variety of activities permeating HR practices, and is very typical of how *practitioners* described a typical day at work:

"Look, basically I like revisiting the activities we left unfinished the previous day. The first thing I do is to plan my day. For example, there are some days in which I spend all my time working only on contracts, especially on Wednesdays. That day is mainly to deal with

suppliers, to verify employment contracts of all employees, to create contracts, and so on. On Fridays I try to schedule my meetings, either with my people or with people from any other areas. This means that I cannot do anything else except attend meetings. This, at the same time, always means more and more work has to be left to do later. However, I usually cannot plan my day because it depends on whether there is going to be a new hiring or not. Now, there are some days when I already know that people will come and ask me lots of questions about payroll matters. I also need to attend to the demands from my boss and from *directors* of other areas, without mentioning the fact that, as Human Resources, we do many things that no one else will do. But they need to be done, so, they end up with Human Resources. Now, we also have very clear calendars we have to follow. For example, I need to monitor the ending of contracts, I need to make sure that all over-payments are detected; I need to check that the payroll has been generated correctly; and before the fifteenth of each month I need to request and generate vouchers for employees. As you can see, my activities vary a lot, but at the same time I have very specific times when I have to deal with them. I would say that I have to constantly adapt and consider these dates in order to complete the activities on time. For example, from the seventh to the tenth days of each month, I have to submit taxation-related information to the State. So, while I need to meet these dates on the calendar, at the same time I have to support employees and deal with outstanding matters” (D15MM 25-41).

After another HR practitioner had described her daily activities, which were very similar to the above, she was asked: ‘And how do you accomplish what you just described?’. She replied:

“I bring two sandwiches with me and have a bite when I can find time to do so. I then leave the office at ten at night. Really, this is the only way to do my job. You do not have enough time. ...This job is not a normal job like those [jobs in which people work] from eight to three. I can tell you frankly that I am [in the office] from eight [in the morning] to ten [at night]...and this is how I work eleven months a year. There is never a single day when you can say: ‘Oh, I will have a quiet day’” (D18SF 30-36).

As these two quotations reflect, work variation, work overload and time constraints permeate the descriptions of a typical working day provided by *practitioners*. Firstly, HR practices entailed a considerable variety of activities, demanding high levels of interaction from *practitioners* with people working in different functional areas within *INTEC*. Secondly, the issue of time is critical to the performance of *practitioners’* daily activities. Most of the accounts provided by *practitioners* included - implicitly or explicitly - the issue of time. Section 7.3.7 will show for example, how the issue of time influences the degree of *practitioners’* involvement in institutional projects. Thirdly, time constraints faced by *practitioners* were reinforced by the feeling of having an excessive amount of work overload, reflected in expressions such as: “Our activities might vary, but what is completely certain, is that we will always have outstanding matters from previous days to deal with” (D11SF 18-90); or: “You can see it in two ways: What is always lacking is time;

and what is always certain is excessive work and pending issues to attend to” (D17LF 28-301).

### **7.2.2 Working in a supporting area: ‘being marginalised’**

*Practitioners* continuously experienced time pressures and work overload; both being signs of the marginalisation of the HR in the Institution. Expressions such as: “they put all the weight on us” (D11SF 18- 202); “we are asked to do a lot but receive little” (S6LF 27-228); “we work a lot and receive a low payment” (D18SF 30-336); exemplified a shared perception from *practitioners* of working in a marginalised area. The following comment clearly illustrates this perception among *practitioners*:

“The main problem that we have always had within the HR area, is that we are seen as an area giving support to the core activity [teaching] of the University, but never as a core process. I have the feeling that we are one of the most marginalised areas, despite our vital contribution to the University as a whole. You can see this in many situations. For example there has been always priority given to developing those employees who are in direct contact with students, mainly teaching staff. If there is a project that we have to co-ordinate, we know whether it is mandatory or not depending on the focus of the project. If it is oriented towards teaching staff, we know we have to consider it as priority number one” (D14SF 22-220).

Moreover, as observed by many *practitioners*, they tended to be asked to engage in activities that are not related to their duties. When one *director* was asked about the type of activities that were delegated to her, she responded: “everything you can imagine and everything you could not imagine” (D11SF 18-212). The following comment by one *director* illustrates how *practitioners* are often delegated activities unrelated to their HR duties:

“For example, recently, there was someone who left the University. She was in charge of different student-related matters such as insurance policies, medical expenses, and international students. So she left, and guess what! Everything that she had been doing was re-allocated to us, and to me in particular” (D18SF 30-352).

Furthermore, this sense of marginalisation is also reflected on *practitioners’* perceptions of themselves as working in an area that, as one *director* put it: “receives the minimal amount of resources to operate, or sometimes even less than that” (D17LF 28-353). This lack of resources within the HR area was reflected in different ways, namely: in the low level of financial compensation received by *practitioners*; in the inability of *practitioners* to

participate in institutional projects; and in the implementation of HR projects without top management support; as the following quotations show:

“Look, here in Human Resources we are some of the most poorly treated [employees] in terms of remuneration. I love what I do, and that is why I am here, but to be completely honest with you, I do feel our work is not adequately rewarded” (S7LF 29-288).

“Ironically, as you may have realised, the problem within the area of Human Resources is precisely Human Resources. Look, on this campus we are not able to participate in many interesting projects because there is no-one who could focus on them. It is not that I am asking for an assistant to help me do my job. No, it is the campus which needs a person to be involved in these strategic projects” (D14SF 22-243).

“When I decided to launch [*the implementation*] on this campus, I first had to sell the idea that the project would bring benefits to our employees. I had to do all that stuff myself. Do you know what [the top management people of this campus] said?: ‘Well, it looks like a good idea, but do you know what; if you want to implement it you will have to do it you yourselves. We cannot give you extra resources. But yes, we like the idea’” (HVPM 24-99).

As the latter comment expressed by *vice-president* shows the sense of ‘being marginalised’ was not only shared by *practitioners* working at every campus of *INTEC*, but also shared by those working at the HR Headquarters. This was reflected in one comment made by *vice-president* showing his understanding of *practitioners’* attitudes when new projects were to be implemented:

“On many occasions, when we start implementing new projects, the first thing people ask us is if the project is mandatory or optional. If we tell them it is optional, they won’t do it. If we tell them it is mandatory, they start complaining. But you know, I understand them, I have been in their shoes” (HVPM 24-307).

### **7.2.3 HR practices as source of mixed feelings and emotions**

Drawing on the comments expressed by many *practitioners* it can be seen that HR practices were perceived by interviewees as embracing a mixture of different feelings and emotions, difficult to practise “without getting emotionally involved” (D12MF 19-172). Rather, as *president* expressed, they were seen as entailing “a different range of feelings which are sometimes contradictory and inevitable” (HPM 23-176). One *staff* exemplifies this point:

“After some time you get to know many employees, and as you are always helping them, they are very grateful to you, so that sometimes a feeling of empathy emerges. That makes you enjoy your work because you are in a friendly environment with a feeling of comradeship. However, one day you receive a notification from one *director* telling you that some contracts need to be finished. When you see the names of people that you had been

friendly with, it is very disappointing and sad, but you can do nothing to change it...Just imagine how difficult it is when they come to your office to sign the end of their contract” (S6LF 27-370).

On the one hand, *practitioners* experience positive feelings from the enactment of HR practices. Among those expressed by many *practitioners* are: a sense of accomplishment and fulfilment derived from their work achievements; hope that things at work will change and will be better in future; gratitude to the University and to their colleagues; pleasure from, and interest in, their work; self-confidence and pride of becoming a better person both professionally and as a human-being; and friendliness, affection, empathy and comradeship towards other employees. The following comments exemplified some of them (e.g., fulfilment, pride, self-confidence):

“When the month is over and everything went well; the hiring process, the payroll runs, the contracts, the overall service, and with no complaints from employees or departments; well, you feel really great and very satisfied” (S7LF 29-306).

“During the sixteen years I have been working at [INSTECH], I have had the opportunity to contribute new ideas ... and to some extent that makes you realise how important you are for the organisation” (D16LF 26-404).

“All the time we are helping people solve their problems, to make their work easier. We do this as a matter of routine that, after a time, becomes part of you ... This is one of the things that I most appreciate from my profession, the fact that it helps me be a better human-being (S7LF 29-160)

“The fact that, on many occasions, we are expected to find our own way ... you learn so many things and apply them in real life that you never thought you were capable of doing” (D17LF 28-408).

On the other hand, however, *practitioners* also experience some negative feelings and emotions when enacting HR practices. Among others, feelings such as sadness, frustration, uncertainty, and powerlessness were commonly mentioned, as the following remarks illustrate:

“I know things won’t always be as I want them to be. Today you know what is going to happen and tomorrow things will be different. Thus, we have to tolerate frustration and uncertainty. Unfortunately this is the way things work here...Here frustration is commonly felt, as we know that if the organisation takes some initiatives, regardless of your personal views, we have to support them” (D13MF 20-109).

“What is frustrating sometimes is that, as I am the only person working in this Direction, I have absolutely no chance of participating in some of the projects. Some of them are very interesting, and also the campus really needs these projects” (D11SF 18-46).

Moreover, sometimes *practitioners* simultaneously experienced both positive and negative feelings towards the same situation, as the following comments show:

“I cannot really complain because, well... I have had many achievements and good experiences; and also, I have learnt a lot as well. But to be honest with you, I do feel there is still too much work to do here in the [HR] area. I constantly feel frustrated because we do all we can, but sometimes we just do not have the time that we need, let alone there sources” (D14SF 22-417).

“You have a good feeling when you realise that you are helping people, for example, by solving their queries on payroll matters, which are very common here. But there are some cases when you see the same person every single month asking about the same thing, which is very irritating to be honest with you” (D13MF 20-155).

## 7.3 Shared knowings

### 7.3.1 Introduction

The previous section identified three features that characterise HR practices. This section introduces a set of knowings that permeate HR practices, and helps complement the characterisation of HR practices. These knowings are collectively and routinely enacted by *practitioners*, and to some degree, they shape, and are shaped by, the features characterising HR practices discussed in the previous section. Six shared knowings are discussed, namely:

- 1) encouraging maintenance of relationships and continuous interactions;
- 2) promoting continuous collaboration and support;
- 3) engaging in continuous learning;
- 4) knowing how to communicate;
- 5) devotion to employees; and
- 6) prioritising operational continuity.

As suggested in Section 4.8, the shared knowings introduced in this section: 1) are routinely and collectively enacted by *practitioners* as part of HR practices so as that practices are seen as the house of knowings; 2) allow *practitioners* to get things done and solve practical problems; 3) embrace, among other things, passion, bodily movements, ways of wanting and feeling, etc. It is further argued in Section 7.4 that, since the

enactment of knowings was not supported by participation in *the community*, HR practitioners minimised the use of *CODECO*.

### **7.3.2 Shared knowing encouraging the development and maintenance of relationships and continuous interaction**

One shared knowing among *practitioners* was expressed in their endeavour to continuously encourage the development and maintenance of relationships, as relationships are seen as “key within the area of HR” (S7LF 29-121). One *director* put it as follows: “I do whatever I can to keep my work relationships fresh” (D11SF 18-163). This shared knowing was highly visible within the HR area, as the following comments shows:

“To me, keeping contact with people who are to some extent related to my work is indispensable. Even when I have a little question or doubt, I take this as an excuse to contact somebody who I have not talked to for a long time” (D18SF 30-126).

“When I first started working at the HR Direction, I came to realise that all interactions I sustained provided me with new knowledge, highly relevant to accomplishing my responsibilities. Since then, I have been in favour of supporting these interactions among my collaborators” (D12MF 19-84).

Developing and maintaining relationships and continuous interaction is collectively practised. *practitioners* gain a wide range of benefits from the enactment of this shared knowing. Among other benefits are those of finding help in critical moments, getting access to specialised knowledge, developing trust as an enabler to future interactions, developing a sense of community, strengthening existing ties, and meeting new people. The following quotations illustrate some of these:

“As a Human Resource *director* I really care about maintaining the working relationships I have developed over the years because you never know. Sometimes you find yourself in a hurry and, thanks to the people you know, you can get out of a critical situation...They definitely make your work easier at critical moments” (D18SF 30-130).

“Keeping in touch has been of assistance to me to keep going, in the sense that sometimes you are very, very busy and you think that nobody else is having the same feeling. But when you talk to other HR *directors*, you realise that you are not the only one having these problems, Sometimes you even stop complaining, because you know there are others in even worse situations than yours” (D16LF 26-220).

“From time to time I have employees in my office asking very specific legal questions that, to be honest, I cannot answer. I know there is an institutional legal department within the University, and I know some of the people working there...They have been very helpful to me; I look to them every time I have queries on legal matters” (D14SF 22-152).



It also emerged from the analysis that the enactment of this shared knowing is not an isolated individual venture only embraced by particular *practitioners*. On the contrary, as the existence of different forums to promote such encounters showed, formal attempts are made by those working at the HR Headquarters to support these interactions. Such attempts are reflected in the creation of HR workshops, HR conferences, and HR monthly meetings, and were perceived by *practitioners* as “excellent opportunities to meet new people” (D18SF 30-154) and to “develop a sense of community” (D16LF 26-169).

Moreover, despite their condition of working in geographically dispersed campuses, *practitioners’* interest in keeping their “contacts alive” (D11SF 18-155), is purposefully sought:

“For as long as I can remember we, as an HR area, have always been concerned to promote continuous interaction among us. Due to the nature of the organisation [of being geographically dispersed], it is sometimes difficult to see each other frequently, but we have always been concerned to keep in touch just the same” (D15MM 25-170).

While it is sometimes difficult for *practitioners* to frequently interact face-to-face, the maintenance of relationships and continuous interaction is supported by existing media such as the telephone or email. Although face-to-face interactions are always seen as preferable, many *practitioners* acknowledge that the existing media (including face-to-face interactions) play a significant role in the development of relationships, and in becoming the basis for future contact:

“I went [to the Headquarters] and for the first time I met [face-to-face] all the HR team [working there]. After that, believe me, it is much easier to contact them than before” (S7LF 29-69).

“Before the crisis occurred, we used to have workshops where the idea was to professionalise all HR staff within the whole University. These were excellent opportunities to meet new people. I can tell you that, nowadays, many of the people I contact whenever I have a problem, are people I met during those workshops” (D18SF 30-154).

### **7.3.3 Shared knowing how to communicate**

Another recurrent theme is the shared knowing reflected in the way *practitioners* communicated when maintaining their interactions. There is a shared understanding, expressed by many in which being an HR practitioner requires “special modes of communication and interactions” (S7LF 29-230). One *director* noted that “communication

was one of the biggest challenges for Human Resource *directors* in this University” (D15MM 25-302). When he was asked why, he responded:

“Well, first we need to be very efficient and effective when communicating. You all know the work overload we have. Second, we have to bear in mind that we are the public face of the University, both internally and externally. Therefore we always have to be professional, and communicate accordingly. And third, we also have to bear in mind at all times that we are HR, and that our clients are people not machines” (D15MM 25-303).

This comment clearly reflects the character of the communicative practice enacted by *practitioners* in their daily routines, where the three views characterise *practitioners’* interactions. Firstly, there is a more purpose-oriented feature, enacted by *practitioners* via existing media to support their tasks at hand:

“If I need a prompt answer, I will always use the telephone or Messenger. But for example, if it is a recruitment situation, we tend to communicate during the process via email, to make sure we are all notified. If a problem or misunderstanding comes up, we can go back and re-check our mailbox. This is the way we do it, and we know this is a way that works” (D18SF 30-278).

“For example, if it is about life insurances for employees, which on many occasions I cannot answer myself, I just go direct to the [organisational intranet], where I know I can find procedures and regulations that help” (D11SF 18-112).

Secondly, the fact that *practitioners* perceived themselves as being the public face of *INTEC* is also reflected in the way they communicate. The following remark shows how *practitioners’* professional position shapes how they communicate, requiring them ‘to be very professional’ (S5MM 21-320). This also constrains them from adopting inappropriate behaviour (e.g., making jokes):

“When we hire someone new, we cannot just start joking with them. We may do this after employees have been with us for some time, but at this stage, we have to be very professional” (S5MM 21-126).

One *director* offered a similar example of how she exhibits certain attitudes when answering a telephone call. Her comment also reflects how particular actions tend to be routinised:

“Let me give you an example. If you call me in the morning I will answer with a smile on my face. If you call me in the afternoon, I will answer in the same way. If you call me when I am busy, I will still use the same tone of voice” (D18SF 30-385).

Moreover, being the public face of *INTEC* not only requires adopting particular ways of verbal communication, but also embraces the enactment of specific behaviours, ways of

dressing, ways of addressing people, and adopting specific attitudes. The following comment shows this shared knowing in practice, as enacted by *practitioners*:

“We [HR] are everything, the first impression, the everyday interaction and the last impression when it comes to employees. In the same way in which academics interact with students, we interact with employees. As such, we have to behave in certain ways, always speak politely, always dress appropriately, and always be empathetic” (D12MF 19-222).

Thirdly, being a HR practitioner, and having continuous interaction with other human beings, also demands certain standards of behaviour when interacting with people, as one *staff* expressed:

“As Human Resource people we are always in constant interaction with people, and that has some implications for our job and the way we do things. One [implication] is that we must treat them with respect [as human-beings], not as machines or robots who only receive orders and have no feelings” (S7LF 29-262).

For example, when one *staff* was asked about her perception of the people-oriented side of HR, she replied: “Well, let me start by telling you that it is not by chance that most Human Resource *directors* [at *INSTECH*] are women” (D18SF 30-80). She then continued:

“I think there are more women because of the competencies which are required for this role. The area of Human Resources is more about giving assistance to employees, talking about their worries, listening to their problems; and certainly we [women] are inclined to be more patient and better listeners, and more sensitive to others’ problems...It is also easier for us to empathise more ...men are more direct, tougher, more severe” (D18SF 30-82).

Her comment is not an isolated one, but is shared by others, as exemplified in the following comment by one *staff*:

“When it comes to providing a service, it is more about being receptive. We deal with all kinds of people, and frequently there are some who require ‘special treatment’. We [women] are good at that” (S6LF 27-350).

Moreover, in demonstrating their competence by knowing how to communicate, *practitioners* are also aware of the relevance of their bodily actions. One example offered by one *staff* shows how the actions of ‘shaking hands’ and ‘opening the door’ become routinised as part of their knowing how to communicate:

“The first thing I do whenever anyone enters my office is to shake hands with them. I have noticed that that make people feel comfortable. Then, I show that I am paying attention, well, not only show, I actually do pay attention; and as they leave I usually open the door for them. This is the way I do it and it works” (S5MM 21-305).

### 7.3.4 Shared knowing promoting continuous collaboration and support

Many *practitioners* agree that the HR area is one of the most marginalised areas of *INSTECH* (see Section 7.2.2). This situation is mainly reflected in the lack of resource allocation, work overload, and time constraints that *practitioners* suffered from. In order to overcome this situation, *practitioners* continuously enact the shared knowing of ‘promoting continuous collaboration and support’, as reflected in the following comment:

“I won’t tell you that all Human Resources people are friends. However, what is certainly true is that we do our best to keep in touch and to help each other whenever possible. This is part of our job on a daily basis, and of course within the [HR] area we all have the same supportive attitude that guides our behaviour” (S5MM 21-190).

This attitude is also observed among those who work at the Headquarters. For example, one *staff* suggested that she continuously received support from the Headquarters “either because of [her] own daily responsibilities, or because of the new projects coming in...[so that] this has been helpful to create a shared understanding of recurrent collaboration” (S6LF 27-206). A similar comment expressed by another *staff* shows how this knowing is shared and embraced by members working at the HR Headquarters. From her experience during *the implementation*, she noted:

“Besides, I liked the project, what has been very helpful to me is the fact that whenever new doubts come to my mind, I know I always have the support of [*vice-president*]. He is always available and every time I talk to him he always ends the conversation telling me: ‘You know my [telephone] number, I am always here’” (S7LF 29-92).

As this comment suggests, this enacted knowing is an integral part of *practitioners’* work. This attitude is also reflected in *practitioners’* disposition to help others, and in the relaxed environment surrounding HR practices:

“The area of Human Resources has something distinctive, which is that whenever you have a problem, you know you have different options to help solve it. You can call [people working at any] campus and just say to them: ‘Hello good morning, I am the Human Resource *director* of this campus and I would like to know this and that; I heard you did very well in the recent evaluation; I would like to know what you did, can I visit you? [The other person replied]: ‘Yes, of course, come over and we can have a coffee together’” (D17LF 28-187).

Moreover, the shared knowing of being supportive and co-operative resulted in actions that are not necessarily related to HR practices, but to their lives beyond the boundaries of work. This is reflected in a spirit of camaraderie and friendliness among *practitioners*:

“We have a very friendly environment in the area [of HR]. We tend to invite each other to our birthdays. From time to time, we go for a coffee together. We support each other in difficult situations” (D15MM 25-226).

“We are lucky because there are maybe five or six children of the same age, I mean sons of colleagues working here, and well, we all invite each other to our parties. Also as some of our children attend the same school, if one of us stays working late, it is easy to ask a colleague to pick your son too. Next time, you would do the same for them” (D13MF 20-325).

### **7.3.5 Shared knowing devotion to employees**

Another interesting finding shows the considerable efforts made by *practitioners* to provide their employees with “a well-deserved service and support” (D11SF 18-330). A shared concern among *practitioners* is that “Human Resources, as a service department, has to take over and facilitate the work of others” (D16LF 26-301). This is something collectively practised and reflected in many of their actions.

This knowing differs from that discussed in Section 7.3.4 ‘Promoting continuous collaboration and support’. Here ‘devotion to employees’ mainly reflects the attitudes of *practitioners* towards other employees working at *INTEC*; whereas ‘Promoting continuous collaboration and support’ shows collaboration and support among *practitioners* themselves. Moreover, the knowing ‘devotion to employees’ is closely related to one of the aspects of knowing how to communicate, which shows how interacting with other human beings requires special modes of communication.

Expressions such as “providing Human Resources here is all about giving service and support” (S7LF 29-155); “I do whatever I can to support my employees” (S5MM 21-380); “All the time we are helping people solve their problems, to make their work easier” (S7LF 29-160), reflects this enacted knowing. One *director* explains:

“I have always had the idea that Human Resources, as a service department, has to take on and facilitate the work of others rather than generate work itself. This is the reason we exist. If we do not facilitate employees’ work, why would we be here in the first place?...We have to understand that we are here to help others accomplish their aims. If we do not do this, then we are lost. [What I always say is] let’s not put more work onto them, but help them cope with their work as much as we can” (D16LF 26-301).

In the interviews, it was found that *practitioners* undertake different actions and strategies as a way to enact this knowing. For example, in order to “treat people in the right way”

(S5MM 21-410), they continuously engage in actions that make their employees feel comfortable, such as showing by their disposition to help, as the following comment show:

“If I have an employee knocking my door I cannot say ‘not now’, no. What I do is to leave what I am doing...Sometimes they have really big problems that need to be solved immediately, and I won’t leave people struggling with their issues alone. So I listen to them, I find ways to help them” (D18SF 30-399).

Moreover, even when sometimes *practitioners* do not necessarily share the same feelings or experiences as the objects of their practices (employees), they attempt to communicate a positive attitude. *Practitioners* - contrary perhaps to their real feelings - show some degree of empathy, or at least avoid giving a bad impression, as the following comments suggest:

“For example, now that we are delivering uniforms to employees, we are also very careful about how we do it. As you know, this is not something we are very happy with because of all the work that is behind it. However, when the time comes to deliver the uniforms to employees, we see that they are very happy about it, and so we have to share their happiness in some way and show it in our treatment of them” (D16LF 26-285).

“Even when I am very, very busy, if an employee comes to my office, I have to put on a happy face. Perhaps if I were totally swamped with work, I would ask him to come back later, but I would never show I was under stress as this can give him a bad impression of me. I would try to hide [my stress] from him, but it is not always easy” (D11SF 18-312).

While these attitudes could, to some extent, be expected from people working in HR in an environment in which a culture of continuous support, collaboration and loyalty to the Institution exists; it was very interesting to find that some *practitioners* - in their strong desire to assist their employees - engage in actions that go beyond their level of responsibility, even though this sometimes resulted in negative personal health consequences for themselves:

“It is not that I am not happy, I really like my job, and I like it so much that I feel a heavy responsibility for what I have to do. But this also has its problems. My husband criticises me all the time because I go home very late and very hungry too, and he says to me: You don’t understand, you have to eat properly and at proper times, otherwise you will have the same eating disorders again” (D18SF 30-321).

“I had a very serious operation and the doctor told me to stay at home for a week. But as soon as I heard this, I started to worry about who was going to look after my employees if I was not there,. So, I stayed at home for the weekend, and then on Monday at eight [am] I was there in my office, ready... I should have listened to the doctor, as after two days I could not work any more” (S5MM 21-440).

These two cases show some of the extreme situations experienced by *practitioners*. However, this attitude of “caring for others and carelessness for ourselves” (D14SF 22-307), as one *director* put it, was observed in other *practitioners* too. However, despite some of the negative consequences, the enactment of this shared knowing also bring with it positive consequences for *practitioners*, as the following comment shows:

“We are expected to be caring and sympathetic towards employees as, for example, people from [the HR headquarters] are with us. But once you have developed this ability you do it subconsciously, and not only in your work. Always adopting the same attitude has been something that has improved my relationships with other people outside of the work environment” (S7LF 29-213).

### **7.3.6 Shared knowing engaging in continuous learning**

Another knowing collectively enacted by *practitioners* was reflected in their engagement in continuous learning activities. The vast majority of *practitioners* agree that HR practices entail continuous improvement. As such, they are continuously involved in learning processes. As one *director* put it: “There are two ways here, either you learn or you learn” (D16LF 26-434). An illustration of this knowing was offered by one *director* when she described how her involvement in different projects required the need for continuous learning:

“Look, for example, right now we are involved in eight different projects. As you can imagine, this situation demands an enormous amount of time, and for much of that time you have to spend it learning new methodologies, new models, new systems, new ways of evaluating, and new regulations. I’m not complaining about this. On the contrary, I feel this culture that we have developed of continuous learning is what has taken us to the place where we are today” (D17LF 28-338).

In the particular case of *the implementation*, learning is also a requirement. It bring with it an element of novelty that require *practitioners* to learn and apply new models, concepts and strategies; as *vice-president* illustrates:

“This is a new paradigm to manage Human Resources within the University, and the reason why we need to support all Human Resource people. They need to learn what this new model is all about, the new concepts it brings, and the strategies needed to implement it” (HVPM 24-61).

The need to engage in continuous learning is clearly not limited to *the implementation*, but as one *staff* commented, it was “embedded in our daily work” (S5MM 21-84). In order to support and facilitate the engagement of *practitioners* in leaning activities, different

materials, learning sources and opportunities for tutoring and coaching are available; as the following remarks show:

“Something that I have to acknowledge is that whenever something new is introduced in the [HR] area, the [Headquarters] always provide tutorials, virtual workshops or whatever is needed for us to learn the new systems” (S6LF 27-60).

“For example, the fact that [*president* and *vice-president*] decided to visit our campuses to teach us how to lead the workshops [to develop job descriptions], was excellent. As it was something totally new for me, [*vice-president*] came and led the first workshop. The following day, we had another workshop, but this time I did the job. [*vice-president*] observed, and at the end of the workshop he gave me some suggestions for improvement. That experience was very, very helpful because not only do you learn from an expert, but you also receive immediate feedback” (D11SF 18-271).

However, as *practitioners* constantly faced time constraints and work overload, this shared knowing is enacted in the form of learning-by-doing, as expressed by *president* when he launched *the implementation*:

“On the one hand, we cannot stop the operation of the University to implement the project. On the other hand, we could not wait until everything was ready....Once the project started we learnt on the job. We amended the model a few times; and we adjusted the implementation to the rhythm of the organisation...We had to learn by doing, there was no other way of doing this” (HPM 23-111).

### **7.3.7 Shared knowing prioritising operational continuity**

Another knowing that *practitioners* routinely and collectively enacted is reflected in the priority given to maintaining the operational continuity of their campuses. One *director* explains:

“We receive some projects in ‘dotted lines’, which means that they are not mandatory but instead you have the choice whether to participate or not. Yes, you receive the signal that something is happening. However [this signal] is given by someone who is not your boss, so sometimes you follow it, sometimes you don’t” (D12MF 19-52).

When many *practitioners* were asked about their priorities, and how they were related to *the implementation*, expressions such as: “I have not been working on the project because of the current work overload we have” (D11SF 18-64); “the project is now on standby because we have overwhelming pressure from our daily activities” (D13MF 20-82); “we have daily operations that we cannot postpone” (D17LF 28-343); “the project requires a lot of time, more than the time I have available to focus on it... There are operational system activities that we cannot simply abandon” (D16LF 26-452); clearly reflect the



priority given by *practitioners* to maintaining their day-to-day operations, over any other activity.

Despite the size of their campuses, and the differences of *practitioners'* work conditions (e.g., number of employees, number of HR staff, the scope of *practitioners'* responsibilities, and access to allocation of resources), this shared knowing reflect how *practitioners* perceive their practices and associated priorities, problems, and concerns:

“While it is true that some [*directors*, working in large campuses] have to co-ordinate the work of many others; and others [*directors*, who work at smaller campuses] work with just a few people, or even alone, I feel that we all share the same concerns and have the same priorities. You just ask any [*director*] and you will see for yourself. Priority number one: keeping the operation of the campus going. Main concern: finding enough time to achieve this aim” (D17LF 28-327).

The comment above accurately shows how this shared knowing reflected *practitioners'* main priorities and concerns. At the same time, it also shows how the enactment of this knowing is highly shaped by the issues of time available and work overload, imperative to, and highly influential on, the way HR practices are performed.

#### **7.4 Participation in the community (not) supporting the enactment of shared knowings**

This section argues that *practitioners* perceived that *CODECO* failed to support the enactment of shared knowings introduced in Section 7.3, thus influencing *practitioners'* endeavours to participate in *the community*. As knowings shaped, to a certain degree, the way HR practices were performed; and because they were collectively and routinely practised, though not supported by *CODECO*; *participation* did not become an element of HR practices.

It can be seen from above (Section 7.3.2) that relationships among *practitioners* emerged as a direct consequence from their engagement in the performance of HR practices. *Practitioners* also purposefully developed these relationships in order to gain different benefits. *Practitioners* suggested that when *CODECO* was introduced their *participation* was undermined arguably they neither found opportunities to develop and maintain their existing relationships, nor occasions to create new ones, as the following comment exemplifies:

“In here, within the HR area, we like to communicate, to talk, to get as much as we can from every interaction, and to keep in touch all the time. This is the reason why we maintain our relationships with other HR colleagues. I think one of the main flaws of this community is the fact that it does not support these kinds of interactions” (S5MM 21-205).

A trust-related issue also appeared to influence *practitioners'* dispositions to participate in *the community*. When one *director* was explaining why she did not participate in *the community*, she referred to how the trust that she developed in her previous relationships shaped her current interactions, thus affecting her motivation to use *CODECO*:

“Although the organisational structure has been changing - before we were eleven campuses in our geographical zone, and now we are only four - we still keep those contacts alive. And, for example, if I have any work-related question, the easiest way to get an answer is to contact those who belonged to this network that I am telling you about, because you know, there is a factor of trust already developed that makes easier to share and express your concerns more openly” (D11SF 18-155).

Secondly, the lack of *participation* was also shaped by the fact that *practitioners* did not find the same attitude towards collaboration and support when using *CODECO*, as was found via other forms of interactions. As one *director* explained:

“I don't see a lot of interaction in *the community*, so how are they expecting us to participate? ... It gives me the impression that *the community* is not suitable for promoting the attitude of support that we are used to whenever we contact people more directly” (D15MM 25-144).

A clear example of this was provided by one *director*. After posting a question in *the community* without a response, she commented that she was disappointed and never used *CODECO* again:

“Once I posted a question and never received an answer. I realised that [*CODECO*] was not the best medium to use because [outside the online community] whenever you have a question you get an answer, but not [at *CODECO*]. I do not really know why. All *practitioners* were given access to [*CODECO*], and we have known each other for a long time, but I never got my question answered” (D11SF 18-350).

Thirdly, *practitioners* did not seem to have a positive attitude towards *CODECO* when it came to supporting learning. While learning was highly valuable for *practitioners*, and supported within their work environment, *practitioners* perceived other sources as being more supportive for their learning activities. This was reflected in the shared preference of *practitioners* for those experiences where they could “learn from the expert” (D11SF 18-271), “see how things are done in the field” (D12MF 19-322), or “have more individual interactions [for learning]” (D14SF 22-180). Thus, as *practitioners* did not perceive their

participation in *the community* offered these benefits, they minimised their *participation*, as the following comment exemplifies:

“I do not see the [online] community as being helpful or supportive for learning. I have the feeling that the process of learning is more complex and, in general, it requires deeper interactions where you have the possibility to see how things are done in the field, or where someone else clearly explains to you how things work. For instance, the support that we received to develop job descriptions in the workshops, where we learned by doing, and the seminars where we were told how to give feedback to employees, are two very good examples of appropriate environments which are supportive of learning” (D12MF 19-322).

Moreover, even though a “favourable culture of learning” (HVPM 24-221) was perceived, and *practitioners* had access to different materials and opportunities to engage in learning activities, they had a preference for face-to-face interactions or more individual encounters. The following comment from a *director* illustrates this. When she was asked about her media preferences for learning activities, she said:

“I would prefer to have more individual interaction because [for example] sometimes you go to seminars, but there is not enough time to resolve your own doubts. So, what generally happens is that we come back from the seminars with our initial questions unanswered, and bring even more questions back with us...So what I do in these cases is to communicate with [*vice-president*] or other people from the [headquarters] to resolve my queries on a more individual basis” (D14SF 22-180).

Fourthly, three main aspects of ‘knowing how to communicate’ were identified in Section 7.3.3. Arguably, these aspects were at odds with *practitioners’* participation in *the community*. This section refers to the purpose-oriented aspect of ‘knowing how to communicate’. The other two aspects introduced in Section 7.3.3, are further discussed in Section 7.7.

As *practitioners* “need to be very efficient and effective when communicating... [because of] all the work overload [they] have” (D15MM 25-303), their media choices were highly shaped by the purpose-oriented aspect of ‘knowing how to communicate’. The following comment shows how, when making their choices, *practitioners* were influenced by a concern to ‘get things done’:

“When we are hiring someone and deciding upon the wages to be paid, as you know, this requires a process of negotiation and therefore face-to-face interaction is preferable. I would say that our needs define how we communicate. In the end the most important thing is to get things done” (S6LF 27-186).

This comment is in line with another comment expressed by one *director* who suggested that choosing the medium by which to communicate was “more a matter of what the practice itself demands”. However her comment also showed her preference - shared by many *practitioners* - for face-to-face interactions:

“Maybe it is not so much a matter of taste, but more a matter of what the practice itself demands, but if I could choose I would say that I prefer personal face-to-face interactions more [than using technologies to interact with others]” (D17LF 28-160).

## **7.5 Availability of media and interconnectedness between practices**

### **7.5.1 Introduction**

To understand the degree and nature of *practitioners' participation*, *CODECO* must not be seen as an isolated technology. Rather it must be seen as being interconnected to, and shaped by, the existence of other elements of HR practices (e.g., other technologies). Similarly, in the same way as elements of HR practices are interrelated to each other, so HR practices are interrelated with other practices performed at *INSTECH*. Thus, to understand *participation*, not only are the interconnections that *CODECO* has with other elements of HR practices relevant, but also the inter-dependencies that HR practices have with other practices performed at *INSTECH*.

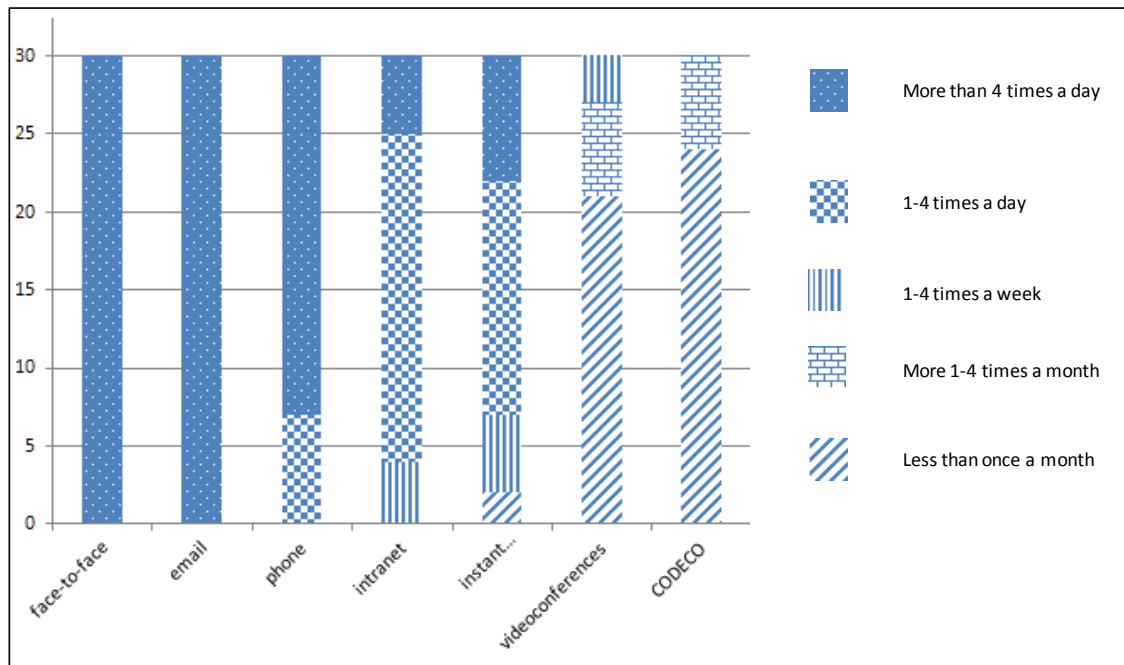
This section explores how these two aspects of interconnectedness shaped *participation*. Section 7.5.2 looks at how the availability of different media for *practitioners* to perform their practices undermined *participation*; thus suggesting that *CODECO* was not isolated from, but was rather interrelated to, other media. Next, Section 7.5.3 shows how, as HR practices were performed on a site where many other practices were carried out, *practitioners' media choices* were influenced by the interconnectedness of HR practices with other practices within the site; thus also shaping the use of *CODECO*.

### **7.5.2 Availability of existing communications media**

When *CODECO* was introduced as a collaborative technology to support communication and knowledge sharing during *the implementation*, its usage was threatened by existing media. The following quotation reflects the availability of existing media and how it is embedded in practice:

“The first thing I do is to check with my colleagues what we did not finish the previous day that needs to be done today; we interact here via oral communication. Then I turn on my computer and check my email. Very often I have requests from my boss, from other heads of department or sometimes some concerns from employees. It happens all the time that while I am doing my work during the day, I receive calls from different people with queries they may have about payroll matters, insurance, training courses, suppliers, uniforms, whatever you can imagine. Also, I tend to contact people from the [HR headquarters] either by email or telephone depending on the urgency of the task. It also happens that sometimes I have queries about something very specific, and as I know I can find that information on [the organisational intranet] I just log in and find whatever I need” (D14SF 22-50).

Based on the comments made by the majority of *practitioners*, it becomes apparent that they have access to a variety of communications media. Moreover, the usage of these media appears to be routinised, and inherently embedded into their practices. The recurrent reference to these media during the interviews with *practitioners*’ conversations reflects this situation (see Section 7.6). Based on the 30 interviews conducted in the study, Figure 7.1 shows that, in addition to face-to-face communication, the use of media such as email, telephone, instant messaging, videoconferences, and the organisational intranet (intranet), are commonly used by *practitioners*.



**Figure 7.1: Media usage frequency**

From the above, it is clear that existing media, including face-to-face interactions, email, telephone, intranet, and instant messaging, were the most frequently used. These five media were used on a daily basis by the majority of interviewees. In contrast, a different

picture appeared when looking at *CODECO*. While 24 participants mentioned that they used *CODECO* 'less than once a month'; six interviewees expressed having a relatively low monthly *participation* (e.g., one to four times a month). The low levels of *participation* were also reflected during the interviews, in which only three out of 30 interviewees mentioned the words 'community', 'online community', or 'virtual community' when describing their daily work activities. Only when questions designed to get them to explicitly talk about *the community* were raised, did *practitioners* refer to it. In contrast, the daily use of other media was implicitly reflected in all the interviewees' conversations.

### **7.5.3 Interconnection between practices**

*INSTECH* is seen as the site on which different interconnected practices are performed, shaping each other in different ways. For example, most of the activities *practitioners* carry out on a routine basis, if not all, (e.g., hiring a new employee, evaluating employees' performance, planning career development, administering the payroll), are difficult to isolate from the enactment of other practices occurring at *INSTECH* (e.g., teaching, grading, doing research). This interconnectedness between practices affects the way people communicate with each other while performing their duties. This thus also shapes the use of *CODECO*.

As the following comment shows, many *practitioners'* media choices are not necessarily shaped by themselves, but by the way in which the overall community of *INSTECH* tend to communicate. As one *director* commented:

"I see that one of the reasons why we continue using the existing media in the way we do is the fact that everybody in the 'Tec community' uses email and the telephone on a daily basis. And to some extent you have no other choice but to use the media that everybody else uses" (D15MM 25-420).

The view of having "no other choice but to use the media that everybody else uses" (D15MM 25-420), is shared among *practitioners*, whose position of being "continuously interacting and giving service to other departments" (S6LF 27-120), increases their tendency to reproduce the use of certain media:

"In our specific situation, being an area which is continuously interacting and giving service to other departments of the University, many queries and requests from people working in different areas are made via email, so we tend to answer via the same medium" (S6LF 27-120).

Similarly, as HR practices are activated by other practices performed at *INSTEC*, *practitioners'* choices of selecting the media used to communicate are mostly "passive"; meaning that 'the system' - and not *practitioners* themselves - moulded their choices. This gave *practitioners* the feeling that "there is no way to escape from [the use of particular media; e.g., email]" (D18SF 30-251). One *director* explains:

"One of the main characteristics of our work as HR *directors* is that many of the things we do are initiated as a consequence of the demands of other processes ... So, rather than being 'active' in our choices to select the media we prefer to communicate through, we have a 'passive attitude' in the sense that it is other people who decide how they communicate with us. I am not saying there is anything wrong with that, but to some extent it is the system that frames the way we communicate and not ourselves" (D13MF 20-189).

Thus, when *practitioners* were faced with the option to participate in *the community*, their choices were not only influenced by the availability of different media as shown in Section 7.5.2, but also by the interconnectedness that HR practices and *practitioners* had with other *INSTEC* people and practices.

## **7.6 Routinisation of media usage**

### **7.6.1 Introduction**

HR practices consist of a bundle of actions repeatedly performed so that an element of routine developed. Since HR practices - and other practices at *INSTEC* - were enacted repeatedly, a series of habits, shared understandings, and non-reflective actions were developed by their practitioners. This feature of routinisation not only affected the way HR practices were performed, but also how and through which media, *practitioners* communicated in their everyday work activities.

This discussion is divided into two parts. Section 7.6.2 shows how *practitioners* developed patterns of interaction supported by existing media; and how these patterns - after being repeatedly enacted - become habitual ways of performing, thus undermining *participation*. Section 7.6.3 develops the point to further argue that, when *CODECO* was introduced into HR practices, the routine patterns of interaction developed in the past, come to life and influence *practitioners'* willingness to participate in *the community*.

### 7.6.2 *Media usage before the implementation*

One of the findings of this research shows how *practitioners'* patterns of media usage were developed and shaped over time by the enactment of certain practices in the past. This situation led HR practitioners to develop routine ways of using technologies that, after being repeatedly enacted, became 'natural' ways of communicating:

"Since I have been working at the University for ten years now...we have used email and the telephone as the mainstream media for communication. If I remember correctly, the practice of using Messenger was more recently adopted, yet we have still been using it for a long time. And as you may know, after such a long time [of using these media] their usage becomes 'natural'" (D14SF 22-126).

A similar comment was expressed by another *director*, who commented that her decisions to use certain media were made subconsciously, or taken for granted:

"It is, you know, you even don't think about it. I don't remember myself thinking about whether I should use the telephone or email. For instance, when we are hiring someone and we have made a decision [about who is going to be hired], I just send an email to notify the Director that the candidate selection has been made. I do not really think about which media to use. We are just so used to doing it that we even don't think about our choices" (D17LF 28-93).

However, other *practitioners* suggested that their communication choices were shaped by shared understandings developed after repeated encounters. This suggests that their choices were not necessarily subconscious, but rather based on some sort of unspoken agreement developed over a period of time:

"If you take a long-term perspective, our interactions tend to be repetitive and with the same people, and after a while we find our own ways of doing things. For example, I know that [*vice-president*] prefers telephone conversations rather than email, as do I, and so whenever I have any queries regarding the competency-based project, I just call him. Something different occurs when I contact [the Rector of this campus]. As I know he has many things to do, an email is the best option to contact him. If I email him, I know I will always receive an answer on time. If I call him, he may not call me back" (S5MM 21-160).

Thus, after *practitioners* routinely enacted the use of certain media over time, this use became the 'natural' way of communicating that led *practitioners* 'not to think about their media choices'. This in turn made it difficult for *practitioners* to change their previous routines; as the following interview excerpt shows:

"Within the area of Human Resources we have been using these media, [telephone and email], as the mainstream media for quite a long time and in such a way that the habit of



using them has led us so to a point where it would be difficult to move to a different media, unless a real need is perceived" (D16LF 26-120).

When the same *director* was asked what would motivate her to use *CODECO*, she briefly - and sarcastically - answered: "not having email, Messenger and the telephone" (D16LF 26-123).

### **7.6.3 Media usage during the implementation**

Long before *the implementation* commenced, *practitioners* developed routine patterns in their communication practices, so that when *the implementation* started, their interactions were highly shaped by the patterns developed in the past. Moreover, when *CODECO* was introduced - after one year of ongoing implementation - *practitioners* had developed certain patterns of interaction during *the implementation* itself that further affected their participation in *the community*. One *director* commented:

"As far as I remember, [*the implementation*] started to be implemented in mid-2007 and [*the community*] was introduced a year later. At that time we had already developed certain patterns of interaction: we used to have monthly meetings to co-ordinate the project and to make strategic decisions to be further deployed among all campuses; [*vice-president*] used to email us on a weekly basis to announce any changes and give us general project-related information; [*president* and *vice-president*] used to visit some campuses to support [*practitioners*] during the first stages of [*the implementation*], especially to develop job descriptions. So, when [*the community*] was introduced it was, I guess, too late. Rather than starting participating in it, we continued having the same types of interaction that had been already established during [*the implementation*]" (D17LF 28-150).

Another *director* explained how, despite an explicit rule imposed by people working at the HR headquarters to maintain weekly interactions in *the community*, neither *directors* nor *staff* followed this policy, but instead continued communicating on the same platform that governed their interactions before *CODECO* was introduced:

"In a meeting we were told to participate at least three times a week in the [online] community but to me that statement did not make any sense. To be honest, what I, and many others did I assume, was to ignore it and just continue our previous ways of interaction." (D13MF 20-245).

Even the actions of those who were promoting the use of *CODECO* during *the implementation* - the *president* and *vice-president* - tended to repeat their patterns of media usage developed in the past:

"What happened here is that [*president* and *vice-president*] initially promoted [*the community*] as the primary media to communicate with during [*the implementation*], but

they themselves were using the media we had before. Once I posted a question in [*the community*] –just to show my engagement in it - asking for the available training courses for employees. What happened was that [*vice-president*] answered my question, but via email. So, what does that mean? It just means that neither [the people working at the Headquarters nor people working in every campus of *INTEC*] will readily change their interaction routines” (D11SF 18-125).

Finally, as one *director* suggested, *participation* was also shaped by previous experiences in *the community*; so when *practitioners* were not satisfied with the use of *CODECO*, they ended up switching back to their old routines:

“To be honest with you, that time was the last time I participated in the [*the community*]. Since then, whenever I have any queries and doubts related to [*the implementation*] I prefer to communicate via the existing forums we have, such as email, the telephone, or sometimes Messenger” (S5MM 21-146).

### **7.7 Participation being at odds with the taste of HR practices**

This section mainly builds on the findings provided in Section 7.2, in which three features characterising HR practices were introduced. It also builds, to a lesser degree, on the findings introduced in Sections 7.3.5 and 7.3.7 where the shared knowings ‘Devotion to employees’ and ‘Prioritising operational continuity’ were identified.

In Section 7.2, it was suggested that the three characteristics permeating HR practices shaped the taste of these practices, i.e., the preference for the way *practitioners* do things together. Later on, in Section 7.3, a set of shared knowings enacted by *practitioners* was introduced. Arguably, these knowings shared a similar taste, thus reflecting *practitioners’* sensitivity to feeling what was appropriate for them to do, and what was not within their practices. Moreover, in enacting these knowings, *practitioners* demonstrated their competence while performing their practices.

When *CODECO* was introduced, *practitioners* did not perceive their *participation* as ‘fitting’ the taste of their practices. As one *director* put it when she was asked about her lack of *participation*: “It just does not go with how we work here. Do not forget that we are HR. You know, we are not very technologically oriented” (D16LF 26-87). Other similar expressions heard during the interviews, such as “you feel you are with Human Resources people” (HVPM 24-136); “[how we interact with people] matches our profession” (HVPM 24-188); “[*CODECO*] just does not fit the ways we do things” (D17LF 28-463); “the [online]

community just does not suit this well” (D11SF 18- 370), showed how the particular taste of HR practices was at odds with *participation*.

It has already been noted that ‘a typical day at work’ of *practitioners* was characterised by time constraints and work overload. When discussing these issues with *practitioners*, it became apparent how *CODECO* was not aligned to the flavour of HR Practices. Rather than *practitioners* finding *CODECO* helpful to ‘get their work done’, interviewees shared a shared perception that their *participation* was more a waste of time, as expressed by one *director*:

“Rather than being helpful to me, I found myself browsing and spending a lot of time finding the job description I needed. It might be that I am exaggerating a bit, but with the workload we have to deal with, every minute spent in the [online] community counts” (D12MF 19-287).

A similar view, also related to the issue of time, was expressed by another *director*, when she was asked about how *participation* could enhance her learning experiences:

“I can tell you that if we want to use the [online] community, the first thing we need to learn is how to use this collaboration tool .That is not an easy task for us, you know, because of the time [constraints] that we have. Now, let’s assume I learn how to use the tool: that does not guarantee I will learn something through it” (D13MF 20-292).

This was understandable when looking back at how *practitioners* were constantly dealing with outstanding matters to be done; as reflected in the following comments: “[t]here are days in which I spend all my time on issues that have been waiting for me and that cannot wait any more”(D12MF 19-158); “On many occasions it has happened to me that it is already two [pm] and I have not done anything I planned, but instead just worked on what we could not finish the day before” (D18SF 30-200). These situations, in turn, informed *practitioners’* decisions to opt for those communications media that allowed them to do their jobs in more effective and efficient ways.

Another example of how *practitioners* perceived *participation* as being at odds with the taste of their practices was commonly reflected when they referred to their communication practices (Section 7.3.3). These were not only related to efficient and effective ways of communicating, but also entailed interactions that required treating others “[as human-beings], not as machines or robots who only receive orders and have no feelings” (S7LF 29-262), as one *staff* put it. In this sense, expressions such as: “it is not by chance that most of the Human Resource *directors* are women” (D18SF 30-80); “the warmth of a woman’s treatment makes the difference” (D16LF 26-270); “there are some

[people] who require ‘special treatment’” (D15MM 25-325); shed some light on how *CODECO* was at odds with this sort of interaction. As one *director* said when talking about the way *practitioners* communicate when interacting face-to-face:

“It is funny because, when you are in those workshops, you ‘feel’ you are with Human Resources people. Everybody is polite, everybody shakes hands, everybody interacts, talking, smiling; I think even for people who do not know who we are, they would probably guess we are Human Resources people...The [online] community just does not suit this well” (D11SF 18-370).

Closely related to this last point, a general preference among *practitioners* for face-to-face interactions was persistently observed during the interviews. This preference of *practitioners* for face-to-face interaction shaped the taste of HR practices, and also influenced *participation*. For example, the following comment shows how one *director* perceived (face-to-face) *meetings* as opportunities to interact with others, and how these interactions were preferred over those supported by email or *CODECO* itself:

“That’s why I like the monthly meetings, because you are in continuous interaction. Before the meeting you have some free time to talk, to ask how everything is going, to say hello to everybody, to shake hands. Of course, these types of interactions are not possible when, for example, you make contact with people via the [online] community, or even via email” (D17LF 28-424).

Similarly, as the following remark shows, when compared to *the community*, other forums for interaction (e.g., HR conferences, HR seminars) were preferred among *practitioners*, in that they helped support the social dimension of HR practices; such as developing a ‘sense of community’:

“For about seven years we have been meeting in various forums in which, fortunately, there has been a lot of participation. These networking opportunities have arisen due to the needs we have as Human Resource *directors*, and to some extent [these forums] have been helpful to develop a sense of community shared by all who work within the Human Resources area” (D16LF 26-169).

There was also a general perception among *practitioners* that, in participating in *the community*, the emotional dimension of HR practices (see Section 7.2.3) was not fully supported, as it was with other existing media:

“Here we are used to communicating via email, but the truth is that we always prefer more personal communication. Now that the [online] community has been introduced, I do not see much benefit from using it. Among other things, because it does not let you express yourself as you probably can do via the telephone or personal interaction. Sometimes you just want to talk to someone who understands and shares your concerns” (D15MM 25-400).

In another interview, for example, when one *director* was commenting on how HR practices embraced different emotions, she was immediately asked about how *participation* could assist her cope with these emotions; she responded:

“What worries me is that I have the impression that the University wants to force the use of some technologies on situations where they are not needed...As I was telling you, it often happens to me that I feel the need to share my worries, and sometimes frustrations, with others; and, well, what I do, is to talk to my colleagues [face-to-face], or give them a quick [telephone] call” (D12MF 19-409).

## **7.8 How a practice-based approach was insightful to understanding online community participation**

What follows discusses the value of the practice-based approach in understanding what shaped *participation*. In the light of the particular preoccupations of PBA, as discussed in Chapter four, four main avenues provide insight for understanding online community participation, namely: 1) *participation* was shaped, to a certain degree, by the context surrounding *the community*; 2) *participation* is a historically-shaped phenomenon; 3) *participation* is a social (i.e., collective) engagement; and 4) *participation* is a dynamic process.

### ***7.8.1 Participation being shaped by the context immersing the community***

Adopting PBA as a lens contextualise *participation* as an activity that takes place within a site, in which HR practices were performed, amongst others. This allowed for *participation* to be seen not as an isolated phenomena being solely shaped by the internal dynamics of *the community*, but as taking place within a site characterised by certain features and, where many other practices were performed. Indeed, adopting PBA as a lens helped give relevant attention to the role of the surrounding context in shaping *participation*, an aspect that is neglected in ANT due to its flat ontology (see Section 8.3.1.4 for further discussion). This will be developed further in Section 8.3.1.4.

Looking at the site as the context in which *CODECO* was immersed illuminates how HR practices and their interconnections with other practices shaped *participation*. For example, it was shown how the nature of HR practices of being interconnected to other practices within the site affected *participation*. As the performance of HR practices demanded HR practitioners to continuously interact with others working at *INSTECH*,

participation in *the community* was undermined because *CODECO* failed to support these types of interaction, already maintained by existing media. Moreover, as particular media were widely used at *INSTECH*, the dependence of HR practices to other practices of *INSTECH* also influenced *practitioners'* media choices.

Adopting PBA was also helpful to examine how *practitioners* perceived that participation in *the community* did not support the enactment of knowings. In Section 7.3 a series of shared knowings were identified as being routinely and collectively enacted by HR practitioners in order for them to demonstrate their competence. The enactment of these shared knowings reflected the needs, priorities, and values governing HR practices. These knowings in turn helped *practitioners* dealing with the features characterising HR practices (see Section 7.2). As participation in *the community* did not support HR practitioners to enact the shared knowings they thus minimised their *participation*. At the same time this reinforced their current communication patterns. Moreover, when *CODECO* was introduced *practitioners* did not see their participation in *the community* as fitting the taste of HR practices, and thus tended to neglect the use of *CODECO*.

### **7.8.2 Participation as a historically-shaped phenomenon**

Secondly, the practice-based approach helped in understanding how the historical context of HR practices shaped current performances of *practitioners*. This presents *participation* as a historically-shaped phenomenon. Looking at *participation* from this angle, suggested that *participation* cannot be understood as if it were a one-time event isolated from previous enactments, but rather as being shaped, to a certain degree, by what was done in the past within the context of which *the community* was part.

Moreover, adopting resources from PBA as a lens for analysis also helped tackle the problems associated with the flat ontology of ANT. These problems, as will be further discussed in Section 8.3.1.4, were reflected in the fact that ANT intends to explain phenomena as if it were all emergent. It thus neglects the importance of the historical context which acts as a force that shapes current performances of practitioners. Chapter six provided an interpretation informed by ANT of what shaped the use of *CODECO*. However, aspects such as habituation and routinisation that shaped *participation* were under-explored when the sociology of translation was used.

Therefore, adopting PBA in the second stage of the study helped examine the past as a force reflected in such aspects as routinisation, habituation, reproduction, perpetuation, and inertia, and how these influenced participation in *the community*. For example, it was shown how HR practices were repeatedly enacted so that certain patterns of interaction and media use became routinised over time. Once these patterns became routine, their continuous repetition perpetuated these patterns. They thus directed HR practitioners to reproduce, rather than to modify, their existing communicative practice. This undermined in turn *practitioners'* willingness to participate in *the community*. The force of the past on current actions was also reflected in the highly embedded use of certain media, in the habits developed by *practitioners* when communicating, and in the unconscious decisions HR practitioners made when it came to deciding their media choices. As such, this interpretation complemented the one provided in Chapter six. This was particularly helpful in looking at how emergent relations, negotiations, and enrolments shaped the degree of *participation*. In summary, the theoretical devices from PBA were helpful to look at how HR practitioners found difficult to break their habituated ways of performing developed over time, and how this prevented them from actively participating in *the community*.

### **7.8.3 Participation as a collective engagement**

Thirdly, the adoption of theoretical resources from PBA helped in conceptualising *participation* as a collectively-enacted phenomenon. Thus, the assumption that because actions are performed by individuals, practices (and their actions) must be seen as individual phenomena was challenged. As such, the interpretation provided in this study does not only look at the interests and motivations of particular individuals as the main focus of analysis, but rather, pays special attention to how the existence of shared understandings, norms, priorities, and 'correct' ways of doing things together shaped the degree and nature of *participation*. What shaped online community participation were collective performances not individual isolated enactments.

Therefore, in the light of PBA, *participation*, though enacted by particular individuals, is seen as a socially-maintained phenomenon. It is not only shaped by the decisions of particular individuals, but rather also influenced by collective performances. This social character of *participation* is reflected in different ways in the case study. For instance, the

shared perception of HR practitioners towards *CODECO* not supporting the enactment of knowings undermined its use. The shared views of HR practitioners on the right way of doing HR within the site prevented them from actively participating in *the community*. HR practitioners enacted their media choices based on mutual understandings, or shaped by what others did, rather than on individual decisions. Moreover, adopting resources from PBA was also helpful to understanding how when particular HR practitioners decided to participate in *the community*, and their actions remained isolated, participation in *the community* did not become part of HR practices.

#### **7.8.4 Emergent nature of participation**

Fourthly, adopting PBA helped explore the emergent nature of participation. It was previously mentioned how aspects such as routinisation and habituation condition change, and thus undermined participation in *the community*. These aspects reflected the reproductive side of practices and helped highlight the historically-shaped character of *participation*. However, the theoretical resources from PBA were also helpful to look at the productive aspect of practices, and how this shaped *participation*.

The findings show that in order for *participation* to become an action of HR practices, it needed to be collectively and recurrently enacted by *practitioners*. Once *CODECO* was introduced, HR practitioners neither collectively nor recurrently participated in *the community*. Two examples clearly reflected this fact. Firstly, it was shown how when a *Practitioner* opted to use *CODECO* by posting a question and she never received an answer. Her action remained isolated and not enacted by others. There was no collective enactment. Secondly, a similar situation occurred when a *Practitioner* was not satisfied with her *participation*, and thus she switched back to her old routines. Her action was also isolated in the sense that occurred as a one-time event phenomenon, not recurrently enacted. Both situations led HR practitioners to recreate rather than transform, or produce new ways of interaction and use of technologies.

However, these findings showed that recurrence and collectiveness did not necessarily mean uniformity and singularity. On the contrary, diversity and variation were always present, and so was the emergent nature of their actions. This in turn allow to suggest that if one of these actions within practices would have turned out to be either collectively supported, or repeatedly practised by practitioners, then, change may take place. Thus,



PBA helped look at how the reproduction, ongoing evolution, and innovation (or abandonment) of practices were in constant negotiation taking place at every act of enactment.

## 7.9 Conclusion

Chapter seven has presented the empirical findings from thirteen interviews conducted during the second stage of the research.. The content of this chapter has provided an answer to research question (3): “*What can a practice-based approach say about what shapes the degree of participation in the online community that is the focus of this study?*” The chapter has also discussed the fruitfulness of the PBA in enhancing our understanding of *participation*. Both data collection and data analysis were informed by notions from the PBA as discussed in Chapter four.

The findings on CODECO implementation at the HR direction have already been discussed in Chapter 6. This has been mainly focused on understanding how the HR implementation took place and how CODECO was aimed at supporting knowledge sharing during this process. This provided light on how what occurred during the implementation shaped online community participation. The evidence provided in Chapter 7, has offered an alternative interpretation that has enhanced an understanding of participation in the online community. Adopting PBA meant seeing *participation* as taking place within a site (*INSTECH*), which acted as the context surrounding the online community and HR practices. HR practices were interconnected to other practices being performed within the site enabling and/or constraining what occurred within them. This site, in turn was acknowledged to be historically, and socially-shaped.

Three main features and six shared knowings permeated HR practices. These features and knowings helped in understanding how and why HR practices were performed in the way they were. It was suggested that, through the enactment of the shared knowings, *practitioners* dealt with the features characterising HR practices. A mutually shaping interaction between the two could best describe the relationship between knowings and features of HR practices..

The main conclusions that explain what shapes participation in the online community that can be drawn from the evidence that has been presented are:

- Given that *practitioners* enacted the shared knowings in order to competently perform their work and that the enactment of knowings was not supported by *participation*, HR practitioners minimised the use of *CODECO*.
- By looking at HR practices as a set of interconnected elements, *CODECO* was seen as being introduced into a context where other media such as face-to-face communication, email, telephone, and instant messaging, were available and highly embedded into HR practices. This thus undermined *practitioners'* willingness to actively participate in *the community*.
- The interconnection of HR practices to other practices performed at *INSTECH* also shaped *practitioners'* *participation*. The evidence presented above showed that *practitioners* often expressed their inability to influence their media choices, especially in situations where the use of certain media was widespread at *INSTECH*, or when interactions were initiated by people working outside the boundaries of HR practices. Thus, when the online community was introduced, HR professionals' choices to participate were highly determined by the widespread use of media across the University.
- *Practitioners*, after repetitive enactments of HR practices, developed a sense of habituation and routinisation of using certain media, and thus tended to enact particular patterns of interaction that perpetuated existing ways of interaction, finding it difficult to switch to participate in the online community. Once *practitioners* had the option to participate in *the community*, they tended to reproduce, rather than to transform, their existing patterns of interaction and media usage.
- Even when a policy was explicitly set up to embrace *participation*, *practitioners* did not follow it. Rather, they reproduced their previous patterns of media usage. This was reinforced when *practitioners* perceived that even those who were sponsoring *CODECO* tended to neglect its use, or when *practitioners'* *participation* was not satisfactory.
- Fourthly, it was argued that in order for *participation* to take place, it needed to 'fit' the taste of HR practices. The empirical findings showed that when *CODECO* was introduced, *practitioners* did not find their *participation* as 'fitting' the taste of their practices; and therefore *participation* did not become a routinely and collectively supported action among *practitioners*.

In the light of these findings, it was suggested that the value of the PBA to improve an understanding of participation was reflected in the following four main avenues::

1. Context played a significant role in the shaping of *participation*. Through the notions of site, taste and knowings the relevance of the context surrounding *the community* in shaping *participation* is foregrounded.
2. *Participation* is a historically-shaped phenomena and thus being shaped, to a certain degree, by what was done in the past, this acting as a force reflected in aspects such as routinisation, inertia and reproduction of patterns of interaction and media use.
3. *Participation* is a collective engagement and shaped by shared ways of doings things, the taste of HR practices, and mutual understandings.
4. *Participation* has an emergent nature. It is not only historically-shaped but also has a productive character present in every occurrence.

The findings of this Chapter offered an alternative interpretation to the perspective provided in Chapter six. Similarly, it was shown how the theoretical resources from the PBA point to aspects that play a significant role in the shaping of participation that differ from those suggested by ANT in Chapter six. However, it has not been discussed so far, how this study dealt with the limitations and challenges faced by praxeological approaches as introduced in Chapters three and four. This will be discussed further in Chapter eight.

## **8. DISCUSSION**

### **8.1 Introduction**

Chapter eight focuses attention on answering the last research question of the study: (4) *'What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?'*. In order to answer this broad question three subsidiary questions are addressed in this discussion:

- In the light of the theoretically-informed interpretations provided in Chapters six and seven of this study, what have we learnt about online community participation?
- To what extent did the challenges and limitations of Actor-Network Theory (ANT) and a practice-based approach (PBA) shape the current study and the understanding of the researcher?
- In the light of the findings and the use of ANT and PBA, what would be relevant considerations to take into account when conducting research informed by approaches within the praxeological family of theories?

In answering these questions, Chapter eight brings now the key content of previous chapters together, and offers a set of considerations that might be relevant when conducting further praxeological research to explore not only participation in online communities, but organisational phenomena in general. Each of these questions will now be addressed in turn.

### **8.2 What has been learnt - through the lenses of ANT and PBA - about online community participation**

This study shares with Reckwitz the view that ANT and PBA, though their “diverse theoretical origin” (2002:243) and their “rather diffuse affinities” (2002:244), can be seen as members of the “praxeological family of theories” (2002:244). These approaches, according to Reckwitz (2002) differ from two classical types of social theory (i.e., purpose-oriented and norm-oriented theories of action; also labelled by Reckwitz as the conceptions of *homo economicus* and *homo sociologicus* respectively). A similar observation by Huizing and Cavanagh (2011) has suggested that ANT (e.g., Callon, 1986; Latour, 1987; Law, 1992) and PBA (e.g., Lave and Wenger, 1991; Orlikowski, 2000; Brown

and Duguid, 2001; Schatzki, 2001; Schatzki et al., 2001; Reckwitz, 2002) are promising alternatives to the conventional subjectivist and objectivist social theories, in that they adopt an intermediate level of analysis that transcends the divide of explaining change by focusing solely on micro-social interactions or macro-structures. Moreover, Marshall (2008) has noted the keenness of praxeological approaches to distance themselves from cognitive approaches which tend to offer “a rather static, functionalistic, and ultimately individualistic portrayal” of social phenomena (2008:414). He also acknowledges - as Reckwitz (2002) and Huizing and Cavanagh (2011) do - that “the unifying label of practice-based theory masks a not insignificant degree of internal differentiation between approaches” (2011:418).

With the aim to answer the first subsidiary question of this discussion: *‘In the light of the theoretically-informed interpretations provided in Chapters six and seven of this study, what have we learnt about online community participation?’*; this section discusses how the use of ANT and PBA can deepen an understanding of online community participation by bringing to the fore some aspects obscured in previous studies, which have been influenced by a cognitive tradition (e.g., *homo economicus*). According to the two interpretations theoretically informed by ANT (Chapter six) and PBA (Chapter seven) provided in this study, it emerged that online community participation:

- 1) must not be understood as being solely shaped by individuals’ decisions, motivations, and interests but should be seen as having a relational and collective nature;
- 2) is neither a static nor a one-time event phenomenon but is dynamic and has a historically-shaped nature; and,
- 3) is not only shaped by the internal dynamics occurring within the boundaries of the online community but is highly shaped by the context in which it is immersed.

The above concerns are further explored below in order to highlight the value of the interpretations provided in the current study.

### ***8.2.1 Participation has a relational and collective nature***

Previous studies have tended to explain participation as being mainly driven by self-motivated interests (see Section 2.5.1) and by individuals’ motivations that are group-

referent (see Section 2.5.2). The former set of studies have explained people's participation in online communities as being strongly influenced by the existence of intrinsic rewards such as recognition, reputation and enjoyment, or by the possibility of gaining tangible returns such as access to privileged information and economic rewards (e.g., Wasko and Faraj, 2000; Lerner and Tirole, 2002; Ardichvili et al., 2003; Bock et al., 2005; Kankanhalli et al., 2005; Chiu et al., 2006; Jeppesen and Frederiksen, 2006; Shah, 2006; Wang and Lai, 2006). The latter have focused their efforts to explain participation based on community-related benefits such as trust, reciprocity, commitment and attachment, that influence peoples' willingness to contribute to their online communities (e.g., Constant et al., 1996; Kollock, 1999; Ridings et al., 2002; Lakhani and von Hippel, 2003; Wasko et al., 2004; Wasko and Faraj, 2005; Usoro et al., 2007; Porter and Donthu, 2008; Wu et al., 2010).

These studies have enhanced our understanding of participation. However, their underlying idea is that participation can be explained solely by reference to properties, motivations, or actions taken by '*individuals*'. Adopting such individualistic assumptions has led to these studies obscuring the enduring social and collective character of human action. Moreover, this tendency to explain participation as a product of the combination of single interests has led these studies to oversimplify the complex nature of participation by isolating variables (e.g., motivations), and treating them as independent so as to be correlated and predicted via statistical methods. In contrast to this view, the theoretical resources from ANT and PBA highlight the relational and collective nature of participation and move away from previous studies that have followed a cognitivist tradition which tends to solely explain action by looking at individual purposes, intentions, and interests.

The deployment of ANT to analyse participation has suggested that participation must be seen as a relational phenomenon. In contrast to the view that individuals' actions and motivations can explain participation (e.g., Ardichvili et al., 2003; Bock et al., 2005; Kankanhalli et al., 2005; Chiu et al., 2006), the theoretical resources from ANT help examine participation as an activity determined by '*relations*' between actors developed and maintained during the process of translation. This moves our understanding from one of an individualistic perspective to a relational view in which '*relations*' between actors are drawn to the fore. The focus on relations between actors, moreover, is not limited to human actors but also extends to non-human actors, as previous studies using ANT to

analyse the adoption of information technologies supporting online communities (e.g., Hall, 2004; Tabak, 2008) have shown.

The ANT interpretation provided in Chapter six has shown how *relations* influenced the shaping of participation in different ways. For instance, the findings show that the level of *participation* is influenced by the relations developed by the technology with other relevant actors of its network. As such, the findings show that the inability of the technology to strengthen its relations with human actors, with those forming its envelope, and with those who could have further developed its components undermine its use and therefore *participation*. Similar findings have been found by Hall (2004) whose findings pointed to how the lack of power of those sponsoring an online community affected participation. Thus, rather than solely understanding *participation* on the basis of motivations and actions of particular individuals, the primacy given to relations between actors have shown how technologies are used only when successful negotiations between actors occurred (Hall and Goody, 2007; Elbanna, 2010). Similarly only when the actors' interests were aligned to the same goal and when processes such as resistance, betrayal and competition were overcome can the use of technologies supporting online communities can be successful (Linde et al., 2003; Cho et al., 2008).

Similarly, the deployment of PBA has helped look at *participation* as a collectively-shaped phenomenon. This also suggests the limitations of viewing *participation* as an activity solely determined by the actions and motivations of individuals (e.g., Kankanhalli et al., 2005; Shah, 2006; Wang and Lai, 2006). This perspective taken by PBA is clearly reflected in its move to look at practices as the unit of analysis rather than individuals. This is also highlighted in its relational thinking that suggests that not only because actions (e.g., participation) are performed by individuals, they can be seen as individual phenomena (Vaast and Walsham, 2005). In so doing, the interpretation provided in Chapter seven moved its focus from looking at the interests and motivations of particular individuals to paying special attention to collective understandings, shared ways of doing things together, and shared concerns and priorities, as influencing *participation*. This move of the current study is consistent with other studies that have looked at the adoption of technologies (e.g., Schultze and Orlikowski, 2004; Vaast, 2007) through the lenses of practice theories.

The use of PBA serves thus to examine the collective character of *participation* in a number of ways. For example, *practitioners* collectively enacted a series of knowings which were not fully supported by *CODECO*. This ended up undermining *participation*. Similarly, *practitioners* shared a set of priorities, attitudes, and shared perception of ways of doing things together. As these shared ways of doing things together were not supported by *CODECO*, *practitioners* prevent themselves from participating in *the community*. These examples show that *practitioners'* media choices were shaped by mutual understandings, by what the collective of *practitioners* did, rather than being solely influenced by individuals' decisions. Consistent with this view, other PBA studies (e.g., Boudreau and Robey, 2005; Vaast and Walsham, 2005) have also found how the use of particular technologies is shaped by the preferences, priorities, rules of thumbs of the collective. The relational thinking of PBA helped make sense of this situation. For example, when individual *practitioners* decided to participate in *the community* but their actions remained isolated, i.e., not collectively enacted by others; *participation* did not become a collective performance.

### ***8.2.2 Participation is a continuously evolving and historically-shaped phenomenon***

The tendency to look at participation as if it were a static event is another limitation of previous participation studies. This is clearly reflected in the cross-sectional designs generally used in these studies that take 'snap-shots' of participation (e.g., Wasko and Faraj, 2000; Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007). Although the value of these studies cannot be denied, looking at snapshots of participation obscures its evolving nature and historically-shaped condition. As such, previous studies have failed to take into account: how what has been done in the past can potentially shape what is done in the present (Boudreau and Robey, 2005); how the degree of participation may increase or decrease over time (Feldman and Orlikowski, 2011); what and how previous events can shape participation; and how aspects such as routinisation and habituation of media use and patterns of interaction might prevent people from participating in online communities (Yates and Orlikowski, 2002)



A valuable contribution of using ANT and PBA as lenses of analysis is therefore to foreground the dynamic and historically-shaped nature of participation. This moves beyond the simplistic explanations that look at participation as if it were a one-time event phenomenon isolated from other (previous) enactments. Although the theoretical preoccupations of each approach highlighted different avenues to address these concerns, the two approaches helped look at participation as a process with its own dynamics and that was continuously evolving, shaped by a series of events that occurred over time, and influenced by the forces of inertia and routinisation that emerged as a consequence of past performances. In line with these concerns, previous PBA studies that have looked at the adoption of technologies (e.g., Yates and Orlikowski, 2002; Boudreau and Robey, 2005) have found how existing routines and habits play an important role in the adoption of technologies supporting online communities.

In this sense, the adoption of ANT encouraged regarding *participation* as entailing a process where relations between actors are developed, maintained and undermined during a translation process. These relations in turn can shape, to a large degree, the use of technologies supporting *participation*. As such, *participation* is not seen as an isolated action, but as being in continuous flux and shaped by the dynamics of the translation process that occurs within and beyond the boundaries of *the community*. From an ANT perspective, what shapes *participation* are continuous processes of negotiation, failures of enrolment, deployment of strategies, and processes of betrayal and competition that occur over time. These then, to different degrees, strengthen and threaten the emergence and maintenance of relations between actors that are required for *participation* to take place. Furthermore, the complexity of this dynamism is reflected in the findings that showed how some actors betrayed, resisted, supported, disrupted, or competed against the use of the technology supporting *participation*.

While ANT serves to highlight how the emergent nature of relations, and the evolving interests of particular actors shapes *participation*; adoption of theoretical resources from PBA challenges the view that *participation* can solely be understood as just a static and isolated event in time unaffected by the inertia of the past. Thus in the light of PBA, the historical context of *participation* is brought to the fore, and help understand how the past – acting as a force – can shape current performances of *practitioners* (e.g., participation). This is clearly reflected, for instance, in how *participation* was undermined because HR

practitioners develop habituated patterns of interaction, and routinised usage of media to communicate. This meant that when *practitioners* face the option of participating in *the community*, they rather may tend to reproduce their previous enactments; situation also found in other technology adoption studies (e.g., Yates and Orlikowski, 2002; Schultze and Orlikowski, 2004; Boudreau and Robey, 2005).

### ***8.2.3 Participation is shaped by the context surrounding the community***

Previous participation studies have also tended to assume - or imply - that online communities are located in a vacuum (e.g., Bock et al., 2005; Chiu et al., 2006; Hsu et al., 2007). This suggests that participation in these communities is mainly influenced by the internal features, structural characteristics and dynamics occurring within their local boundaries. The problem with these studies is that they tend to downplay the role of context in shaping participation because they assume context to be a static, container-like setting where communities reside. These studies, however, have been helpful in understanding how the roles and types of participation found in online communities, the size of these communities, the level of communication activity taking place, and the features of the technologies supporting online communities influence participation (e.g., Butler, 2001; Nonnecke and Preece, 2001; Blanchard and Markus, 2004; Nonnecke et al., 2004b; Dubé et al., 2005; Bateman, 2007; Butler et al., 2007; van den Hooff et al., 2010). However, despite the usefulness of these studies, looking at participation as taking place in an 'isolated' community, or within a context generally seen as a static backdrop obscures the highly contextualised nature of online communities and thus our ability to understand participation.

Contrasting the studies that have focused attention on the internal dynamics of communities, the studies reviewed in Section 2.5.5 (where the role of the external environment of online communities has been explored) suggest that the context surrounding online communities plays an influential role in the shaping of online community participation (e.g., Baym, 2000; Hall, 2004; Cox, 2007; Cox, 2008). Aspects such as the social context, the existence of alternative communities, the availability of different communication media, and the multi-memberships of potential participants of online communities have been found to influence participation (e.g., Baek and Schwen, 2006; Carr

and Chambers, 2006; Bogenrieder and Baalen, 2007; Cox, 2007; Gu et al., 2007; Jeppesen and Laursen, 2009; Dahlander and Frederiksen, 2011; Wang et al., 2011).

The adoption of ANT and PBA, in line with these studies, was valuable to further enhance an understanding of how the context surrounding *the community* influenced *participation*. ANT and PBA, in contrast to other approaches used in previous studies, look at context not only as a container in which online communities exist, but also sees it as dynamic and historically-shaped, and playing a role of mutual constitution with *participation*. Despite ANT and PBA holding contrasting (but complementary) views towards the notion of context itself (ANT highlights its emergent nature and PBA assumes its historically-given nature) the two approaches help look beyond the understanding that participation can be solely explained on the basis of what occurs within the boundaries of a particular community. As suggested in previous studies (e.g., Orlikowski, 2000; Schultze and Boland, 2000; Schultze and Orlikowski, 2004) looking beyond the boundaries of a community can provide new light to better understand the use and adoption of technologies.

In the light of ANT, the low level of *participation* was not fully explained by the inability of the technology to further develop its internal applications, or by the lack of activity taking place in the community. Instead, *participation* was also seen as being shaped by the relations developed between actors within and across networks, and also determined by events and situations that occurred in the context where *the community* resided. For example, the findings showed how the weak envelope surrounding *CODECO* - composed by the actors that the technology has a relationship with - undermined the ability of the technology to become indispensable to other actors. This envelope not only consisted of the applications of the technology itself, but also included actors located in the context where the technology was introduced. The findings also show how the existence of competing and disrupting actors (e.g., other technologies and forums for interaction) played an influential role in the shaping of *participation* by interfering in the development of strong relations between human actors and *CODECO*. Similarly, by looking at the context surrounding *the community*, the findings show how despite negotiations taking place, and strategies being developed to persuade *practitioners* to participate in *the community*, those promoting *participation* failed to interest others to do so. Moreover, since the technology supporting *the community* was seen as part of a larger actor-network - that of the HR

project – ANT helped look at how the lack of *participation* was also affected by the late enrolment of the technology in relation to the initiation of the HR project.

Equally, the theoretical resources from PBA help investigate how HR practices and their interconnections to other practices performed within the site shaped *participation*. This avoids the view of participation as taking place in an ‘isolated’ community. By looking at *participation* through the lens of PBA three main aspects of the context were foregrounded in the analysis. Firstly, a series of features characterising HR practices were identified namely 1) work overload, work variation, and time constraints; 2) HR area as being marginalised; and 3) HR practices as being sources of mixed emotions. These features in turn shaped, and were shaped by, the enactment of shared knowings that HR practitioners collectively and routinely enacted (see Section 7.3). It was argued that HR practitioners did not find *participation* as supporting the enactment of knowings and thus they tended to minimise their *participation*. Secondly, the findings also showed how the taste of HR practices was at odds with *participation* and therefore HR practitioners tended to minimise the use of the technology supporting *participation*. Thirdly, the relational thinking of PBA assisted in looking at *participation* as being influenced not only by the features and the particular taste of HR practices, but also by the interconnectedness among practices within the site. For example, the findings showed how the high interconnectedness of HR practices to other practices performed within the site influenced HR practitioners’ media choices. As many of their activities were initiated by, or linked to the performance of other practices, and as practitioners of these other practices used particular media to communicate, HR practitioners were left with no other choice but to use the media that everybody used within the site.

### **8.3 Dealing with critiques and limitations of ANT and PBA**

The previous section showed how this study provided two alternative interpretations that helped enhance our current understanding of participation. It was argued that ANT and PBA offered powerful theoretical devices to bring to the fore the collective, relational, dynamic, historically-shaped, and contextual nature of participation. This in turn helped overcome the limitations of previous online community studies, which have tended to be influenced by a cognitive tradition.

This section provides an answer to the second subsidiary question: *‘To what extent did the challenges and limitations of ANT and PBA shape the current study and the understanding of the researcher?’* Thus, whereas the previous section highlighted how ANT and PBA helped in foregrounding aspects obscured in previous studies, this section focuses attention on discussing how challenges and limitations (some inherent in the use of ANT and PBA and others resulting from the choices made during the study) shaped the current study. On the basis of what will be discussed in this section, and on what has been discussed in Section 8.2, the last section of the discussion introduces some aspects that might be of relevance to consider when conducting further research informed by praxeological approaches.

This section is organised in three main parts as follows. The first part discusses four critiques of ANT, namely: the principle of general symmetry, questioning the reflexive approach of ANT, the Machiavellian orientation of ANT, and the flat ontology of ANT (Section 8.3.1). The second part addresses three critiques and challenges of PBA, namely: difficulties in applying the philosophical elements of PBA, the multivocality of PBA, and methodological concerns (Section 8.3.2). Finally, the third part focuses attention on discussing power issues since they are a common concern among ANT and PBA (Section 8.3.3). Section 8.3.3 can be seen as an initial step to understanding how ANT and PBA dealt with power issues which needs further and deeper exploration.

### ***8.3.1 Responding to critiques of ANT***

This section revisits four of the critiques and challenges of ANT identified in Section 3.6, namely: the principle of general symmetry, questioning the reflexive approach of ANT, the Machiavellian orientation of ANT, and the flat ontology of ANT. It discusses how the study discussed in this thesis dealt with these concerns and how this ended up shaping the findings in Chapter six.

#### ***8.3.1.1 The principle of general symmetry***

The symmetrical principle of ANT in which agency is ascribed to human and non-human actors has been criticised by many (e.g., Collins and Yearley, 1992; Bansler and Havn, 2004; Munir and Jones, 2004; Whittle and Spicer, 2008). These critiques have suggested that the adoption of a symmetrical view “degrades our understanding of action” (Whittle and Spicer, 2008:620), and fails to acknowledge its meaningful nature (Munir and Jones,

2004). However, those in favour of the symmetrical principle have argued that humans and non-humans must be seen as active entities with the ability to exercise control on others.

In responding to this critique, the adoption of the symmetrical principle in the current study helped treat humans and non-human actors in an unbiased way. To accomplish this aim, a vocabulary in which no difference between humans and non-human actors was used. Thus an interesting account of the relations that emerged between human and non-human actors was provided showing for example, processes of betrayal, competition, and negotiation between human and non-human actors. In practice, this principle supported an investigation of people, technologies, policies, conceptual models, etc., as actors with the capacity to exercise control on others, while at the same time being subjected to the control of other actors. Adopting this principle was particularly relevant to looking at technologies (e.g., the technology supporting the online community and those competing against the interests of *CODECO*) as active actors capable of constraining, enabling, disrupting, or controlling others' ability to act; rather than looking at them as being passive or neutral entities. The stance of this study towards this principle resonates with Huizing and Cavanagh's view of objects having "indispensable agency-like effects in ordering, stabilising and changing human sociality" (2011:8).

This study also acknowledges, however, that fully accepting the extreme position of symmetry becomes problematic; i.e., how can we attribute certain meanings to technologies and non-human actors in general? How can we capture the interests of non-human actors? Why do human actors need to speak in the voice of non-human when eliciting the interests of the latter? This also points to the limitation of the current study of not having being able to get closer to the world of the actors involved as it has been suggested in previous ANT and PBA studies (Charreire Petit and Huault, 2008; Nicolini, 2009; Feldman and Orlikowski, 2011; Huizing and Cavanagh, 2011). This could have been an opportunity to conduct more careful empirical observations that led to better reveal the potential multiplicity of meanings and uses of non-human actors (Whittle and Spicer, 2008).

### 8.3.1.2 *Questioning the reflexive approach of ANT*

The reflexive approach of ANT has also been challenged. These critiques have taken two main directions (as discussed in Section 3.6). One of the avenues of these critiques suggests that ANT studies tend to adopt an objective stance and use a vocabulary that fails to match the world they are supposed to reflect (Murdoch, 2001). This implies that ANT can offer 'superior' views, and assumes others' explanations can be 'naïve' or 'wrong' (Whittle and Spicer, 2008:618).

It is acknowledged in the study discussed in this thesis acknowledges that the interpretation informed by the theoretical resources from ANT does not 'match' the world of research participants in the sense that the vocabulary used differed from the research participants' vocabulary. However, constant efforts were made to provide a thick description of the case with the aim of fairly reflecting the world of the research participants via a detailed account. Similarly, to ensure that different perspectives were considered and thus the phenomenon under investigation fairly represented, research participants who played different roles with the HR Direction were interviewed. Since the initial interviews were conducted before ANT was adopted as a theoretical lens, the risk of imposing the vocabulary of ANT on research participants was avoided. This was found particularly useful as a means to fairly represent the world of the actors involved, while not imposing the researcher's interests and views. Moreover, it was made clear that the interpretation provided in the study discussed here was not superior to other alternative interpretations. Rather, the claim made was that the findings informed by ANT provided a fruitful interpretation that enhanced an understanding of participation. However, the possibility of other interpretations existing and their potential to offer alternative fruitful perspectives was also acknowledged and welcomed (the practice-based interpretation provided in Chapter seven is a clear example of this). In summary, the interpretation informed by ANT was seen as the result of a constructive process shaped by the researcher's interests, the voices of actors and the particular preoccupations of ANT.

A second critique of ANT suggests that those using ANT face the danger of unreflectively applying the notions of the sociology of translation to prove its universality (Cordella and Shaikh, 2006; Whittle and Spicer, 2008). To avoid this problem, theoretical resources from ANT were adopted as sensitising devices without an attempt to force the data into particular categories. This view was informed by previous studies using ANT (e.g., Wilson

and Howcroft, 2002; Scott and Wagner, 2003; Cho et al., 2008) in which similar approaches have been followed and resulted in valuable insights to understand the adoption of technologies. For instance, the process of translation was seen as an ongoing, iterative and disorderly process, rather than as being ordered and following the four moments of translation in a linear one-way process.

### 8.3.1.3 *The Machiavellian orientation of ANT*

The Machiavellian orientation of ANT suggests that ANT tends to pay more attention to understanding how things become aligned, and to give privilege to strong actors and their relations in the analysis (e.g., Amsterdamska, 1990; Calas and Smircich, 1999; Gad and Bruun Jensen, 2010). Acknowledging that adopting this position could have potentially obscured the relevance of other actors, and their relations and networks, this study made continuous efforts to maintain “sensitivity to complexity” as suggested by Gad and Bruun Jensen (2010:59), and to follow the underlying principles of ANT during the analysis stage.

To maintain sensitivity to complexity during the analysis different strategies were followed. Firstly, for instance, the complex set of relationships that the technology supporting *participation* developed with other actors was examined. The value of this approach has been reflected in previous studies that have highlighted the relevance of non-human actors in shaping their own adoption (e.g., Hall, 2004). In this study thus rather giving priority to those relationships that the controlling actor sustained with other actors, technologies were equally analysed. Being aware of the existence of other actor-networks was also helpful in identifying and giving appropriate relevance to actors and events that played a role in influencing *participation*. For example, the findings showed how the lack of synchronisation between the emergence of the network supporting *the implementation* and the network supporting the use of *CODECO* had an impact on the level of *participation*.

Secondly, in order to be neutral when assessing the relevance of actors, the core principles of ANT were consistently followed (see Section 3.2). Following the principle of symmetry was helpful to neutrally assess and describe the relevance of both human and non-human actors without privileging any actor. Similarly, putting into practice the principle of free association prevented from defining relations between actors *a priori*. Instead, relations were seen as emergent in nature. In the cases where it was acknowledged that some actors



played more important roles than others did, or that some relations were more relevant than others, these understandings emerged directly from the ongoing analysis.

#### 8.3.1.4 *The flat ontology of ANT*

The main controversy about the flat ontology of ANT is that it pays little attention to how broader social structures influence local action (Reed, 1997; Walsham, 1997). The low levels of attention paid to broader structures are reflected in how ANT rejects the existence of a context, thus assuming that “networks are immersed in nothing” (Latour, 1999:128). This stance, as noted by Munir and Jones (2004), puts ANT in a position that radically suggest that there is no such thing as society, but only actors and their relations. The ‘emergent view of context’ adopted by ANT (Fox, 2000:858), which assumes that nothing is taken for granted, but everything is emergent reflects this stance of ANT.

The flat ontology of ANT obscured two aspects that emerged as relevant in understanding *participation*. Firstly, one of the most common criticisms against ANT stands that its flat ontology pays little attention to the existence of a context and how it acts as a background that shapes local phenomena (Reed, 1997; Walsham, 1997; Schatzki, 2002; Munir and Jones, 2004). In rejecting the existence of a context, or neglecting its relevance, aspects characterising the context surrounding HR practices were not appropriately explained through the lens of ANT. Although ANT was helpful in identifying relevant actors located within the context surrounding *the community* that played influential roles in the shaping of *participation*, it became apparent from the emerging findings that more than actors and their relations influenced *participation*. This weakness of the approach was corroborated by a number of examples from the data. For instance, aspects such as taste of HR practices, the particular ways of doing things within HR practices, and the conditions permeating HR practices, also influenced *participation*. However, these aspects, all with a collective character, were obscured when ANT was used as a lens for analysis. This resonates with the observation made by Munir and Jones (2004) who points to the problem of ANT when it radically assumes that there is no such thing as context, but only actors and their relations.

A second concern is that assuming that context, control, and relations are all emergent also becomes problematic. Adopting this stance implies that the processes of translation need be seen as solely shaped by the relations developed within the time-frame of these

particular translations. This view may lead to under-explore how what occurs in the past, i.e., events that occurred before the translation processes currently being observed, can influence *participation*. This problem is understandable because ANT does not presume the existence of a historical context, but rather seeks to explain its existence by reference to emerging relations (Fox, 2000). Despite this problem, not presuming the existence of an historical context was indeed helpful in highlighting how what occurred 'during' the translation process of the network supporting *CODECO* shaped *participation* (i.e., it gave meaning to emerging events, by looking at how relations developed and evolved over time, exploring the negotiations based on political processes between actors, looking at processes of betrayal taking place over time). Nevertheless, these events taking place and the relations being developed during this particular process of translation did not fully explain *participation*. For example, during the interviews many HR practitioners referred to how the habits they developed over time influenced their current ways of communicating, or how after repetitive enactments of their practices, they chose their media to communicate with without thinking consciously about their choices. These aspects (e.g., routinisation of patterns of interaction and habituation of media use) however remained under-explored when ANT was used as a lens for analysis, yet they appeared to be relevant in shaping *participation*. This in turn pointed to one of the drawbacks of assuming an emergent view of context as suggested by ANT, and one of the advantages that the adoption of PBA brought with it to this study: the relevance given to historical context in shaping phenomena.

In summary, the findings emerging from the data suggested that the theoretical resources from ANT were not fully equipped to 'make sense' of two relevant aspects influencing *participation* namely: 1) how the features of the surrounding context of *the community* influenced *participation*; and 2) how what occurred in the past - before the emergence of the network supporting the use of *CODECO* - influenced *participation*. To counterbalance these drawbacks- and in alignment with the suggestion by Walsham (1997) of combining ANT with other social theories to address the problems of ANT's flat ontology - PBA was adopted in the second stage of the research. In so doing, the aspects mentioned above, previously under-explored by ANT, were brought to the fore during the PBA analysis.

### **8.3.2 Responding to critiques of PBA**

Section 8.3.1 has discussed how four critiques and challenges of ANT shaped the findings provided in Chapter seven. Here three concerns that accompanied the use of PBA, and how they influenced the analysis of Chapter seven are discussed. These are: difficulties in applying the philosophical elements of PBA, the multivocality of PBA, and methodological concerns. Reference is also made to how previous PBA studies reviewed in Chapter four have dealt with these concerns. Previous critiques of PBA on power issues will be discussed in Section 8.3.3.

#### *8.3.2.1 Difficulties in applying the philosophical elements of the approach*

One of the challenges of using PBA previously identified in Section 4.11 concerns the difficulty of applying its philosophical elements to empirical data (Geiger, 2009; Feldman and Orlikowski, 2011). Two potential problems related to this concern were identified, namely: 1) the difficulty of finding the appropriate lexicon to express the dynamic, relational and enacted nature of practices (Nicolini et al., 2003; Gherardi, 2009a; Feldman and Orlikowski, 2011); and 2) the problems of defining the boundaries between practices and differentiating practices from their context (Nicolini, 2011; Cox, 2012).

Firstly, with regard to the use of an appropriate lexicon to express the complex nature of practices, the vocabulary provided by the practice-based approach, though initially difficult to digest, ended up offering a powerful set of tools for this study, and are capable of reflecting the complexity of practices. Moreover, the use of this vocabulary also helped sensitise the approach taken to explore aspects that otherwise by using an a-theoretical approach might not have been highlighted and thus remained potentially under-explored.

Secondly, to overcome the issue related to the difficulties of differentiating boundaries between practices and practices themselves from context, an explicit differentiation between the concepts of practices and site was made. Site, on the one hand, was seen as the context immersing practices, that is, as the multi-campus University system in which, among many others, HR practices were performed. Practices, on the other hand, were seen as an organised set of actions performed by HR practitioners within the site. Thus the activities, actions, and projects such as hiring, development and training, payroll, and implementation of HR-related projects, were seen as part of HR practices. Nicolini (2011)

and Schatzki (2005) have suggested or followed similar deployments of these two concepts. Moreover, looking at the notions of site and practices in this way helped examine how HR practices were interconnected to other practices within the site, and how this influenced *participation*. This interconnectedness between practices was reflected in different ways: a) practices sharing some of their elements (e.g., email was widely used within all practices performed at *INSTECH*); b) practices were connected to each other (e.g. teaching practices and HR practices were connected when teaching new courses demanded the hiring of new teaching staff); and c) practices enabled and constrained each other (e.g., budgeting practices constrained HR practices when external resources were not allocated to support *the implementation*).

#### 8.3.2.2 *Multivocality of practice-based approach*

The “ongoing multivocality” of PBA (Cox, 2012:182), is reflected in the fact that, between practice theorists, different emphasis is given to core aspects of the approach (Nicolini et al., 2003; Cox, 2012). This has resulted in its application in significantly different ways (Geiger, 2009). Rather than looking at these differences as a weakness, the differentiation in emphasis was seen as an opportunity to analyse empirical data in a flexible manner. For example, while some practices theorists have highlighted the reproductive aspects of practices in their accounts and others the productive emergent feature of practices, the study discussed in this thesis looked at *participation* from a neutral perspective. This helped provide different but complementary views. While routinisation and habituation were found as highly influential in the shaping of *participation*, the theoretical resources from PBA were also helpful in looking at how *participation* was, to some degree, emergent; based on shared understandings developed over time, and similarly being contested in every enactment of HR practices.

#### 8.3.2.3 *Methodological concerns*

One of the challenges that emerged from the adoption of PBA entailed methodological concerns. Of relevance to this study are those concerns that pointed out the lack of consistency between the use of PBA and the methodological choices made by researchers, resulting sometimes in the absence of real participation by researchers in organisational life. Although PBA studies have a preference for data collection methods such as

ethnography in which a strong involvement of the researcher in the field is preferred (Carlile, 2002; Nicolini et al., 2003; Charreire Petit and Huault, 2008; Nicolini, 2009; Feldman and Orlikowski, 2011; Huizing and Cavanagh, 2011) limitations of time and budget led to the adoption of interviews as the main method for data collection. This in turn undermined the opportunity to directly observe what HR practitioners did and said on a day-to-day basis. One of the main limitations of this approach was thus the possibility of ending up with the reflections and thoughts of respondents as opposed to looking at practices and events as they unfolded (this issue will be discussed further in Section 9.5). However, continuous efforts were made during the interviews to pay attention to the complexities of HR practices and to the way they were performed on a daily basis. This was reflected in the sort of questions asked at interviewees. For instance, when interviewees were asked to talk about a typical day at work a more conversational mode was used to let research participants talk freely, rather than following a structured close-ended format.

In summary, adopting interviews as the main method for data collection brought with it some advantages. This helped address specific research interests, offered unlimited access to research participants, and the opportunity to select participants representing examples of polar which represented the different voices of HR practitioners. Moreover, to complement the use of interviews, other sources of data were used such as HR documentation, attendance at online HR meetings, and browsing participation in the online community. For instance, the attendance at online HR meetings was particularly useful to get a feel for the flavour of HR practices. The way that interactions took place during these meetings, and the priorities and problems discussed, were reflected to some extent in these meetings.

### ***8.3.3 Responding to issues of power in ANT and PBA***

The reliance of the study discussed in this thesis on the use of two particular approaches considered to be part of the same family of theories (Reckwitz, 2002; Huizing and Cavanagh, 2011) is one of its limitations. The case here is that they might look at phenomena from similar perspectives, which in turn can potentially obscure other aspects of relevance to understanding the phenomenon under investigation.

The use of ANT and PBA have enhanced an understanding of participation, and overcome some of the limitations of participation studies informed by a cognitive tradition. However, previous literature has often pointed to the weakness of ANT and PBA to deal with power issues. As Marshall and Rollinson have observed: “it is necessary to move beyond the confines of practice-based approaches [such as ANT and PBA] to knowledge and interrogate a range of other accounts which are more explicit in their treatment of power and knowledge” (2004:74). To explore the validity of these concerns, this section discusses how power issues were addressed once ANT and PBA were adopted as the informing lenses for the study in question here.

These debates that relate to the critiques of ANT and PBA have pointed to the inability of the approaches to tackle power at different levels. This is because power manifests itself in different ways depending on the level of analysis from which it is observed. An adequate social theory needs to pay attention to three levels of analysis (i.e., individual, organisational, and institutional) (Friedland and Alford, 1991); only by looking at the dynamics among these three levels of analysis can organisational phenomena and change be understood (Battilina, 2006). Accordingly, it can be argued that ANT and PBA helped provide some light on how power played a role in the shaping of participation within these three levels of analysis: micro (individual-related), meso (organisational-related), and macro (societal-related) levels. In the light of this interest, and on the basis of the three suggested levels of analysis, the following concerns are explored:

- What did ANT and PBA reveal about how power relations at the individual level influence participation?
- What did ANT and PBA reveal about how existing organisational imperatives shape participation?, and
- What did ANT and PBA reveal about how societal forces influence participation?

The above questions are introduced separately; however, that should not be taken to imply that they are independent from each other. They are introduced in this way purely to simplify the discussion. For the purpose of this discussion power is defined as “the ability or capacity to achieve something, whether by influence, force, or control” (Roberts, 2006). Thus what ANT and PBA could say on how power - acting as a force manifesting itself via

individuals, organisational constraints or societal forces - played a role in the shaping of participation, is explored.

It is worth clarifying that this discussion is based on experience of using ANT and PBA with the primary aim of exploring participation in an online community within the context of HR in a Mexican University. This clarification becomes relevant on the basis of the belief that, if ANT and PBA had been used for different purposes (e.g., looking at the evolution of HR practices within the University or exploring HR practitioners' social networks across Mexican Universities), different conclusions might have been reached, particularly on the ability of the approaches to deal with power issues.

#### 8.3.3.1 *Power issues at the micro-level*

The sociology of translation as discussed in Chapter three was particularly helpful to look at how power manifested itself at the individual level. For example, the notions of translation and control helped explore how a focal actor developed different strategies and engaged in processes of negotiation in order to persuade others to use the technology supporting the online community. However, the findings showed that although different strategies were developed to achieve this aim, his ability to institutionalise the use of *CODECO* was questioned. This suggests the absence of a dominant source of power. This in turn is particularly relevant to exploring different means through which HR practices could have been changed via political negotiations between actors.

Moreover, by treating human and non-human actors symmetrically, ANT helped shed light on how non-human actors had the ability to exercise control on others, and at the same time be subjected to the control of other actors. In this regard, the findings showed, for example, how some technologies played a resistive role. For instance, *CODECO* acted against its own adoption. Equally the findings revealed how technologies acted as a reactive force when they competed against the adoption of *CODECO*. Either of these forces, reflecting the power of non-human actors, ended up undermining participation.

Regarding the use of PBA, its ability in the work discussed in this thesis to deal with power issues at the individual level echoes previous critiques to the approach. These critiques have pointed out that there is a risk of assuming that consensus and coherence permeate practices when PBA is used (Contu and Willmott 2003, Roberts 2006). Similarly, the study

discussed in this thesis shares the concern expressed by Fox that PBA does not say much about how practitioners of a community change or innovate their practices (2000:860). This is because it tends to obscure the power of individuals by favouring the collective character of practices, and thus misses the opportunity to supply accounts by which individuals contribute to change (Miettinen et al., 2012).

Thus it is suggested that, to a certain degree, these critiques can be understood since the interests of PBA move away from individuals to practices. Accordingly, PBA appears to be more useful to an exploration of how it is that practices are collectively sustained, how shared understandings are developed, how practitioners developed shared knowings that are collectively enacted, or how they shared their perceptions towards the features and taste of their practices. However, as experienced in this study, focusing more on practices than individuals brings with it the risk of undermining the ability to explore aspects (e.g., power) at the individual level.

Thus, the work discussed in this thesis shows that ANT can offer something to PBA to deal with power issues at the individual level. This has been previously observed by Fox (2000) and also calls attention to the suggestion by Nicolini (2009) to alternate the use of theoretical resources from PBA and ANT to look at different aspects of practices. Nicolini's methodology suggests using PBA to zoom in to practices, and later on using ANT to zoom out. The value of his methodology, without question, has much to offer. However this seems to neglect the use of theoretical resources from ANT when zooming in on practices. As this study has suggested, the use of ANT to explore power issues at the individual (micro) level of practices can be insightful when practices are zoomed in.

#### 8.3.3.2 *Power issues at the meso (organisational) level*

It is worth considering how organisational forces influenced participation in *the community*, and how ANT and PBA were helpful in exploring these concerns. With regard to ANT, for example, following the principle of agnosticism helped avoid defining the relations between actors *a priori*. Rather, relations were seen as emergent and entailed political processes of negotiations between actors. These actors were not necessarily located within the same level (e.g., individual, organisational). For example, ANT showed how, despite the powerful position the focal actors held in the corporate hierarchy, they failed to negotiate the allocation of resources to further develop the technology supporting



*the community*. A similar problem was reflected during the implementation of the HR project when those heading *the implementation* constantly faced lack of resources to support their initiative. These two situations, reflecting the difficulties of gaining sufficient allocation of resources, also shed light on the position and relevance of HR practices in relation to other practices performed at *INSTECH*, and how this had an influence on *participation*.

However, as it has been shown in Section 8.3.1.4, the flat ontology of ANT, which pays little attention to how broader structures influence local action, undermined the ability to explore how two forces within the organisational context influenced *participation*. Firstly, neglecting the existence of a context limited the opportunity to look at how the organisational context acted as a force that influenced *participation*. According to ANT, context is assumed to be emergent and thus actors and their relations is all that is needed to explore to understand phenomena. However, the findings revealed that there were more than actors and their relations shaping *participation*. Secondly, assuming context to be emergent also became problematic because forces such as inertia, routinisation and habituation, which played an influential role in shaping participation, were obscured. To deal with some of these limitations, PBA was adopted in the second stage of the research as a means to address the problems of ANT's flat ontology (Walsham, 1997).

The challenge that PBA faces in exploring the relations and mechanisms that exist between a community of practitioners and the context in which the community is embedded (Contu and Willmott, 2000; Handley et al., 2006) is a shared concern among practice theorists. At a meso (organisational) level, the organisational imperatives guiding practices is one of such mechanisms that needs attention when exploring how power plays a role in the shaping of organisational phenomena (Kuhn and Jackson, 2008).

Thus, on the basis of this concern, a potential problem of using PBA in this study was the possibility of under-exploring the role of such mechanisms and organisational forces in shaping participation in the online community. However, by adopting the notions of site, practices and knowings an understanding of how existing organisational imperatives had an influence on *participation* was developed. Similarly, these theoretical resources were helpful in looking at how HR practices were performed and interconnected to other practices within the site. As such, HR practices, and participation, were seen as not only shaped by the internal dynamics of HR practices but also determined 1) by the conditions

that permeated the site where these practices were performed, and 2) by the interconnectedness among practices within the site. The findings of Chapter seven identified three main features that characterised HR practices, namely: 1) work overload and time constraints; 2) working in a marginalised area; and 3) HR practices as a source of mixed feelings and emotions (see Section 7.2). These features of HR practices were collectively perceived by HR practitioners, and reflected the position of HR practices in relation to other practices performed at the site to a certain degree. These features in turn acted as an organisational force that shaped the way HR practices were performed. They also helped understand why *practitioners* collectively and routinely enacted a set of shared knowings (see Section 7.3). Moreover, the features characterising HR practices and the shared knowings collectively and routinely enacted by HR practitioners, together shaped the taste of HR practices.

It is thus that adopting the notions of site, practices and knowings helped explain how existing power structures within the site shaped HR practices and *participation*. The findings showed, for example, that in order for HR practitioners to deal with their condition of work overload and time constraints, they collectively enacted actions informed by the knowings 'how to communicate' and 'prioritising operational continuity'. It follows that when HR practitioners found they could not enact these shared knowings via *participation*, they tended to use other media – rather than *CODECO* – instead. Thus participation in *the community* was undermined.

#### 8.3.3.3 *Power issues at the macro (societal) level*

Previous critiques of ANT and PBA on their difficulties in dealing with issues of power at the institutional level also resonates with the study discussed in this thesis. The challenge of ANT and PBA to appropriately deal with power issues has not only been highlighted by those who have questioned the value of the approaches, but was also acknowledged by those who have developed and used the approaches. Within the former group, we can find those who have questioned the flat ontology of ANT that neglects the role of social structures in local action (Reed, 1997; Walsham, 1997; Schatzki, 2002; Munir and Jones, 2004) and those who have challenged the ability of PBA to deal with power issues (Contu and Willmott, 2000; Contu and Willmott, 2003; Marshall and Rollinson, 2004; Handley et al., 2006; Roberts, 2006). Within the latter group those such as Schatzki (2002), Lave and

Wenger (1991), and Corradi et al., (2008) have explicitly acknowledged the difficulties of PBA to deal with power issues.

On the one hand, ANT has been criticised for its flat ontology which tends to minimise the role of social structures in the shaping of local phenomena (Reed, 1997). This problem of ANT emerges because it tends to ignore the existence of a context or minimise its relevance, and assumes that there is no such thing as society, only actors and their relations (Munir and Jones, 2004). Adopting this position not only obscures how social structures influence local action (e.g., *participation*); but, as it has been shown in Section 8.3.1.4, it also undermined our ability to explore how the particularities of a specific context, and its historicity (e.g., previous enactments creating inertia, routinisation and habituation) shaped *participation*. Indeed, one of the strongest critiques by Schatzki (2002), who argues strongly to differentiate his account from ANT, points to the tendency of ANT to reject the existence of context by citing Latour when claiming that “networks are immersed in nothing” (1999:128), and thus its inability to look at how social structures shape local action.

On the other hand, PBA has received similar criticism over its inability to tackle power issues at the institutional level. The work of Contu and Willmott (2000, 2003) and Hardley et al. (2006) have strongly criticised the ability of PBA to explore how relations of power in which the community is embedded (such as capitalism or employment relations) influence the performance of local practices. The main concern of these authors is the inability of PBA to appropriately explore the role that the broader socio-cultural context can play in the shaping of practices. The previous section showed how the notion of site helped in looking at how some features characterising HR practices acted as an organisational force that influenced *participation*. However, the notion of site referred to the locality of phenomena, in the sense that it paid attention to how the immediate context (i.e., organisational) played a role in the shaping of *participation*.

It can be argued that when looking at power issues at the institutional level the interest must be shifted to exploring how-macro actors, macro-forces, or social structures might have influenced *participation*. However, one of the difficulties found here was how to explore these concerns in the light of the approaches used. It could have been expected, for instance, that the interpretations provided could have shed some light on how forces such as religion, capitalism, or gender influenced *participation*. It is argued that the inability to

make sense of these concerns reflected the difficulty to perceive (via PBA and ANT) how such forces coming from macro-actors and social structures were visibly manifested in the performance of practices.

This is in fact one of the main limitations of ANT and PBA: the problem of exploring how macro-phenomena retroact at the level of local practices. The under-exploration of these concerns in the study discussed in this thesis reflected this limitation. For example, this study paid little attention to Catholicism, which shapes many of the practices (i.e., educational, work-related, entertainment) within Mexican society (e.g., ‘How could Catholicism influence the way HR practices were performed?’; ‘Could Catholicism be seen as a force that had an influence on the shared knowings such as devotion to employees enacted by HR practitioners?’). Similarly, little attention was given to the issue of gender (e.g., ‘How does the fact that most HR practitioners were women (except for the top two highest positions who were men) affect *participation*?’; ‘Can gender explain why the HR area was perceived by HR practitioners as being a ‘marginalised area’?’). It is questionable to suggest that these macro-forces could have had a direct influence on the shaping of *participation*. However, it is less questionable to suggest that these aspects can potentially influence the way HR practices were performed. There is no room for discussion on how HR practices influenced *participation*. For example, within institutional theories, there is a general agreement that such forces such as the capitalist market, the bureaucratic state, and the nuclear family play a role in the actions of individuals (Lounsbury, 2008)

The little attention paid to these aspects thus resonates with previous critiques of ANT and PBA with regard to their ability to adequately tackle power issues at the macro level. The challenges faced by these approaches have motivated others to suggest, or imply, the complementarity of ANT and PBA in supporting each other to better tackle power issues (Walsham, 1997; Fox, 2000; Nicolini, 2009). For example Fox (2000) has observed that ANT has something to offer to PBA in the way power is addressed, whereas Nicolini (2009) has suggested a methodology for studying practices by switching theoretical lenses (e.g., using PBA to foreground the local accomplishment of practices, and ANT to articulate the connection between practices and their relations to the trans-local phenomena). While these suggestions are helpful, they still entail the use of approaches that are seen as part of the same family of theories (i.e., the praxeological family), which have been criticised for tending to downplay the relevance of the broader context (e.g., at the institutional level) in

which human action takes place. As Mutch et al. have observed, “firmer connections are needed between broad institutional patterns discernible at national or regional level and the actions that occur within and between organizations” (2006:609). This in turn opens up the opportunity to explore how praxeological studies can benefit from other approaches in which relevant attention to the role of macro-forces in shaping phenomena is given. The following section discusses further this consideration, among others that might be of relevance when conducting praxeological studies.

#### **8.4 Relevant considerations for further research informed by approaches within the praxeological family of theories**

This section provides an answer to the third subsidiary question stated in this introduction of this Chapter: *‘In the light of the findings and the use of ANT and PBA, what would be relevant considerations to take into account when conducting research informed by approaches within the praxeological family of theories?’*. This section is based on the discussion in the two previous sections where the usefulness of ANT and PBA to overcome some of the problems of previous literature was suggested (especially those following a *homo economicus* tradition) (Section 8.2), and the limitations and challenges of the two approaches were discussed (Section 8.3). A series of reflections about how ANT and PBA were used in the current study are presented. Here is also presented a self-critical reflection on the decisions made during the study, and the challenges faced during the research process.

These reflections can help point to aspects that might be of relevance to consider in further research when approaches which are members of the praxeological family of theories are used. In looking at ANT and PBA as members of this family, the spirit of this discussion is keen to suggest that they can be used in concert, complemented by insights from institutional theories. It is thus suggested that this can benefit our understanding of organisational phenomena, rather than arguing - as Schatzki (2002) has fiercely done - for the differentiation and incompatibility of ANT and PBA. In this spirit, the challenges of this endeavour are also acknowledged.

The following six considerations are discussed, namely:

- bringing issues of power to the fore of the analysis;

- use of alternative approaches to assist praxeological theories in dealing with power issues;
- choosing different angles for observation;
- acknowledging the emergent and historically-shaped nature of phenomena;
- highlighting the socio-material character of phenomena;
- prioritising the use of ethnographic methods.

In the light of these considerations, it is believed that a better understanding of organisational phenomena can be achieved, and the value of ANT and PBA can be enhanced to bring to the fore the relational, collective, historical, dynamic and contextually-shaped character of organisational phenomena.

First, Section 8.3.3 discussed how ANT and PBA were insightful in exploring how power issues played a role in the shaping of *participation*. However, it was acknowledged that this was an initial attempt to explore these concerns that requires further and deeper exploration. The issue of power was certainly not given primary attention during the analysis, arguably because power itself is a problematic theme within the two approaches used in this research, as previous critiques have shown (e.g., Fox, 2000; Contu and Willmott, 2003; Handley et al., 2006; Kuhn and Jackson, 2008) . However, the problems the two approaches have in dealing with these concerns do not deny, at any point, the relevance of power concerns to understanding organisational phenomena. On the contrary, “power, knowing, and organisation are not separate phenomena but different facets of the same social and material process” (Nicolini, 2011:618). Although, there are difficulties of providing a convincing account of how social structures and power are reflected in practice. This problem faced in this research resonates with Nicolini’s (2009) view, when he observed that PBA can only explain phenomena such as social structures, institutions and power, when they are manifested in the actual practices. As such, it is acknowledged that further studies can be of benefit when power issues are brought to the fore during the analysis of organisational phenomena.

Second and closely related to the above, another consideration would be to explore alternatives from which ANT and PBA can potentially benefit in the way power is addressed. In particular, Section 8.3.3.3 showed the difficulties faced in dealing with power issues at the institutional level. For this reason how power influenced *participation* was

obscured during the analyses. This was reflected, for example, in the low level of attention given to how aspects such as gender and religion were related to HR practices in general, and to participation in the online community in particular. This problem resonates with previous critiques of PBA and its ability to explore power issues at the societal level (Contu and Willmott, 2003; Handley et al., 2006), and those that criticise ANT for low attention it pays to the role of macro structures in influencing local phenomena (Reed, 1997; Walsham, 1997; Munir and Jones, 2004).

One possible way to overcome these problems could be informed by the suggestion by Fox (2000) that ANT and PBA can complement each other in the way power is addressed. However, using both approaches to help each other does not fully solve the challenge shared by praxeological theories of dealing with issues of power at the institutional level. Sections 8.3.3.1 and 8.3.3.2 have shown how ANT and PBA shed some light on how power within the micro (individual) and meso (organisational) levels influenced *participation*. However it still remains for this study – to some degree due to the inability of the approaches to tackle these concerns – to explore power issues at the institutional level (Section 8.3.3.3).

Another direction that might be of relevance to consider when engaging with the use of praxeological theories to conduct research is the use of alternative perspectives beyond those considered as members of the praxeological family of theories. As such, one possibility could be looking at the potential contribution that institutional theories (Lounsbury, 2007) can offer to praxeological approaches in the way power issues are addressed. According to institutional theorists, “practices are fundamentally embedded in cultural systems that are structured as an embodiment of the range of activities, social conflicts, and moral dilemmas that individuals are compelled to engage with as they go about negotiating the sorts of everyday events that confront them in their lives” (Lounsbury, 2008:356). Although these theories have been criticised for underestimating the relevance of individuals’ agency when looking at how organisations work (Reckwitz, 2002; Huizing and Cavanagh, 2011) – concerns to which ANT and PBA pay particular attention, exploring how these theories can help ANT and PBA in dealing with power issues seems a promising avenue to conduct further research (Lounsbury, 2007; Nicolini, 2009). Thus the relevance of these theories seems to offer insight to look at how the

broader social structures can play a role in the shaping of phenomena, and to bring these issues to the fore of the analysis.

Again, exploring the integration of theoretical resources from other theories to the palette of resources from praxeological theories becomes a critical challenge that requires further exploration. Acknowledging that institutional theories and praxeological theories can complement each other is an initial step in this endeavour. Fortunately, acknowledgement has been made from both sides on the potential contributions they can gain from each other. Praxeological theories have seen an opportunity in institutional theories to deal with power issues (Nicolini, 2009), whereas those engaged with institutional theories have suggested praxeological theories can help overcome some of the problems faced by institutional theories in dealing with issues at the micro level (Battilina, 2006; Lounsbury, 2007; Lounsbury, 2008).

This study also suggests that to better explore the complexity of practices when praxeological approaches are used, there is a need to adopt different angles for observation. This suggestion becomes even more relevant when the use of theoretical resources from institutional theories is considered beneficial in providing insights to tackle power issues. From this view, it thus becomes vital to adopt methodological approaches that allow moving upward and backward to look at practices and their connections; to address the connections between “the here-and-now of the situated practising and the elsewhere-and-then of other practices” (Nicolini, 2009:1392). Thus, by moving up the relevant macro-actors and social structures that shape phenomena can be included, whereas by moving down the implicated human and non-human agencies that play a role in the shaping of phenomena can be observed.

The need to adopt different angles for observation can be extended to the issue of time. This entails, among other things, that studies informed by the praxeological family of theories need to observe context from two complementary views. On the one hand, context needs to be acknowledged as having an emergent nature. On the other hand, there is also a need to look at context as pre-given and thus historically-shaped. While giving attention to the emergent nature of context can bring to the fore the productive character of practices, giving attention to the historically-shaped character of context might help in highlighting aspects such as habituation and routinisation, and how they play critical roles in shaping phenomena.



Among the dualisms that praxeological theories aim to overcome is the one related to the artificial divide between humans and non-humans that permeates studies influenced by a cognitive tradition (Marshall, 2008; Huizing and Cavanagh, 2011). Section 8.3.1.1 acknowledged that fully adopting the extreme position that treats humans and non-humans symmetrically became problematic in this study since it raised the risk of erroneously attributing certain meanings and interests to non-human actors. However, it was also observed that referring to human and non-human actors with a symmetrical vocabulary proved to be useful to treat actors in an unbiased way, particularly to look at technologies as active actors capable of constraining, enabling or disrupting others' ability to act. Accounts of practices that fail to thematise the active contribution of artefacts and tools and avoid asking how they enable the performances of practices will in turn provide impoverished and lacking accounts of practices (Nicolini, 2009:1402).

As such, this study highlights and supports the position that when looking at socio-material practices (Orlikowski, 2007), we need to move away from the idea of objects and subjects as separate entities, and that human over non-human must be given primary attention. As this study has shown, non-human actors –not just human actors- can have resistive and active agencies reflected in their capacity to act back, enable, constrain or refuse translation (Fox, 2000). Thus when conducting praxeological studies to inform organisational phenomena it is suggested that attention must be paid, of course, to the active role of people in performing their practices, but at the same time, this must not be done at the expense of under-exploring the active contribution of non-human to the performance of socio-material practices. Although there is no agreement about the relative agency that should be attached to non-human and human actors (Huizing and Cavanagh, 2011), the main concern must be on giving a more balanced status to both human and non-human actors.

One of the main limitations of this study entails methodological concerns. As has been noted in Chapter five (the methodology chapter) and will be discussed further in Section 9.5, the lack of resources and time led to adopt interviews as the main method for data collection. Thus, there was a risk of ending up with only the thoughts of practitioners as opposed to observing practices as they unfolded. This also undermined the ability to better reveal the multiplicity of meanings, interests and uses of non-human actors (Whittle and Spicer, 2008).

Methods such as ethnography, in which one has the opportunity to observe how practices are performed, are preferable in praxeological approaches (Carlile, 2002; Nicolini et al., 2003; Charreire Petit and Huault, 2008; Nicolini, 2009; Feldman and Orlikowski, 2011; Huizing and Cavanagh, 2011). This study suggests that further research can benefit from the use of ethnographic methods which can potentially offer a rich toolkit of methods for investigating practice 'as it happens', thus allowing to observe the conditions of the local performances of practices. Moreover, given the need for bringing the material agencies to the fore, ethnographic methods have proved to be capable to facilitate looking at how non-humans are always interconnected to – enabling and constraining - the performance of practices.

However, it is also important to note that in adopting ethnography, there is a risk of over-emphasising the attention given to micro-interaction, which in turn can undermine the ability to look at how what happens here and now is shaped by, and shapes, what happens within the wider context. Just using ethnographic methods alone might obscure how such issues as power and social structures have the capacity to retroact at the local level. To avoid this risk, strategies and methods to articulate the connections and associations between practices, observing the effects produced by local practices, extending the observation to the different places where the practice shows up, following its intermediaries wherever they might go (Nicolini, 2009), and moving up and out across sites (Lounsbury, 2008) may be of relevance to consider as aspects to inform the use of other methods that can potentially provide further light on the interconnection of practices to their wider contexts.

## **8.5 Conclusion**

This chapter has answered the last research question of the study (4) '*What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?*'. The data collected analysed in Chapters 6 and 7 have enhanced our understanding of participation in online communities. These findings suggest that participation is a complex phenomenon, and that the views of participation as having an individualistic, static and isolated nature, undermine the ability to explore its collective, dynamic and highly contextualised character. The theoretical resources from ANT and PBA

have helped in bringing these concerns to the fore, and in overcoming previous limitations found in studies influenced by a cognitive tradition.

It was shown that participation has a relational and collective character. Participation was shaped by the relations that the collaborative technology developed with HR professionals and other technologies. It has a collective nature because mutual understandings, shared ways of doing things, and shared concerns and priorities shaped the willingness of HR practitioners to participate. ANT and PBA also showed that explanations that see participation as being static as if it were a one-time event do not fairly represent its dynamic nature. This character was reflected in the findings that show that participation was continuously evolving and historically-shaped. The past, reflected in aspects such as routinisation, reproduction of actions, and inertia also pointed to look at the relevance that the historical character of participation played on its shaping. Using theoretical resources from ANT and PBA also helped highlight the critical role that the context in which CODECO was introduced played in the shaping of participation.

Despite the valuable contribution of ANT and PBA to this study, there still remained some limitations of the two approaches. A limitation that emerged from the use of ANT relates to the flat ontology of the approach in which little attention is paid to how the context acts as a background that shapes local phenomena. This undermined the first interpretation informed by ANT to fully explore how HR practices influenced online community participation. However, the use of the PBA in the second stage of the study helped in bringing this concern to the fore through the notions of site, practice and knowing. A second limitation of the ANT interpretation provided in Chapter 6, was reflected in the under exploration of how what occurred in the past (before the launch of CODECO) influenced *participation*. This problem resulted because the way ANT was used did not allow presuming the existence of a historical context, but rather participation was explained by reference to emerging relations developed within the time-frame of a particular translation process (that of *the implementation*). The PBA also helped in dealing with the problem of under-exploring the relevance of the historical context in shaping participation. It did so by looking at both, the productive and the reproductive aspects of practices and how these shaped participation.

The use of the PBA also brought with it some limitations. When the PBA was used as theoretical lenses to analyse participation in the second stage of the study, it was difficult

to analyse the contribution of individuals to processes of change. This occurred because when the PBA was used, privilege was given to the collective dynamics of practices and how this shaped participation. However, to help the PBA in dealing with this concern, the study gained benefit from the use of the sociology of translation in the initial stage of the study. As such, ANT provided a set of concepts capable of exploring how individual actors contributed to the enrolment and mobilisation of other actors to participate in the community.

A final limitation that emerged from the use of ANT and PBA relates to the ability of these approaches to analyse how macro-forces and social structures influenced participation. This problem resonates with previous criticism of ANT and PBA that have pointed to ANT's flat ontology and the inability of PBA to analyse the role of the broader socio-cultural context in the shaping of local practices. This limitation of the approaches was reflected in the interpretations provided in Chapters 6 and 7, in which how macro-forces and social structures such as Catholicism and gender affected participation was under-explored.

Acknowledging that a single approach cannot fully address the complexities of organisational phenomena, and in the light of the limitations of the study discussed in this thesis, a set of considerations were highlighted so that the ability of praxeological approaches to analyse the collective, relational, historical dynamic and contextually-shaped nature of phenomena can be enhanced. Six main considerations were highlighted:

- Issues of power need to be foregrounded in the analysis;
- the use of alternative approaches is suggested to assist praxeological approaches in dealing with power issues;
- the use of different angles for observation can enhance an understanding of organisational phenomena;
- the emergent character, and the historically-shaped nature of organisational phenomena requires equivalent consideration;
- the socio-material character of phenomena needs to be analysed; and
- the use of ethnographic methods is prioritised and can be combined with complementary methods

On the basis of the critics and limitations of ANT and PBA and the considerations suggested, the following Chapter discusses the contributions, practical implications and limitations of the study discussed in this thesis. Directions for further research are also suggested.

## **9. CONCLUSIONS**

### **9.1 Introduction**

This chapter shows how all the work described in this thesis fits together, demonstrating how the aims of the study were met, that the research questions were answered, and that a valuable contribution was made. It starts by presenting a summary of the preceding chapters. It then discusses how the study contributes to existing knowledge in the field of online communities and praxeological studies. It continues by discussing the practical implications of the research and finishes by considering the limitations of the study and by suggesting directions for further research.

### **9.2 Summary of research**

The overall purpose of this research was to explore what shapes participation in an online community within the context of a multi-campus University system in Mexico through the use of theoretical resources from Actor-Network Theory (ANT) and a practice-based approach (PBA)

Chapter one discussed the background of the study and stated four overlapping and complementary research questions to address the research aim of the study: to enhance our current understanding of the factors shaping online community participation in the light of ANT and PBA. The chapter discussed how an increased interest in online communities - initially observed on the Internet and extended further to the corporate context - has resulted in a considerable body of literature motivated, to a large degree, by the perception of the benefits organisations can gain from their use. As participation has been acknowledged to be the most critical aspect of online communities to succeed (Butler, 2001; Ardichvili et al., 2003; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007; Ardichvili, 2008), a considerable number of studies have aimed at enhancing our understanding of the factors shaping online community participation.

It was argued that although, a diversity of perspectives and theories characterised this body of literature, these studies have tended to be influenced by a cognitive/*homo economicus* tradition. While these studies have been useful to look at participation from a particular perspective, it was observed that cognitive approaches tend to offer individualistic, static and reductionist views of organisational phenomena (Reckwitz,

2002; Marshall, 2008). In order to offer alternative perspectives to those offered in previous studies, the chapter further suggested that two praxeological approaches– ANT and PBA – can be potential lenses to offer new insights on participation in online communities. The value of these approaches was argued on the basis of their application in previous technology adoption studies, and on their ability to foreground the collective, dynamic and historically-shaped character of phenomena.

Having stated the significance of the study, the chapter further introduced the research site and briefly described the organisational setting of which the online community, the focus of this study, is part. In order to achieve the main aim of the study four research questions were established and served as the basis from which to guide the research process. Question (1) addressed the contributions and potential limitations of the previous online community literature; questions (2) and (3) addressed respectively what ANT and PBA can reveal about participation in the online community, the focus of this study; and question (4) aimed at reflecting on what was learnt from the case study about participation, and the strengths and weaknesses of ANT and PBA as a perspective of online community participation. The remaining chapters provided answer to these questions, as note below.

Chapter two reviewed previous online community studies, acknowledged the value of this body of research, and identified some limitations. These studies were categorised into five main groups according to the primary focus of their enquiries namely: 1) studies looking at the self-related motivations and interests of particular individuals; 2) studies looking at community-related factors such as trust, attachment, and reciprocity; 3) studies prioritising the structural characteristics of communities (e.g., size, activity, composition) in shaping participation; 4) studies looking at technology-related issues such as sociability, usability and features of technologies; and 5) studies whose explanations have explored how the context surrounding communities can be critical in shaping participation.

Although the relevance of these studies was acknowledged, this chapter also pointed to the need to conduct more studies to further explore the context surrounding online communities. It was observed that studies within this literature have tended to be influenced by a cognitive tradition. As such, although not all studies reviewed adhere to the same narrow perspective found in the orthodox cognitive tradition, some drawbacks have been identified, namely: 1) a tendency to understand participation as being solely

determined by individuals' motivations, actions and interests (individualistic bias); 2) a tendency to provide explanations of participation on the basis of statistical relationships with the aim of predicting future behaviours (limiting their ability to represent the messy complexity of participation); 3) a tendency to use cross-sectional methodologies and treat events as isolated and discrete (e.g., snapshots of participation that obscure the evolving nature of participation); and 4) a tendency to treat context as a static container-like backdrop. By acknowledging the contributions of previous online community studies, and identifying the pitfalls of this body of literature, research question (1): *'What are the contributions of previous online community literature to understanding online community participation?'* was addressed in this chapter.

On the basis of the concerns that emerged from the literature review and moving away from the cognitive tradition, Chapter two suggested the use of two approaches – ANT and PBA – both these are members of the praxeological family of theories as informing lenses for the enquiry. These approaches were suggested as being capable of offering alternative perspectives that could enhance our current understanding of participation by avoiding some of the pitfalls found in previous studies (Gherardi, 2000; Reckwitz, 2002; Marshall, 2008; Geiger, 2009), many of which were informed by traditional cognitive approaches.

Chapter three introduced two notions from Actor-Network Theory, namely control (Section 3.3), and the sociology of translation (Section 3.4), to be used as theoretical devices to guide the process of data analysis during the first stage of the research. From this discussion, a set of statements was proposed to be used as initial guidelines (Section 3.5) to inform the analysis of Chapter six, in which participation in the online community was explored in the light of ANT. The chapter concluded by discussing previous controversies and potential limitations of ANT, namely: 1) the principle of generalised symmetry, questioning the reflexive approach of ANT, its Machiavellian orientation and its flat ontology. The stance of this study towards these concerns was made explicit (Section 3.6).

In summary, the content of Chapter three set out the theoretical basis for answering research question (2) by introducing the notions of control and translation, and the principles of generalised symmetry, agnosticism, and free association through which participation entailing the use of a collaborative technology was explored. From the perspective of these theoretical resources, the collaborative technology supporting the



online community entailed the emergence of an actor-network, in which the relations it developed with other relevant actors and networks shaped participation in the online community.

Chapter four provided the theoretical basis for answering research question (3). It introduced theoretical resources from PBA mainly informed by the work of Theodore Schatzki (Schatzki, 2001; Schatzki, 2002); Silvia Gherardi and her colleagues (Gherardi, 2001; Nicolini et al., 2003; Gherardi et al., 2007; Gherardi, 2009b; Gherardi, 2009a); Wanda Orlikowski and co-authors (Orlikowski, 2000; Orlikowski, 2002; Feldman and Orlikowski, 2011); and influenced to a lesser degree by Reckwitz (2002), Warde (2005), Nicolini (2011) and Cox (2012). It was argued that the approach would enhance an understanding of participation. A series of statements making reference to aspects such as interconnectedness between practices and their elements, emergence and routinisation, recurrence and collectiveness, and differentiation between practices and knowings-in-practice were suggested as potential areas to be examined during the processes of collection and analysis during the second stage of the research (Section 4.10). Critiques related to the multivocality of PBA, issues of power, difficulties to make sense of change in practices, methodological concerns and the challenge of transporting the philosophical elements of PBA into empirical analysis were acknowledged. Equally the stance of this study accompanying these concerns was discussed (Section 4.11).

Chapter five introduced the design of the research, the methods adopted for data collection and analysis, ethical considerations, and the criteria used to evaluate the quality of the research. This research was defined as a two-stage interpretive theoretically-informed research, standing in opposition to positivist studies. Five key characteristics of the study were identified, namely: 1) an emergent design; 2) use of qualitative methods; mainly interviews; 3) the non-random strategy for selection of research participants; 4) use of inductive logic during data collection and analysis theoretically informed by ANT and PBA; and 5) a view of reality as socially-created. The design of the research consisted of two main stages. In the first stage different methods were used for data collection, namely interviews, project-related documents, online seminars, and browsing of the online community. The aim of the process of data collection at this stage was to explore the factors shaping online community participation; special attention was also given to the project implementation since the online community aimed to support knowledge sharing

and collaboration during the implementation of the HR project. At the time data were collected, ANT had not been adopted; though theoretical resources from the approach, as discussed in Chapter three, were used to inform the analysis at this stage. At the beginning of the second stage of the research the low degree of participation was evident; however, some aspects influencing participation in the online community were under-explored through using just the lens of ANT. Thus, PBA was adopted to inform the processes of data collection and analysis during the second stage of the study. During this stage, data were mainly collected via semi-structured interviews, and the analysis followed an inductive rationale theoretically informed by PBA as discussed in Chapter four. Sections 5.3 and 5.4 described in detail how the research process took place. Section 5.3 justified the use of methods for data collection and analysis; how access was gained to the research site; described the use of interview protocols and how the piloting and main interviews were conducted; and described how ethical considerations were addressed. Section 5.4 outlined the analytical procedure followed during the analysis of empirical data. This description was used as an audit trail to ensure the transparency of the research process. The chapter ended by describing the strategies used to meet the criteria for quality evaluation such as credibility, authenticity, significance, criticality, sensitivity and triangulation.

Chapter six introduced the findings theoretically informed by ANT, thus providing an answer for research question (2): *'What do the theoretical resources from Actor-Network Theory reveal about participation in the online community that is the focus of this study?'*. For ANT participation in the online community was equated to the use of the technology supporting the online community. In other words, this chapter examined participation by looking at how the collaborative technology supporting the online community developed and maintained the necessary relations with other relevant actors so as to become indispensable to them. That is to say that, by developing and maintaining its relations with relevant actors, the technology could potentially have been used and therefore participation observed. However, the findings showed, on the contrary, that the technology failed to establish strong enough relations with relevant actors and remained unused, and therefore participation was undermined.

Chapter six was presented in two complementary sections. The first section offered a chronological narrative of the HR project whose implementation was accompanied by the (late) introduction of the collaborative technology supporting participation in the online

community. The second section examined how the emerging network attempted, but failed, to enrol the technology supporting the online community. The findings showed that the use of the technology supporting the online community never took place as expected by those sponsoring its use. In the light of the theoretical resources from ANT, the collaborative technology supporting participation in the online community: 1) developed irreversibility properties unaligned to the interests of relevant actors; 2) found itself in an incomplete process of translation; 3) had a late enrolment that made its adoption difficult; 4) competed with other powerful actors that undermined its use; 5) was surrounded by a weak envelope that made relations between the technology and other relevant actors difficult to develop and maintain; and 6) those supporting its use lacked political power to gain resources for its further development. Together, these findings showed how the collaborative technology supporting participation failed to develop and maintain strong relations with other relevant actors, and how this undermined its use and therefore participation.

In the light of this analysis it was highlighted how the theoretical resources from ANT helped in looking at participation as a relational, emergent, and context-dependent phenomenon. As such, ANT was insightful to look at participation and its complexity as entailing: 1) political processes based on negotiations; 2) an evolving process characterised by tensions between the actors involved; 3) a process having a relational and emergent nature; 4) a process where actors with diversity of interests were identified; and 5) a process where technologies were seen as active actors with the ability to enable, constrain, and resist others' actions.

Chapter seven introduced the second set of findings of the research. The findings were informed by PBA as described in Chapter four and offered an answer to research question (3): *'What can a practice-based approach say about what shapes the degree of participation in the online community that is the focus of this study?'*. In the light of the theoretical resources from PBA, participation in the online community was understood as taking place within a site in which, among many others, HR practices were routinely and collectively performed. The analysis showed how participation was shaped by: 1) the availability of existing communication media; 2) the interconnection of HR practices to other practices within the site; 3) the routinisation of media use and the reproduction of patterns of

interaction; 4) participation not fitting the taste of HR practices; and 5) participation not supporting the enactment of shared knowings.

The theoretical resources from PBA helped understand how, when *CODECO* was introduced, the availability of existing media and its embedded use within HR practices prevented HR practitioners from participating in the community. Similarly, it was found that existing media was extensively used by HR practitioners and people working in other practices of the University; as HR practices were highly interconnected to other practices within the site HR practitioners were constrained in their choices of the media they could use. Moreover, HR practitioners developed a sense of habituation and routinisation of media use, also reflected in their patterns of interaction. As HR practices were repeatedly practised, media usage was perpetuated so that, when the collaborative technology was introduced, HR practitioners found it difficult to break their old routines. The findings also showed how a set of knowings were collectively and routinely practised and permeated the performance of HR practices. The enactment of these knowings reflected the 'right way of doing Human Resources' within the University, thus reflecting HR practitioners' competence. When *CODECO* was introduced there was a general perception by HR practitioners that their participation in the online community was at odds with these set of knowings, thus preventing them from actively participating in the online community. For example, HR practitioners found it difficult to develop and maintain their relationships with others via participation in the online community. Finally, it was found that participation in the online community did not fit the taste of HR practices and, in turn, HR practitioners neglected the use of the collaborative technology. This was reflected for instance, in how HR practitioners, due to the time constraints they faced in a day-to-day basis, preferred the use of alternative media; or how the online community was not perceived as the appropriate forum to develop a sense of community, or to support the emotional dimension of HR practices.

On the basis of this interpretation, it was highlighted how theoretical resources from PBA helped in looking at participation as: 1) shaped by the context surrounding the online community; 2) a historically-shaped phenomenon; 3) a social (i.e., collective) engagement; and 4) a dynamic process. This in turn, helped provide a fruitful interpretation in which the complex nature of participation was observed.

Chapter eight encapsulated the key content of previous chapters and offered an answer to the last research question of the study (Q4): *'What are the strengths and weaknesses of ANT and PBA separately and together as a perspective on online community participation?'*. Three subsidiary questions were put forward and answered in the chapter.

The first subsidiary question discussed what was learnt about participation in the light of the theoretically-informed interpretations provided in Chapters six and seven. By providing an answer to this question it was shown how ANT and PBA – seen as praxeological approaches – converged in looking at participation as a complex phenomenon characterised by its collective and relational, dynamic and historically-shaped, and highly contextualised character. It was suggested that the two perspectives taken in this study help enhance our current understanding of participation by paying attention to what previous studies – mainly informed by a cognitive tradition – have obscured. In this light, it was thus suggested that participation in online communities 1) must not be understood as being solely shaped by individuals' decisions, motivations, and interests but should be seen as having a relational and collective nature; 2) is not only shaped by the internal dynamics occurring within the boundaries of the online community, but is also highly shaped by the context in which it is immersed; and 3) is neither a static nor a one-time phenomenon, but is dynamic and has a historically-shaped character.

The second subsidiary question discussed previous limitations, challenges and critiques of ANT and PBA, how they were tackled in the study, and how they shaped the interpretations and the understanding of the researcher. Special attention was given to discussing power issues and how the use of ANT and PBA helped in dealing with these concerns. It was acknowledged that, although the approaches provided some light on issues of power at the individual and organisational level, ANT and PBA lacked the ability to appropriately make sense of how macro-structures and forces within the wider context of the community influenced participation. This was acknowledged to be a limitation of the current study, resonating with previous research (e.g., Nicolini, 2009) in which the use of alternative approaches (e.g., institutional theories) has been suggested to help praxeological approaches in dealing with power issues at the institutional level.

The flat ontology of ANT prevented an adequate exploration of: 1) organisational aspects of the context surrounding the community; and 2) aspects such as routinisation and habituation influenced participation in the community. However, the use of PBA through

the notions of site, practice, and taste, helped in bringing these concerns to the fore. Another limitation of the study was acknowledged, related to the use of interviews as the main method for data collection, given the limitations of time and budget that prevented the adoption of spending long periods of observation within the site. Other limitations and challenges of the approaches were also discussed. However, it was felt that they did not represent a threat for the outcome of this study.

To answer to the third subsidiary question of the discussion, Chapter eight provided a series of considerations that might be of relevance for those conducting research informed by praxeological studies. The following considerations were suggested to be taken into account when exploring organisational phenomena: 1) bringing issues of power to the fore of the analysis; 2) using alternative approaches to help praxeological theories in dealing with power issues; 3) choosing different angles for observation; 4) acknowledging the emergent and historically-shaped nature of phenomena; 5) highlighting the socio-material character of phenomena; and 6) prioritising the use of ethnographic methods. These considerations were suggested in the spirit of exploring how praxeological studies such as ANT and PBA can benefit from each other and from other (institutional) theories when they are used in concert to explore organisational phenomena; however the challenges of this endeavour were also acknowledged.

### **9.3 Contributions to current knowledge**

The achievement of the main purpose of this research, exploring online community participation through the lenses of ANT and PBA, allows providing a series of contributions relevant to those interested in studying online communities, and those using praxeological studies to guide their enquires. These contributions highlight the value of the research by pointing to some practical implications and suggesting the need for further work.

#### ***9.3.1 Contributions to online community literature***

One of the contributions of this study to online community literature is that by adopting ANT and PBA, aspects obscured in previous participation studies have been foregrounded. Previous research looking at online communities has enhanced our understanding of the factors affecting participation. These studies have been particularly relevant to

understanding how individual and community-related motivations, structural characteristics of online communities such as membership size, communication activity and composition and roles of participants, and technology-related aspects, play a role in the shaping of participation. More recently, other studies have also pointed to the relevance of the context where communities reside as an important factor shaping participation.

Although the relevance of these studies has enhanced our understanding of participation, many of these studies have been informed by a cognitive tradition, also labelled by Reckwitz (2002) as the *homo economicus* tradition. Studies influenced by this tradition have been accused of providing individualistic, static, and reductionist understanding of phenomena. Though not all studies reviewed in Chapter two have followed a cognitive tradition, some tendencies within these studies were identified that have obscured aspects that are relevant to deepening our understanding of participation. The following issues identified in previous studies thus suggested the need to conduct further research on participation:

- A tendency to assume that participation can be solely explained on the basis of individual motivations, interests and actions thus obscuring the collective and relational character of participation.
- A tendency to adopt cross-sectional designs (taking snap-shots of participation) thus potentially obscuring the dynamic and evolving character of participation (e.g., Wasko and Faraj, 2000; Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007).
- A tendency towards reductionism in which levels of participation are explained in terms of statistical relationships thus missing the opportunity to fairly represent the messy complexity of participation (e.g., Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007; Wang, 2007).
- A tendency to predominantly focus on what occurs within the boundaries of the community thus under-exploring the critical role of context in shaping participation.

In the light of these concerns, this study has contributed to online community literature by foregrounding aspects obscured in previous studies; it has done so by moving away from those approaches influenced by a cognitive tradition, and instead exporting the use of praxeological approaches to explore participation in online communities from two alternative perspectives. Despite the different theoretical preoccupations of the two approaches, it was shown in Section 8.2 that the two interpretations theoretically informed by ANT and PBA converged on the idea that participation: 1) must be seen as having a relational and collective nature, rather than being solely shaped by individuals' decisions, motivations, and interests; 2) is dynamic and has a historically-shaped nature, and thus cannot be seen as a static or one-time event phenomenon; and 3) is strongly shaped by the context in which communities are immersed, not just shaped by the internal dynamics occurring within the boundaries of the community. Thus, on the basis of the findings of this study, it is suggested that the use of praxeological approaches has the potential to deepen our current understanding of participation, by foregrounding the collective, relational, dynamic, historical and contextualised nature of participation.

This study has also contributed to previous online community literature not only by shifting to the use of praxeological approaches to inform the study but also by using two theoretical approaches in one single study. This was found to be beneficial in that the particular preoccupations of each approach provided complementary insights to look at the factors shaping participation that otherwise - using one single approach - would have been difficult to observe.

On the one hand, ANT was particularly useful to look at participation as entailing processes of negotiation between actors in which a focal actor aimed at persuading others to participate in the online community. Looking at these processes was found to be useful in understanding participation as a political process in which strategies were developed, actors persuaded, and organisational resources negotiated, in order to sponsor and promote participation. Theoretical resources from ANT also helped highlight how these processes of negotiation were characterised by tensions between the actors involved, and how these played a fundamental role in the shaping of participation. This in turn has contributed to our current understanding of participation by showing how processes such as competition, betrayal and resistance might play critical roles in the shaping of participation. Competition was created by existing technologies that 'compete' against the



interests of those promoting participation; betrayal was observed when even those sponsoring the use of the collaborative technology ended up using competing technology; and resistance was observed when, after the deployment of different strategies to promote participation, actors were persistently reluctant to use the collaborative technology. Moreover, these processes of competition, betrayal, and resistance were emergent and relational, and showed the diversity of actors' interests.

Adopting theoretical resources from ANT has also suggested that in order to deepen our understanding of participation we need to move away from those explanations that solely explore what occurs within the boundaries of online communities. Instead we need to explore the context that surrounds these communities in more depth. These findings have also shown for example how participation was influenced by events that occurred within the larger context, by the negotiations taking place between actors, by the lack of allocation of resources, and by the deployment of different strategies to persuade others to participate in the community. The use of ANT also helped in looking at non-human actors (technologies, events, etc.) as critical in the shaping of participation. Indeed, the findings showed how technologies (and other non-human actors) influenced participation in different ways enabling, constraining or resisting translation.

On the other hand, theoretical resources from PBA were helpful in looking at participation as taking place within a site in which, apart from HR practices, many other practices were performed; these practices were interconnected and shaped each other. Accordingly, in looking at participation as taking place within a site was insightful to explore how the features of the site and the interconnection of HR practices to other practices shaped participation.

Adopting PBA was also helpful in looking at participation as a collective engagement. It was the collective enactment of knowings, the shared concerns towards priorities and issues constraining and enabling HR practices, the shared views on what the right way of doing HR is within the site that prevented HR practitioners from actively participating in the online community. Accordingly PBA was insightful to look at how, in order for participation to occur, *practitioners'* actions were required to be collectively and routinely enacted; otherwise, these actions remained isolated from other enactments and thus will not become part of their practices. Thus looking at phenomena from this angle, helped in showing how when participation in *the community* remained individually enacted, or took

place as a one-time event, this action did not make sense to the collective of practitioners and thus was further abandoned.

Using theoretical resources from PBA also helped in looking at participation as a historically-shaped phenomenon, at how previous performances influenced current ones. The empirical findings showed that HR practitioners developed certain patterns of interactions and media use over time, so that when they had the option to participate in the online community they found it difficult to modify their ways of interaction. As these patterns of interactions had been repetitively enacted by practitioners, they became routinised, habituated ways of performing. In turn, this sense of habituation prevented practitioners from participating in the community, and instead directed them to reproduce rather than to modify their existing interaction patterns of communication and media used.

#### 9.3.1.1 *Methodological contribution to online community literature*

The adoption of ANT and PBA pointed to the methodological concern of reconsidering the rationale and scope of the processes of data collection when looking at participation in online communities. Chapter two noted that much of the existing research in online communities has been influenced by a cognitive tradition. As such, these studies have tended to adopt simplistic, individualistic and cross-sectional methods to study phenomena. However, in the light of the findings of this study, it is suggested that in order to deepen our understanding of participation, there is a need to use methods that assist the exploration of the highly contextualised character and the collective and dynamic nature of participation. This character of participation puts into question some of the methodologies and methods of previous studies in which internal dynamics of communities (e.g., Wasko and Faraj, 2000; Bock et al., 2005; Chiu et al., 2006; Hsu et al., 2007); individual motivations and interests (e.g., Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007); and snap-shots of participation (e.g., Wasko and Faraj, 2000; Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006; Hsu et al., 2007); have received primary attention.

In previous studies, for example, there is a tendency to see online communities as independent from the wider environment of which they are a part. Accordingly these

studies have given primary attention to the internal dynamics of these communities and thus, for example, have provided explanations on the basis of communication activity taking place in the community, neglecting the relevance of the context surrounding communities. Instead of simply looking at what occurs within the boundaries of a community, this study has shown that a greater understanding of participation can be gained when looking beyond its boundaries. For example, while looking at the communication activity taking place in the online community showed relatively low levels of participation, the use of interviews allowed the exploration of the critical role that context played in shaping this communication activity.

Similarly, in looking at participation as being mainly shaped by the self-centred motivations and interests of particular individuals the use of methods has tended towards reductionism by isolating factors and treating them as discrete and independent variables. The goal of these studies is generally to establish statistical relationships among variables with the aim of control and prediction. The findings of this study have shown, in contrast to this logic, that participation is a 'messy' phenomenon that is far from being understood via statistical relationships among variables. The complex nature of participation thus requires that questions and methods must move beyond just looking at how the motivations and interests of individuals shape participation.

Finally, the findings of this study have also shown the relevance of looking at participation as an evolving process. Previous studies have tended to use cross-sectional methodologies that look at participation as if it were a one-time event phenomenon. Adopting this stance undermines the ability of these studies to look at the dynamic and evolving character of participation. Therefore, those looking at participation might give preference to the adoption of longitudinal approaches to observe the continuous evolution of participation, and how different events that occurred over time shaped participation.

In summary, this study has highlighted the need to ask broader questions and to adopt more complex methods for data collection when studying participation in online communities. These questions and methods must aim at broadening the simplistic views of online community participation that solely look at their members' motivations and interests; ask much broader questions to explore beyond observing and measuring contributing behaviours, and be more about the context within which the community exists. They must also move away from the reductionist view of participation, which sees it

as a static one-time event, to look at how participation evolves and how events and past performances shape current ones.

### ***9.3.2 Relevance and contributions to praxeological studies***

This study has made a contribution by providing a series of considerations for further research that might be of relevance for those using praxeological approaches as informing lenses for their research endeavours. Acknowledging that organisational phenomena cannot be addressed by a single totalising approach, this study has suggested some considerations that can potentially enhance the ability of praxeological studies to foreground the relational, collective, historical, dynamic and contextually-shaped character of organisational phenomena. These considerations do not suggest a prescriptive approach to be followed step-by-step in order to successfully conduct praxeological research. However, on the basis of experience gained during this research process these can be helpful for scholars engaged in conducting research informed by approaches such as Actor-Network Theory, and a practice-based approach. These considerations, previously introduced in Section 8.4, are summarised below.

Firstly, power issues must be a primary concern when studying organisational phenomena. Once the problem of praxeological approaches to dealing with power issues is acknowledged, especially those at the societal level, researchers need to look for alternative approaches that can foreground these concerns. These alternatives must be sought beyond the options provided by praxeological approaches since these approaches have been challenged on their ability to adequately deal with these concerns (Reed, 1997; Contu and Willmott, 2000; Contu and Willmott, 2003; Munir and Jones, 2004; Handley et al., 2006). Adopting insights from institutional theories (e.g., DiMaggio, 1988; Battilina, 2006; Lounsbury, 2007; Lounsbury, 2008) seems a promising route to explore the role of broader social structures in the shaping of organisational phenomena.

Secondly, when looking at organisational phenomena attention must equally be paid to the active role of humans in performing their practices, and the active contribution of non-humans to the performance of socio-material practices. This entails the need to acknowledge that not only human, but also non-human, actors can act as active entities with the ability of enabling, constraining, or resisting change.

Thirdly, to better capture the complex nature of organisational phenomena, there is a need to adopt different angles for observation. This entails the need to move down to look at the local accomplishment of practices, and up to include the relevant macro-forces that shape phenomena. This offers, among other benefits, the possibility to better explore power issues at different levels of analysis.

Fourthly, those using praxeological approaches need to acknowledge context as both historically-shaped and emergent. Foregrounding the emergent nature of context is insightful to look at the creative, and productive character of practices. Meanwhile bringing the historical character of context to the fore might help in highlighting the habitual and regularised aspect of practices. When these two complementary views of context are acknowledged and explored, the possibilities to provide insightful accounts that can explain both change and the stability of organisational phenomena can potentially increase.

Fifthly, the use of ethnographic methods must be given priority when conducting research informed by praxeological studies. However other methods and strategies should also be considered. While ethnographic methods can be of particular relevance to look at local accomplishment of practices, other methods are required to look at the connection between practices and the larger context surrounding phenomena.

These considerations require further development. However, they also open promising lines of inquiry to explore how theoretical resources from different traditions can be incorporated within a single study. This also brings the methodological challenge of finding adequate methods capable of exploring the local accomplishment of practices and their connection to other practices and the broader context. This is especially the case when research is generally limited in terms of access, time and (economic) resources.

A second contribution to praxeological studies is the suggestion that the use of ANT and PBA to explore one particular phenomenon (e.g., participation in online communities) offers the possibility of providing complementary views of the phenomenon in at least two different avenues. This contribution reflects keenness to explore how, by using theoretical resources from ANT and PBA, the complexity of practices can be better addressed. In this sense, this work is closer to the spirit of those studies by Nicolini (2009) and Fox (2000) where the use of theoretical resources from ANT and PBA has been suggested; and

distances it from those efforts where the differences and incompatibility of the approaches have been fiercely argued (e.g., Schatzki, 2002).

The first avenue in which the use of ANT and PBA can be beneficial for further studies, relates to how power issues at the individual and organisational level can be better addressed when both ANT and PBA are used in a single study. The study discussed in this thesis has shown, on the one hand, the usefulness of ANT in examining how power manifested itself at the individual level by exploring the political processes of negotiations between actors, and by treating human and non-human actors symmetrically. On the other hand, PBA, through the theoretical resources of site, practices and knowings, shed light on how existing power structures at the organisational level played a role in the shaping of participation. Thus, further studies can benefit from the use of the two approaches to address how power issues influenced phenomena. However, it is important to acknowledge that while ANT and PBA might be helpful in dealing with power issues in different ways, it will depend on the phenomenon studied, and the level of granularity in which the analysis is conducted.

A second avenue in which this study has contributed to praxeological studies relates to the suggestion that when the two approaches are used this brings the potential advantage of looking at context as both emergent and historically-shaped. While ANT highlighted how the emergent nature of relations, the negotiations taking place during the translation process, and the strategies developed by a focal actor, shaped participation, PBA helped make sense of how the historical context shaped participation by exploring how aspects such as routinisation, habituation and perpetuation shaped participation. Again, this observation is based on the experience of using the approaches to understand online community participation. How far ANT and PBA can be insightful to explore both the emergent and historical character of phenomena will depend on the time-frames observed.

#### **9.4 Practical implications**

This study has been primarily concerned with an exploration of the factors that shaped participation in an online community within the context of a multi-campus University in Mexico through the lens of ANT and PBA. The findings of this study have provided an insight into the various complexities of participation and have highlighted the critical role of context in shaping participation. However, the conclusions drawn from this research do

not prescribe a step-by-step procedure to be followed in order to create “successful online communities”. Nevertheless, there are some relevant to practitioners, designers of communities, and organisations when taking part in initiatives to set up, support, or promote online communities.

This study showed that participation was highly influenced by the practices and the organisational context surrounding the community. HR practitioners minimised their participation in the community because they perceived their participation was at odds with the preference for the way things were done within HR at *INSTECH*. Similarly, the findings show that participation in the community did not support the enactment of knowings through which HR practitioners demonstrated their competence and solved their practical problems, leading practitioners to neglect the use of *CODECO*.

For practitioners this draws attention to the necessity of considering the current ways of performing and the underlying principles guiding the performance of practices when the emergence of communities is pursued. Thus in order for those setting up communities to be successful in their initiatives there is a need for a good understanding of the environment into which online communities are introduced, rather than only focusing, for example, on the interface design of the collaborative technology supporting participation. In this light, attention turn on what practitioners actually do in their daily work, how they meet their information needs, how they communicate on a daily basis and the media they use to do so. For example, the findings showed that one of the shared knowings of HR practitioners was to develop and maintain their relationships with others, and that they minimised their participation in the community because in participating they found it difficult to support the sorts of interactions through which they could build and develop their relationships with others. Thus, those involved in building communities within their organisations need to explore how technologies can become integrated into the regular work of practitioners by paying simultaneous attention to the technologies supporting communities and the way practices are performed in a daily basis.

Furthermore, the research revealed that participation was affected by what occurred beyond the boundaries of HR practices. For example HR practitioners referred to the fact that their media choices were “passive” and influenced by forces that were beyond their control such as the inertia created by the fact that everybody at *INSTECH* tended to use particular media (e.g., email and telephone). Therefore, when engaging in initiatives that

entail the sponsoring of online communities attention must be also paid to the larger organisational context and the relations that might exist between practices in that they can be potentially shaped the way existing media and current patterns of interactions take place. Moreover, before technologies are introduced there is a need to conduct a careful evaluation to avoid unnecessary expense that can ended up in a redundant technology such as the financial resources allocated to customise the technology supporting the community.

Organisations can gain benefit from a further understanding of the process through which technologies are incorporated into their organisational practices. The findings informed by ANT showed that in order for the collaborative technology to be used there was a need for negotiations among actors working at different areas of the organisation. For example, it has been shown how although some strategies were developed by those sponsoring the community, these strategies were insufficient to persuade other actors to allocate more resources to further develop the collaborative technology. Facilitating these negotiations and warranting the allocation of resources to support these initiatives might improve the possibilities of success when adopting new technologies. This also points to the need to consider technologies that are flexible to adapt to the requirements of practitioners in order to increase the possibility that they will be used or modified, if required, according to the needs of practitioners.

Organisations should also consider the use of people who can potentially facilitate the ongoing adaptation between specific technologies and the particular organisational context where they are introduced. It is desirable for these people to have sufficient social and political influence as well as a deep understanding of the needs of practitioners. The findings of this study showed, for example, that those who initially sponsored the collaborative technology to support the community ended up using other technologies instead, and that those being “persuaded” perceived little need to participate in the community since their information needs were fully met via the use of existing media. Thus organisations not only need to warrant the allocation of financial resources and conduct a careful evaluation of potential needs, but also to choose the right people to lead the implementation of technologies and ensure that their interests will correspond to both the real needs of practitioners and the commitment to promote the use of the technologies at hand.



Overall, the following are some aspects that, if taken into account when developing communities, might increase their possibilities of success:

- Guarantee access to sufficient resources including financial resources and allocation of people to sponsor the community.
- Look at the current patterns of interactions and media use to explore potential needs.
- Be alert if existing ways of doing things can be maintained.
- Incorporate relational aspects into the operation of communities.
- Make efforts to ensure that communities fit the flavour of the practices aimed at being supported.

Whereas these considerations might be beneficial for those cultivating online communities supported by collaborative technologies, the practical implications of the current study might be also relevant for organisations interested in adopting other technologies (e.g., micro-blogging) to support their employees' communicative practice. The principles may potentially apply to the adoption of any information and communication technology.

## **9.5 Limitations and further work**

Once the contributions and the practical implications of this research have been highlighted it is important to acknowledge the limitations of the study, and to suggest areas for further research. Although the limitations of this research have been discussed throughout the thesis they are summarised together here. Further research is suggested either to address these limitations, or to further examine relevant aspects that emerged from this study.

A first limitation stems from the use of ANT and PBA as theoretical lenses to inform the analyses of this study. While this study strongly suggests that ANT and PBA be used as heuristics to examine participation in online communities, it is still open to debate whether the use of these particular theories might have obscured other aspects that can be considered as more relevant when adopting different approaches. This potential limitation was acknowledged during the research process. However, the decision not to consider other perspectives during the study was made on the basis that doing so would undoubtedly have added complexity to the already two-approach-based study. In the end

this decision proved to be sound, since pursuing this reasoning helped provide an alternative perspective for understanding participation. However, this decision also raised the issue of foregrounding certain aspects at the cost of obscuring others.

The issue of power serves to exemplify this situation since both ANT and PBA have been questioned over their ability to appropriately deal with these concerns at the institutional level. Section 8.3.3 has discussed how ANT and PBA helped shed some light on how power issues at the micro and meso levels played a role in the shaping of participation. For example, at the micro level ANT was helpful in exploring how a focal actor developed different strategies to persuade others to participate in the online community, and how the failure of these strategies influenced participation. At the meso level, for example, it was shown how certain conditions permeating HR practices undermined *practitioners'* willingness to participate in the community. However, as has already been acknowledged in previous sections, ANT and PBA obscured how macro-forces and the social structures of the larger context could have influenced participation. This limitation of praxeological approaches was reflected in this study, for example, in the low levels of attention paid to how religion or gender could have played a role in the shaping of HR practices, and therefore in participation.

Once this limitation is acknowledged, further research that contemplates the use of theoretical resources that can better capture the role of social structures and how they play a role in the shaping of local accomplishment of practices is therefore suggested. It still remains a challenge to integrate theoretical resources from different approaches (most probably coming from different traditions if power issues are to be better tackled). Some considerations that can be taken as a starting point have been suggested in Section 8.4 and further summarised in Section 9.3.2.

There is a less ambitious and complex endeavour, but still with the potential to offer powerful explanations of organisational phenomena. This study used the two theories in a sequential order in which no attempt was made to combine theoretical resources from both approaches in one single interpretation. Thus, it still remains for further research to explore the simultaneous use of ANT and PBA, and to find ways in which their theoretical resources can be articulated to work together.

Previous work has suggested or combined some of the theoretical devices of both theories (e.g., Fox, 2000; Nicolini, 2009; Huizing and Cavanagh, 2011), and has suggested how they can complement each other in the way they deal with power issues. Nicolini (2009) has demonstrated how the use of resources from both approaches can be insightful in zooming in and zooming out from practices. However, there is still an implicit logic of using the theoretical resources in a sequential order. The proposition by Fox (2000) that suggests that ANT and PBA can complement each other to appropriately deal with power issues was not accompanied by empirical data. This study has shown how ANT and PBA converged in certain aspects to deepen our understanding of participation. It has also shown how ANT and PBA provided complementary insights on how power issues can be tackled at individual and organisational levels. Using the two approaches in concert still remains a promising avenue to be further explored.

A second limitation also related to the use of ANT and PBA was the potential intellectual bias of trying to fit the situation to a model. This concern was addressed in different ways and called on reflexivity in the course of the study. In the particular case of ANT, for example, it has been observed that there is risk of unreflectively applying the four stage model of translation in order to verify its universality (Whittle and Spicer, 2008). However, as discussed in previous sections, different strategies and techniques were used to avoid this potential problem. Firstly, during the interviews, constant efforts to create an appropriate atmosphere where interviewees felt free to talk openly about their practices were made. Similarly, in order to fairly represent the voices of practitioners, sensitivity towards emerging aspects was pursued rather than bringing theoretical vocabulary to the interviews. During the analyses, for example, when using ANT to make sense of the data, the model of translation was used as providing a set of sensitising ideas rather than seen as a model to be tested.

When using theoretical resources from PBA, a similar logic was followed. The bricolage of resources was adopted as devices to analyse data in a flexible manner, for example, when paying equal attention to the reproductive and productive aspects of practices helped in providing different but complementary views of *participation*. Whereas routinisation and habituation were found as highly influential in the shaping of participation, the theoretical resources from PBA were also insightful for an examination of the emergent nature of .

This was based on shared understandings developed over time, and similarly being contested in every enactment of HR practices.

A third limitation relates to the focus of this study on one single site. This research has also shown the value of ANT and PBA by providing new insights to better understand online community participation. However, the study is still limited in that it focused attention on one single online community within a very specific context: that of HR practices within higher education in Mexico. Thus, the findings of this study cannot be generalised to other contexts. As the findings of this research suggested, the context surrounding the online community highly affected the degree of participation of HR practitioners. Therefore, it can be argued that by shifting sites (e.g., contexts) a different set of knowings, and taste permeating practices might be found and thus shape participation in different ways. This in turn suggests the need to examine other contexts (e.g., fields such as engineering, consultancy, etc.) in which different conditions, knowings, and interests may prevail. An obvious area for further research is therefore to extrapolate the use of ANT and PBA to explore similar phenomenon within different contexts. This study can be seen as a step towards further exploration of the two theories in a field where they have rarely been used. Again, the considerations suggested in Section 8.4 might be of relevance to take into account when using ANT and PBA within other contexts.

This study might also be criticised for the way in which ANT was used, and for the relevance of the findings presented in Section 6.3 with regards to the overall goal of this research. It is acknowledged that the findings introduced in Section 6.3, where a chronological narrative of *the implementation* was introduced, did not directly answer any of the research questions. Nevertheless, it is fairly to say that this narrative helped provide details of the context to which the online community was a part. It was also this narrative that shed some initial light on the relevance of HR practices in the shaping of participation, thus pointed to the need to further explore the role of HR practices.

A final limitation points to the methods employed to collect data. As shown in Chapter 5, the methods to collect data were mostly restricted to interviews. However, other complementary sources were used to a lesser degree: measuring participation activity in the online community, project-related documents, and HR online seminars. The use of complementary methods proved to be insightful for the study in different ways. For example, ANT and PBA pointed to the need to move away from just observing

communication activities inside the online community, as if they were neatly self-contained entities. In this sense, the use of interviews allowed the exploration of broader aspects informed by the particular preoccupations of the approaches. Moreover, the use of interviews, browsing the community, and project-related documents, offered retrospective and historical information that was particularly relevant, for example, to trace the HR project implementation and the different events and strategies taken by the focal actor that shaped participation in the community. This was consistent with the interests of PBA and ANT that suggest particular attention must be given to the historical context and to link it to present situations, rather than use cross-sectional studies that assume participation is a one-time event phenomenon.

Despite the efforts to exploit the use of different methods within one single study, two relevant concerns need to be taken into account. Firstly, one line of criticism of the use of interviews in the study may come from those who tend to rely on the use of methods in which the goal is to maintain distance between the researcher and the research participants. They might argue that interviews lack objectivity and rigour, and thus the data obtained could be contaminated and highly influenced by subjectivity. In this regard, the challenge of studying phenomena that are socially constructed and perceived differently by interviewees is acknowledged. Different strategies were followed to avoid possible bias and any imposition of researcher's views that might have developed due to his own personal background, theoretical interests, and experience. For example, to avoid this research participants were selected in examples of polar types. This could potentially provide a more complete picture of the phenomenon. When some issues or relevant incidents appeared, an attempt was made to explore these issues within the interviews or in subsequent conversations took place. Similarly a continuous effort was made to avoid bringing the theoretical vocabulary of the informing approach to the conversations. When using the interview protocols, they were taken as overall guidelines to explore certain topics, rather than as a list of statements to be tested. The awareness to emergent aspects was also persistent during each interview.

Secondly, another avenue for criticism of the use of interviews as the main method for data collection may arise as a consequence of not using ethnographic methods, since they are regarded as preferable within praxeological studies (Carlile, 2002; Nicolini et al., 2003; Nicolini, 2009; Feldman and Orlikowski, 2011; Huizing and Cavanagh, 2011). This is

because methods such as ethnography allow researchers to become closer to the real life of research participants, to observe the local accomplishment of practices and the interactions at the micro-level. In contrast, relying on the use of interviews brings the risk of ending up only with the thoughts of practitioners as opposed to observing practices as they unfolded.

Furthermore, in the light of the considerations suggested in Section 8.4 – i.e., a need to explore different levels of analysis, to choose different angles for observation, to foreground both the emergent and historical aspects of phenomena, and to give a more balanced status to both human and non-human actors – further studies adopting methods such as ethnography might be best positioned to explore these concerns. However, the use of ethnographic methods may need to be complemented by other methods and techniques capable of shedding light on the connections between practices, and between practices and the larger context. These studies would thus entail, on the one hand, ethnographic methods that might require long periods of observation allowing researchers to observe, for example, the local accomplishment of practices, the micro-interactions and power relations that occur at the individual level, and the role of non-human actors in mediating the performance of practices. On the other hand, in order to explore how local practices connect to the wider context, other methods and techniques might be required. These might include, among others, extending the observations to other places where the effects of local practices are reflected, following artefacts created in local practices wherever they go, looking at practices that precede or enable the performance of the local practices, and moving up and out across sites.

In summary, the overall contribution of this study has been in opening up new lines of inquiry that might inspire others to conduct more research within the fields of both online community studies and praxeological research. On the one hand, the use of ANT and PBA within one single study has suggested these approaches can be insightful to deepen our understanding of participation. It is expected this study could motivate further online community studies informed by praxeological approaches. On the other hand, the use of two praxeological approaches within one study has helped in bringing to the fore aspects such as the relational and collective, dynamic and historically-shaped, and contextualised character of organisational phenomena. However, this study has also shown that while some aspects were foregrounded, others were obscured (e.g., power issues at the societal

level). As such, this study has also suggested a series of considerations that might be relevant when conducting further praxeological research to explore organisational phenomena.

## **9.6 Final word**

When the study discussed in this thesis began, there was a lack of a vocabulary from the side of the researcher through which to express what had been first observed to be influencing participation in the online community. To some degree, ANT and PBA have offered a set of theoretical resources and vocabulary through which one can reflect on and discuss what is observed, though, there is an awareness that through this intellectual journey new language, ideas, and understandings have only begun to develop. However, the work undertaken has helped in understanding that ANT and PBA, although they have enhanced an understanding of organisational phenomena, also have limitations that point to the need for alternative approaches.

On the basis of the study discussed in this thesis, there is a belief that praxeological approaches offer a solid base from which to conduct further exploration of organisational phenomena. It thus seems that ANT and PBA are in a flexible position to look down and up, to explore how they can offer different perspectives from those informed by the *homo economicus* and the *homo sociologicus* traditions. However, it is also acknowledged that these two traditions face some of the challenges of praxeological studies.

So far, this study has given more questions than answers. However, it has also offered a repertoire of vocabulary, ideas, and sensitising devices to seek for more answers, but more importantly to ask different questions.

## Bibliography

- Agterberg, M., van den Hooff, B., Huysman, M. & Soekijad, M. (2010). "Keeping the Wheels Turning: The Dynamics of Managing Networks of Practice". *Journal of Management Studies*, **47** (1), 85-108.
- Alvesson, M. (2003). "Beyond neopositivists, romantics, and localists: A reflexive approach to interviews in organizational research". *The Academy of Management Review*, **28** (1), 13-33.
- Amsterdamska, O. (1990). "Surely you are joking, Monsieur Latour!". *Science, Technology, and Human Values*, **15** (4), 495-504.
- Ardichvili, A. (2008). "Learning and Knowledge Sharing in Virtual Communities of Practice: Motivators, Barriers, and Enablers". *Advances in Developing Human Resources*, **10** (4), 541-554.
- Ardichvili, A., Page, V. & Wentling, T. (2002). "Virtual Knowledge-Sharing Communities of Practice at Caterpillar : Success Factors and Barriers". *Performance Improvement Quarterly*, **15** (3), 94-113.
- Ardichvili, A., Page, V. & Wentling, T. (2003). "Motivation and barriers to participation in virtual knowledge-sharing communities of practice". *Journal of Knowledge Management*, **7** (1), 64-77.
- Avgerou, C. (2008). "New socio-technical perspectives of IS innovation in organizations Book section". In: Avgerou, C., Rovere, L. & Lebre, R. (eds.), *Information systems and the economics of innovation*, pp. 141-161. Cheltenham: Edward Elgar.
- Baek, E.O. & Schwen, T.M. (2006). "How to Build a Better Online Community". *Performance Improvement Quarterly*, **19** (2), 51-68.
- Bansler, J.P. & Havn, E. (2004). "Technology-use mediation". *Scandinavian Journal of Information Systems*, **16**, 57-84.
- Bansler, J.P. & Havn, E.C. (2003). "Building community knowledge systems: an empirical study of IT-support for sharing best practices among managers". *Knowledge and Process Management*, **10** (3), 156-163.
- Bartis, E. & Mitev, N. (2008). "A multiple narrative approach to information systems failure: a successful system that failed". *European Journal of Information Systems*, **17** (2), 112-124.
- Bateman, P. (2007). "Commitment, Communication & Connection : Understanding participation in Online Communities from Multiple Perspectives". *AMCIS 2007* pp. 12-31.
- Bateman, P.J., Gray, P.H. & Butler, B.S. (2006). "Community commitment: How affect, obligation, and necessity drive online behaviours". *Twenty-Seventh International Conference on Information Systems*, Milwaukee. pp. 983-1000. Milwaukee.
- Battilina, J. (2006). "Agency and Institutions: The Enabling Role of Individuals' Social Position". *Organization*, **13** (5), 653-676.
- Baym, N.K. (2000). *Tune In, Log on: Soaps, Fandom, and Online Community*. London: Sage Publications.



- Beekhuyzen, J., von Hellens, L. & Nielsen, S. (2011). "Underground online music communities: exploring rules for membership". *Online Information Review*, **35** (5), 699-715.
- Bishop, J. (2007). "Increasing participation in online communities: A framework for human-computer interaction". *Computers in Human Behavior*, **23** (4), 1881-1893.
- Blackburn, S. (2002). "The project manager and the project-network". *International Journal of Project Management*, **20** (3), 199-204.
- Blanchard, A.L. & Markus, M.L. (2004). "The Experienced "Sense" of a Virtual Community : Characteristics and Processes". *Database for Advances in Information Systems*, **35** (1).
- Bock, G.-W., Zmud, R., Kim, Y.-G. & Lee, J.-N. (2005). "Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate". *MIS Quarterly*, **29** (1), 87-111.
- Bock, G.W. & Kim, Y.-G. (2002). "Breaking the myths of rewards : An exploratory study of attitudes about knowledge sharing". *Information Resources Management Journal*, **15** (2), 14-21.
- Bogenrieder, I. & Baalen, P. (2007). "Contested practice: multiple inclusion in double-knit organizations". *Journal of Organizational Change Management*, **20** (4), 579-595.
- Boudreau, M.-C. & Robey, D. (2005). "Enacting Integrated Information Technology: A Human Agency Perspective". *Organization Science*, **16** (1), 3-18.
- Bradbury, H. & Bergmann, B.M. (2000). "Relationality in Organizational Research: Exploring The Space Between". *Organization Science*, **11** (5), 551-564.
- Braun, V. & Clarke, V. (2006). "Using thematic analysis in psychology". *Qualitative research in Psychology*, **3** (2), 77-101.
- Brown, J.S. & Duguid, P. (2001). "Knowledge and Organization: A social-practice perspective". *Organization*, **12** (2), 198-213.
- Bryman, A. & Cassell, C. (2006). "The researcher interview: a reflexive perspective". *Qualitative Research in Organizations and Management: An International Journal*, **1** (1), 41-55.
- Buchanan, D.A. & Bryman, A. (2009). *The SAGE Handbook of Organizational Research Methods*. London: Sage Publications Ltd.
- Butler, B., Sproull, L., Kiesler, S. & Kraut, R. (2007). "Community Effort in Online Groups: Who Does the Work and Why?". *Leadership at a Distance: Research in Technologically-Supported Work*.
- Butler, B.S. (2001). "Membership size, communication activity, and sustainability: A resource-based model of online social structures". *Information Systems Research*, **12** (4), 346-362.
- Butler, T. (2003). "From data to knowledge and back again: understanding the limitations of KMS". *Knowledge and Process Management*, **10** (3), 144-155.
- Calas, M.B. & Smircich, L. (1999). "Past postmodernism? Reflections and tentative directions". *Academy of Management Review*, **24** (4), 649-671.
- Callon, M. (1986). "Some elements of a sociology of translation; domestication of the scallops and the fishermen of St Brieuc Bay". *In*: Law, J. (ed.), *Power*,

- Action and Belief A New Sociology of Knowledge?* , pp. 196-229. London: Routledge and Kegan Paul.
- Callon, M. & Latour, B. (1981). "Unscrewing the big Leviathan: how actors macro-structure reality and how sociologists help them to do so". In: Knorr-Cetina, K.D. & Cocourel, A.V. (eds.), *Advances in Social Theory and Methodology: Toward an integration of micro and macro-sociologies*, pp. 277-303. London: Routledge and Kegan Paul.
- Callon, M. & Latour, B. (1992). "Don't throw the baby out with the bath school! A reply to Collins and Yearley". In: Pickering, A. (ed.), *Science as practice and culture*, Vol. 343, pp. 343-368. Chicago: The University of Chicago Press.
- Carlile, P.R. (2002). "A pragmatic view of knowledge and boundaries: Boundary objects in new product development". *Organization Science*, **13** (4), 442-455.
- Carr, N. & Chambers, D.P. (2006). "Teacher professional learning in an online community: the experiences of the National Quality Schooling Framework Pilot Project". *Technology, Pedagogy and Education*, **15** (2), 143-157.
- Charreire Petit, S. & Huault, I. (2008). "From practice-based knowledge to the practice of research: revisiting constructivist research works on knowledge". *Management Learning*, **39** (1), 73-91.
- Chia, R. (2006). "Strategy as Practical Coping: A Heideggerian Perspective". *Organization Studies*, **27** (5), 635-655.
- Chiu, C., Hsu, M. & Wang, E. (2006). "Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories". *Decision Support Systems*, **42** (3), 1872-1888.
- Cho, S., Mathiassen, L. & Nilsson, A. (2008). "Contextual dynamics during health information systems implementation: an event-based actor-network approach". *European Journal of Information Systems*, **17** (6), 614-630.
- Clarke, A. & Dawson, R. (1999). *Evaluation research: An introduction to principles, methods, and practice*. London: Sage Publications Ltd.
- Collins, H. & Yearley, S. (1992). "Epistemological Chicken HM Collins and Steven Yearley". In: Pickering, A. (ed.), *Science as practice and culture*, pp. 301. Chicago: The University of Chicago Press.
- Constant, D., Sproull, L. & Kiesler, S. (1996). "The Kindness of Strangers: The Usefulness of Electronic Weak Ties for Technical Advice". *Organization Science*, **7** (2), 119-135.
- Contu, A. & Willmott, H. (2000). "Knowing in practice: a "delicate flower" in the organizational learning field". *Organization*, **7** (2), 269-276.
- Contu, A. & Willmott, H. (2003). "Re-embedding situatedness: The importance of power relations in learning theory". *Organization Science*, 283-296.
- Cook, S.D.N. & Brown, J.S. (1999). "Bridging Epistemologies : The Generative Dance between Organizational Knowledge and Organizational Knowing". *Organization Science*, **10** (4), 381-400.
- Cordella, A. & Shaikh, M. (2006). *From epistemology to ontology: Challenging the constructed "truth" of ANT*. Department of Information Systems London School of Economics and Political Science. Report No. 143).

- Corradi, G., Gherardi, S. & Verzelloni, L. (2008). *Ten Good Reasons for Assuming a 'Practice Lens' in Organization Studies*. Report No.
- Corradi, G., Gherardi, S. & Verzelloni, L. (2010). "Through the practice lens: Where is the bandwagon of practice-based studies heading?". *Management Learning*, **41** (3), 265-283.
- Cox, A.M. (2007). "Beyond information – factors in participation in networks of practice: A case study of web management in UK higher education". *Journal of Documentation*, **63** (5), 765-787.
- Cox, A.M. (2008). "An exploration of concepts of community through a case study of UK university web production". *Journal of Information Science*, **34** (3), 327-345.
- Cox, A.M. (2012). "An exploration of the practice approach and its place in Information Science". *Journal of Information Science*, **38** (12), 176-188.
- Creswell, J.W. (1994). *Research design: Qualitative and Quantitative approaches*. Thousand Oaks:CA: Sage Publications.
- Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five traditions*. California: Sage Publications, Inc.
- Creswell, J.W. & Miller, D.L. (2000). "Determining validity in qualitative inquiry". *Theory into practice*, **39** (3), 124-130.
- Dahlander, L. & Frederiksen, L. (2011). "The Core and Cosmopolitans: A Relational View of Innovation in User Communities". *Organization Science*, 1-20.
- DiMaggio, P. (1988). "Interest and agency in institutional theory". In: Zucker, L. (ed.), *Institutional patterns and organizations*, pp. 3-22. Cambridge: Ballinder.
- Dubé, L., Bourhis, A. & Jacob, R. (2005). "The impact of structuring characteristics on the launch of virtual communities of practice". *Journal of Organizational Change Management*, **18** (2), 145-166.
- Dubé, L., Bourhis, A. & Jacob, R. (2006). "Towards a typology of virtual communities of practice". *Interdisciplinary Journal of Information Knowledge and Management*, **1** (1), 70-93.
- Dyer, J.H. & Nobeoka, K. (2000). "Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case". *Strategic Management Journal*, **21** (3), 345-367.
- Eisenhardt, K.M. (1989). "Building theories from case study research". *Academy of management review*, **14** (2), 532-550.
- Elbanna, A. (2010). "Rethinking IS project boundaries in practice: A multiple-projects perspective". *Journal of Strategic Information Systems*, **19** (1), 39-51.
- Ellis, D., Oldridge, R. & Vasconcelos, A. (2004). "Community and virtual community". *Annual review of information science and technology*, **38** (1), 145-186.
- Faraj, S., Jarvenpaa, S.L. & Majchrzak, a. (2011). "Knowledge Collaboration in Online Communities". *Organization Science*, **22** (5), 1224-1239.
- Faraj, S. & Johnson, S.L. (2011). "Network Exchange Patterns in Online Communities". *Organization Science*, **22** (6), 1464-1480.

- Faraj, S., Wasko, M.M. & Johnson, S.L. (2006). "Electronic Knowledge Networks : Processes and Structure". In: Becerra-Fernandez, I. & Leidner, D. (eds.), pp. 1-42. Armonk, NY: Sharpe, Inc.
- Farzan, R., Dabbish, L., Kraut, R. & Postmes, T. (2011). "Increasing Commitment to Online Communities by Designing for Social Presence". *CSCW 2011*, 2011, Hangzhou, China. pp. 321-330. Hangzhou, China.
- Feldman, M.S. & Orlikowski, W.J. (2011). "Theorizing Practice and Practicing Theory". *Organization Science*, **22** (5), 1240-1253.
- Feldman, M.S. & Pentland, B.T. (2003). "Reconceptualizing Routines Organizational". *Administrative Science Quarterly*, **48** (1), 94-118.
- Fox, S. (2000). "Communities Of Practice, Foucault And Actor Network Theory". *Journal of Management Studies*, **37** (6), 853-868.
- Fulk, J., Heino, R., Flanagan, A.J., Monge, P.R., Bar, F. & Bar, F. (2004). "A Test of the Individual Action Model for Organizational Information Commons". *Organization Science*, **15** (5), 569-585.
- Gad, C. & Bruun Jensen, C. (2010). "On the consequences of post-ANT". *Science, technology & human values*, **35** (1), 55-80.
- Gallivan, M.J., Eynon, J. & Rai, A. (2003). "The challenge of knowledge management systems: Analyzing the dynamic processes underlying performance improvement initiatives". *Information Technology & People*, **16** (3), 326-352.
- Geiger, D. (2009). "Revisiting the Concept of Practice: Toward an Argumentative Understanding of Practicing". *Management Learning*, **40** (2), 129-144.
- Gherardi, S. (2000). "Practice-Based Theorizing on Learning and Knowing in Organizations". *Organization*, **7** (2), 211-223.
- Gherardi, S. (2001). "From Organizational Learning to Practice-Based Knowing". *Human Relations*, **54** (1), 131-139.
- Gherardi, S. (2009a). "Knowing and learning in practice-based studies: an introduction". *The Learning Organization*, **16** (5), 352-359.
- Gherardi, S. (2009b). "Practice? It's a Matter of Taste!". *Management Learning*, **40** (5), 535-550.
- Gherardi, S., Nicolini, D. & Strati, A. (2007). "The Passion for Knowing". *Organization*, **14** (3), 315-329.
- Golden-Biddle, K. & Locke, K. (1993). "Appealing work: An investigation of how ethnographic texts convince". *Organization Science*, **4** (4), 595-616.
- Gongla, P. & Rizzuto, C.R. (2001). "Evolving communities of practice: IBM Global Services experience". *IBM systems Journal*, **40** (4), 842-862.
- Gray, B. (2004). "Informal Learning in an Online Community of Practice". *Journal of Distance Education*, **19** (1), 20-35.
- Greene, J.C., Caracelli, V.J. & Graham, W.F. (1989). "Toward a conceptual framework for mixed-method evaluation designs". *Educational evaluation and policy analysis*, **11** (3), 255-274.
- Gu, B., Konana, P., Rajagopalan, B. & Chen, H.W.M. (2007). "Competition Among Virtual Communities and User Valuation: The Case of Investing-Related Communities". *Information Systems Research*, **18** (1), 68-85.

- Guba, E.G. & Lincoln, Y.S. (1994). "Competing paradigms in qualitative research". In: Denzin, N.K. & Lincoln, Y.S. (eds.), *Handbook of qualitative research*, pp. 105-117. Sage: Newbury Park.
- Guldberg, K. & Mackness, J. (2009). "Foundations of communities of practice: enablers and barriers to participation". *Journal of Computer Assisted Learning*, **25** (6), 528-538.
- Hall, H. (2001). "Input-friendliness: motivating knowledge sharing across intranets". *Journal of Information Science*, **27** (3), 139-146.
- Hall, H. (2004). *The knowledge trap: an intranet implementation in a corporate environment*. PhD Dissertation, Napier University.
- Hall, H. & Goody, M. (2007). "KM, culture and compromise: interventions to promote knowledge sharing supported by technology in corporate environments". *Journal of Information Science*, **33** (2), 181-188.
- Handley, K., Sturdy, A., Fincham, R. & Clark, T. (2006). "Within and Beyond Communities of Practice: Making Sense of Learning Through participation, Identity and Practice\*". *Journal of Management Studies*, **43** (3), 641-653.
- Hansen, D.L. (2007). *Knowledge sharing, maintenance, and use in online support communities*. PhD Dissertation, University of Michigan.
- Hanseth, O. & Braa, K. (1998). "Technology as traitor: emergent SAP infrastructure in a global organization". *International Conference on Information Systems ICIS*, Helsinki. pp. 188-196. Helsinki.
- Hara, N., Shachaf, P. & Stoerger, S. (2009). "Online communities of practice typology revisited". *Journal of Information Science*, **35** (6), 740-757.
- Harisson, D., Laplante, N. & St-Cyr, L. (2001). "Cooperation and resistance in work innovation networks". *Human Relations*, **54** (2), 215-255.
- Herring, S.C. (2004). "Computer-mediated discourse analysis: an approach to researching online behaviour". In: Barab, S., Kling, R. & Gray, J. (eds.), *Designing for Virtual Communities in the Service of Learning*, pp. 338-376. Cambridge University Press.
- Hew, K.F. & Hara, N. (2007). "Empirical study of motivators and barriers of teacher online knowledge sharing". *Educational Technology Research and Development*, **55** (6), 573-595.
- Honglei, L. (2006). *An empirical exploration of virtual community participation: The interpersonal relationship perspective*. PhD, The Chinese University of Hong Kong.
- Hsu, M.H., Ju, T.L., Yen, C.H. & Chang, C.M. (2007). "Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations". *International Journal of Human-Computer Studies*, **65** (2), 153-169.
- Huizing, A. & Cavanagh, M. (2011). "Planting contemporary practice theory in the garden of information science". *Information Research*, **16** (4).
- Huysman, M. & Wulf, V. (2005). "IT to support knowledge sharing in communities, towards a social capital analysis". *Journal of Information Technology*, **21** (1), 40-51.

- livari, J., Hirschheim, R. & Klein, H.K. (1998). "A paradigmatic analysis contrasting information systems development approaches and methodologies". *Information Systems Research*, **9** (2), 164-193.
- Jarvenpaa, S.L. & Staples, D.S. (2000). "The use of collaborative electronic media for information sharing: an exploratory study of determinants". *The Journal of Strategic Information Systems*, **9** (2-3), 129-154.
- Jarzabkowski, P. (2004). "Strategy as Practice: Recursiveness, Adaptation, and Practices-in-Use". *Organization Studies*, **25** (4), 529-560.
- Jeppesen, L.B. & Frederiksen, L. (2006). "Why Do Users Contribute to Firm-Hosted User Communities? The Case of Computer-Controlled Music Instruments". *Organization Science*, **17** (1), 45-63.
- Jeppesen, L.B. & Laursen, K. (2009). "The role of lead users in knowledge sharing". *Research Policy*, **38** (10), 1582-1589.
- Jick, T.D. (1979). "Mixing qualitative and quantitative methods: Triangulation in action". *Administrative science quarterly*, 602-611.
- Johnson, P., Buehring, A., Cassell, C. & Symon, G. (2006). "Evaluating qualitative management research: Towards a contingent criteriology". *International Journal of Management Reviews*, **8** (3), 131-156.
- Johnson, P. & Duberley, J. (2000). *Understanding Management Research: An Introduction to Epistemology*. London: Sage Publications.
- Johnson, S. (2010). "Should I stay or should I go? Continued participation intentions in online communities". *Proceedings of Academy of Management Annual Conference*, pp. 1-6.
- Jones, Q., Ravid, G. & Rafaeli, S. (2004). "Information Overload and the Message Dynamics of Online Interaction Spaces: A Theoretical Model and Empirical Exploration". *Information Systems Research*, **15** (2), 194-210.
- Joyce, E. & Kraut, R.E. (2006). "Predicting Continued participation in Newsgroups". *Journal of Computer-Mediated Communication*, **11** (3), 723-747.
- Kankanhalli, A., Tan, B.C.Y. & Wei, K.K. (2005). "Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation". *MIS Quarterly*, **29** (1), 113-143.
- Klein, H.K. & Myers, M.D. (1999). "A set of principles for conducting and evaluating interpretive field studies in information systems". *Mis Quarterly*, **23** (1), 67-93.
- Koh, J., Kim, Y.G., Butler, B. & Bock, G.W. (2007). "Encouraging participation in virtual communities". *Communications of the ACM*, **50** (2), 68-73.
- Kollock, P. (1999). "The Economies of Online Cooperation : Gifts and Public Goods in Cyberspace". In: Smith, M. & Kollock, P. (eds.), pp. 220-242. London: Routledge.
- Komito, L. (1998). "The Net as a foraging society: Flexible communities". *The Information Society*, **14** (2), 97-106.
- Kuhn, T. & Jackson, M.H. (2008). "Accomplishing Knowledge: A Framework for Investigating Knowing in Organizations". *Management Communication Quarterly*, **21** (4), 454-485.
- Kvale, S. (2006). "Dominance through interviews and dialogues". *Qualitative Inquiry*, **12** (3), 480-500.

- Lakhani, K.R. & von Hippel, E. (2003). "How open source software works: "free" user-to-user assistance". *Research Policy*, **32** (6), 923-943.
- Landqvist, F. & Teigland, R. (2005). "Collective Action in Electronic Networks of Practice : An Empirical Study of Three Online Social Structures". pp. 359-375.
- Latour, B. (1986). "The powers of association". *In*: Law, J. (ed.), *Power, Action and Belief A New Sociology of Knowledge?*, pp. 264-280. London: Routledge and Kegan Paul.
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge: Harvard University Press.
- Latour, B. (1990). "Drawing things together". *In*: Lynch, M. & Woolgar, S. (eds.), *Representation in Scientific Practice*, pp. 19-68. Cambridge: MIT Press.
- Latour, B. (1999). *Pandora's hope: Essays on the reality of science studies*. London: Harvard University Press.
- Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Law, J. (1986a). "Editor's introduction: Power/Knowledge and the dissolution of the sociology of knowledge". *In*: Law, J. (ed.), *Power, action and belief: a new Sociology of Knowledge?* London: Routledge & Kegan Paul.
- Law, J. (1986b). "On power and its tactics: a view from the sociology of science". *The Sociological Review*, **34** (1), 1-38.
- Law, J. (1986c). "On the methods of long distance control: vessels, navigation and the Portuguese route to India". *In*: Law, J. (ed.), *Power, Action and Belief A New Sociology of Knowledge?* , pp. 234-263. London: Routledge and Kegan Paul.
- Law, J. (1986d). *Power, action and belief: a new Sociology of Knowledge?* London: Routledge & Kegan Paul.
- Law, J. (1987). "Technology and heterogeneous engineering: the case of Portuguese expansion". *In*: Bijker, W., Hughes, T. & Pinch, T. (eds.), *The social construction of technological systems: New directions in the sociology and history of technology*, pp. 111-134.
- Law, J. (1992). "Notes on the theory of the actor-network: ordering, strategy, and heterogeneity". *Systems Practice*, **5** (4), 379-393.
- Lazar, J. & Preece, J. (2002). "Social considerations in online communities: usability, sociability, and success factors". *Cognition in the digital world*, 127-151.
- Lee, F.S.L., Vogel, D. & Limayem, M. (2002). "Virtual community informatics: What we know and what we need to know". *35th Hawaii International Conference on System Sciences* pp. 2863-2872.
- Lerner, J. & Tirole, J. (2002). "Some simple economics of open source". *The Journal of Industrial Economics*, **L** (2), 197-234.
- Li, W. (2008). *Online knowledge sharing in a multinational corporation: Chinese and American practices*. PhD, University of Illinois.
- Lin, H.-F. & Lee, G.-G. (2006). "Determinants of success for online communities: an empirical study". *Behaviour & Information Technology*, **25** (6), 479-488.
- Lincoln, Y.S. & Guba, E.G. (1985). *Naturalistic inquiry*. Beverly Hills: CA: Sage Publications, Inc.

- Linde, A., Linderoth, H. & Räisänen, C. (2003). "An actor network theory perspective on IT-projects: A battle of wills". *Action in Language, Organisations and Information Systems*.
- Lloyd, A. (2009). "Informing practice: information experiences of ambulance officers in training and on-road practice". *Journal of Documentation*, **65** (3), 396-419.
- Lloyd, A. (2010). "Framing information literacy as information practice: site ontology and practice theory". *Journal of Documentation*, **66** (2), 245-258.
- Lounsbury, M. (2008). "Institutional rationality and practice variation: New directions in the institutional analysis of practice". *Accounting, Organizations and Society*, **33**, 349-361.
- Lounsbury, M.a.C., E. (2007). "New Practice Creation: An Institutional Perspective on Innovation". *Organization Studies*, **28** (7), 993-1012.
- Mahar, G. (2007). *Factors affecting participation in online communities of practice*. PhD Dissertation,
- Maloney-Krichmar, D. & Preece, J. (2005). "A multilevel analysis of sociability, usability, and community dynamics in an online health community". *ACM Transactions on Computer-Human Interaction*, **12** (2), 201-232.
- Marshall, N. (2008). "Cognitive and Practice-based Theories of Organizational Knowledge and Learning: Incompatible or Complementary?". *Management Learning*, **39** (4), 413-435.
- Marshall, N. & Rollinson, J. (2004). "Maybe Bacon Had a Point: The Politics of Interpretation in Collective Sensemaking". *British Journal of Management*, **15** (S1), S71-S86.
- Martin, E.W. (2000). "Actor-networks and implementation: Examples from conservation GIS in Ecuador". *International Journal of Geographical Information Science*, **14** (8), 715-738.
- Miettinen, R., Paavola, S. & Pohhjala, P. (2012). "From Habituality to Change: Contribution of Activity Theory and Pragmatism to Practice Theories". *Journal for the Theory of Social Behaviour*, **42** (3), 345-360.
- Morgan, G. & Smircich, L. (1980). "The case for Qualitative Research". *Academy of Management Review*, **5** (4), 491-500.
- Munir, K.A. & Jones, M. (2004). "Discontinuity and after: the social dynamics of technology evolution and dominance". *Organization Studies*, **25** (4), 561-581.
- Murdoch, J. (2001). "Ecologising sociology: Actor-network theory, co-construction and the problem of human exemptionalism". *Sociology*, **35** (1), 111-133.
- Mutch, A., Delbridge, R. & Ventresca, M. (2006). "Situating Organizational Action: The Relational Sociology of Organizations". *Organization*, **13** (5), 607-625.
- Nardi, B.A. & Whittaker, S. (2002). "The place of face-to-face communication in distributed work". In: P. Hinds & Kiesler, S. (eds.), *Distributed work: New research on working across distance using technology*, pp. 83-110. Cambridge: MIT Press.
- Nicolini, D. (2009). "Zooming in and out: Studying practices by switching theoretical lenses and trailing connections". *Organization Studies*, **30** (12), 1391-1418.



- Nicolini, D. (2011). "Practice as the Site of Knowing: Insights from the Field of Telemedicine". *Organization Science*, **22** (3), 602-620.
- Nicolini, D., Gherardi, S. & Yanow, D. (2003). "Introduction: Toward a practice-based view of knowing and learning in organizations". In: Nicolini, D., Gherardi, S. & Yanow, D. (eds.), *Knowing in organizations A practice based approach*, pp. 3-31. New York: ME Sharpe, Inc.
- Nonnecke, B., Andrews, D., Preece, J. & Voutour, R. (2004a). "Online Lurkers Tell Why". pp. 2688-2694.
- Nonnecke, B. & Preece, J. (1999). "Shedding Light on Lurkers in Online Communities". *Ethnographic Studies in Real and Virtual Environments: Inhabited Information Spaces and Connected Communities*, Edinburgh. pp. 123-128. Edinburgh.
- Nonnecke, B. & Preece, J. (2000). "Lurker demographics: counting the silent. ". *ACM SIGCHI CHI 2000 Conference on human factors in computing systems. The Hague*.
- Nonnecke, B. & Preece, J. (2001). "Why lurkers lurk". *Americas Conference on Information Systems 2001 Boston*.
- Nonnecke, B. & Preece, J. (2003). "Silent participants: Getting to know lurkers better". *From Usenet to CoWebs: Interacting with Social Information Spaces*, 110-132.
- Nonnecke, B., Preece, J. & Andrews, D. (2004b). "What lurkers and posters think of each other". *Proceedings of the 37th Hawaii International Conference on System Sciences - 2004*, Vol. 00, pp. 1-9.
- Orlikowski, W.J. (1993). "Learning from Notes: organizational issues in groupware implementation". *The Information Society*, **9** (3), 237-250.
- Orlikowski, W.J. (2000). "Using Technology and Constituting Structures : A Practice Lens for Studying Technology in Organizations". **11** (4), 404-428.
- Orlikowski, W.J. (2002). "Knowing in Practice : Enacting a Collective Capability in Distributed Organizing". *Organization Science*, **13** (3), 249-273.
- Orlikowski, W.J. (2007). "Sociomaterial Practices: Exploring Technology at Work". *Organization Studies*, **28** (9), 1435-1448.
- Orlikowski, W.J. (2010). "The sociomateriality of organisational life: considering technology in management research". *Cambridge Journal of Economics*, **34** (1), 125-141.
- Orlikowski, W.J. & Baroudi, J.J. (1991). "Studying information technology in organizations: Research approaches and assumptions". *Information Systems Research*, **2** (1), 1-28.
- Østerlund, C. & Carlile, P. (2005). "Relations in Practice: Sorting Through Practice Theories on Knowledge Sharing in Complex Organizations". *The Information Society*, **21** (2), 91-107.
- Pan, S. & Leidner, D. (2003). "Bridging communities of practice with information technology in pursuit of global knowledge sharing". *The Journal of Strategic Information Systems*, **12** (1), 71-88.
- Patton, M.Q. (2001). *Qualitative research and evaluation methods*. Sage.

- Peddibhotla, N.B. & Subramani, M.R. (2007). "Contributing to Public Document Repositories: A Critical Mass Theory Perspective". *Organization Studies*, **28** (3), 327-346.
- Phang, C., Kankanhalli, A. & Sabherwal, R. (2009). "Usability and Sociability in Online Communities : A Comparative Study of Knowledge Seeking and Contribution". *Journal of the Association for Information Systems*, **10** (10), 721-747.
- Pickard, A.J. (2007). *Research methods in information*. London: Facet Publishing
- Porter, C.E. (2004). "A typology of virtual communities: a multi-disciplinary foundation for future research". *Journal of Computer-Mediated Communication*, **10** (1).
- Porter, C.E. & Donthu, N. (2008). "Cultivating Trust and Harvesting Value in Virtual Communities". *Management Science*, **54** (1), 113-128.
- Preece, J. (2000). *Online Communities: Designing Usability, Supporting Sociability*. John Wiley.
- Preece, J. (2001). "Sociability and usability in online communities: Determining and measuring success". *Behaviour & Information Technology*, **20** (5), 347-356.
- Preece, J., Nonnecke, B. & Andrews, D. (2004). "The top five reasons for lurking: improving community experiences for everyone". *Computers in Human Behavior*, **20** (2), 201-223.
- Raban, D.R., Moldovan, M. & Jones, Q. (2010). "An empirical study of critical mass and online community survival". *Proceedings of the 2010 ACM conference on Computer supported cooperative work - CSCW '10*, 71-80.
- Rafaeli, S., Ravid, G. & Soroka, V. (2004). "De-lurking in virtual communities : a social communication network approach to measuring the effects of social and cultural capital". 2004, pp. 1-10.
- Reckwitz, A. (2002). "Toward a Theory of Social Practices: A Development in Culturalist Theorizing". *European Journal of Social Theory*, **5** (2), 243-263.
- Reed, M.I. (1997). "In praise of duality and dualism: rethinking agency and structure in organizational analysis". *Organization Studies*, **18** (1), 21-42.
- Ren, Y., Harper, F.M. & Riedl, J. (2010). "Increasing Attachment to Online Communities : Designing from Theory". *MIS Quarterly*.
- Ren, Y., Kraut, R. & Kiesler, S. (2007). "Applying Common Identity and Bond Theory to Design of Online Communities". *Organization Studies*, **28** (3), 377-408.
- Restler, S.G. & Woolis, D. (2007). "Actors and factors: Virtual communities for social innovation". *The Electronic Journal of Knowledge Management*, **5** (1), 89-96.
- Rheingold, H. (1993). *The Virtual Community: Homesteading on the Electronic Frontier*. Addison-Wesley Pub. Co.
- Rice, P.L. & Ezzy, D. (1999). *Qualitative research methods: a health focus*. Melbourne, Australia: Oxford University Press.
- Ridings, C.M., Gefen, D. & Arinze, B. (2002). "Some antecedents and effects of trust in virtual communities". *Journal of Strategic Information Systems*, **11** (3-4), 271-295.
- Roberts, J. (2006). "Limits to Communities of Practice". *Journal of Management Studies*, **43** (3), 623-639.

- Rosenbaum, H. & Shachaf, P. (2010). "A Structuration Approach to Online Communities of Practice: The Case of Q&A Communities". *Journal of the American Society for Information Science and Technology*, **61** (9), 1933-1944.
- Sarker, S. & Sidorova, A. (2006). "Understanding business process change failure: An actor-network perspective". *Journal of Management Information Systems*, **23** (1), 51-86.
- Savolainen, R. (2007a). "Information Behavior and Information Practice: Reviewing the "Umbrella Concepts" of Information-Seeking Studies". *Library Quarterly*, **77** (2), 109-132.
- Savolainen, R. (2007b). "Information Source Horizons and Source Preferences of Environmental Activists : A Social Phenomenological Approach". *Journal of the American Society for Information Science*, **58** (12), 1709-1719.
- Schatzki, T. (2001). "Introduction: practice theory". In: Schatzki, T., Knorr-Cetina, K. & von Savigny, E. (eds.), *The Practice Turn in Contemporary Theory*. New York: Routledge.
- Schatzki, T. (2005). "Peripheral Vision: The Sites of Organizations". *Organization Studies*, **26** (3), 465-484.
- Schatzki, T., Knorr-Cetina, K. & von Savigny, E. (2001). *The practice turn in contemporary theory*. London: Routledge
- Schatzki, T.R. (2002). *The site of the social: A philosophical exploration of the constitution of social life and change*. University Park, PA: The Pennsylvania State University Press.
- Schatzki, T.R. (2006). "On Organizations as they Happen". *Organization Studies*, **27** (12), 1863-1873.
- Schultze, U. & Boland, R.J. (2000). "Knowledge management technology and the reproduction of knowledge work practices". *Journal of Strategic Information Systems*, **9**, 193-212.
- Schultze, U. & Orlikowski, W.J. (2004). "A Practice Perspective on Technology-Mediated Network Relations: The Use of Internet-Based Self-Serve Technologies". *Information Systems Research*, **15** (1), 87-106.
- Scott, S.V. & Wagner, E.L. (2003). "Networks, negotiations, and new times: the implementation of enterprise resource planning into an academic administration". *Information and Organization*, **13** (4), 285-313.
- Seale, C. (1999). "Quality in Qualitative Research". *Qualitative Inquiry*, **5** (4), 465-478.
- Shah, S.K. (2006). "Motivation, Governance, and the Viability of Hybrid Forms in Open Source Software Development". *Management Science*, **52** (7), 1000-1014.
- Sharma, S., Smith, a.F., Rooksby, J. & Gerry, B. (2006). "Involving users in the design of a system for sharing lessons from adverse incidents in anaesthesia". *Anaesthesia*, **61** (4), 350-4.
- Sharratt, M. & Usoro, A. (2003). "Understanding Knowledge-Sharing in Online Communities of Practice". *Knowledge Creation Diffusion Utilization*.
- Silverman, D. (2006). *Interpreting qualitative data: Methods for analyzing talk, text and interaction* Sage Publications.

- Smith, J.K. (1983). "Quantitative versus qualitative research: An attempt to clarify the issue". *Educational Researcher*, **12** (3), 6-13.
- Stoddart, L. (2007). "Organizational Culture and Knowledge Sharing at the United Nations : Using an Intranet to Create a Sense of Community". *Knowledge and Process Management*, **14** (3), 182-189.
- Storey, J. & Barnett, E. (2000). "Knowledge management initiatives: learning from failure". *Journal of Knowledge Management*, **4** (2), 145-156.
- Strati, A. (2007). "Sensible Knowledge and Practice-based Learning". *Management Learning*, **38** (1), 61-77.
- Strauss, A.L. & Corbin, J. (1990). *Basics of qualitative research*. Newbury Park, CA: Sage.
- Tabak, E. (2008). "Inscription of information behaviour to communities of practice on an organisational intranet". *The 20th Australian Conference on Computer-Human Interaction: Designing for Habitus and Habitat*, NY. pp. 347-350. ACM, NY.
- Tatnall, A. & Burgess, S. (2002). "Using actor-network theory to research the implementation of a BB portal for regional SMEs in Melbourne, Australia". *15th Bled Electronic Commerce Conference eReality: Constructing the eEconomy*, Slovenia. pp. 179-189. Citeseer, Slovenia.
- Tatnall, A. & Gilding, A. (1999). "Actor-network theory and information systems research". *Australian Conference on Information Systems 1999* pp. 955-966. Citeseer.
- Teigland, R. & Wasko, M.M. (2004). "Extending Richness with Reach: *participation and Knowledge Exchange in Electronic Networks of Practice*". In: Hildreth, P.M. & Kimble, C. (eds.), pp. 230-242. Idea Group Publishing.
- Teo, H.-H., Chan, H.-C., Wei, K.-K. & Zhang, Z. (2003). "Evaluating information accessibility and community adaptivity features for sustaining virtual learning communities". *International Journal of Human-Computer Studies*, **59** (5), 671-697.
- Thomas, D.R. (2006). "A general inductive approach for qualitative data analysis". *American Journal of Evaluation*, **27** (2), 237-246.
- Tiwana, A. & Bush, A.A. (2005). "Continuance in Expertise-Sharing Networks : A Social Perspective". *IEEE Transactions on Engineering Management*, **52** (1), 85-101.
- Toral, S.L., Martínez-Torres, M.R. & Barrero, F. (2010). "Analysis of virtual communities supporting OSS projects using social network analysis". *Information and Software Technology*, **52** (3), 296-303.
- Usono, A., Sharratt, M., Tsui, E. & Shekhar, S. (2007). "Trust as an antecedent to knowledge sharing in virtual communities of practice". *Knowledge Management Research & Practice*, **5**, 199-212.
- Vaast, E. (2007). "What Goes Online Comes Offline: Knowledge Management System Use in a Soft Bureaucracy". *Organization Studies*, **28** (3), 283-306.
- Vaast, E. & Walsham, G. (2005). "Representations and actions: the transformation of work practices with IT use". *Information and Organization*, **15** (1), 65-89.

- van den Hooff, B. & de Leeuw van Weenen, F. (2004). "Committed to share: commitment and CMC use as antecedents of knowledge sharing". *Knowledge and Process Management*, **11** (1), 13-24.
- van den Hooff, B., van Weenen, F.D.L., Soekijad, M. & Huysman, M. (2010). "The value of online networks of practice: the role of embeddedness and media use". *JOURNAL OF INFORMATION TECHNOLOGY*, **25** (2), 205-215.
- Van House, N.A. (2003). "Science and Technoloav Studies and Information Studies". *Annual Review of Information Science and Technology V. 38*, pp. 3-86. Information Today, Inc.
- Veinot, T. (2007). ""The eyes of the power company": Workplace information practices of a vvault inspector". *Library Quarterly*, **77** (2), 157-179.
- Venkatesh, V. (2000). "Determinants of Perceived Ease of Use : Integrating Control , Intrinsic Motivation , and Emotion into the Technology Acceptance Model". *Information Systems*, **1997**, 342-365.
- Venters, W. (2010). "Knowledge management technology-in-practice: a social constructionist analysis of the introduction and use of knowledge management systems". *Knowledge Management Research & Practice*, **8** (2), 161-172.
- Walsham, G. (1997). "Actor-network theory and IS research: current status and future prospects". *In*: Lee, A., Liebenau, J. & DeGross, J. (eds.), *Information Systems and Qualitative Research*, pp. 466-480. London: Chapman and Hall.
- Walsham, G. (2006). "Doing interpretive research". *European Journal of Information Systems*, **15**, 320-330.
- Walsham, G. & Sahay, S. (1999). "GIS for district-level administration in India: problems and opportunities". *Mis Quarterly*, **23** (1), 39-65.
- Wang, C.-c. & Lai, C.-y. (2006). "Knowledge Contribution in the Online Virtual Community : Capability and Motivation". pp. 442-453.
- Wang, X. (2007). *An ecological perspective on online communities*. Ph.D. Dissertation, University of Pittsburgh.
- Wang, X., Butler, B. & Ren, Y. (2011). "The Impact of Membership Overlap on Growth : An Ecological Competition View of Online Groups ". *Articles in advance*, 1-36.
- Warde, A. (2005). "Consumption and Theories of Practice". *Journal of Consumer Culture*, **5** (2), 131-153.
- Wasko, M. & Faraj, S. (2000). "It is what one does": Why people participate and help others in electronic communities of practice". *The Journal of Strategic Information Systems*, **9** (2-3), 155-173.
- Wasko, M. & Faraj, S. (2005). "Why should I share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice". *MIS Quarterly*, **29** (1), 35-57.
- Wasko, M.M., Faraj, S. & Teigland, R. (2004). "Collective Action and Knowledge Contribution in Electronic Networks of Practice". *Journal of the Associatiion for Information Systems*, **5** (11-12), 493-513.
- Wasko, M.M., Teigland, R. & Faraj, S. (2009). "The provision of online public goods: Examining social structure in an electronic network of practice". *Decision Support Systems*, **47** (3), 254-265.

- Watson-Manheim, M.B. & Belanger, F. (2007). "Communication Media Repertories: Dealing with the Multiplicity of Media Choices". *MIS Quarterly*, **31** (2), 267-293.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.
- Whittemore, R., Chase, S.K. & Mandle, C.L. (2001). "Validity in qualitative research". *Qualitative health research*, **11** (4), 522-537.
- Whittle, A. & Spicer, A. (2008). "Is actor network theory critique?". *Organization Studies*, **29** (4), 611-629.
- Wilson, M. & Howcroft, D. (2002). "Re-conceptualising failure: social shaping meets IS research". *European Journal of Information Systems*, **11** (4), 236-250.
- Woerner, S.L., Orlikowski, W.J. & Yates, J. (2004). "The media toolbox: Combining media in organizational communication". *Proceedings of the Academy of Management, Orlando FL*.
- Wu, J.J., Chen, Y.H. & Chung, Y.S. (2010). "Trust factors influencing virtual community members: A study of transaction communities". *Journal of Business Research*, **63**, 1025-1032.
- Yates, J.A. & Orlikowski, W. (2002). "Genre systems: Structuring interaction through communicative norms". *Journal of Business Communication*, **39** (1), 13-35.
- Zboralski, K. (2009). "Antecedents of knowledge sharing in communities of practice". *Journal of Knowledge Management*, **13** (3), 90-101.

## Appendices

Appendix one: List of publications and presentations arising from this thesis

1. Rivera González, G. & Cox, A.M. (2012). "Redefining *participation* in Online Community: Some Neglected Topics". In: Li, H. (ed.), *Virtual Community participation and Motivation: Cross-Disciplinary Theories*, pp. 72-89. Hershey PA: IGI Global.
2. Rivera González, G., Cox, A.M. & Flores Zambada, R. (2012). "A human resources project implementation: An actor-network theory perspective". *Contaduría y Administración*, 57 (3), 9-39.
3. Rivera González, G. & Cox, A.M. (2012). "Using ANT and practice theory to explore the shaping of participation and non-use of social media". *Co-production of Knowledge: Social media, STS and... Symposium*. The University of York, York, 18th-20th July.
4. Rivera González, G. & Cox A.M. (2010). "Multiple memberships in organizational change projects and operational continuity". *VIII Jornadas Latinoamericanas de Estudios Sociales de la Ciencia y la Tecnología - VIII ESOCITE, Buenos Aires*, 20th-23rd July.
5. Rivera González G. & Cox, A.M. (2009). "A Human Resources Project: An online community and its context" *The Second edition of the International Doctoral Consortium on Intellectual Capital Management. University Paris-Sud 11, Paris*, 27th May.

## Appendix two: Terminology

ANT	Actor-Network Theory
PBA	practice-based approach
<i>CODECO</i>	Collaborative technology supporting participation
<i>the community</i>	The online community, the focus of this study
<i>participation</i>	Participation in <i>the community</i>
<i>the implementation</i>	The HR project in which sharing of knowledge and information were expected to occur via <i>participation</i>
<i>INSTECH</i>	The multi-campus University system
<i>practitioners</i>	All HR employees of <i>INSTECH</i> including those working at the HR headquarters, and HR directors and staff of each campus
<i>headquarters</i>	HR headquarters where strategic decisions (such as the implementation of institutional projects) are made
<i>president</i>	Senior HR officers leading <i>the implementation</i> and the launch of
<i>vice-president</i>	<i>CODECO</i>
<i>director</i>	HR Directors of each campus of <i>INSTECH</i>
<i>staff</i>	HR staff working at each campus of <i>INSTECH</i>
<i>meetings</i>	HR face-to-face monthly-meetings attended by members of the <i>headquarters</i> and <i>directors</i> where strategic concerns are mainly discussed
<i>model</i>	A set of systems, concepts, procedures, and standards developed at <i>INSTECH</i> to guide the performance of the HR practice.



Appendix three: Interview schedule stage one

Interview questions	Themes/areas of interests
<p>Can I record the interview?</p> <p>Can you please read and sign the form if you agree on everything what it is stated?</p> <p>Are you aware that you can withdraw from the interview at any time?</p> <p>Do you have any questions about this interview or this project in general?</p>	<p>Before the interview</p>
<p>Explanation of the purpose of the study (Researcher)</p> <p>Can you tell me about yourself, and your educational background?</p> <p>Can you tell me about the staff and student population of the campus?</p> <p>Can you tell me about your main responsibilities and duties?</p>	<p>Opening statements and background information</p>
<p>What is the HR project all about?</p> <p>Can you describe the different stages of the project and the main goals to be achieved in each stage?</p> <p>What is your role in this project?</p> <p>What experiences have you had during the implementation stage of the project?</p> <p>Does this project represent any type of conflict on your actual duties; i.e., time, resources, interests?</p> <p>If yes, how do you deal with these problems?</p> <p>How does the organisation support you in achieving the goals of the project?</p>	<p>HR project</p>
<p>What kind of knowledge do you need to do the project's work?</p> <p>Can you talk about your sources of information, support and advice in this project?</p> <p>How do you interact with others also involved in the project?</p> <p>Do you share your project' experiences with others? How?</p> <p>Which kind of media do you usually use to communicate with</p>	<p>Knowledge sharing and sources of information during the HR project</p>

others?	
<p>Are you aware of the online community?</p> <p>What do you think about it?</p> <p>Did you attend the online session where the collaborative technology supporting the online community was introduced?</p> <p>How do you describe your actual participation in the online community?</p> <p>Can you show me the activities that you can do in the online community?</p> <p>What can you tell me about your participation's experiences in the online community?</p> <p>Have you found the online community useful to support your knowledge sharing activities during the implementation of the HR project?</p>	Online community
Do you have any further comments or suggestions about your job/the online community?	Ending the interview process

Appendix four: Interview schedule stage two

Interview questions	Themes/areas of interests
<p>Can I record the interview?</p> <p>Can you please read and sign the form if you agree on everything what it is stated?</p> <p>Are you aware that you can withdraw from the interview at any time?</p> <p>Do you have any questions about this interview or this project in general?</p>	<p>Before the interview</p>
<p>Explanation of the purpose of the study</p> <p>Can you tell me about yourself, your background and how you ended up in this job?</p> <p>Can you tell me about your experience in this job, and staff and student population of the campus?</p> <p>Can you tell me about your main responsibilities?</p>	<p>Opening statements and questions</p>
<p>Can you describe your experiences with the HR project and how it first came to your campus?</p> <p>Can you describe how you interact with others during the implementation of the HR project?</p> <p>Have you participated in the online community?</p> <p>What are your experiences with the online community?</p> <p>Why haven't you participated?</p>	<p>Online Community and HR project</p>
<p>Could you describe a typical day at work? What would I see you doing in a typical day at work?</p> <p>How would you describe the environment of your workplace?</p> <p>Are there any 'main' concerns/guidelines that inform the way you do Human Resources?</p> <p>Could you talk about your most and least enjoyable things about your job?</p> <p>How is the HR practice different from other practices, can you see any particular features of HR practices?</p>	<p>Working practices Differentiation among practices and knowing-in - practice</p>

<p>What could you say about the human side of Human Resources?</p>	
<p>How are HR connected to other practices? Could you provide some examples of this situation?</p> <p>Do you have any forms of interaction with people from other areas?</p> <p>How do you usually communicate with them? Which media do you use? Why?</p>	<p>Interconnectedness among practices</p>
<p>How would you describe your job; i.e., do you have a routine; is it always changing?</p> <p>Do you have a preferred way of communicating?</p> <p>How is it that you communicate in the ways you do?</p> <p>What would affect you current ways of interaction?</p>	<p>Routinisation and change</p>
<p>Is there anything else you would like to say about your job/the online community?</p>	<p>Ending the interview process</p>

Appendix five: Research participants stage one

Participant	ID code	Position/ Group	Campus Size (Employees)	Gender (M/F)	Age (Years)	Profession	Seniority (Years)
1	<b>D1LF</b>	Director 1	Large 1500	F	45-55	Communication MA	29
2	<b>S1LF</b>	Staff 1	Large 1500	F	35-45	Psychology	15
3	<b>D2MF</b>	Director 2	Medium 600	F	35-45	Accountant	6
4	<b>D3SF</b>	Director 3	Small 286	F	25-35	Psychology MA	6
5	<b>D4LF</b>	Director 4	Small 286	F	25-35	Psychology MA	10
6	<b>D5LM</b>	Director 5	Large 1450	M	45-55	Management MA	15
7	<b>S2LF</b>	Staff 2	Large 1450	F	25-35	Communication	5
8	<b>HCM</b>	Headquarters (Coordinator)	NA	M	45-55	Biology MA	20
9	<b>D6MF</b>	Director 6	Medium 800	F	35-45	Psychology	8
10	<b>D7MF</b>	Director 7	Medium 707	F	35-45	Accountant	20
11	<b>D8LF</b>	Director 8	Large 1685	F	45-55	Education MA	15
12	<b>HPM</b>	Headquarters (President)	NA	M	45-55	Management. PhD	15
13	<b>HVPM</b>	Headquarters (Vice- President)	NA	M	35-45	Engineering MBA	10
14	<b>D9LF</b>	Director 9	Large 1700	F	35-45	Engineering MA	6
15	<b>S3LF</b>	Staff 3	Large 1700	F	35-45	Psychology MA	16
16	<b>S4LF</b>	Staff 4	Large 1300	F	35-45	Accounting MSc	18
17	<b>D10SF</b>	Director 10	Small 350	F	25-35	Psychology	6

Appendix six: Research participants stage two

<b>Partici- pant</b>	<b>ID code</b>	<b>Position/ Group</b>	<b>Campus Size (Employees)</b>	<b>Gender (M/F)</b>	<b>Age (Years)</b>	<b>Profession</b>	<b>Seniority (Years)</b>
18	<b>D11SF</b>	Director 11	Small 400	F	35-45	Psychology	18
19	<b>D12MF</b>	Director 12	Medium 700	F	45-55	Accountant	12
20	<b>D13MF</b>	Director 13	Medium 650	F	35-45	Accountant	6
21	<b>S5MM</b>	Staff 5	Medium 650	M	35-45	Communication MA	5
22	<b>D14SF</b>	Director 14	Small 350	F	35-45	Psychology	10
23	<b>HPM</b>	Headquarters (President)	NA	M	45-55	Management. PhD	15
24	<b>HVPM</b>	Headquarters (Vice- President)	NA	M	35-45	Engineering MBA	10
25	<b>D15MM</b>	Director 15	Medium 850	M	45-55	Communication	12
26	<b>D16LF</b>	Director 16	Large 1200	F	35-45	Accountant	16
27	<b>S6LF</b>	Staff 6	Large 1200	F	35-45	Psychology	12
28	<b>D17LF</b>	Director 17	Large 1100	F	45-55	Management MA	12
29	<b>S7LF</b>	Staff 7	Large 1100	F	35-45	Education	7
30	<b>D18SF</b>	Director 18	Small 320	F	25-35	Communication	6

Appendix seven: Ethics-related documentation

Research ethics approval

Date: Wed, 24 Jun 2009 16:51:56 +0100

From: V.Gillet@sheffield.ac.uk

To: gibran\_rg@hotmail.com

CC: A.M.Cox@sheffield.ac.uk

Subject: Research ethics application - approved with suggested changes

Dear Gibrán,

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that it was approved on ethics grounds, on the basis that you will adhere to the ethics forms that you submitted. The reviewers did suggest that you might consider the following:

1. Reconsider the phrasing of A.10 concerning the destruction of audio recordings and especially transcripts after the project has ended, as this data may be of relevance for publication, perhaps even in combination with data subsequently collected in other projects, at a later date.
2. Explain how consent will be obtained when observing online activities and explain the role of the researcher in order to assure confidentiality of any conversations and activities that take place.

I suggest you consider these comments together with your supervisor before beginning your data collection and send me updated documents, if appropriate. If during the course of your project you need to deviate further from the documents you submitted please inform me. Written approval will be required for any other significant deviations from or significant changes to the approved documents.

You may now commence your research.

Thanks,

Val Gillet

Ethics Administrator

<p>1. Research Project Title: “Factors that shape participation in an online community: Multi-memberships, competition and previous history and levels of participation”</p> <p>2. Invitation paragraph You are being invited to participate in this research project. Before you take a decision to participate or not, it is important for you to understand the purposes and implications of this research. Please take your time to read the following information carefully and do not hesitate to ask the researcher if something is not clear or if you would like to obtain more information. Thank you for reading this.</p> <p>3. What is the project’s purpose? The aim of this research is to investigate how people involved in the Competence Project lead by the Human Resource Department at ITESM are influenced by their context in which they live and work to participate in an online space created to support the project’s success. I am attempting to understand what shapes peoples’ participation in the online space and what kind of interactions exist between people who are involved in this project.</p> <p>4. Why have I been chosen? You have been chosen to participate as you are one of the people who are involved in the project.</p> <p>5. Do I have to take part? Your participation to be interviewed in the project is completely optional. If you decide to participate, you will be asked to read and sign a consent form and you are free to withdraw at any time. If you choose not to participate in this research project, there will be no effect in any form that may affect your work.</p> <p>6. What will happen to me if I take part? If you decide to participate an initial interview will take place between July and August 2009. The interview will take around 60 minutes to complete. If necessary you will be invited again to participate in another interview next year for additional data or clarification. During the interview you will be asked about your role in the Competence Project and your participation in the online space.</p>
--



The purpose of the interview is to understand what shapes your participation in this online space.

7. What do I have to do?

You will be asked to provide comments in relation to the questions asked and shared your experiences during the project. Also have to accept that your online participation in the online space will be studied to see how you interact and participate in that space.

8. What are the possible disadvantages and risks of taking part?

No foreseeable disadvantages or risks exist if you take part in this project. All your comments will be made anonymous in order to protect your identity and the confidential documents will be locked in a secured file cabinet.

9. What are the possible benefits of taking part?

There will be no material or monetary benefit for your participation. One of the benefits of your participation would be that your opinions and experiences may help to have a better understanding of how the online space is working and based on this opinions and experiences some suggestions can be made to improve its use.

10. What happens if the research study stops earlier than expected?

All participants will be informed if the research stops earlier than expected. Reasons will be clarified.

11. What if something goes wrong?

If you have any problem or would like to make a complain regarding your treatment by the researcher, please feel free to contact my supervisor:

Supervisor details

Supervisor name	Andrew M. Cox
E-mal	a.m.cox@sheffield.ac.uk
Address	Room 222, Department of Information Studies University of Sheffield, Regent Court, 211, Portobello Street, Sheffield, S1 4DP

Tel	0044(0)114 2226347
-----	--------------------

If your complaint has not been handled to your satisfaction you can contact the University's Registrar and Secretary at:  
<http://www.shef.ac.uk/registrar/index.html>

12. Will my taking part in this project be kept confidential?

Your assistance in providing the required information will be highly appreciated. All information you may provide will be kept in strict confidentiality and anonymous. Myself and my supervisor are the only who will have access to the information you provided and no attempt will be made to reveal your identity in the final report of the analysed data.

13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

The information that I am attempting to collect from this interview is to know what different factors affect your participation in the online space. I am also seeking for information regarding your role in the project and how the online space can support your work regarding the project. Collecting this information would allow me to have a better understanding on how different people participate in the online space and to see the factors that affect participation on the online space.

14. What will happen to the results of the research project?

The data may appear in presentations and journal articles keeping at all times your anonymity. A summary of the study after its completion will be provided to the leader of the project.

Will I be recorded, and how will the recorded media be used?

The audio recordings of the interviews in which you may take part during this research will be used only for transcriptions and analysis and may be used for illustration in conference presentations and lectures. No other use will be made of them without your written permission, and no one outside the project will be allowed access to the original recordings.

15. Who is organising and funding the research?

This project is funded by CONACAY and SEP and is part of my PhD dissertation in the University of Sheffield in UK.

16. Who has ethically reviewed the project?

This research project has been ethically approved by the Department of Information Studies' Ethical Review Procedure.

17. Contact for further information

Students Details	
Student name	Gibran Rivera Gonzalez
E-mail	lip08gr@sheffield.ac.uk
Address	Room 224, Department of Information Studies, University of Sheffield, Regent Court, 211, Portobello Street, Sheffield, S1 4DP
Tel	0044(0) 7599714360

Supervisor details	
Supervisor name	Andrew M. Cox
E-mal	a.m.cox@sheffield.ac.uk
Address	Room 222, Department of Information Studies, University of Sheffield, Regent Court, 211, Portobello Street, Sheffield, S1 4DP
Tel	0044(0)114 2226347

A copy of this information sheet will be given to you along with a signed consent

form. Finally, thank you very much for taking time to participate in this interview. Your assistance in providing the required information will be highly appreciated.

Thank you very much for your participation in this project.

Consent Form

Title of Research Project: **Factors that shape participation in an online community: Multi-memberships, competition and previous history and levels of participation**

Name of Researcher: **Gibran Rivera Gonzalez**

Participant Identification Number for this project:  
box

Please initial

I confirm that I have read and understand the information sheet  
dated \_\_\_\_\_ explaining the above research project

and I have had the opportunity to ask questions about the project.

I understand that my participation is voluntary and that I am free to withdraw  
at any time without giving any reason and without there being any negative  
consequences. In addition, should I not wish to answer any particular  
question or questions, I am free to decline. *Insert contact number here of  
lead researcher/member of research team (as appropriate).*

I understand that my responses will be kept strictly confidential.

I give permission for members of the research team to have access to my  
anonymised responses. I understand that my name will not be linked with  
the research materials, and I will not be identified or identifiable in the  
report or reports that result from the research.

4. I agree for the data collected from me to be used in future research

I agree to take part in the above research project.

\_\_\_\_\_

Name of Participant    Date    Signature

\_\_\_\_\_  
Name of person taking consent      Date      Signature

\_\_\_\_\_  
Lead Researcher      Date      Signature

Copies:

One copy for the research participant and one copy for the researcher

## Appendix eight: Samples of coded interview data

### Coded data stage one

The screenshot displays a software interface for analyzing coded interview data. On the left, a 'Tree Nodes' panel shows a hierarchical structure of nodes. The 'Relations and interactions' node is selected, and its sub-nodes are visible, including 'benefits gained', 'existence of different forums', and 'preference for face to face'. The main window shows a detailed view of this node, titled 'Relations and interactions'. It contains three references with their respective coverage percentages:

- <Internals\Interviews\I015MM 25> - § 1 reference coded [0.80% Coverage]**  
**Reference 1 - 0.80% Coverage**  
Desde que yo recuerdo, nosotros como área de recursos humanos siempre hemos estado interesados en promover la continua interacción entre nosotros. Tu sabes que nuestra condición hace que sea difícil que nos veamos frecuentemente, pero como te digo, aun así siempre hemos tratado de mantenernos en contacto de alguna u otra manera.
- <Internals\Interviews\I018SF 30> - § 2 references coded [1.50% Coverage]**  
**Reference 1 - 0.55% Coverage**  
Para mí es indispensable estar en contacto con las personas que de alguna u otra manera se relaciona con mi trabajo. Fíjate, incluso cuando tengo una pequeña duda, tomo esto como una excusa para contactar a alguien con quien no he hablado en mucho tiempo.
- Reference 2 - 0.95% Coverage**  
Mira como director de recursos humanos, realmente me preocupa mantener mis relaciones de trabajo que he desarrollado a lo largo de los años, porque uno nunca sabe que puede ocurrir. Por ejemplo, a veces te puedes encontrar tan de prisa, y es gracias a las personas que conoces, que puede salir de una situación crítica. Es justamente esa gente, la que en momentos difíciles hace tu

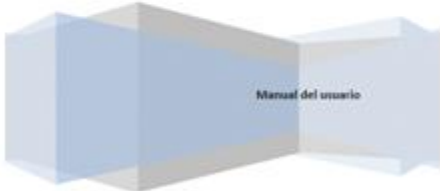
### Coded data stage two

The screenshot displays a software interface for analyzing coded interview data. On the left, a 'Nodes' panel shows a hierarchical structure of nodes. The 'Competing actors' node is selected, and its sub-nodes are visible, including 'New presidents', 'New vision', 'Previous projects', and 'Re-accreditation'. The main window shows a detailed view of this node, titled 'Competing actors'. It contains three references with their respective coverage percentages:

- <Internals\I035F 4> - § 1 reference coded [0.93% Coverage]**  
**Reference 1 - 0.93% Coverage**  
Realmente no veo necesidad de participar en la comunidad virtual. Pues como te digo, en comunicación que requiero tener para implementar el proyecto de competencias, me siento muy bien con los foros que ahora tenemos. Además, pienso que la introducción de la comunidad estuvo un poco retrasada. Quizá una historia diferente hubiera sido si tanto la comunidad como el proyecto hubieran sido implementados simultáneamente.
- <Internals\I07MF 10> - § 1 reference coded [1.32% Coverage]**  
**Reference 1 - 1.32% Coverage**  
Yo pienso que cualquier esfuerzo tecnológico tiene que satisfacer alguna necesidad en particular, por lo que creo que tanto xxx como yyy tuvieron que haber enfatizado en la necesidad que la comunidad virtual iba a resolver, más que la comunidad per se. Desde mi perspectiva, yo no me siento aislada. Al contrario, tengo una variedad de medios que puedo utilizar para comunicarme con el sistema y con los campus. Ciertamente hoy puedo decir que recibo todo lo que necesito en términos de apoyo y conocimiento para poder implementar el proyecto.
- <Internals\I02LF 7> - § 3 references coded [2.42% Coverage]**  
**Reference 1 - 0.75% Coverage**  
La verdad tenemos una gran variedad de medios disponibles y pues si yo siento que la comunidad virtual sale un poquito sobrada. Si la ves bien, en realidad no te ofrece algo extra de lo que ya podemos acceder con los medios existentes.

Appendix nine: Samples of official documentation analysed during the first stage of the study

**Comunidad virtual de Gestión  
de RH por Competencias**





## Roles organizacionales

Como se mencionó anteriormente, las comunidades virtuales tienen una organización interna que está definida por roles. Cada miembro tiene uno o más roles y asume una serie de responsabilidades de acuerdo a estos roles.

De acuerdo a las necesidades de la comunidad, se determinarán los roles que existirán.

El líder de la comunidad hará públicas las actividades y responsabilidades correspondientes a cada rol dentro de la comunidad.

Algunos de los roles que pueden existir en las comunidades son los siguientes:

- **Líder de la comunidad:** Responsable de una comunidad en específico. Puede delegar responsabilidades a los facilitadores con el soporte de los roles organizacionales.
- **Facilitadores de la comunidad:** Responsable de ayudar a los miembros de una comunidad específica, son soportados por otros roles organizacionales.
- **Mentor:** Tiene el compromiso de ayudar a los nuevos miembros de la comunidad en su integración a la misma.
- **Moderador de foros :** Responsable de administrar los foros de discusión para estimular la participación de los miembros.
- **Documentador :** Responsable de documentar toda la información relevante generada para y dentro de la comunidad.
- **Miembro de la comunidad específica:** Todos los miembros de la comunidad tienen este rol y su principal función es participar y colaborar con la misma.

Inicialmente, en la Comunidad de gestión por competencias, se asignarán los roles de:

- Líder de la comunidad: Ing. ~~XXXXXXXXXXXXXXXXXXXX~~
- Miembros de la comunidad:
  - Directores de RH de las Rectorías de Zonas
  - Directores de RH de los campus
  - Responsables de la implantación del Modelo de Gestión de RH por Competencias
  - Responsables técnicos de administrar la herramienta

# Políticas y procedimientos para la Comunidad virtual de Gestión de RH por competencias

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## **Introducción**

La Dirección de Recursos Humanos del Sistema pone a su disposición las políticas a seguir en la Comunidad virtual de gestión de RH por competencias, las cuales comprenden los lineamientos generales y procedimientos involucrados para la correcta administración de la información de dicha comunidad.

La Comunidad virtual de gestión de RH por competencias es un espacio de colaboración donde grupos de personas, involucradas en el proyecto de gestión por competencias, podrán interactuar al compartir experiencias y conocimientos relacionados con este tema.

Este documento será actualizado conforme a las necesidades de la organización y es responsabilidad de la Dirección de Recursos Humanos del Sistema notificarlo de manera oportuna.

10. Los foros de discusión deberán ser creados solamente por el líder o responsable de la comunidad a nivel sistema, rectoría o campus, y por el moderador de foros.
11. El tiempo de respuesta será no mayor a 2 días hábiles posteriores a la petición.
12. Es responsabilidad de cada miembro de la comunidad, el entrar al menos tres veces a la semana a verificar si hay algún aviso, comentario o documento que requiera ser atendido o consultado.
13. El moderador de foros será el responsable de evaluar periódicamente las aportaciones hechas en los foros, con el fin de generar documentos de memoria de la comunidad.
14. Las Reuniones, Tareas y Anuncios deberán ser publicadas solamente por el líder o responsable de la comunidad a nivel sistema, rectoría o campus.
15. Los manuales de capacitación para la navegación de la comunidad deberán estar en la Biblioteca en la carpeta de Capacitación de la CV.

## Appendix ten: Samples of snap-shots of communication activity in the online community

**Collaboration Suite Workspaces** Preferencias | Desconectar | Ayuda  
**Mis Espacios de Trabajo**

Mis Espacios de Trabajo > Gestión por competencias > Está conectado como: Usuario Dummy. El rol es 'Escritor'.

**Gestión por competencias**

Buscar:

- **Visión General**
- Biblioteca
- Reuniones
- Tareas
- Anuncios
- Discusiones
- Buzón
- Vistas
- ▶ Miembros

**Visión General**

Comunidad para compartir documentación sobre el proyecto de Gestión por competencias Valores

**Actividad de Biblioteca**

Nombre	Carpeta Principal	Fecha de Modificación	Modificado por
No hay ninguna actividad de bibli...			

**Actividad de Discusiones**

Nombre	Foro	Fecha de Modificación	Modificado por
Re: ¿Qué les gustaría que se dis...	Delimitando la co...	18-mar-2009 16:49	[Redacted]

**Actividad del Buzón**

Nombre	Fecha de Modificación	Modificado por
filminas del plan de certificaci...	30-mar-2009 16:47	[Redacted]
Re: Curso de comunidades	06-mar-2009 18:45	[Redacted]

**Anuncios**

- Curso de Comunidad Virtual
- Políticas de la Comunidad

**Mis Tareas Pendientes**

- Ninguna Tarea Pendiente

**Mis Próximas Reuniones**

- Ninguna Próxima Reunión

[Mis Espacios de Trabajo](#) | [Preferencias](#) | [Desconectar](#) | [Ayuda](#)

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 10.1.2.0.0 (051019.1244)

**Collaboration Suite Workspaces** Preferencias | Desconectar | Ayuda  
**Mis Espacios de Trabajo**

Mis Espacios de Trabajo > Gestión por competencias > Está conectado como: Usuario Dummy. El rol es 'Escritor'.

**Gestión por competencias**

Buscar:

- Visión General
- **Biblioteca**
- Reuniones
- Tareas
- Anuncios
- Discusiones
- Buzón
- Vistas
- ▶ Miembros

**Carpeta Actual: Biblioteca** Nueva Carpeta | Cargar

Filtrar por Nombre:   Cuota de Biblioteca Usada: 0%

Seleccionar Elementos y ...

Seleccionar Todo | No Seleccionar Nada

Seleccionar	Nombre	Acción	Estado	Tamaño	Modificado por	Fecha de Modificación
<input type="checkbox"/>	Cómo utilizar esta comunidad				[Redacted]	26-ago-2009 16:53
<input type="checkbox"/>	Documentación de Gestión de RH...				[Redacted]	05-ene-2010 9:58
<input type="checkbox"/>	Perfiles de puesto				[Redacted]	21-oct-2010 12:21
<input type="checkbox"/>	Registro de Avances				[Redacted]	17-nov-2009 12:15
<input type="checkbox"/>	Trash				system	18-oct-2010 13:59

No hay contenido enlazado existente  Contiene Contenido Enlazado

[Nueva Carpeta](#) [Cargar](#)

[Mis Espacios de Trabajo](#) | [Preferencias](#) | [Desconectar](#) | [Ayuda](#)

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 10.1.2.0.0 (051019.1244)

## Appendix eleven: Samples of documentation included in the audit trail

### Samples of notes from the researcher's diary

**Saturday 3th of July 2010**

I finally submitted my Upgrade report to my supervisor. I sent to my supervisor a report consisting of 28,000 words. The report included the work done during the first 21 months of my study. It includes the research problem, a literature review on managerial work, the methodology, analytic framework, initial findings of my research and further work. I am expecting to receive feedback from my supervisor within one week and work on these corrections. Within two weeks I will be submitting the final version of the upgrade report to the Department.

**Tuesday 6<sup>th</sup> of July 2011**


I had a short meeting with my supervisor. It lasted about 30 minutes. We discuss the following issues:

Together we checked and agreed on the activities I did during the period April-June 2010 and wrote the SEP report. This report was mainly based on the Upgrade report in which I introduced a new timetable for my further work.

We discuss some initial issues about my Upgrade report:

- Add page numbers and cover page (I also added acknowledgement and Table of figures)
- Double check the periods I am describing (18 or 21 months?)
- Discussion on the stages of my research. We agreed that rather than 3 different phases my research consist of two. What I am doing in the second phases is to study in-depth the issue of multi-memberships; although I am using different methods (interviews and periods of observations). The topic is the same.
- Give more time to do the writing up. Based on this discussion I changed from 4 months previously assigned to 8 months for writing up.
- An explanation is needed to justify why I only used 13 interviews after I have done 17.
- The issue of how ANT and PT fit together was shortly discussed. My supervisor noted that using PT for the overall study was not the best idea, in that it would mean to disregard what I have done so far. Rather PT could be used as the framework for the second stage. The issue here, is to use together this two theories along my research
- Another important issue was the fact that my research does not have a clear focus on "Information Studies". I need to reflect on this issue further.

Samples of records of supervision

 The University of Sheffield
<h2>Graduate Research Office</h2> <h3>Record of Supervision</h3>
<b>Personal Information</b>
<b>Name of Student:</b> Gibran Rivera
<b>Department:</b> Information Studies
<b>Name of Supervisor:</b> A.M.Cox
<b>Name of Second Supervisor (or equivalent):</b> 
<b>Report of Meeting</b>
<b>Date of Meeting:</b> 21-03-11
<b>Progress on objectives set at the last meeting:</b> I finish transcription process. All interviews are transcribed in Nvivo Reading of Schatzki's book in progress
<b>Report on current meeting:</b> Discussion on emerging findings during the last set of interviews Work out on my findings Need to apply for extension Book chapter: Participation in online communities: waiting for notification
<b>Next Meeting</b>
<b>Student: Objectives agreed (with timescales) for action before next meeting:</b> Reflect on how I achieved theoretical saturation Re-read transcriptions and work on findings Work on the plan and application for scholarship extension Work on feedback for book chapter "HR: An ANT perspective"
<b>Supervisor: Objectives agreed (with timescales) for action before next meeting:</b>
<b>Date of next meeting:</b> 18-04-11
<b>Other relevant information:</b>
Who was this form completed by: Student <input checked="" type="checkbox"/>

## Samples of form used to report the analysis of complementary methods

**Source:** Online seminar

Code: OS3

**Date:** 08-07-2009

**Participants:** HR president, HR vice-president, HR directors and members of staff from different campuses

**Duration:** 60 minutes

**Content:**

The competency-based model was further discussed following the content of the previous seminar. The HR president and vice-president introduced the first stage of the project in which "job descriptions" must be developed. Examples of job descriptions can be found in the online community. It seems that the online community could be used as a documentary repository in which different job descriptions can be uploaded.

From what was said in the seminar today, in order to deploy the competency-based model, HR practitioners require continuous interaction with people working at the headquarters. This, in many occasions, was assumed can happen via existing media such as email and telephone communication.

There were a few questions regarding the development of job descriptions from the side of HR directors and staff. This would require further discussion. It would be helpful to explore how this discussion takes place (e.g., which media is used).



## Appendix twelve: Final coding structure stage one

### *INSTEK* as an Actor-Network

- Campuses
- Steering committee
- HR direction-*INSTEK*-level
- HR direction-campus-level

### *CODECO* and the implementation

- Inability to evolve
- Irreversibility properties
- Late launch
- Competing actors
- Weak envelope

### Chronological Narrative of Implementation

- Implementation as actor-network
  - Human actors
  - Non-human actors
- Antecedents
  - New *president*
  - New vision
  - Previous projects
  - Re-accreditation
- Initiation
  - Controlling actors
  - Implementation as OPP
  - Passing OPP-positive
  - Passing OPP-negative
  - Steering committee meetings
  - Initiation issues
    - Implementation speeded up
    - Lack of enrolment of actors
- Re-launch
  - Interessement and enrolment strategies
    - *Vice-president* as envoy
    - Online seminars
    - Campus visits
    - Agenda

- Improving model
  - Launch *CODECO*
- Disrupting actors
- Abandonment of actors

## Appendix thirteen: Final coding structure stage two

### Features of HR practices

- Work overload
- Time constraints
- Marginalisation
- Work variation
- Source of mixed feelings

### Shared knowings

- Relations and interactions
  - Benefits gained
  - Existence of different forums
  - Preference for face-to-face
- Prioritising operational continuity
- Collaboration and support
  - Headquarters
  - Relaxed environment
  - Outside working environment
- Continuous learning
- Knowing how to communicate
  - Purpose-oriented
  - Being the public face
  - Interaction with human beings
- Devotion to employees
  - All about service
  - Strategies
  - Negative consequences

### Supporting shared knowings

- *participation* and relationships
- *participation* and collaboration
- *participation* and learning
- *participation* and knowing how to communicate

### Fitting taste

- Work overload and time constraints
- Human-side of communication
- Preference for face-to-face
- Emotional dimension

### Availability of media

- Embedded media

### Interconnectedness between practices

- Widespread use
- Passive attitude

### Routinisation of media use

- Before the implementation
- During the implementation

Appendix fourteen: List of top journals used in the literature reviews

<b>Top journals used as sources of previous literature</b>	<b># of studies from each journal</b>
Organization Science	16
Organization Studies	11
Management Learning	7
MIS Quarterly	7
Information Systems Research	6
Journal of Management Studies	5
Organization	5
Journal of Information Science	5
Journal of Strategic Information Systems	5
European Journal of Information Systems	4
Journal of Documentation	4
The Information Society	4
Journal of Knowledge Management	4
Knowledge and Process Management	3
Academy of Management Review	3