Organisational Complexity:
Organizing Through the Generation and Sharing of Knowledge

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This paper explores the processes of knowledge generation and sharing among the employees of a multinational business organisation. We consider the generation and sharing of knowledge as crucial for the process of organising, especially in situations in which new businesses are being developed. In particular this paper examines the new ways of organising that emerged within the multinational organisation following the creation of a new internet business unit. The paper elaborates on the effects of those changes in the way people make sense of the new working contexts through the stories they share.

Considering knowledge as dynamic, generative and emergent; rooted in social practice and (re)produced and shared in social interactions has led us to focus on the study of organisational collectives such as work teams. In interpreting the findings from the empirical study, it is suggested that the interactions among those collectives are the medium through which sense making and knowledge generation occur in the organization resulting from the web of relationships developed, maintained and sustained through the participation of people within different networks. However, it becomes also apparent that the participation in those networks does not only enable but can also inhibit both the generation and sharing of new knowledge as well as the development of new ways of organising.

Keywords

Knowledge processes
Organising
Teams
Networks
Multinational corporations

Introduction

In this paper we explore the processes of knowledge sharing and generation among the employees of a multinational business organisation –the Corporation-. We consider knowledge generation and sharing as crucial for the process of organising, especially in situations in which new businesses are being developed. In particular the paper examines the ways of organising that emerged within the Corporation after the set up of an internet business unit (NIB) aimed at generating and spinning off new internet related businesses. The paper elaborates on the effects of these processes in the way people reconstruct the organisation and their ways of working through the stories they share. These stories compose a collectively (re) produced narrative that guides -and therefore constrains- employees' recollections. They are also the vehicle through which people both share and challenge what they know and the way they use it.

Considering knowledge as a dynamic, generative and emergent -rather than as an attribute of the organisation- means stressing its intrinsically social nature. Knowledge is generated and shared in social interactions through the constant conversations and practices on which its (re) production depends. It is through these interactions that stories, experiences and knowledge are developed, maintained, challenged and transformed. That is why we have focused on the relationships generated with/in work teams. As a collective engaged in work practices, they are able to create a space where work knowledge can be originated, sustained and transmitted. It is a shared context where individuals can interact with each other and engage in the constant conversations and practices on which effective reflection depends. It is also through the membership to different teams and groups that individuals are able to transcend the organisation and its boundaries and connect and relate to its wider environment.

In interpreting the findings from the empirical study, we suggest that the 'knowledge spaces' –where both new knowledge and organised structure can co-emerge- should be enabled rather than managed in order to allow for new working practices and ways of organising to develop. This perspective on knowledge leads to a conceptualisation of organisations that stresses their inherent complexity and their interactive and co-evolving nature with their environments. The following theoretical sections will explore these concepts and the relationships between them.

Organisational knowledge: to posses or to enable?

Knowledge processes in organisations are often explored in relation to their degree of manageability. Indeed, 'knowledge management' as an area for both research and practice has become extremely popular in the last few years[1]. Within the organisational literature the idea of managing knowledge has been developed and/or challenged according to a number of different perspectives very much in line with current debates in -social sciences (Brown and Duguid, 2001; Alavi and Leidner, 2001; Alvesson and Karreman, 2001; Schultze, 1998). We would

distinguish mainly two polar positions that we have labelled: 'having' knowledge and 'enabling' knowledge (Smircich, 1983; Cook and Brown, 1999). Whereas in the first perspective knowledge is seen as an attribute or possession of the organisation or of its individual members –'knowledge workers'- the second perspective looks at knowledge from a more systemic point of view, as a dynamic generative and emergent process. We explore this distinction below.

Treating knowledge as an attribute of the organisation takes us back to a functional perspective on organisations conceptualising them as machines (Morgan, 1986). Researchers following this approach, tend to portray knowledge as part of the structural system of the organisation and therefore attuned to, and supportive of it. They take for granted that the organisation 'has' knowledge and that in exploiting it, it will become the firm's main source of 'competitive advantage' (Holsapple and Joshi, 2002). Thus, knowledge is thought as objective, divisible[2], and therefore manageable -at least in its explicit form- using technology as the set of tools to codify it (Hansen et al. 1999). The social phenomena underlying the generation and sharing of knowledge are considered as factual, measurable and delimited and therefore perceived as behaving in a functional or dysfunctional way in terms of achieving the organisation's survival.

This has consequences for the way knowledge is treated and explored. It is implied that an ineffective organisation can be made effective and enhance its profit margin if an 'unhealthy' knowledge system can be supplanted by a 'healthy' one (Thomas et al. 2001). Following this approach organizations have attempted to find a way through which they can make the knowledge emanating from the individual's personal experiences part of the organization's knowledge databases in order to enhance the firm's 'competitive advantage'. However if knowledge is an "ambiguous, unspecific and dynamic phenomenon, intrinsically related to meaning, understanding and process and thus difficult to manage" (Alvesson and Karreman, 2001) it would make more sense to think in terms of facilitating knowledge transfer and re-production rather than in managing it (Tsoukas, 1996).

Understanding organizational knowledge as an object or resource tends to privilege explicit over tacit knowledge, and knowledge possessed by individuals over that possessed by the group (Cook and Brown, 1999). However, what we 'know' and the way we practise it emerges from the interplay between tacit and explicit knowledge -it is inter-subjective-, and is therefore inherently indeterminate and continually emerging (Tsoukas, 1996). Furthermore knowledge needs also a language to be transmitted, represented and shared and as such is always historically and culturally specific. The knowledge -and therefore the sense of 'reality'- that is shared by particular social groups, is sustained by social processes.

From this perspective individual experiences are not considered in isolation, since knowledge is the product of interaction and communication (Tsoukas and Vladimirou, 2001). Indeed, for experiences and explanations to be thought of as relevant knowledge, they have to be experienced as meaningful by the social collective. Thus, it is social groups that determine what is 'memorable' and also

how it will be practised. As signs and explanations become imbued with the memories of a group's lived experiences they become re-valued and constantly deployed in day to day life. In fact, one's ability to use and to interpret them becomes indicative of one's membership and participation in that social group (Alonso, 1988).

This perspective takes a conceptual shift away from the individual towards the group, from possessions towards processes, and the focus is on interactions and social practices. Placing actions and social practices at the centre of attention means also that neither individuals nor systems are allowed to predominate but that the analysis can concentrate on the actions and manifest organisational practices displayed in the interaction between both (Wenger, 2000; Brown and Duguid, 2001). The organisation's advantage would then be more related to efforts of co-ordination and enabling –rather than managing– the knowledge processes occurring among different collectives within and around the organisation (Brown and Duguid, 2001; Newell et al., 2001).

Knowledge and organisational collectives

Most of the studies of knowledge explored before follow what Morgan would call the machine metaphor for understanding organisations (Morgan, 1986). It is the most common metaphor in organisational literature and although it has been criticised and recognized as unsatisfactory in a rapidly changing world; it has nonetheless continued to inform the practice of management. The image of an organisation as a machine relies on the deployment of prescribed rules and formalised control intended to simplify the operations of the organisation to achieve predictability even in conditions of uncertainty and change. That is why the metaphor continues to be very attractive, since it seems to offer simplification, routine and predictability as well as rationality as the means to understand the process of organising and also the interchange of knowledge. Even if there is an agreement about the complex world that is the business world these days and about its constantly changing environment, this metaphor still dominates the way we think and act in relation to organisations (Morgan, 1986). In a sense formal organisation emerges as a way of 'managing and reducing' its complexity.

However, organisations are inherently complex. From a knowledge point of view, this perspective on organisations emphasises how connections among parts of the system can enable learning and adaptation (Griffin et al. 1998; Kallinikos, 1998; Anderson, 1999; Kauffmann, 2000). As a system organisations are able to gather data about their surroundings, themselves and their behaviour and then use that information for guiding future actions (Kauffman, 2000). However, the connections established among different parts of the system allow not only for information transmission among collectives but also open up possibilities of generating and sharing new meanings, thus providing increased capability to share and generate knowledge. If we think in terms of organisational collectives and their working relationships this also means that people are able to organise themselves and the knowledge they share by relying in their web of connections when they need to search and acquire new information or reorganise their

activities. The benefit of this perspective is the conceptualisation of the organisation as a structure that is fluid, yet sensitive to the needs of the connected elements as well as in connection with its environment in such a way that co-evolution –of both the organisation and its environment- is possible (Griffin et al., 1998).

Indeed, most contemporary organisations are networks of interdependent units, using 'groups' and work teams as their 'building blocks'. For that reason relationships among the different components of the organisation –individuals or groups- are complex being characterised by a mixture of co-operation and competition. People compete against each other for power and scarce resources but, in the meantime they need to rely on each other in order to accomplish their tasks, while emotional ties are formed among them (Masterbroek, 1987). Owing to the necessary interdependency among organisational units, the process of organising needs to take place through the fine balancing of co-operation and mutual dependency on the one hand, and rivalry and autonomy on the other hand. This is reflected in the need that work teams experience to create a common framework of working routines and habits in order for people to work together and at the same time to capitalise on and encourage difference and variety –e.g. specific expertise- that would allow for both innovation and creativity within the team and the wider organisation.

However, most of the research work done in relation to teams still revolves around the idea of increasing the team's –and eventually the organisation's-performance (Katzenbach and Smith, 1993). In fact, despite the importance given to teams in the organisational literature there are few studies which aim to look at teams *per se* –looking at team practices and processes- and even less tracking their social processes and development over time (Hosking and Morley, 1991). An example is the way individuality is still emphasised in team studies. Teams are usually seen as collections of individuals in which particular personal traits or characteristics are explored or encouraged. One of the most obvious examples is the way leadership is portrayed in the managerial literature[3]. Recent perspectives that have focused on the role of the organisation in the generation and use of knowledge follow this approach when they suggest that although the integration of individual knowledge at the collective level is necessary, the knowledge is 'owned' nevertheless at the individual level (Okhuysen and Eisenhardt, 2002).

This approach to teams and organisations tends to promote a rather prescriptive image of what a group should 'be' without much consideration to contextual factors such as history, culture or embeddedness of those collectives in their local and wider environment. In fact, these studies stress a bi-directional adaptation to the environment where the group boundaries –structural and/or symbolic- are portrayed as fixed (Chidanbaram and Bostrom, 1997; Mark, 1999). However, as a collective, the team constantly generates, shares and challenges meanings, goals and tasks, and therefore their 'own knowledge' and boundaries (West, 1996). That is, teams are 'loosely coupled' and the boundaries between the team and the organisation are often blurred. By the very act of belonging to more than one group inside and outside the organisation the team members make the

boundaries of the team permeable to other influences. Indeed, people in teams often work on "complex sequences of interdependent tasks that compose a larger "project" rather than on single tasks. And they often have more than one project going on at one time" (McGrawth, 1984). At the same time working units, through its members' connections, go beyond the organisational boundaries, being embedded 'loosely' in a broader system creating social networks that cut across the whole organisation. In fact, any team member is more a 'participating member' of many groups rather than a 'proper part' of any specific team (McGrath, 1991:152).

It is through the connection between the members of a team and their interchanges that stories, experiences and knowledge, are developed, maintained, interrupted and transformed. The way the communications flow among the employees of the organisation becomes crucial to develop new ways of organising and is the way in which knowledge is generated and shared among them. Organisational collectives therefore play a central role in the 'knowledge-creating company' (Nonaka and Takeuchi, 1995) because they provide a shared context where individuals can interact with each other and engage in the constant conversations on which effective reflection depends.

If we take this view, we will be able to stress the interactive and co-evolving-nature of organisations with their environments as well as the process of co-emergence of both knowledge and organised structure through the "connection, interaction, [and] relationships between diverse entities" in the organisation (Allen, 2001). These interactions are the medium through which sense making and knowledge generation occur in the organization resulting from the web of relationships developed, maintained and sustained through the participation of people within the networks (Weick, 1995).

Methodology

In this paper we consider knowledge as a social construction that is mainly constituted through dialogue, conflicting interpretations and action possibilities negotiated among the members of a collective. We have therefore used a research methodology that allows us to focus upon the shared social context of the parties involved in those knowledge processes. The research described in this paper has followed a qualitative approach to data gathering and analysis. This approach implies essentially an emphasis on processes and meanings rather than on an examination or measurement in terms of quantity, amount, intensity or frequency (Van Maanen, 1982).

The particular Corporation where this study took place is a multinational business made up of more than 1800 individual companies with branches all over the world. It is a well known 'traditional organisation' with mainly two lines of 'core products'. However, two years ago, the Corporation put in place plans for leveraging its brand name and encouraging internal development. It set up a new internet business (NIB) in order to create new ventures in a non-traditional medium using "the *internet as a way to look at new ways of doing business and*

creating new relationships, particularly online relationships with the customers… looking at *ways we can do more with the brand, the customer contact and the actual points of sale.*" The business venture we have looked at more closely -as an example of the type of ventures developed by NIB- had participants in two continents and three different locations: London in the UK and Bombay and Delhi in India. The team observed was involved in the planning and implementation of an e-learning project with six schools in India.

As means of data gathering, we have conducted 10 semi-structured interviews with a cross-section of NIB members, together with a 'reflecting back' workshop. Each interview lasted at least 1 and ½ hour. The first author also attended 4 teleconferences with the India venture team. These were 'virtual observations' of the venture team weekly meetings –via teleconference-. All interviews and group discussions were taped and transcribed verbatim. The use of different methods of data gathering corresponds with the attempt to use different viewpoints to gain a greater understanding of the phenomena being studied adding rigor, breadth and depth to our investigation (Flick, 1992). The different methods can also facilitate and legitimate the diverse chorus of voices, interests and perspectives that exist within an organisation. Thus, using an interpretative approach and different methods of data gathering implies also looking into the multiple narratives that give voice to, and allow the construction of multiple organisational worlds (Alvesson, 1995).

In the following section, we present the analysis of the data from which the employees' stories have been extracted. Those stories were gathered through the in-depth interviews, group discussions and the meetings with employees of NIB. They are one of the main forms of discourse through which organisational members share and transmit their experiences and therefore their knowledge. The analysis of those stories sought to identify the work processes the team from NIB engaged in while working on the development and implementation of ventures like the school e-learning project in India. The analysis consisted of multiple readings of the meeting and interview transcripts and documentation for the systematic identification of ways of relating, work processes and events. These were initially coded according to three main areas: i) the connections and communication processes –including enabling and inhibiting conditions- between NIB and the large corporation, ii) between the India venture team and NIB and iii) within the India venture team. The coding was achieved with the aid of Atlas/Ti, a qualitative research software for data analysis and management (Murh, 1997).

The next section aims to reconstruct the history and main concerns of NIB's employees according to those stories. The end result is an 'added story' that results from our analysis and seeks to 'make more complex' the reader's understanding of the stories employees have been telling to each other and to us during the research process. The aim of this account is to make clearer how those stories, and therefore experiences and knowledge, are (re) produced through the employees' interactions.

Organizing through the generation and sharing of knowledge

NIB and the Corporation: Developing a two way relationship

The idea that new business prosper when separated from their corporate parents has become commonplace (Kluge et al., 2001). Separation is the model of choice especially when the old and the new differ greatly -for example the internet start up launched by an industrial company. But although the new businesses need space to develop, separation can prevent them from obtaining invaluable knowledge, experience and resources as well as rob the parent company from the vitality and new practices the new business can generate (Day, Mang, Ritcher, & Roberts, 2001). That was a tension experienced in the way of relating between NIB and the Corporation from the very beginning. NIB's main objective was to 'make money out of the internet' establishing their own niche while providing value back to the Corporation.

> "We have, on the one hand, a corporate role which is that we need to relate back into the Corporation, given they are funding us and we're part of them. We need to have a rapport and credibility there but at the same time we may need to have some attributes for the market place which are slightly different." (Interview 2)

Being a new medium, the set of skills and capabilities the employees working at NIB needed were different from those required by the more traditional businesses within Corporation. That is why NIB started to look for people with '*the right set of capabilities*' to compete and '*open up*' new markets. People from *outside* the Corporation with the required skills where recruited. That soon created a perception of difference between the new employees in terms of origins: people coming from outside the company and people being promoted from within the Corporation .

> "I think, it's a good thing to have these *specialists* from outside and they bring a new perspective of what we're trying to do, because here we're trying to move into new businesses and I think they will help at least provide some input and insight as to what should be the benchmarks and having that benchmark of what we're trying to do in the new environment will maybe help transform some of [the Corporation's] processes and adapt them to be more effective and efficient. But equally from the [Corporation's] side they need to understand that we're moving into a new environment and you need those people..." (Interview 8)

At the same time, this recruiting of new people -some of them to very senior positions- meant usually reorganisation of roles and responsibilities. One of the problems associated with this reorganising of people and functions was the lack of time to distribute the necessary information for people to know "who does what, where and in what role".

> "…restructuring that takes place every six months. So, your reference indicator

changes and you get constantly mapped into different parts of the organisation and even though, what you do every day doesn't change, you just haven't got a clue who's doing what, who's roles and responsibility, what its direction." (Interview 6)

This lack of clarity was also echoed on they way people defined themselves: as employees of the Corporation or employees of NIB? This identification was important when it came to plan a career. Could they develop their career across the Corporation crossing over the specialisation that some of the jobs at NIB implied or were they employed to be NIB employees exclusively? This had practical consequences on the way the company hired its people creating temporary contracts when it came to fulfil some jobs or permanent contracts for some others.

> "People who've transferred from [the Corporation] into NIB often regard this as a post within their greater career within [the Corporation]. So they regard themselves as perhaps a Corporation's employee first and they're very interested in knowing what is my status within the wider organisation, when is my promotion going to happen, when can I apply for my next position within [the Corporation]? People who come from outside might regard it as an internet business and see this as a step on their career in an internet world." (Interview 6)

According to Day et al. (2001) a company that seeks both performance and growth should give entrepreneurial activities plenty of space but also connect them to its parents' resources, goals and knowledge. However some of the characteristics of both the Corporation and the new business were inhibiting this 'linking back' process. For instance, the different ways of working and cultures necessary to carry on a new job:

> "…the Corporation culture is, in some ways, a barrier to our culture" (Interview 2)

> "we have a set of very [Corporate] industry…specific processes and they do not necessarily apply to very fast pace, internet venture set up and I'm experiencing problems in trying to move things forward and yet I've felt I'm being held back by these very heavyweight processes, which don't necessarily fit for a typical venture set up environment." (Interview 2)

An enabler *and* inhibitor for NIB's development was the way the Corporation is run: through informal networks. People tend to know each other and there seems to be little need for a formal organisational chart. The assumption is that everyone is or should be part of a network to be able to communicate and to do a good job. As many other enterprises, the Corporation organises itself around 'projects' coordinated through those networks that have at their core a 'networking logic' not only technological but also social.

> "If you come in from the outside, it's very clear that people are still knit here very tightly on personal relationships, based on when they started as new graduates, where they got moved around the world, where they had jobs and they know each

other… It's a very tightly knit culture and it's because of those relationships that things actually get communicated and work done." (Interview 5)

Social networks have always allowed us to create relational spaces in which knowledge is shared, disseminated and interchanged. The Corporation is very much based on those networks, they can help create and promote new ways of working without having to go through very formalised procedures. However 'traditional networking' presents us with the impossibility of mastering resources or focussing on task implementation beyond a certain level of complexity (Castells, 2001). Thus, traditional face-to-face networking only allows us to keep relatively small functioning networks, whereas the new ICTs allow us to expand on that process and probably shape it differently. As we will see latter on this is specially the case in creating new ventures in far away places like India. However, networks also imply certain degree of continuity within the organisation and that is why newcomers have problems having access to and using a previously established network:

> "So that [the Corporation] people can provide the stronger bridges back into the networks that exist within a corporation this size and that the language of [the Corporation] is one that has to be decoded by new people, and you decode the words, you don't necessarily have the ability to understand the way the networks run that are using that code." (Interview 2)

When connections and boundaries are blurred, a problem emerges on how to communicate and with whom one communicates, between needing to consult every decision or taking responsibility and between leadership and accountability. A heavy reliance on networks then can become a burden for expansion and development. The tension is exposed clearly in the next quotation:

> " My belief about a consensus system is that it slows things down as a function. You can then argue about whether it speeds it up in the background or not, whether or not you can bring people online. *I've never been in a culture where so many people feel like they need to be consulted* and they want to argue and you say, so what's your alternative and then they go, oh actually, now that you mention it, it's pretty good." (Interview 5)

The tendency to work mainly through informal networks means also that there is not a "good knowledge management process" in place that people can follow:

> "we do not have a very good knowledge management process at this point, within any part of the organisation, let alone between the business creation part. So, how do they share that with us? And how do they share that with the bigger Corporate which sits above us as always, in everything we do which is to the benefit of." (Interview 4)

It is clear through the stories that employees tell that the Corporation has an organizational structure, culture and a way of doing things that prompts people to

stick with the known even when they decide to explore new areas. It therefore made sense to place new and old businesses as separated as possible. The idea was that each venture, including NIB, could operate under its own resource allocation criteria, performance measurement systems and reward structures. The aim was to increase the distance between legacy business and the new opportunities through the carving out of different legally separate units. Anderson (1999) suggests that the most effective organisations evolve strategies that lie at the 'edge of chaos'. Thus, when organisations maintain a balance between equilibrium and flexibility and allow for many small changes that might cumulate into radical strategic innovations allowing them to reach higher fitness levels -or better competence- to co-exist in their environment. NIB seems to have been an 'exploration' in the search for new markets for the Corporation. However, it was 'an exploration' that was failing not having had the space where both new knowledge and a new organisational structure could develop.

> "Are we a centre of excellence that helps to bring value to the group by helping them exploit the internet, to improve their business process and generate more value or is our key focus developing new internet business, in terms of revenue for the group. So these two don't necessarily align with each other. Sometimes bringing value to a group doesn't necessarily generate revenue. It could be cost saving for the group and I find, in some ways, these are in conflict, the business objectives here." (Interview 3)

> "The existing projects are making no money. So, while they're all wonderful growth platforms and they have all the nice buzz words, at the end of the day we are a taker of cash in [the Corporation] and there is, I think, no path to profitability." (Interview 5)

NIB and the India e-learning team: Ventures within the venture

And yet when the corporation created NIB, its intention was to extend the brand and leverage on its name through the development of new ventures. The ideal for NIB was to be a *different but not separate* 'entity' from the main Corporation.

Within NIB, ventures were also seen as needing their own space to develop. The perception was that without their own resources, their own performance metrics and a distinctive organisational design, they would fail to develop the necessary entrepreneurial spirit. Also the aim was to benefit from the substantial business opportunities that can arise when people develop and interchange ideas, information and experiences beyond and across organisational boundaries. In order to achieve this, however businesses need a number of overlapping channels that effectively transmit soft information and make 'remote people' part of the local working spheres (Day et al., 2001). One of the main concerns at NIB in creating ventures that needed a distributed team was the 'remote people management' and the type of communication strategies that needed to be developed.

> "We have people in London, India, Australia, Argentina, Houston and we have like one person in the Netherlands, one or two people in Germany, one or two people in Finland and I'm concerned that we're not managing, we've not matched the remote management of our teams and that concerns me in terms of their commitment, their engagement, our on the ground understanding of what's happening there, what's happening with those businesses, what do they really think as opposed to what the executives in those countries may think" (Interview 4)

This concern is also reflected in the difficulty that isolated new businesses might have of rejoining the main mainstream, especially when they have developed new business models that are supposed to invigorate the operations they left behind. It was reproduced in the relationship between NIB and the venture we have looked at closely: the India e-learning team.

The India e-learning team had participants in two continents and three different locations: London, UK and Bombay and Delhi in India. The team we observed was involved in the planning and implementation of an e-learning project with six schools in India. In this venture NIB was trying to provide curriculum and non-curriculum content to schools in India online. Some other companies had attempted to do so in India before and they had not been successful. NIB concluded that those competitors failed because everything else that was necessary to bring that content to the schools and the children wasn't there. The schools needed teacher training, software, hardware, technical support, connectivity, infrastructure etc. and all that had to be ready for them as well. That was the main objective of the NIB India venture and provided an excellent link back to the Corporation.

> "We want to be able to actually establish relationships with the consumer, ahead of the other business in the Corporation… and we think that, you know, e-learning is a good way of doing that and also the Corporation has always been involved in education, but from more of the socio-investment side. So we also have some in-house expertise in terms of corporate e-learning and want to see if we can capitalise on the technology itself and our experience and to see how we can establish something in that domain." (Interview 7)

However, the London manager of the India e-learning venture wanted the venture 'protected' from the political fights occurring at the HQ in London. Although keeping parts of the company separated might have helped to achieve the goals of growth, performance and the development of new ways of thinking, it did present a number of problems. The problems were associated primarily with the creation of new organizational boundaries between the India team and London. It also inhibited the flow of information and ideas between the two and thereby made it more likely that experiences and knowledge might be lost.

> "It is very, very important that everybody in the team knows the company, knows the people working for the company, the network and the systems to relate back. Okay, like for example, in my case, I didn't know anything about the Corporation. There were very many times that I couldn't really take decisions because I was like,

am I going to get myself into political problems? Is there a structure that I should respect and I'm not doing it? So, luckily enough, my other two co-workers over there, they had been like forever with the company and they were able to direct me, but that really slowed me quite a lot. So had I known a bit more what the structure was, how did people react, what I could expect from the network, things would have been faster and easier." (Interview 11)

The issue of identity and of how to relate to the different stakeholders involved became especially poignant within the venture. For instance among the India e-learning team recruited in Bombay and Delhi, people had doubts in terms of commitment of the Corporation to the project or to the possibility of still belonging to the Corporation if the project for which they were hired failed. In relation to this project the main question for its members was: is the Corporation going to absorb the people they are hiring for the India project if it fails or is it going to fire them?

"So, it's about trying to be absolutely clear what it is like to be part of this organisation, particularly in terms of some of the… let's say, the chaos and uncertainty. So you can be putting all of your energy into a project and then the project gets stopped, simply because it isn't proven to create enough value or it's decided something else. So that can be quite distressing if it's something that you've been involved with." (Interview 7)

Within the venture

The employees describe the Indian venture as a very ambitious project that had to cope with all the problems of being developed in a remote location. Initially the project had a 'venture manager' that was basically trying to coordinate everything, a marketing specialist and a CTO (Chief Technology Officer). Later on it became obvious to the team that they needed a 'good and straight project manager' as well as a Launch Director to coordinate back to the Corporation. Once the 'structural' functions were covered the team turned their attention to the content. They hired a Content Manager with two people working for her, a science and a maths specialist and expand on the area of marketing business development hiring a business developer and incorporating a Finance Manager. The venture manager in India is the 'top guy in the picture' together with the Launch Director:

"…because even though there is a local team that is able to keep going, there always has to be a linkage with the central and that is what [the launch director is] doing at the moment." (Interview 11)

Initially everything was created in Bombay just because part of the team were from there and because allegedly Bombay 'is the new media capital of India'. As it happened when they started both partnering and selecting the members for the local team, they found that everything 'was happening in Delhi'.

> "Our portal development agency, some of the hosting agencies and all the good candidates we were getting, everything was from Delhi. So that's why, at the moment, we have to have both offices going on so [people] just travel to Delhi every week which is super tough for them. So there is even a virtual team between the virtual team…" (Interview 10)

Indeed, the distributed teams became part of what an NIB venture meant. This is not unusual since distributed teams are becoming increasingly common especially in multinational organisations. Just as technology facilitated information transmission around the world, it now enables globally distributed people to collaborate on issues and challenges that their organisation face at the international level (Maznevski and Chudoba, 2000). However, in this study we were looking at a team characterised among other things by using technology supported communication more than face-to-face communication and living and working in different countries[4].

Virtuality is used here in connection with "the creation of electronic ties and the establishment of electronically sustained alliances of actors: i.e. networks, which are occasioned by the diffusion of current technology" (Kallinikos, 2001: 113). A virtual environment can have advantages and disadvantages in relation to formal and informal work networks. For instance virtual work can help to eliminate overheads and contribute to cost saving creating also greater autonomy for employees (Robey et al. 2003). On the other hand when teams are organised virtually they can become isolated from the core of the company, experience fears of negative impact in career development, employee exploitation and the physical problems of virtual communication. The following section presents some of the challenges that the India team faced.

Making the remote team part of the local working spheres

Under conditions of virtuality how is it possible to make the communication and interchange routines part of the current working spheres ? Work is continuous and complex and people move fluidly from one task to the next. One of the problems with distributed teams is that the end of meetings often signal 'out of sight, out of mind' making the 'remote' not part of the continuity of each other's working spheres (Mark, 1999). The issue was how to develop the relationship *within* the team

> "…So there are a number of factors that help to influence a virtual team working and the creation of *identity is critical*. It's actually more critical in a virtual team than in a co-located team. People you bump into at the coffee machine every hour or so, you're bound to actually relate to in a very different way to people that you may speak to once every two or three days and can't see the expression on the face…" (Meeting 1)

The challenge then is to find a continuous way of 'being in touch' not only through weekly or bimonthly formal meetings, with occasional telephone or e-mail interchanges in between, but rather becoming 'part of' the team -even if remote- and therefore of the daily working life. This way of working also makes

the development of social ties more difficult. For the India team it meant building a shared repository of common team materials and engaging in informal as well as formal communications, to build relationships outside of the formal meeting structure (Mark, 1999). However, in the India case the relationships developed between the team and the London's headquarters had an influence in the way people shared experiences and their decision making process.

> "People are still there and they're very disconnected. Not sharing. *Also the further you are from London, the more disconnected you are from the decisions*, the thinking and our understanding of what's happened." (Meeting 2)

> "…that's an issue. I would like them to *take ownership in India for what they're doing* because it's *impossible* really *to make every operational decision in the project from London*." (Interview 6)

Indeed, one of the main challenges that virtual teams face is that they can become isolated from the core of the company and experience fears of negative impact in career development besides the 'physical' problems of virtual communication that can create an impoverished emotional interaction with other Corporation and NIB's members. Furthermore, in breaking boundaries and allowing employees to shift identities –being part of the India team and the Corporation- virtuality makes more difficult to construct a recognisable career project (Kallinikos, 2001).

Developing a culture that supports motivation and co-operation

In order to communicate and work together groups develop their own frameworks of interpretation: shared assumptions and beliefs that are held by the members of a group as a learnt product of the group experience. It is important in order to develop a shared sense of identity to have sufficient common experiences to create a shared view. This presents a challenge for the distributed group whose members themselves might not be able to define who is a member of their social unit. It is not enough to present a set of recommendations that the group can follow. Culture in a team is affected by the group history, experience, the composition of its members etc. Within a virtual group, the nature and usage of the technology also plays a major role in shaping the way the group interacts and therefore the development of a shared interpretative and action oriented framework (Mark, 1999).

> "[Now]…we've *rented accommodation away from the main office*. For practical reasons as well as for these reasons, in fairness … it brings benefits because it then means that the *new team can form its own identity*, can create its own identity itself and it can hopefully avoid some of the worst elements of being part of the Corporation's identity but pick up some of the best bits of being part of the Corporation and getting the Corporation's identity, and it's *predominantly made up of new-to-Corporation people…*" (Interview 6)

> "It's a very, very fine equilibrium between letting the local team act because they know the market and they know how things have to be done and share the

knowledge of the central…I see it as a very, very *fine equilibrium between trying to impose directives from the central and respecting the local vision* of things. (Interview 11)

According to Newell et al (2002) the development of new ways of organising conduces to more knowledge-intensive work but it also makes it more difficult to manage. In an organisation that relies on networks there tend to be less rules and procedures that frame communication, therefore knowledge can be 'lost'. There is also less hierarchy. This implies that there are less middle managers to act as coordinators or 'information brokers' between for instance the Corporation and the different ventures and therefore subordinates must control their own activities. It is then that the organisation tends to become more 'stretched' and virtual and when participation can become an issue.

Participation

Without a cooperative environment is also difficult to achieve a high level of participation by all members of the team. Some of the themes emphasised during our conversations with NIB's employees in the India project were ownership, individual responsibility, and dissent. Thus, people felt that participation also meant to have space for dissent and conflict, allowing discussions and disagreements to surface through the communications.

"… if the project, is to meet its deliverables and *people are to feel that they own the output*…" (Meeting 1)

"The *local manager was refusing to allow*… any *dissent from the team members*. He wanted to demonstrate a unified face to what he considered to be the shareholder boss. The consequence of that was *that problems that could and should have surfaced early were being pushed under the carpet*, not seen or heard at all by the people who continue to fund the project, until it was too late.." (Interview 4)

There are different aspects of interaction and conversational processes that are important when dealing with far away interactions and communications. Issues like the delay in the conversations, the problems of turn-taking in the conversation, the lack of interpretation when it comes to body language etc. also make difficult to 'interpret' on-line and telephone conversations and to provide an environment in which participation becomes easy. As the following examples show a flowing conversation is not always easy to achieve.

"…one of the issues *with just tele-conferencing is you tend not to pick up the personal*. Immediately talking pure, hard, fast business issues yet the things that actually get in the way of forming sometimes aren't those things at all…*accent or dialect, language are all blockers*, that are far greater blockers when it's a virtual team and so, you're talking on the telephone." (Meeting 1)

Cooperation and participation were seen as crucial for the development of both the Ventures and the NIB team by the India Launch Manager since:

> "… the values themselves are going to change, as sure as heck, as our team grows. As our recruitment grows in India, then the values that a bunch of Caucasians in London and Houston put together, are they going to be the right values for the NIB tomorrow if actually 33% of our staff is in India? Probably not. *So even if we don't want to, we need to cooperate*" (Interview 7)

However things had started to change between the corporation and NIB and therefore between NIB and its different ventures.

> "In the beginning, everybody wanted to work for NIB, like a new business in [the Corporation], you know, people said it's risky but it's exciting. This was spring 2000. Now, we're in a different time zone. People are saying, no, I don't want to go to NIB. They haven't delivered last year, it cost a lot of money, there is a risk for everyone that works in NIB, if you want to be in [the Corporation] long term…" (Interview 5)

In June 2002, NIB together with two other new business created by the Corporation few months before, became re-organised under a third business called Corporation Consumer. NIB ceased to exist officially, although most of its employees remained as part of the Corporation. The India e-learning team, despite having done "an excellent job" in the words of their Launch Manager, was suspended, its employees are now working for other companies and most of them not longer part of the Corporation. The following quote summarises the feelings of most of the team members regarding the breaking up and stopping of the ventures…

> " We're talking about a company that has been around for a long time. So they're very stuck in the way of doing things. The Corporation like any big organisation, has a bit of arrogance. That being us, we're successful. We know how to do things, therefore everything is going to be rosy and no, things are not always rosy at all. So, that arrogance sometimes it is a problem particularly when you have a geographical and a cultural distance. Sometimes had the central been a bit more humble and listened a bit more to the local team and their needs, a few things could have been avoided." (Interview 11)

In general virtual teams exist in adaptive work environments (Duarte and Snyder, 1999). Their work as we have seen is in constant change with new problems always in the horizon. The India e-learning team worked in a highly unstructured environment with little known rules. Within more technical environments – structured and more regulated- teams can address work with tested methods in a world where variables can be contained, surprises minimised and where mapping, predictability and repetition are the norm. However, an adaptive environment like the one described by the India e-learning team did not have structured rules and the team had not yet develop satisfactory responses to the problems they faced. Many employees tend to prefer more technical environments where risk, uncertainty and discomfort are lower (Duarte and Snyder, 1999). However

adaptive environments can generate innovative solutions to new challenges that the Corporation might have benefited from.

Discussion

This paper has looked at the processes of knowledge sharing and generation among organisational collectives during the creation of new business ventures. Through the stories that NIB employees tell we have seen how there is a very clear tension between: 1) the strong culture of the parent Corporation's powerful informal networks and the taken for granted nature of its knowledge 'sharing and generating system' -represented on standards, ways of working, norms, accountability procedures etc.- and 2) the efforts by employees at NIB to develop a culture and an identity on their own. This new NIB identity would have had implications for the type of 'market niche' they would have created for themselves outside -in the market- and also inside –among the more than 1800 businesses that compose the Corporation. As Kanter (2001) suggests, organisations that develop networks internal to their organization are able to deal with knowledge more effectively; whereas through external networks they can have better access to additional intellectual and market resources co-evolving better with their environment. It is the coordination and eventual co-evolution of these internal and external networks that equip organizations to enable spaces where knowledge sharing and creation can occur.

NIB's employees were aware of the double need of belonging to the Corporation but developing a different way of organising. Thus, they needed the experience, knowledge and support of the Corporation and at the same time enough space to self-organise on their own. They attempted to explore and find the niche where they could grow, contribute and 'add value back' to the Corporation. The social networks both at NIB and at the Corporation acted as enablers and at the same time as inhibitors of that process.

Social networks were enablers in allowing people to share and develop new ways of relating and sharing without having to go through very standardised/explicit organisational arrangements to do so. However they have 'continuity and maintenance' needs on their own. They indeed have their own emergent structural properties and underlying logic that can present itself as a constraint for 'new comers' that need to 'play the system' before they can gain access to and use it. For example, in the India e-learning project, people were allowed to explore and develop their own ways of doing things in India away from the constraints that the Corporation would have represented had they been in London. However the very fact of having been far away and protected by their launch manager in the London HQ from potential 'interferences' created a barrier for the India team to be part of the Corporation and benefit for a possible future inside it. This protected situation created extra-organisational boundaries for the team when it came to i) learn from the Corporation and ii) to be able to contribute back to it. Their own development was both aided and aborted.

Indeed, the participation and maintenance of the social networks within the

organisation is central to the employees' stories. However, within these networks the agent at the end of the line of communication does not appear relevant any longer. The network seems to be gradually replacing the old organisational setting based on a rationalised bureaucracy with a very clear and identifiable receptor at the end of that communication line. Mobility, inter-activity and pervasive connectednesses are emphasised and have an impact on the way people organise themselves. The individuals included in the network are being empowered by this transformation. However, it also leads to extreme vulnerability for those excluded from the network, and with little bargaining power to negotiate working conditions.

At the root of the employees' stories, there is a process of differentiation. What employees seem to suggest is that the emerging ways of organising in which they participate do not take the form of a group in which they depend on others as colleagues, as members, as people. The organisation that is emerging creates a different type of bonding. People eventually depend on others through what it is represented through the network of communications. In other words, the 'development' seems to be towards more dependence on communication channels and on how people communicate rather than on who is at the other side of the communication channel. This expansion of a networking form of organisation, even if it augments the human powers of organising and integration, also undermines our concept of a separate, independent subject helping to subvert the notions of sovereignty and self-sufficiency. This process includes also the search and the creation of difference through the comparison with the 'Other'. That is, employees' tell of two forms of organising: one that tends towards connectivity and homogeneity but that provokes and runs hand in hand with the construction of difference, boundaries, distinctiveness and uniqueness (Hall and du Guy, 1996).

The notion of a network can also shadow issues of power in knowledge distribution. Differences in knowledge –e.g. its presence or absence in particular collectives- gives much of the momentum for our social interaction, from gossip to the division of labour. As Barth (2002:1) says: "we must share some knowledge to be able to communicate and usually must differ in some knowledge to give focus to our interaction".

The final question would be then how to allow for the development of local knowledges and ways of working while sustaining the collective intellectual capital of a company? How to allow for both the development of new organised structures and new knowledge? A way forward may be enabling the construction of a 'knowledge space…an interstitial space, a space that is created through negotiation between spaces' and that allows the 'fertilisation of different knowledge traditions' and different ways of working (Turnbull, 2000).

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[1] For a review see Dierkes et al. (2001)

[2] I.e. tacit or explicit, reason or experience, 'knowing that' or 'knowing how', sticky or leaky etc.

[3] It is interesting to notice that 'ineffectiveness' is mainly associated with group processes, -e.g. famously Janis (1972) on groupthink- whereas effectiveness is usually associated with the individual's 'appropriate' handling of responsibility.

[4] Lipnack and Stamps (1997) define a virtual team as "a group of people who interact through interdependent tasks guided by common purpose…across space, time, and organisational boundaries with links strengthened by webs of communication technologies".