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The Management of Distance in Distributed-work

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**UNIVERSITE PARIS-DAUPHINE
ECOLE DOCTORALE DE DAUPHINE
&
GEORGIA STATE UNIVERSITY
J.MACK ROBINSON COLLEGE OF BUSINESS**

THESE
Pour l'obtention du titre de
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CHAUVET Mathieu

**The Management of Distance in Distributed-
work: A Deleuzian Approach to Control**

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GALLIVAN**

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**THE MANAGEMENT OF DISTANCE IN DISTRIBUTED-WORK: A DELEUZIAN
APPROACH TO CONTROL**

BY

Mathieu Julien CHAUVET

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Doctor of Philosophy

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY
ROBINSON COLLEGE OF BUSINESS

2012

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ACCEPTANCE

This dissertation was prepared under the direction of the Mathieu CHAUVET Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctoral of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

THE MANAGEMENT OF DISTANCE IN DISTRIBUTED-WORK: A DELEUZIAN APPROACH TO CONTROL

BY

Mathieu Julien CHAUVET

13th of November 2012

Committee Co-Chair: Pr. Michael GALLIVAN and Pr. Stéphanie DAMERON

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Distributed-work has introduced challenges for both employees and managers alike. Maintaining a form of supervision and discipline remains then necessary as control is the ultimate means for the hierarchy to bridge the issue of distance. With regard to the unprecedented changes generated by the significant development of ICTs in organizations, we expressed the necessity to analyze how control is reconsidered within the managerial challenges introduced by distributed-work.

Our theoretical reasoning finally led us to use the works of French philosopher Gilles Deleuze as a basis for a more relevant conceptual framework. Data coming from 49 interviews and 7 days as non-participant observer enabled us to provide evidences for the disruption of management practices due to the reconsideration of control in distributed-work. Both for managers, evolving from a supervisory to a facilitator status, and distributed-workers themselves, whose activities will mainly be directed by the management of their visibility, responsiveness and modulation. Ultimately, this PhD dissertation provides concrete managerial manifestations for Deleuzian societies of control.

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INDEX

ACKNOWLEDGEMENTS	9
REMERCIEMENTS	12
INDEX	15
FIGURE INDEX	18
TABLE INDEX	ERREUR ! SIGNET NON DÉFINI.19
GENERAL INTRODUCTION	21
<i>I) Distributed-work as our research object: presentation and organizational manifestations:</i>	22
<i>III) Our research work sequence :</i>	29
PART I: THEORETICAL FOUNDATIONS OF CONTROL IN DISTRIBUTED-WORK	33
CHAPTER I: DISTRIBUTED-WORK: CHARACTERISTICS AND EFFECT ON MANAGEMENT	34
<i>I) The emergence of a Temporal distance:</i>	36
<i>II) The impact of Geographical distance:</i>	39
<i>III) The significance of Cultural distance:</i>	41
CHAPTER II: THE CONCEPT OF CONTROL: AN ANALYSIS THROUGH THE MANAGEMENT OF DISTRIBUTED-WORK	45
<i>I) Definition of control :</i>	46
<i>II) Means and tools in control organizations :</i>	49
1) Behavior control:	49
2) Outcome control:	51
3) Social control:	52
4) Self-Control:	54
5) Matrix of control forms:.....	55
6) Control Portfolios:	57
7) Expected control modes in work-at-distance environments:	59
<i>III) A need for conceptual step forward in the general understanding of control:</i>	62
1) Limits of approaches of control in organization theories:	62
2) Michel Foucault and the concept of disciplinary power:.....	68
3) Limitations of Foucault's theory and contributions of Deleuze:	71
4) Relevancy of Deleuze's works for our research perspective:	73
PART II: METHODOLOGY AND DESIGN OF THE CORE RESEARCH	78
CHAPTER III: METHODOLOGY OF RESEARCH	79
<i>I) Research design:</i>	80
1) Epistemological posture :.....	80
2) Our research assumptions:	86

3) Research strategy for apprehending reality : the case study	90
4) Research Roadmap :	105
5) Research occupational hazards:	108
II) <i>Data collection:</i>	111
III) <i>Modalities of data analysis:</i>	123
1) Data analysis process:	123
2) Rigor and Relevancy of our research data :	128
IV) <i>General description of cases:</i>	133
1) FIRST CASE: functional team within the company EADS – Corporate Department:	133
2) SECOND CASE: functional and operational team within the company EADS – Cassidian division:	145
3) THIRD CASE: Operational team within the company EADS – Cassidian division: 150	
4) FOURTH CASE: Functional team within the company KCI – KCI Medical France:	153
CHAPTER IV: RECONFIGURATION AND DESIGN OF OUR ANALYTICAL FRAMEWORK.....	159
I) <i>Reconsideration of types of distance constitutive of remote-environments through Deleuze’s works:</i>	159
1) The rhizome structure:	160
2) The actual/virtual dichotomy:	163
3) The deterritorialization:.....	166
II) <i>Global management of the three forms of distance using Deleuzian concepts:</i>	169
1) The impact of the rhizome structure on forms of distance in distributed-work:..	169
2) The impact of Deleuze’s work on the virtual/actual dichotomy over distance in distributed-work:	177
3) The influence of the phenomenon of deterritorialization over distances in distributed-work	185
III) <i>Logic of control for managing the different forms of distance:</i>	194
1) Temporal distance:	195
2) Geographical distance:	200
3) Cultural distance:	202
4) Deleuzian perspective on logic of control for the management of distance:	205
PART III: EMPIRICAL EXAMINATION OF OUR FRAMEWORK THROUGH CASE STUDIES	218
CHAPTER V: CASE ANALYSES.....	219
I) <i>Identification and consideration of temporal distance:</i>	219
II) <i>Perceptions of geographical distance:</i>	225
III) <i>The consideration of cultural distance :</i>	231
IV) <i>Global management of distance :</i>	236
V) <i>Control portfolio and societies of control:</i>	238
CHAPTER VI: CONFIRMATORY CASE: SIMILARITIES AND DIFFERENCES.....	244

<i>I) Similarities with previous cases:</i>	244
1) Temporal distance: manifestations of isolation, control-enactment processes and impact over visibility:.....	244
2) A common observation of perceived proximity and social control in the management of geographical distance:	249
3) The omnipresence of deterritorialization:	253
4) General management of distance and control:.....	254
<i>II) Differences and original contributions:</i>	256
1) Issue of distributed forms (telecommuting and nomadic work) with respect to perceptions of temporality :.....	256
2) A different understanding of cultural distance and effects of outcome control on cultural deterritorialization :.....	261
PART IV: GENERAL RESTITUTION OF THE EMPIRICAL RESEARCH: STEPPING BACK TOWARDS A BIGGER PICTURE.....	266
CHAPTER VII: THE RECONSIDERATION OF CONTROL IN THE MANAGERIAL CHALLENGES INTRODUCED BY DISTRIBUTED-WORK	267
<i>I) The managerial challenges introduced by emergent forms of distance and necessitating the deployment of control practices:</i>	268
<i>II) Control modalities and reconsideration of control in distributed-work:</i>	272
<i>III) Societies of control and questioning of managerial motivations for distributed-work:</i>	278
GENERAL CONCLUSION: INSIGHTS, LIMITATIONS AND PERSPECTIVES	287
1) Theoretical and methodological contributions:	287
2) Managerial contributions:	290
3) Limitations of our research work:.....	291
REFERENCES	293
APPENDIX INDEX	320

FIGURE INDEX

Figure 1 - Our research work sequence.....	31
Figure 2 - The three forms of distance constitutive of distributed-work environments... 44, 353	
Figure 3 - Control relationships created by the development of distributed-work	66
Figure 4 - Our Case Study Method	91
Figure 5 - EADS Management Structure	136
Figure 6 - Organization chart of the HR/CD Department	140
Figure 7: A Deleuzian perspective of the management of distances in distributed-work environments	193
Figure 8 - Comparison and shift of control forms from approaches of control in organizational theories to our analysis based on Deleuze's work	208, 363
Figure 9 - Analytical framework: The management of distances in distributed-work environments: a Deleuzian approach to control	210, 365
Figure 10 - The management of distances in distributed-work environments: A Deleuzian approach to control	286, 376

FIGURE INDEX

Table 1 - Forms of control in Organizations	55
Table 2 - Expected control modes and motivations in work-at-distance environments according to approaches of control in organizational theories (own construction	61
Table 3 - Theoretical Grid, as a result of the literature review regarding the theme of managerial and control issues in remote-work universes	76
Table 4 - Variety of our case selection.....	99, 358
Table 5 - Criteria for theoretical sampling strategy, adapted from Hlady-Rispal (2002)	102
Table 6 - Details about our non-participating observation.....	114
Table 7 - The five phases of an interview (according to Wacheux, 2006)	115
Table 8 - Data collection grid of our research study	117
Table 9 - Original themes dictionary table.....	125
Table 10 - Adequacy with Mucchielli's criteria of reliability and validity.....	130
Table 11 – Case-Study #1: participants.....	142
Table 12 – Case-Study #2: characteristics of participants	147, 368
Table 13 – Case-Study #3: characteristics of participants	151, 368
Table 14 – Case-Study #4: characteristics of participants	156
Table 15 - New and final themes dictionary table.....	211
Table 16 - Synthesis of main similarities and differences observed in KCI Medical France case in comparison to previous cases	264, 372

« On impose, à distance, plus de respect. »

TACITE

GENERAL INTRODUCTION

The debate about distributed-work has become increasingly prominent in academic literature as its development in our contemporary world has increased. Nevertheless, even though these new ways of organizing are promising, distributed-work is still not the predominant form of management in organizations. For example, telecommuting, which is a form of remote-work, although not the most important one, is practiced by only 7% of the French working population (Morel-a-Lhuissier, 2006).

The relatively low take-up by the French workforce might be due to the fact that distributed-work introduces challenges that are difficult to overcome for both employees and managers alike. The entirely unprecedented conditions created by advanced information technology and its complex consequences generate contradictions which challenge organizations in unanticipated ways. Clearly, the reconsideration of the traditional space-time continuum brought on by the development of distributed-work disturbs the classical representation of management that has been taught and practiced for generations.

In recent history, physical-office based work has been the norm for decades, and still represents the traditional form of organization. This form of management is essentially based on the concept of proximity - it means the physical distance between people measured in units such as inches, meters, or miles (Kiesler and Cummings, 2002). Priority in management has been placed for years on increasing proximity between individuals, not on reducing distance which the recent development of our societies would seem to suggest. Organizations prefer to place the emphasis on mobility because they do not accept working with colleagues at a distance. Working at a distance, to them, often means leaving the control of working

activities to employees, something that managers do not really want, although, paradoxically, they keep on outsourcing or globalizing many activities.

This debate about encouraging mobility or reducing distance is particularly significant for the development of distributed-work. While concepts of mobility and distance could easily be brought together, they remain different conceptions in the representation of the organizations that implement them. More precisely, mobility might even be interpreted as the enemy of distance (De Mazenod & Maurin, 2008).

By favoring mobility, traditional organizations maintain their pyramidal and centralized structure. Some employees become nomads, by necessity or not, and are equipped with mobile tools. But clearly, the organization itself does not change much. Therefore, despite its facade of modernity, mobility is rather the descendant representation of management and traditional face-to-face organizations. Concretely, mobility at work is a degraded form of office-work (De Mazenod & Maurin, 2008). The most significant element constitutive of the evolution of organizations in our contemporary societies will then not be mobility, but distance. In comparison to mobility, an approach through distance implies a philosophy of remote collaboration, a radically different mode of organization.

We therefore suggest in this document that the key issue emerging from the evolution of organizations should not be addressed by how we keep on working while being mobile, but rather how we could work by being distributed, at a distance, without necessarily having to be mobile. We will then particularly focus our attention with respect to distributed-work on the issue of distance, even if we do not neglect questions of proximity and mobility that will come back repeatedly in this document - if only because nomadic work, which is a concrete illustration of mobility, is an important manifestation of distributed-work.

I) Distributed-work as our research object: presentation and organizational manifestations:

Distributed-work is a form of management that is the consequence of the evolution of our society and the development of ICTs. The connection and networking of new technologies within and between organizations has finally led to the development of what is called the network organization (Miles and Snow 1986). This network organization, mainly illustrated by distributed entities, is characterized by a vertical disintegration, the formation of autonomous groups, and the flexibility of organizational boundaries. The network

organization replaces rigid hierarchies with networks of formal and informal communication, and information systems that permit connections between all parts of the organization. A decrease in the number of hierarchical levels, flattening structures and a change in the decision-making process result from the deployment of IS in organizations.

The reduction of intermediate hierarchies is a normal consequence of the introduction of IS in the organization (Reix, 1990; Desreumaux, 1996) as it facilitates opportunities for direct and vertical communication independently from intermediate levels. The recent changes in organizational context lead to the emergence of new principles of management that information systems are establishing and strengthening, and that are illustrated by distributed-work.

Distributed-work, work-at-distance and remote-work are three notions that can be used interchangeably¹. They define any form of work organization that employs tele-mediated and controlled methods of overseeing either isolated individuals (e.g., home-based or office-based workers in the form of telecommuting) or collaborative work (virtual teams) (Huws & O'Reagan, 2001).

In the preceding definition, we mention several forms of distributed-work that can be adopted in organizations. The focus of our dissertation is related to distributed-work in its entirety. It is then important to distinguish its constitutive forms: virtual teams, telecommuting and nomadic work. Meanwhile, all these forms of distributed-work are included in the body of knowledge for this thesis.

Powell et al. define virtual teams as “groups of geographically, organizationally and/or time dispersed workers brought together by information and telecommunication technologies to accomplish one or more organizational tasks” (2004, p.7). When comprised of members that work and live in different countries and are culturally diversified, such teams are qualified as global virtual teams, the term global implying a culturally diverse and geographically dispersed entity (Jarvenpaa & Leidner 1999).

Nomadic work is included in the notion of work-in-movement, but is differentiated from telecommuting: it can then be assimilated to a notion of mobile work. We can then distinguish:

¹ Distributed-work will still be our privileged denomination since it fits perfectly with the Deleuzian philosophy, and the concept of rhizome especially, that is further described later in this document. Distributed-work indeed refers to universes where members are all dispersed, while remote-work could introduce the idea that there is a center in this network, since members work remote from something/someone. The idea that there is no defined center, as proposed by distributed-work, comes into particular correlation with Deleuze's work.

- Telecommuting, sharing work activity between the workplace and home, a form which basically corresponds with extremely busy and hardworking employees whose work goes far beyond their personal life.

- Fixed telecommuting, working exclusively, or almost exclusively, from home.

- Nomadic work, with individuals that often have a specific function (commercial or technical) and who have to juggle their duties between several workplaces.

A commonly accepted assumption is that, in any case, it is a mistake to consider telecommuting as a simple, rigid form of work (Baruch, 2001).

Finally, the best way to integrate such differentiation between home-based work and nomadic work is to adopt the perspective that “teleworking occurs when employees perform all or a substantial part of their work physically separated from the location of their employer, using IT for operation and communication” (Baruch, 2001).

Forms of distributed-work might then sometimes represent ambiguous configurations, whose effects in terms of management or social interactions within organizations are not predetermined at all. Indeed, organizations have been structured for decades to facilitate physical proximity with others, a proximity that was necessary to work, for the reproduction of processes of authority and the exercise of control. In our contemporary international context, distance is nevertheless inevitable.

Fortunately, technology now mostly allows overcoming distance. Information systems provide means of coordination and control that reduce the hierarchical structures and exceed the needs of physical proximity and synchronous relationships. The main obstacle for organizations to develop distributed-work then still remains psychological. And while the typical hierarchical functioning of face-to-face traditional organizations is supported by technology, it is thus expected that the exercise of control will be at the heart of the managerial disruption driven by the development of distributed-work.

Indeed while considering the numerous issues emerging from the development of distributed-work, maintaining a form of surveillance and discipline at a distance remains necessary. In such specific universes, control is the ultimate means for the hierarchy to bridge the issue of distance. At a time when management practices are being reconsidered around distance through a new approach to time and space, we definitely need to address issues generated by forms of management and control within remote-work environments.

II) General issues of management and control related to distributed-work:

In remote-work environments, four variables are identified as being major attributes: (1) the constitution and definition of the team, (2) the perception of virtuality; (3) the cultural differences among members geographically dispersed, and (4) the forms of control that managers use to oversee team members (Huws & O'Reagan, 2001; Powell et al., 2004; Gibson & Gibbs, 2006). One of the fundamental differences in face-to-face and virtual environments is the distinction between the immediacy of a physically present team member and the remoteness of a virtual team member (Heuser, 2009). Remoteness and spatial distribution complicate a manager's ability to monitor participants and progress, increases travel budgets, limits face-to-face interaction, and weakens social relations –Bell & Kozlowski, 2002; Evaristo et al., 2004; Persson et al., 2009). However, remote entities can have distinct levels of virtuality depending on the proportion of electronic communication and face-to-face meetings they use to cooperate. The degree of virtuality is directly linked to the *geographical, physical* distance existing between members (Brown 1995; Rallet & Torre, 1999; Kiesler & Cummings 2002).

In the meantime, this geographical dispersion also introduces *temporal* distance (Carmel & Agerwal, 2001; Kayworth & Leidner, 2002; Espinosa & Carmel, 2003; Leonardi et al., 2004; Nurmi et al., 2009). Indeed, even if Information and Communication Technologies (ICTs) facilitate the exchange and cooperation of members located in New-York, Paris and Beijing, for instance, these individuals will still be subject to time-zone differences. Inexperienced members with limited familiarity with this type of work environment may then sometimes experience anxiety or trust-decline due to negative interpretations of silence or delays associated with time dispersion (Crampton, 2001; Gudykunst & Nishida, 2001; Piccoli & Ives, 2003, Sarker & Sahay, 2004). Not everyone “may feel at ease or quickly adapt to the “free-floating demands of the hyperflexible workplace” (Victor & Stephens 1994, quoted in Powell et al., 2004).

As a consequence, the work performed by such distributed teammates generally cannot proceed in parallel and definitely needs to be re-sequenced to incorporate time lags. Remote-entities are mainly directed by asynchronous relationships, which limit the ability to engage in real-time collaboration. As such, they differ significantly from traditional (*i.e.*, face-to-face) organizations for which synchronous interaction is the primary means of collaboration.

By taking into account difficulties introduced by the shifting from a traditional office-based to a virtual way of working, the analysis of control becomes absolutely obvious (Das & Teng, 1998; Langevin, 2002; Wang, 2008). Indeed, organizational control is a key issue while considering the management of remote-entities, if only because direct control, like supervision, is no longer possible when members are physically distant. Moreover, the economic cost for controlling such teams would be much greater than for traditional teams.

Furthermore, although the development of work-at-distance enables the collaboration of members both geographically or/and time dispersed all around the world, their control becomes even more difficult as another distance - *cultural* this time (e.g., Hofstede) - appears with manifestations such as differences in languages, or in norms of communication, resulting then in misinterpretations and un-conveyed information, differences in salience and interpretation (Girin, in Chanlat 1990; Crampton, 2001; Dubé & Paré, 2001; Pauleen & Yoong, 2001; Schiller & Mandviwalla, 2007; Wilson & O’Leary, 2008).

From a practical point of view, constraints resulting from these three types of distance sometimes make the monitoring and the control of such teams impossible (O’Leary *et al.*, 2001). Managing these types of distance represents the most important issue and the greatest challenge faced by a leader managing at a distance (Brunelle, 2009). In most academic studies, either IS research has been implicitly based on the assumption that remote-entities will be able to optimally organize their work-flow and manage internal processes, thereby neglecting the potential impact of traditional managerial control mechanisms on team effectiveness. Or, by focusing their study on control in remote-teams, the authors failed to investigate the role of national culture (Piccoli *et al.*, 2004). A research strategy has yet to be determined to respond to both such practical and academic weaknesses.

Since the conceptualization of control in organizational theories is excessively related to aspects of proximity rather than distance, we rather use in this PhD dissertation the works of French Philosopher Gilles Deleuze as a distinct and original approach for globally analyzing the concept of control in distributed-work, taking into account that he developed “a new set of conceptual tools, which offer a basis for reassessing the ontological status of the organization in the changing and virtually shaped environment of the twenty-first century” (Linstead & Thanem, 2007). The choice of this author is motivated by numerous arguments in order to question our traditional vision of space, and the use of concepts that can nowadays explain this current trend of spatial breakdown in our working-life. Deleuze describes the emergence

of a world integrated capitalism (Deleuze & Guattari, 1980) succeeding to the classic capitalism, and symbolized by a smooth space with disorganized and nomadic movements that necessitates a reconsideration of elements such as control, perception of territories and cultures.

The use of Deleuzian concepts pervaded several areas, not just philosophy, but also theater, literature, contemporary painting, or architecture. Yet, Deleuze promoted the notion of “pop philosophy” (Deleuze, 1990a) as a sort of toolbox that is accessible to everyone, and where his ideas can be applied to a variety of domains – even those apparently remote from philosophy. Nevertheless, with the exception of few studies or occasional references to few specific concepts (Linstead & Thanem 2007), management and IS researchers have paid little attention to his philosophical contributions. However, using such theory in the analysis of control within remote universes can be of great interest.

By considering “societies of control”, Deleuze initially sought to characterize the global crisis of our institutions, and the progressive and dispersed installation of a new system of domination. But the emergence of societies of control can easily be related to the increasing development of Information and Communication Technologies and distributed-work over the last century. Societies of control do not lead to a physical confinement of individuals anymore but rather exercise a continuous control through instantaneous communication permitted by the numerous developments in Information and Communication Technologies. Societies of control seem at first to offer new freedoms to individuals, but “participate as well in mechanisms of control that are equal to the harshest of confinements” (Deleuze, 1990b) by introducing a new system of domination. Distributed-work, by promoting flexibility in time and space for employees, comes into correlation with this description.

At a time when the nature of management is changing due to tele-mediated work, we suggest that a Deleuzian perspective provides a useful interpretive lens for better understanding the context of distributed-work, specifically regarding issues of distance and control that his concept of “societies of control” can address globally. This original conceptual framework will help us to address the following research issue:

How is control reconsidered within the managerial challenges introduced by distributed-work?

The development of our analytical framework enables us as well to emphasize three research questions, which will act as guidelines for the realization of our field research study:

- What managerial changes necessitate the requirement of control practices in remote-work environments?
- What will be the forms of control practices used?
- What do this reconsideration of control means to our global vision of management?

The purpose of this research document is to address how we can explain (research question #1), support (research question #2), and understand (research question #3) the reconsideration of control within the management of distributed-work.

III) Our research work sequence :

In order to address the preceding research issues, our research work will be divided into four parts:

➤ First of all, we focus our attention on the development of the theoretical body of our research (PART I). This part consists of two chapters of description of managerial results specific to distributed-work (*Chapter I*), then the analysis of the concept of control through this remote perspective of management (*Chapter II*). It is important in the first part of this PhD dissertation to address the managerial challenges of distributed-work, illustrated by the three forms of distance that our research object brings out: The temporal, geographical and cultural forms of distance that emerge from the development of distributed-work introduce issues in terms of communication and identification that are especially difficult to overcome for both managers and employees. Analyzing the origins of managerial issues in such specific universes remains critical for a better understanding of the theoretical foundations of relationship between distributed-work and control. The definition of the concept of control and the analysis of its sequencing within organizational theories is a preliminary step for apprehending the particularities of these research issues. Although no consensus has been reached on an accepted universal of control – this fascinating concept being largely assimilated to other constructs of trust, power or even coordination, the numerous approaches that have focused their analysis over organizational control in the literature can be summed up by the seminal works of Ouchi. But the identification of various limitations finally leads us to legitimate the need for a new concept of the general understanding of control. Approaches to control in organizational – as well as economic – theories provide a conceptualization that is excessively related to aspects of proximity, and over elaborate on ‘what’ control is exercised on rather than on ‘whom’ and ‘how’ it is felt by the individuals who are the objects of it.

➤ The second part of our research work (PART II) consists in the core of our PhD dissertation. The methodology of our research is described first in this document (*Chapter III*), so that we have the possibility of presenting the particularities of our research design and of explaining the details of our chronological treatment of data. Our data gathering consisted of the making a qualitative analysis of various case-studies. These descriptions are necessary before the following chapter, where we propose to address the design of our analytical framework that has been utilized for this research work (*Chapter IV*). Such reconfiguration of our analytical frameworks has been made thanks to the use of our exploratory case, and has

led us to emphasize three Deleuzian concepts particularly relevant for the management of distance in distributed-work universes: the rhizome structure, the prevalence of perceived proximity coming from the actual/virtual dichotomy, and the phenomenon of deterritorialization. These whole concepts are imbricated in a specific environment of control that is defined by Deleuze as the “society of control,” consisting of a subtle form of isolation and domination that is not detected by the individuals who live in it. Through this description of societies of control, we obtain a global understanding of control that previous approaches to the concept of control in organization theories were not able to provide. The reconfiguration and modifications of our original themes dictionary through the introduction of such Deleuzian concepts finally lead us to develop a complete analytical framework that has been used for the following case-studies.

➤ The examination of this original analytical framework has been conducted in distinctive phases related in the third part of our research work (PART III). The description of this data gathering is made chronologically in this PhD dissertation. We first conducted two case-studies within the same organization – but at different organizational levels - than our exploratory case. In a comprehensive and interpretative argument, the aim here was to confront our conceptual model coming from the literature and our exploratory case to new practical fields. Later, we conclude our concrete examination by the analysis of a completely distinctive confirmatory case study, made within the medical sector rather than that of aeronautics. The results of this ultimate case are presented in a way permitting cross-checking and distinctions with previous cases. These two additional case-studies plus the final confirmatory case study enabled us to better analyze the managerial forms developed in distributed-work environments and to understand the way controls play a significant role for individuals, organizations and technologies within them.

➤ Finally, we provide in the ultimate part of this PhD dissertation a general discussion of our empirical research (PART IV), which leads us to the analysis of the research questions considered in this work (*Chapter VII*). Results from this empirical research are then compared in order to provide a bigger picture of this analysis of control in distributed-work universes. A final synthesis provided in Chapter VIII for allows us to conclude with the insights, limitations and eventual future perspectives of our research work. The following figure (*Figure1*) summarizes the different steps of our PhD dissertation:

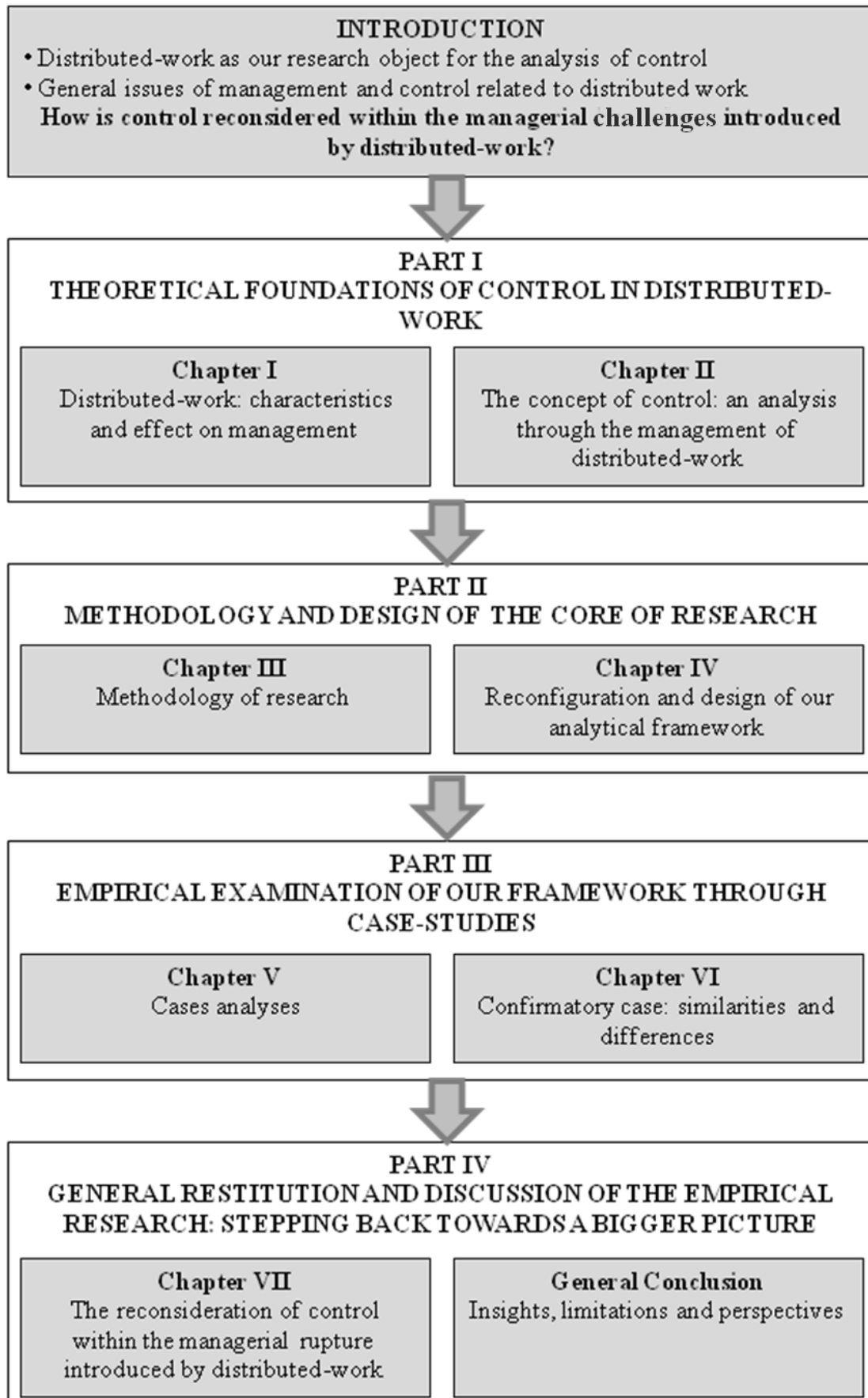


Figure 1 - Our research work sequence

PART I

Theoretical foundations of control in distributed- work

PART I: THEORETICAL FOUNDATIONS OF CONTROL IN DISTRIBUTED-WORK

The first part of this work is devoted to the literature review. Our research lies at the crossroads of several interrogations of distributed-work environments and their managerial issues, particularly in terms of organizational control. Therefore, it is important to review the academic literature devoted to these themes and to provide an overview of constitutive theoretical elements. This part is divided into two chapters that provide insights about the object of our research and the issues that it raises:

- Chapter 1 focuses on the characteristics of distributed-work and its effect on management. Through these sections, we will focus on the effect of distance within these particular universes. This will allow us to describe the numerous managerial results that emerge concretely from work-at-distance. The analysis of such elements will finally lead us to justify the analysis of organizational control as the ultimate means for the hierarchy to bridge distance in management.
- Chapter 2 will allow us to focus our research on the issue of control within the universes of distributed-work. After defining the main approaches of control in both organizational and even in the economic theories, we will examine the relevance of these approaches to remote management. These questions will lead us to ultimately justify the necessity of reconsidering the current conceptualization of the issue of control in distributed-work.

Chapter I: Distributed-work: **characteristics and effect on management**

In the previous sections, we had the opportunity of making general descriptions of remote-work, especially defining it as corresponding to any form of work organization that employs tele-mediated and controlled methods of overseeing either isolated individuals (e.g., home-based or office-based workers in the form of telecommuting) or collaborative work (virtual teams) (Huws & O'Reagan, 2001). While distributed organizations could take different shapes and configurations, these entities possess, and benefit from, similar characteristics.

In congruence with this observation, Parot (2003) expresses the fact that remote-environments are subject to three different types of distance in their functioning: geographic distance, cultural distance (*i.e.*, the national culture here), and professional distance. These diverse forms of distance are at the origin of the main characteristics constitutive of a distributed organization, but one dimension is still missing, according to the current view: the temporal dimension. While it is closely related to geographical distance, temporal distance is a crucial element in the life of a work-at-distance entity, especially with respect to all the issues it could effect in relation to the structure and the organization of the group. These statements about the variety of distances present in remote-environments are supported by Armstrong & Cole (2002) who claim that:

“Objective measures of distance include not just geographical distance but also time difference (time zones), organizational distance (different departments, functions, and levels), and cultural difference (both national culture and organizational office site culture). Our findings suggest that national and organizational cultures are experienced as dimensions of distance in distributed-work groups, along with kilometer and time zones”.

In such entities, virtual teams especially, the distinction between organizational and national culture is somewhat complex (Vaara, 2000, Dameron & Joffre, 2007). This is why that, rather than distinguishing them, we prefer to treat cultural distance considering both national and organizational cultures (or professional distance, as depicted by Parot (2003)). Similarly, universalist approaches to culture, which constitute the most significant part of cross-cultural research made in management, treat culture as a concept that includes both national and professional aspects - and define it as the collective programming of the mind which distinguishes the members of one group or category of people from another (Hofstede, 1981)².

Finally, it turns out that when dealing with work-at-distance, geographical distance alone should not be exclusively investigated. Consequently, in this study, and in congruence with Karjalainen & Soparnot (2010)³, we consider that virtual organizations are subject to the influence of distance in three distinctive ways, the first two being at the origin of the last one⁴: temporal distance, geographical distance⁵, and cultural distance. This is consistent with the academic study of Leonardi et al. (2004) who urge a “reconceptualization of distance as a multidimensional construct created and maintained through communication practices and not only through physical location”. Similarly, Nurmi et al. (2009) defined distributed teams as characterized by geographical distance, time separation and cultural diversity of team members.

² Organizational cultures operate within national cultures, although it happens that within few companies, the influence of organizational culture could be assimilated to the one of national culture (Schein, 1992).

³ “The emergence of virtual teams in international organizations creates managerial challenges that are related to geographical and temporal dispersions, and the multiculturalism of their members” (Karjalainen & Soparnot, 2010)

⁴ “Time, together with space, is eminently cultural” (Chanlat, 1990)

⁵ “Distance and time effects are often confounded in global software team studies because many geographically dispersed teams are often also separated by time zones” (Espinosa & Carmel, 2003).

I) The emergence of a Temporal distance:

Despite the lack of research on its effects⁶, temporal distance created by work-at-distance practices has, however, many practical representations in contemporary organizations. In particular, it creates challenges regarding collaboration in global teams spanning multiple time-zones, as team members may be unavailable for simultaneous communication. Nevertheless, time separation is more than just time-zone differences (Espinosa & Carmel, 2003) since other factors like non-overlapping weekend days and holidays, shifts, and different working schedules can be identified. Multinational organizations are sometimes the scenes of the dominant/hub sites that dictate meeting times convenient to their normal workday, but never adjusting for the sake of the distant participants as well.

As a result, temporal distance limits the power of distributed leadership by creating competing lines of authority, and by occulting visibility and awareness of team conditions (Nurmi et al., 2009). These effects of temporal distance on issues of structures and perceptions of role for distributed-workers will be one of the focuses of our research work.

In practice, remote meetings might have to combine diverse factors of time-differences, with a massive time difference between individuals dispersed all over the world. Communication between different sites across time differences often proved inappropriate as information did not flow adequately between members (Nurmi, et al. 2009). As a consequence, the work performed by such distributed teammates generally cannot proceed in parallel and definitely needs to be re-sequenced in order to incorporate time lags.

Regarding another form of work-at-distance, as is the case with telecommuting especially, temporal distance would emerge for employees who have difficulties in separating professional and private times – *i.e.*, work/life balance. Distributed-work constitutes a disruption of one's personal time and further confuses the boundaries between work and home life (Espinosa & Carmel, 2003). Many home-based telecommuters for instance admit having trouble staying focused on their daily work just by closing the door of the office located within their home.

Issues behind observations of temporal distance are therefore much more general, and consist of difficulties that distributed-workers experience in correctly identifying to or recognizing the structure of their team. All these elements legitimize the need for investigating the position of individuals in remote-entities, especially virtual teams, and

⁶ “There has been no theoretical research specifically on the impact of time differences” (Espinosa & Carmel, 2003)

members' perceptions about their team and its structure as we take into consideration that the understanding and acceptance of personal roles and contributions is one of the main elements for the effectiveness of the team (Millward & Kyriakidou, 2004).

To sum up, because of the inability to monitor them, virtual workers have to possess high levels of organizational identification if they are to achieve sustained organizational benefits (Crisp and Jarvenpaa, 2003). In this respect, the study of the temporal distance is central in remote-work environments as it raises critical managerial issues:

- asynchronous relationships are more frequent than real-time collaborations as opposed to traditional face-to-face ways of working, a factor that affects communication between individuals

- boundaries between private and professional lives are less and less identifiable, a factor which raises additional issues regarding the increase of feelings of isolation already suffered by most distributed-workers

- more generally, temporal distance has a direct incidence on feelings of team membership developed by distributed-workers, since these individuals have difficulties in identifying the boundaries of the structure they are part of and their role within this structure. This phenomenon is even stronger as remote-entities are mostly constituted temporarily and are often modified.

Consequently, we see here that when determining whether individuals are affected by temporal distribution or not, it is important to consider both the technology that these individuals employ, and the structure they are part of.

While the focus on boundaries between 'asynchronous/synchronous' and 'private/professional lives' is relatively emphasized in past academic studies (Shamir & Salomon, 1985; Habib & Cornford, 1996; Hill et al., 1998; Montoya-Weiss et al., 2002; Espinosa & Carmel, 2003; Klein & Kleinhanns, 2003, Sarker & Sahay, 2004), less attention has been paid to the general impact of temporal issues on feelings of membership and on the identification of individuals roles and structures. Our research will focus significantly on this latter element, since the identification of distributed-workers' roles and the structures they are part of, is a concrete and major managerial issue (Nurmi et al., 2009). This lack of clarity regarding members' identification or belonging to a specific group will sometimes be assimilated to misunderstandings, anxiety, conflicts, or discrimination dispersion (Crampton,

2001; Gudykunst & Nishida, 2001; Piccoli & Ives, 2003, Sarker & Sahay, 2004). Investigating the temporal distance in the context of work-at-distance should then not be limited to an analysis of observable time dimensions (time-zones, temporal phases (professional/private), etc...)⁷.

⁷ “Time is not an objective and measurable dimension: it is subjective and qualitative as well” (Chanlat, 1990).

II) The impact of Geographical distance:

While considering work-at-distance practices, anyone can understand that the word ‘distance’ correlates with the notion of geographical distance. With distributed-work, there is no longer a need to worry about traditional concerns of whether or not members are located in reasonable proximity to collaborate with one another, nor what it would cost to achieve that proximity and collaboration between them (Townsend et al., 1998). Advances in communication technologies have made it possible to draw upon expertise, regardless of where it resides, to interdependently integrate individuals’ abilities and knowledge in order to solve problems (Kirkman et al., 2004; Ben Naoui Jawadi, 2008)

The main challenges for distributed-workers from the emergence of geographical distance consist of trying to succeed in communicating⁸, collaborating, cooperating with people they cannot interact physically with, or sometimes, with whom they have not even met once in person. Indeed, the distinctiveness of this specific way of working is constituted by the fact that human physical interactions, including the body language, is substituted by electronic interactions, using technologies such as email or telephone (Bell & Kozlowski, 2002). In distributed-work, social interactions are mostly impeded by low information exchange and absence of informal communication (Herbsleb & Grinter 1999), and lack of face-to-face interaction (Dubé & Paré 2001; Pauleen 2003). Geographical distance and proximity between individuals not only affects the formation of a group, but also the extent to which group members identify with one another. Finally, the management of geographical distances necessarily implies the consideration of a key concept that has been used ad infinitum in literature and day-to-day lives for the last few decades: virtuality, and its perceptions by individuals.

Scholars working on communication in virtual organizations have unanimously focused on the concept of distance as a by-product of specific technologies, emphasizing the virtual aspect (Leonardi et al., 2004). In an attempt to explain how distant workers use communication technologies, several theories have emerged in order to explain media choices, especially highlighting the importance of contextuality (Rudy, 1996). These theories assume that when individuals choose a medium for electronic communication, they

⁸ "The organization of space is related to the spatial organization of communications. Indeed, the space also organizes and directs communication: space imposes traffic lanes, formal channels that espouse the need to structure information on a functional mode" (Fischer, in Chanlat 1990)

essentially look for technology that provides a medium as much like face-to-face communication as possible, thereby reducing perceived distance (Wilson & O’Leary, 2008) between them.

Social presence (Short et al., 1976) for instance asserts that communication medias differ in their degree of social presence, and in this way, become a crucial element for developing interaction. Secondly, media richness (Daft & Lengel, 1986) assumes that when individuals have to communicate delicate or complex information, they will choose the richest media possible: the greater social presence of a medium creates a greater immediacy and warmth of the communication, because of the greater number of channels, the theory says. In summary, the outcome of both approaches has largely positioned distance as an extremely negative element that has to be overcome through the choice of rich media in order to restore social presence (Leonardi et al., 2004): this observation is based on a particular and somehow misleading conception of virtuality.

Although practitioners and academics all agree to say that virtuality is a primary condition of geographic distance, defining and consequently measuring this concept of virtuality is extremely difficult for them. It is obvious that there is “a need for more sophisticated research to explore this phenomenon. Clearly, not enough emphasis has been placed on “what it means to be dispersed from others” ” (Scott, 1999). The issue is important when considering the question of well-known and developed “virtual teams,” for example: Whereas the concept of virtuality has always characterized work distributed through time and space (Townsend et al., 1998), such teams can have distinct levels of virtuality depending on the proportion of electronic communication and face-to-face meetings they use to cooperate. Identifying the virtual degree (Chudoba et al., 2005) of a team remains then extremely crucial for a manager as it will give rise to the choices made for his/her management and it will determine the dynamics that emerge from those choices. (Ben Naoui Jawadi, 2008). Such observations emphasize the need for going back to the basics of the definition of virtuality, as there is no current consensus at the level of organizational theories. The focus on a general consideration of this notion would enhance a better understanding of issues related to the perception of distances and proximities within the frame of work-at-distance activities.

III) The significance of Cultural distance:

One of the most quoted benefits of globalization, especially from the current perspective of work organization practice, is the favoring of multicultural collaboration, and hence the exchange of new and rich individual thought. But this statement has to be qualified. Although cultural diversity can constitute a positive characteristic in terms of open-mindedness or richness and variety of managerial perspectives, managing differences in culture is often considered as a challenge rather than an opportunity (Dameron & Joffre, 2007). The consideration of cultural insights is often balanced by mitigated effects.

Sometimes it is positive⁹ through the greater variety of perspectives that culture brings to bear on a problem area. Sometimes it is negative, through the introduction of difficulties and challenges¹⁰ in terms of communication (Girin, in Chanlat 1990; Crampton, 2001; Dubé & Paré, 2001; Pauleen & Yoong, 2001; Sarker & Sahay 2004; Schiller & Mandviwalla, 2007; Wilson & O'Leary, 2008). These diverse results can be explained from a methodological point of view, since we can question whether the observed differences result from "true differences due to culture or merely measurement artifacts" (Karahanna et al., 2002). Nevertheless, this cultural topic remains extremely valuable for the understanding of remote-work universes.

Cultural distance is actually used for measuring the magnitude of differences among national cultures. The culture, in this case, can be conceptualized as shared symbols, norms, and values in a social collectivity like a country (Wilson & O'Leary, 2008). Culture may have a profound effect on how individuals perceive information, act upon it, and relate to other individuals (Powell et al., 2004). Cultural differences among distributed team members can increase the subjective distance between them (Nurmi et al, 2009) since individuals often attempt to decipher communication through their own cultural perspective, thereby leading to

⁹ "We examined the performance of culturally homogeneous and heterogeneous teams and found indications that heterogeneity may, in fact, enhance the perceived decision quality when team members are willing to collaborate. Contrary to popular belief that group diversity may have negative effect one group consensus ... heterogeneous groups with high collaborative conflict management style edge achieve higher levels of agreement" (Paul et al., 2004, p. 213)

¹⁰ According to Dubé & Paré (2004), cultural differences affect management, leadership, autonomy, priority and focus, decision-making, and relationships between people (). Finally, "managing virtual teams whose members are geographically and linguistically dispersed is a daunting task" (Gurung & Prater, 2008, p. 25).

"Cultural diversity is a phenomenon that is creative of richness, whose exploration could bring tremendous benefits both in terms of vision enhancement and profitability of activities and strategies [...] A number of empirical studies have however shown that cultural diversity could have a negative impact on team effectiveness by generating many conflicts threatening the implementation of expected synergies, or even the survival of these projects" (Loth, 2009)

a great deal of information loss and distortion: national culture has ultimately an impact on organizations' management. However, we still need to investigate what the significance of this impact is.

Observations of cultural attributes have mostly been the object of numerous discussions and theories since the latter quarter of the XXth century. Coming from the analysis of theories including those of Hall (1966, 1977) Hofstede (1981) Trompenaars (1998) or D'Iribarne (1989), difficulties in balancing collectivism and individualism, perception of authority and hierarchy, planning and punctuality (i.e., variation in senses of urgency and timing for completing objectives and meeting deadlines) have been identified (Herbsleb & Moitra 2001, Kayworth & Leidner, 2002). Nonetheless, such theories made by Hofstede, etc...have been made at a time when work-at-distances practices had not yet emerged. Global and cross-cultural exchanges were not as defined as they are presently. The validity and legitimacy of these theories when viewed through the current evolutions of our societies have consequently been called into question.

New approaches have since emerged in order to propose alternatives to these essentialist theories. It is especially the case of the socio-constructivist perspective of Vaara (2000, 2005), which, as being a distinctive global approach of considering national cultures, is based on the identification of oppositions rather than focusing on their comparison. This original view analyzes the concept of culture from a critical point of view, originally based on an epistemological approach based on research by Jurgen Habermas and his "Theory of Communicative Action".

This research stream is interesting in comparison to previous ones as it assumes that social reality is historically constituted and, consequently, is produced then reproduced by actors. **Culture is there regarded as "a constant process of interpretation rather than a stable structure of values and standards. [...] Cultures and cultural differences only exist when people become conscious of them in social interaction" (Vaara, 2000, p. 82). The process of recognition of culture is consequently dual: it is a question of taking into account manifestations of culture, as well as reflective processes developed by the fact that actors give sense to their cultures.**

This concept "of giving sense" is extremely crucial because it is at the origin of the construction of cultural differences. Indeed, it leads one to consider culture through two different processes of integration: "cultures as concrete systems of beliefs ("to be made sense

of”) and as individual interpretations (“the outcomes of sense-making processes”)” (Vaara, 2000, p.87). This approach is mostly focused on oppositions, conflicts and other contradictions present within our contemporary society, besides promoting emancipation and rejecting the concept of consensus. Applied to the study of national culture, this analysis makes it possible to determine that “cultural conceptions are not only reflections of concrete cultural differences, but also the product of complex cognitive, emotional and political processes” (Vaara, 2000, p.83).

The socio-constructivist perspective could be extremely interesting for application to remote-work contexts. By supporting the concept of emancipation, we could make a parallel with the emergence of work-at-distances practices that originally developed in a wish to improve employees’ flexibility and welfare. Besides, by focusing on an individual level, this approach would be likely to address limitations of previous cross-cultural theories and to adapt current global evolutions (obsolescence of national focus of analysis for instance). Nevertheless, with work-at-distance environments enabling multicultural collaboration all around the world, we still need to investigate whether this evolution truly leads to a cultural confrontation with new challenges emerging as exposed by Vaara (2000, 2005), or rather to the smoothing of cultural differences and particularities.

Conclusion of the Chapter:

Although electronic tools support more each day processes of cooperation, coordination and collaboration while facilitating exchanges of information (Thévenot, 2011), distributed collaboration is however more than a simple technological substitution for traditional face-to-face collaboration. As addressed by Rutkowski et al. (2002), distributed collaboration places special emphasis on the importance of structuring activities for balancing electronic communication in order to bridge cultural and stereotypical gaps (cultural distance), to increase profitable role repartition between the participants (temporal distance), and to prevent and solve conflicts inherent to dispersion (geographical distance) (*figure 2*).

Nevertheless, ICTs introduce changes that have incidences on the accessibility, indexing, availability, diversity, immateriality and interactivity of information that enable management processes (Kalika, 2002). Because they support information and help for the coordination within organizations, ICTs play a central role in the process of organizational

control. Through the development of IS, the virtual organization will be affected with respect to vertical control, horizontal coordination, the size of organizations and units, the coupling between organizational units, etc...(Fulk and DeSanctis, 1995). More broadly, information systems provide means of coordination and control that reduce the hierarchical structures and exceed the needs for physical proximity and synchronous relationships. New technologies promise the replacement of traditional hierarchies by organizational forms that are flexible and responsive. Understanding the numerous effects on management due to the emergence of distance, as we have described, in remote-work universes will only be possible through the establishment of control processes. Therefore, focusing on this specific concept of control turns out to be critical in our research perspective: such emphasis will be the purpose of next chapter.

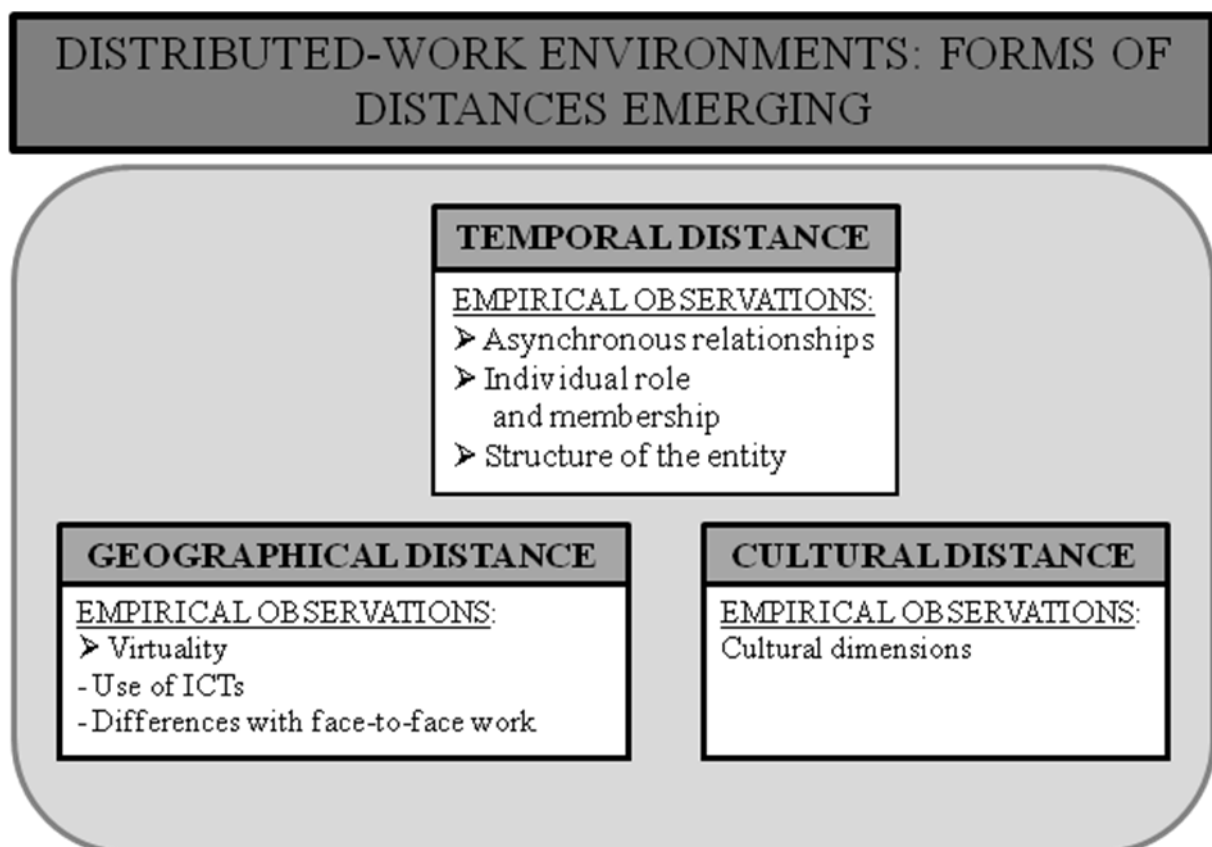


Figure 2 - The three forms of distance constitutive of distributed-work environments

Chapter II: The concept of control: an analysis through the management of distributed-work

Following the previous chapter devoted to the global consideration of distributed-work, the particularities and barriers emerging from such environments have been identified. Over the last few decades, many improvements have been made regarding the development of information technologies. The development of dedicated technologies now makes it possible the integration of collaborative work through sociotechnical processes supporting communication, sharing and coordination activities (Thévenot; 2011). As a result, nowadays, technologies can no longer be considered as boundaries or restrictions to the development of distributed practices, even though sometimes previously depicted in the literature (Baker et al., 2006). As addressed in the previous parts with the enumeration of results coming from the three types of distance emerging in remote-work universes, restrictions mostly come from the managerial side (Hinds & Mortensen, 2005). Such restrictions are sometimes that important that they make the monitoring of remote-entities almost impossible (O’Leary et al., 2001). Consequently, their importance has to be reduced as much as possible if the goodwill of the individuals involved is to be maintained. This is the role of control, as it has been recognized as a means to address uncertainty among cooperating partners (Das and Teng, 1998).

The issue of control is critical in remote-universes, as it has aspects related to information processing, and creates incentives and disincentives for organizational members to behave in a manner consistent with firm goals and objectives (Turner & Makhija, 2006). Because of their characteristics - time compression, spatial compression, exponential increase in the volume of information that is stored and processed, and flexibility of usage (Reix, 1990), technologies and information systems directly fit into the process of organizational control, thereby modifying organizational control modes (Orlikowski, 1991; Leclercq, 2008).

As long as distributed-work leads to a reconsideration of organizations' management, it will also result in a modification of control processes.

I) Definition of control :

Control lies at the heart of organizations, by constituting one of their central features: without control, organizing is not possible (Delbrige & Ezzemal, 2005). The notion of control is used in many diverse ways: as a multifaceted concept, it has no single and precise meaning (Merchant, 1988, Gallivan & Depledge, 2003). No consensus has ever been reached regarding the definition of control itself (Gallivan, 2001, Crisp & Jarvenpaa, 2002) since it usually requires a precise definition in the context of a given scenario (Gallivan & Depledge, 2003).

Control is generally associated with a broad and behavioral sense, which includes everything that helps ensure that people of the organization are acting so as to implement properly the strategy that has been agreed upon (Merchant, 1988). Basically, it refers to attempts by management or other stakeholders within the organization to influence the behavior and activities of personnel to achieve desired outcomes (Jaworski, 1988)¹¹. Such conceptions are however problematic since they do not provide an exact and global understanding of the term: this lack of consensus resulting from its dynamic nature shows that this construct of control is far too broad to be confined to a singular method of interpretation (Das & Teng, 1998). Some could, for instance, identify the functionalist inspiration of definitions presented above assuming that control is only a way to achieve goals and develop the organizational efficiency (Langevin, 2002). This is due to the fact that these definitions correspond to a perspective of traditional management control system as being output-oriented. Control processes would here mainly consist in checking a posteriori.

Nevertheless, other possible orientations of control may be identified: control modalities can also be considered in the sense of willing to handle subordinates' attitudes a priori (Leclercq, 2008). In that sense, control is a system and process of animation (Bouquin, 2006). The control issue is above all an issue of controlling individuals, as actions and decisions can also be disjunct from the goals of the organization (Langevin, 2002). Besides facilitating the decision of managers, processes of control will then also facilitate and induce the behavior of individuals within the organization in the direction expected by the latter.

¹¹ We will see later that such definition of control, with the issue of influencing that is emphasized, is largely oriented towards the concept of power.

Both perspectives are however related, as control, in the sense of handling a priori, actually initiates power, which will eventually legitimate the control as a checking procedure (Leclercq, 2008).

Control is required in any cooperative activity for coordinating the contributions of individuals (Scott, 1992), and is recognized as a fundamental management activity (Jaworski, 1988). More significantly, Follett (in Gulick & Urwick, 1937) addressed the fact that “the object of organization is control, or we might say that organization is control. Concretely, the issue of control will be divided into two types of organizational management (Langevin, 2002), which are:

- management of the decision: control mechanisms will be instituted in order to reduce deficiencies in the decision making process (lack of coordination due to different time zones in global virtual teams for instance).

- management of individuals: with respect to issues like lack of direction (wrong behaviors adopted due to an ambiguity in the perception of organizational goals), motivational problems (fear of professional isolation while being part of a virtual team) and personal limitations (virtual organization that requires unique skills, abilities and knowledge).

This duality is critical for managers, who seem to constantly be torn between the desire of delegating some of their work, for example by decentralizing certain decisions, and the need for retaining some control over the activities of their subordinates (Thiétart, 2003). Virtual organizations tend to be non-hierarchical and decentralized (Ahuja & Carley, 1999). The difficulties for managers are how to decentralize without losing control. At the other extreme, the use of excessive control can be problematic as it “can damage the relationship between controllers and controlees [causing] unintended human and social consequences” (Markus, 2000): processes of delegation must not be neglected by managers in order to ensure goodwill.

Such ambivalence is inherent to the dual nature of control mechanisms, both enabling and constraining. Enabling in that they facilitate the coordinated action of individuals in the production process, and constraining as they restrict the manner and outcomes of individuals' actions (Orlikowski, 1991). Taking into account that nominal autonomy and enhanced managerial control are mutually supportive in remote-entities, the traditional frontier of control is becoming harder to delineate (Sewell, 1998). In any cases, control is essential to understand the fact that control is an inherent characteristic of the nature of organizations:

“Organization implies control. A social organization is an ordered arrangement of individual human interactions. Control processes help circumscribe idiosyncratic behaviors and keep them conformant to the rational plan of the organization. Organizations require a certain amount of conformity as well as the integration of diverse activities. It is the function of control to bring about conformance to organization requirements and achievement of the ultimate purpose of the organization. The coordination and order out of the diverse interests and potentially diffuse behaviors of members is largely a function of control.” (Tannenbaum, 1968)

II) Means and tools in control organizations :

In this section, we are going to further analyze how the concept of control is generally presented and understood in organizational theories. Such analysis is absolutely necessary in order to get the most global perspective and understanding of the concept of control in management. Control in any organization can be exercised by a plurality of means (Cardinal et al., 2004). These means can be formal - viewed as a performance evaluation strategy (Eisenhardt, 1985), or informal - based on social or people strategies (Eisenhardt, 1985, Jaworski, 1988)¹². Formal control includes a combination of classic techniques that direct the activity of subordinates. The control is more explicit in nature and is based on certain structural elements, such as the degree of centralization or decentralization, functional specialization, the degree of vertical or horizontal integration, and the extent of control (Flamholtz et al., 1985). However, the identification of contingency factors for control (Chiapello, 1996) shows that control is not limited to processes that are deliberately intended and implemented by management.

With formal means of control, there are tools of informal control derived from the identification of individual and collective determinants for behaviors (Chiapello, 1996; Bouquin, 2006) that emerge from the interaction of various influences (peer, group, culture, values, market, or environment pressures) (Chiapello, 1996). More precisely, control appears in that case as an open social system, which increasingly consists of the management of individuals, a system that can grow under the influence of various elements constituting it (Leclercq, 2008). According to the nature - formal or informal - of control tools, different mechanisms of control can be identified based on the object to which they relate, be they actions and behavior, outcomes, individuals' characteristics or the emotional context.

1) Behavior control:

In Behavior Control, already present at the beginning of the 20th century with the Fayol and Taylor literature, specific rules and procedures are articulated and lead to desired outputs. Behavior control is often assimilated to process control, as both mechanisms clearly specify the appropriate behaviors and processes in which employees must engage (Turner & Makhija,

¹² "Formal control systems are based on measurement and often lead to rewards or sanctions, depending on conformance with specified procedures. In contrast, informal control is based on socializing individuals to accept the norms, values and culture of an organization as their own, thus ensuring compliant behavior" (Gallivan & Depledge, 2003, p.165).

2006). The initial purpose of such behavior control is to control without consideration of individuals, (Bouquin, 2006), through the introduction of rational management practices for the efficient use of resources. Definitely, authority is here the major coordinating mechanism. Controllers observe the behavior of controlees, who are rewarded based on the degree to which they follow these desired procedures. With regard to this perspective, direct supervision becomes the preferred mean of control as strict rules supervise the behavior of subordinates whose autonomy is extremely limited. This is especially the case in certain earlier control research like the one from Ouchi (1979, 1980) where behavioral observation is assimilated to physical sight.

Nevertheless, direct supervision can hardly be used in work-at-distance universes because of the geographical dispersion existing between distributed members¹³. Even if sight is possible through videoconferences or travel to physical locations, the context is unlikely to permit the regular physical observation of people while performing work. The inability to physically observe behavior precludes the ability to monitor and control behavior, while also interrupting processes of norm formation that are based on observing behaviors (Crisp and Jarvenpaa, 2003). As a consequence, although of course, all control is ultimately behavioral in its effect (Ouchi, 1979), behavior control *per se*¹⁴ would not easily be used in such specific universes.

Indeed, the use of behavior control is rather appropriate when the organization can reduce the domain of each individual's job into clearly specified and specialized tasks. Nevertheless, in order to do so, this form of control establishes rules or norms for the behavior of individuals by utilizing the surveillance method in overseeing their work (Eisenhardt, 1985), which is barely impossible at distance. Besides these constraints related to the geographical distance, it is asserted that behavior control mechanisms would have a significant negative effect on trust in temporary virtual teams where trust can emerge quickly and deteriorate rapidly (Piccoli & Ives, 2003), providing thus another major argument against the use of behavior controls in remote-universes.

¹³ “Standardization of practices and policies may also be difficult as different sites are embedded in different physical, cultural, and organizational contexts and thus may face challenges in sharing contextually ‘situated’ knowledge” (Gibbs, 2009).

¹⁴ It means assimilated to physical sight.

2) Outcome control:

Outcome control has emerged as an organizational solution for avoiding the limitations of behavior control: while behavior control specifies the methods, outcome control specifies performance criteria. It rather relies on the principles of delegation, motivation through objectives, and evaluation of individuals based on results. In Output (or Outcome) Control, desired outcomes or goals are articulated, and controlees are rewarded for meeting these specific goals. The purpose of managers is to make employees participate in setting goals as well. In return, positive or negative initiatives would emerge in order to reward or punish the achievement of initial goals.

The most distinctive feature of outcome controls is the specification of explicit outcome requirements for employees' work (Turner & Makhija, 2006). Outcome controls rely on the use of incentives that are clearly aligned with a desired outcome or level of effort. In contrast to behavior control, this form of control specifies goals in a manner that affords little uncertainty over the ideal outcome (Turner & Makhija, 2006). Outcome control will then be tremendously used in remote-work environment, as it is facilitated by the use of ICTs like email. Thanks to the possibility of asynchronous communication it offers, its multidimensional nature, and its electronic form, electronic mail allows a major evolution in the exercise of authority and enables the surpassing of formal hierarchical control systems (Leclercq, 2008).

The concept of formal control – behavioral and outcome controls - often carries a pejorative connotation suggesting domination and punishment. It is fairly common to notice that this notion creates suspicions, negative reactions, or defensive behaviors such as apathy, absenteeism, avoidance of the organization or hostility leading to deliberate errors (Crozier & Friedberg, 1977). Because of conflicting values, it often turns out that subordinates express opposition to finalizations of control. In order to limit these precise side effects of potential rejection to control, informal modes of control, including clan control, are introduced for fostering positive attitudes from employees (Leclercq, 2008).

3) Social control:

Social (or “Clan”) Control is implemented by promoting common values, beliefs, and philosophy within a clan, which is defined as a group of individuals who are dependent on one another and who share a set of common goals. With social control, team members monitor their teams by drawing attention to existing structures as standards for behavior. Workers are directed through having internalized the appropriate organizational norms during initial and ongoing socialization, a process that attempts to instill and reinforce goal and value congruence between individuals and those espoused for the organization (Orlikowski, 1991). The identification of social control contributes then to a key shift emphasis away from the formal and structural components of organization, to the social characteristics of organizing (Delbridge and Ezzamel, 2005).

In situations of social control, information is communicated in organizational rituals, stories, or ceremonies. This information about values and norms is subtle, however, meaning that it cannot be easily obtained by newcomers.

Yet this population is the one through which the process of social control persists. Social control includes informal arrangements that are at the heart of the process of socialization for organizational members, thereby providing individuals with representations of their roles and conveying messages within the company. When facing a new situation - for instance, integration in a new virtual team -, newcomers are uncertain about what to do and how to behave. As a natural process, they often compare the situation to something they have experienced before in order to guide their behavior. Nevertheless, they often lack any similar experience in their past where the situation is exactly matching. As a consequence, they finally end up turning to other members for clues about appropriate behavior, thereby replicating common values, norms and beliefs promoted by existing members of the team. Therefore, socialization between employees is essential in clan control, as it requires organizational members to have a high amount of interaction and communication (Barker, 1993; Flamholtz, et al., 1985).

As a result, workers eventually succeed in controlling themselves by collaborating, thereby developing their own control (Barker 1993): unlike other management, people directly develop their own means of control, which is a source of motivation and personal commitment. Negative results could however emerge from the emergence of this ideational form of control, as it establishes conformity through the creation of a unitary set of organizational values. Indeed, although nominally increased autonomy and decentralized

decision-making are usually supported in remote-entities, discretion is in reality highly circumscribed by behavior expectations that are built into organizational values through the development of social control (Rosen and Baroudi, 1992).

Nevertheless, differences between social control and behavior control are various and explicit. For instance, clan control depends on people's willingness to conform to organization goals rather than on explicit monitoring and on a surveillance system. First, they interact for reaching a negotiated consensus about proper behavior: they do it by internalizing a set of core values coming from their organizations. Then, normative rules naturally emerge through the reproduction of such a consensus over time.

The process of rules' construction is here significantly atypical in comparison to formal systems. Under a behavioral control system, rational rules are created and maintained by supervisors. In clan control, rules come from the value consensus of members: the success or not of the implementation will depend on the level of collaboration and the degree of self-management (Barker 1993). Such observation is interesting as it provides the identification of a fourth form of control.

4) Self-Control:

In extension to the three previous approaches, a fourth form of control that is missing in Ouchi's original matrix should not be neglected: Self-Control, a form of control often referred to as Self-Management. In a work environment, supervisors often cannot control all the factors influencing employees' behavior. If employees can specify contingencies to influence their own behavior, this self-influenced behavior can be a substitute for formal leadership (Manz & Sims Jr, 1987).

Self-management in organizational contexts refers to the phenomenon in which a person behaves in accordance with organizational goals without being subject to external controls. This control mechanism is particularly visible in the Management By Objectives (MBO) promoted by progressive conceptions of control emerging in organization theories at the ultimate phase of the XXth century. In self-management, individual employees set up standards and then monitor, evaluate and reward their own behaviors. Standards of evaluation in self management could come from past performance, the observed performance of others, and socially acquired performance criteria.

Self-management is often used in remote-work universes as it is appropriate for situations in which organizations cannot adequately measure the behavioral performance or standardize the work process (Mills 1983). This is moreover the case in work-at-distance situations, especially because of geographical dispersion that limits direct supervision. Even though information technologies are rarely introduced into organizations for control purposes, they often result in an intensification of control by encouraging self-control among organization members (Coombs et al., 1992). Concretely, managers will facilitate such self-management by making their subordinates gradually reinforce strategies or processes of self-management such as goal setting and self-reinforcement (Manz and Sims Jr 1987).

5) Matrix of control forms:

Four types of controls (behavior, outcome, clan, and self control) can finally be distinguished a notion that supports the idea that control is applicable to complex, non-routine tasks (Kirsch, 1996). These four forms of control can finally be reorganized into a matrix (*Table1*), considering and introducing the following dimensions: level of analysis (individual or collective) and level of formality (high or low).

		Level of Formality	
		<i>High</i>	<i>Low</i>
Level of Analysis	<i>Collective</i>	OUTPUT CONTROL	SOCIAL CONTROL
	<i>Individual</i>	BEHAVIOR CONTROL	SELF CONTROL

Table 1 - Forms of control in Organizations

Thanks to the academic literature, it is possible to identify formal control, viewed as a performance evaluation strategy, and informal control, based on social or people strategies. Therefore behavior and output can be characterized as two modes of formal control (Ouchi, 1979, Eisenhardt, 1985); Social and Self controls as more informal. Moreover, informal control can be addressed at diverse levels: “clan” (group level) and self-control (individual level) (Kirsch, 1997). The same distinction is valid for behavior (where individual behavior is regulated by the establishment of procedures) and output controls (where expected goals are communicated and clarified, but individual actions in order to achieve them are not specified).

Beyond these recurring dimensions of organizational control, it is necessary to recognize their relative nature (Fischer, 1995; Chiapello, 1996). According to Fischer (1995), there is no appropriate and universal control system that applies in all circumstances. The implementation of control mechanisms is indeed dependant on contexts seen in the

organization, so that control is likely to vary in style, role, and dominant. Finally, control remains highly dynamic. In accordance, control mechanisms generally coexist in varying degrees within the same organization in order to overcome the deficiencies of each of these modes. The notion of control portfolio has eventually emerged in the academic literature for illustrating such process.

6) Control Portfolios:

New forms of organizations do not offer the expected radical change in terms of freedom that could be granted to employees (Desreumaux, 1996). Remote-entities also employ restrictive control mechanisms, and the power relationships, and the hierarchical relationships concomitant with them. Instead, remote-entities employ a mix of control mechanisms, a disciplinary matrix of power and knowledge (Orlikowski, 1991), thereby supporting the idea that “there is no single and universally appropriate monitoring system that could be applied in all circumstances” (Fischer, 1995). It is common for multiple control mechanisms to coexist. As an example, Storey (1985) suggests that control usually works in levels and cycles, so that if one level of control fails in an organization, then other forms will assume dominance. Control must be regarded as a “process of continuous emergence, an unstable equilibrium in constant reconstruction” (Bouquin, 2006).

The same ideas have been developed by other recent studies on organizational controls, which suggest that a mix of controls, combining different forms of control, works more effectively than just a single form of control. Cardinal et al. (2004) for instance observe that an imbalance among formal and informal controls is the key driver of shifts in control configurations: informal and formal controls need to co-exist to create effective control processes that lead to good organizational performance. These observations connect with the idea of control portfolio (Kirsch, 1997; Choudhury & Sabherwal 2003; Wang, 2008), recently appearing with the emergence of work-at-distance environments, and making organizational control theory more dynamic (Cardinal et al., 2004; Kirsch, 2004).

The concept of control portfolio has been investigated especially by IS researchers in the context of IT project management where managers influence the performance of the team through formal control, while team members also exercise control in the form of self- or outcome control (Henderson and Lee, 1992). This agrees with Tannebaum (1966) who asserts that both managerial controls and team-member controls can operate concurrently and that their effects are inter-working. Wang (2008), by specifically focusing her study on telecommuting, has shown the effective use of this portfolio of controls, showing that global control processes could include all four different control forms identified in prior theories (*i.e.*, behavior, outcome, social and self-controls).

Globally, in work-at-distance environments, a variety of mixed and overlapping control mechanisms is implemented. This variety of controls starts from pre-existing mechanisms of formal controls, and is then followed by a new design of control mechanisms

for implementing formal control or adding informal controls to supplement formal controls (Kirsch, 1997). Remote-entities tend to start with simple controls but then add additional controls after experiencing performance problems (Choudhury & Sahberwal, 2003). During the constitution of this controller portfolio, controllers have to judge the mechanism to be appropriate for the situation, and sometimes need to adapt these control mechanisms, thereby defining or adding new mechanisms of formal/informal control if they see that control processes are missing.

7) Expected control modes in work-at-distance environments:

As explained in the first chapter of this dissertation, remote-work environments are characterized by the emergence of three forms of distance, which are temporal, geographical and cultural. In order to succeed in managing each of them and to limit the numerous constraints they impose, appropriate control mechanisms are instituted. We have seen for instance that temporal distance imposed by remote-work environments makes it difficult for employees to distinguish their private and professional lives, especially for those who work from home.

More generally, distributed-workers are concerned by both professional and social isolation, leading them to question their role and to have difficulties in identifying with the team they are part of. In confronting these issues, individuals are usually required to develop self-management practice. Telecommuters for instance would have to establish practices for themselves, such as devoting a specific room for their professional activity within their house, saying goodbye to their families and closing the door of said room, in order to separate both private and professional lives and not be disturbed by peripheral distractions (Habib & Cornford, 1996; Hill et al., 1998, Raghuram et al., 2003).

Moreover, taking into consideration the other main manifestation of work-at-distance, i.e. virtual teams, the challenge for their leadership consists in the fact that these control functions have to be accomplished by the team itself. Members of virtual teams are expected to have the technical knowledge, skills, abilities, and other attributes to be able to contribute to team effectiveness and to operate effectively in a virtual environment. Supporting such elements is valuable for virtual team leaders in order to distribute aspects of these functions to the team itself, so that they create sort of a self-managing team (Bell & Kozlowski, 2002). Leaders will need to implement a system in which team members will be able to regulate their own performance as a team.

Working from home or at geographical distance, far from superiors and colleagues, should not be considered as an excuse for working less: This is a source of concern for managers. In other words, how to be sure that their employees actually do the job they are expected to? Geographical distance makes direct supervision difficult or impossible. In order to address the substitution of human interaction by electronic interaction while working at distance, managers use formal forms of control, especially outcome control (Langevin, 2002, Nidumolu & Subramani, 2003, Karjalainen & Soparnot, 2010). Behavior control is focused on the processes and the ways of addressing the objectives, which is difficult to evaluate with work-

at-distance as it demands frequent attention that geographical distance does not really permit. Output control is easier: by only focusing on goal achievement, it reduces the need for control verifications and enables managers to ensure that their subordinates have actually done some work to achieve objectives.

Finally, control forms are necessary for reducing negative impacts of cultural diversity on team communication, cooperation or harmonization. Since members of the team could be culturally diverse, they need common elements to develop a successful collaboration. A social form of control has to be supported to enable the sharing of values and beliefs irrespective of the members' original culture. But not to excess, as "excessive cohesion and standardization of team norms and processes may curtail the strategic benefits of cultural diversity and local responsiveness and stifle innovation" (Gibbs, 2009).

To summarize, we observe that each type of distance will need a specific control modality in order to be managed (*Table 2*). A valuable observation can be made from this: a single, universal, and specific form of control is not able to confront and reduce the numerous constraints imposed by temporal, geographical and cultural distance.

	Control motivations	Accurate control modes
Temporal distance	Need for control so that employees succeed in better identifying their work/life balance and are not disturbed by matters arising from their personal lives.	Self-control: employees have to manage and impose specific practices to deal with isolation, or to individually contribute to team effectiveness.
Geographical distance	Need for control so that managers who deal with virtuality and the impossibility of addressing direct supervision, are sure that their employees actually do the job they are expected to do.	Formal control, rather outcome than behavior control: permanent supervision being complex, objective achievements are the primary focus.
Cultural distance	Need for control in order to manage cultural differences and the impact on team cooperation, communication and social collaboration.	Social control: members being culturally diverse, they need to share some common norms or values in order to create positive social and professional climates.

Table 2 - Expected control modes and motivations in work-at-distance environments according to approaches of control in organizational theories (own construction)

III) A need for conceptual step forward in the general understanding of control:

While confronting the numerous managerial issues emerging from the development of distributed-work, maintaining a form of surveillance and discipline at distance remains absolutely necessary. In such specific universes, control is the ultimate mean for the hierarchy to bridge the issue of distances. At a time when management practices are being reconsidered around distance through a new approach to time and space, we definitely need to address issues generated by forms of management and control within remote-work environments. The aim of the following sections is to address the relevancy of approaches of control in organizational theories regarding the management of control in distributed-work. Since their efficiency is severely questioned, we finally propose a conceptual reconsideration in the general understanding of control approaches coming from specific disciplines.

1) Limits of approaches of control in organization theories:

Past academic studies have mentioned the various mechanisms of control developed and used for the management of remote-work universes (Henderson & Lee, 1992; Kirsch, 1997; Kurland & Cooper, 2002; Choudhoury & Sabherwal, 2003; Nidumolu & Subramani, 2003; Piccoli & Ives, 2003; Wang, 2008). Nevertheless, several limitations might be pointed out regarding the relevancy of such academic studies investigating organizational control in distributed-work. Among them, the main criticism is related to organizational and economic contexts from which theories of control are derived: their conceptualization of control is excessively related to aspects of proximity. This observation explains in part the de-emphasis of aspects of organizational control in the literature related to “new organizational forms” as observed by Delbridge and Ezzamel (2005).

The reason is mainly the following: for most approaches where control is considered as a process of measurement and evaluation, behavior control takes a significant role through direct and personal supervision. Nevertheless, this kind of physical direct supervision is not feasible anymore in distributed contexts. The vision of a manager who keeps on sticking to the old management practices of managing by walking around and behaving as if workers need to be seen in order to be considered as working is not appropriate to such environments (Lupton & Haynes, 2000). Finally, most approaches of control in organizational theories indirectly suggest that control “will be effective if there is an organizational proximity and may be enhanced by geographic proximity” (Levy and Talbot, 2010). Our representation of

control is completely reconsidered through the introduction of remote-work and forms of distance emerging from it.

Obviously, a more dynamic and general approach of control is missing and has to be proposed in order to globally address the concept of control in the managerial rupture introduced by work-at-distance. Providing additional elements of thought towards this initiative primarily necessitates taking into consideration concepts that are often neglected in the literature related to traditional forms of control. Fulk and DeSanctis (1995) observe that IT development is closely linked to the emergence of new organizational forms and should eliminate existing control mechanisms. IT would indeed permit a means of relieving hierarchical pressures on organizational practices, and create networking and lateral relationships at the origin of new organizational forms and practices (Isaac, 2002). The analysis of mechanisms such as peer-supervision and employee-initiated controls provides ways of overcoming limitations.

➤ Peer-supervision:

When investigating the following question “who is controlling?”, the classical answer in most past academic studies will be the hierarchical superior. It is then legitimately implied that control relationships between individuals will be vertical. However, this is not the case for peer-supervision, a mechanism that is massively present in today’s remote-entities.

In peer-supervision, influential individuals have the opportunity to control behavior of organizations and its members (Mintzberg, 1986): this sometimes explains in part why various coalitions fight to control decisions within the organization. In practical terms, members are clearly able to compare themselves with their colleagues on a rational basis, simply by glancing at displays of personal performance data or other indicators such as absenteeism for instance, for identifying those who jeopardize the overall performance (Sewell, 1998). Analysis of peer-supervision mechanism is often limited in past academic studies as much of this control literature emphasizes formal control within a hierarchical setting, having less to say about how to exercise control in non-hierarchical relationships among relative colleagues (Crisp and Jarvenpaa, 2003).

Previously, peer-supervision could be considered a mechanism of social control, since social control actions lead to a monitoring of goals’ integration. Nevertheless, peer-supervision is atypical and mainly consists in pressuring others by, for instance, exerting pressure to encourage a team member to engage in (or refrain from engaging in) specific behavior.

Ultimately, the team becomes a more pervasive supervisor than the previous external managers were, with a more effective control that comes from the authority and power teammates exercise over each other as peer managers.

Concrete manifestations of peer-supervision can be illustrated by the tracking, the interpretation and transmission of status information about individual team members. Peer-supervision includes a monitoring characteristic that leads individuals to interpret the activities of their peers in a specific perspective, to evaluate them. For instance, it takes the form of indicating whether individuals had received desired output from a teammate, leading individuals to sometimes use employee-initiated controls¹⁵. Peer-supervision could even go so far as that active members of a specific team, by noting the lack of participation from one teammate, discuss with their manager the possibility of officially removing the member from the team. As such, we posit that peer-supervision can be perceived as a form of virtual management, where codes, while not explicitly enforced, are finally enforced by exception, so that if someone steps out of line they are reprovved. The management of time by individuals, and their appreciation by other colleagues in particular –in terms of overtime work and responsiveness during the completion of the project for instance, would then serve as a particularly useful device of management and peer-supervision.

➤ Employee-initiated controls:

While we see in peer-supervision that sources of controls can be different from the hierarchical managers, another modality of control can enable us to better approach the attitude of individuals being controlled. Individuals can be subject to control modalities as an arduous constraint that limits their way of functioning within the remote-entity. Or they can be more enthusiastic, and can interpret control as a normal and standard work procedure.

Giddens (1987) refers to the dialectic of control observing that “all forms of dependence offer some resources whereby those who are subordinate can influence the activities of their superiors”. Although Orlikowski (1991) observed that little is known regarding how and when this dialectic is expressed, how sustained are its effects, and what the long-term implications for control and organizing are, more precisions regarding these issues can be provided by the study of employee-initiated controls. Employee-initiated controls provide such an original perspective in the understanding of control by employees: some of them can be “control-

¹⁵ Team members will take the initiative to inform each other when they provided new work products, in order not to be accused of delays.

seekers” and ask for rules to follow. They will then approach their manager for being indirectly controlled. Employee-initiated controls refer to the phenomenon that employees take initiative to report to their managers about their work status although it is not required by managers (Wang, 2008).

Employee-initiated control is similar to traditional self-controls in the sense that both are initiated by employees and not imposed by managers. Still, they are divergent in the sense that the whole process of traditional self-control does not involve the manager, while employee-initiated control involves both the manager and the employee. Both of these controls serve the purpose of ensuring that people work responsibly. However, the driver of employee-initiated control is that employees desire to gain visibility: Employees consider it important that their managers understand the value of their work, so they constantly remind their managers about their work status (Wang, 2008).

In terms of control escalation, the issue raised by such employee-initiated controls is that many employees eventually act similarly. In other words, that a certain number of people purposely send initiated updates of their work to their supervisors. Indeed, managers who appreciate such initiatives would, over time, consider such practices as a norm and ask every employee to do the same, although it was initially a sporadic and individualized action.

Vertical control relationships

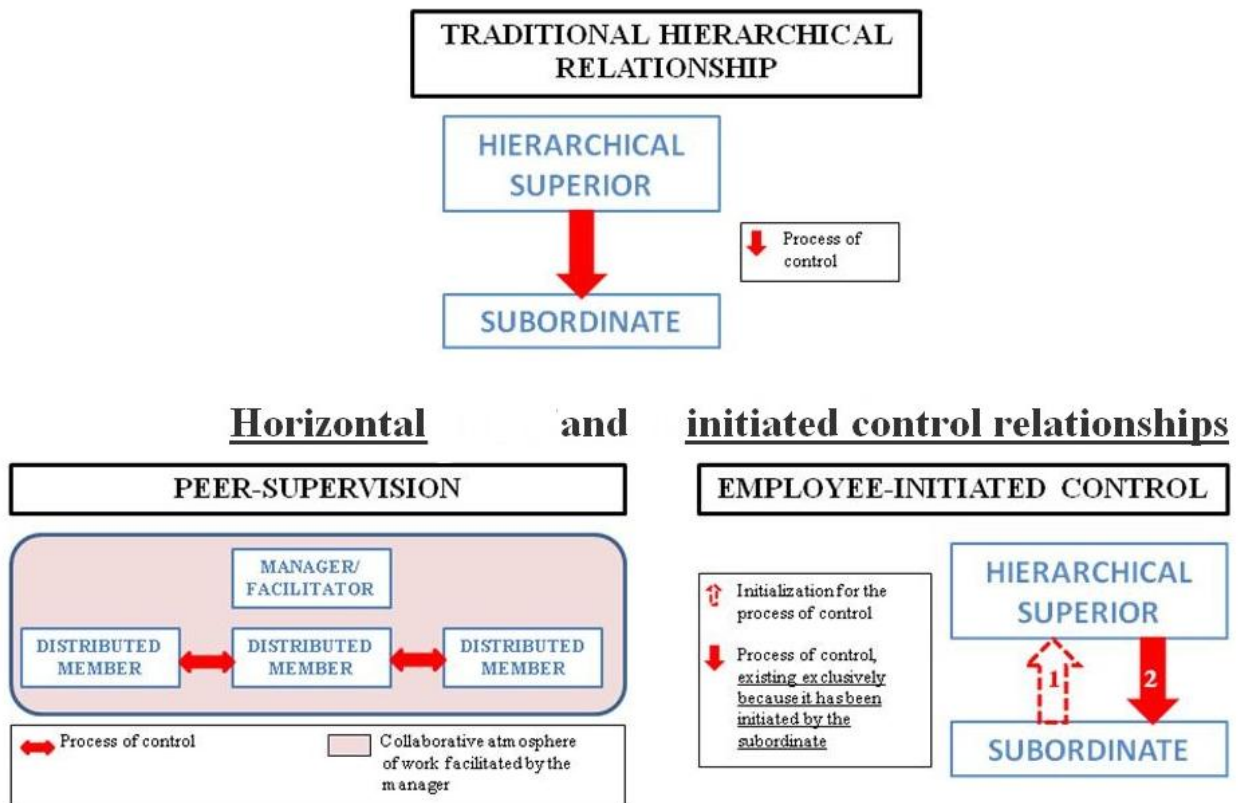


Figure 3 - Control relationships created by the development of distributed-work

We consider these specific modalities of control - be they employee-initiated controls or peer-supervision – as modalities of control-enactment, which is the development of processes and structures that attempt to influence members to engage in behavior that accomplish collective goals over time (Crisp and Jarvenpaa, 2003). Control-enactment includes several team processes such as specifying control structures, pressuring teammates, terminating team membership, as well as team and member monitoring. To understand these all-processes, it is necessary to examine processes and structures internal and external to the team while considering the development of control over time.

Finally, through control-enactment, not only can individuals exercise a degree of influence over the formulation of their own work, but individuals are also able to influence the work of others in their team through suggestion, demonstration, and exhortation (Sewell, 1998). Thus, paradoxically, it is interesting to notice here that autonomy moves from an

individual characterization (genuine autonomy) towards a more collective sense (nominal autonomy).

At that point, we could legitimately raise the question: isn't it possible to observe forms of behavior control without direct supervision? Why can't we identify responsiveness of individuals or individuals' ability to collaborate remotely as observable elements of behavior (Langevin, 2002)? Our suggestion is that forms of behavior without direct supervision can directly be observable through control-enactment processes (especially peer-supervision), because, as we explained above, control-enactment describe processes and structures that attempt to influence members to engage in behavior that accomplishes collective goals over time.

We therefore propose in the following paragraphs to introduce more original approaches that respond to this call for a broader approach to control within distributed organizations. These approaches are mainly constituted by the seminal works of post-structuralist authors, since this research has the benefit of “reinforcing our concern to emphasize the importance of the context, or situatedness of control” (Delbridge and Ezzamel, 2005). Post-structuralist approaches recognize the significance of situatedness, be it historical, economic or sociopolitical, by emphasizing the potential for individuals to construct contexts from their personal cognition and interests.

2) Michel Foucault and the concept of disciplinary power:

The works of French philosopher Michel Foucault have permitted the analysis of multiple micro-powers coming from outside the observed entity. The main aim of Foucault's philosophy is to study the various systems of coercion present within our society, and the development of the systems of coercion under the pressures and mutations of institutions (being prisons, schools, factories, families, hospitals, etc...). As such, he has developed an original perspective related to the concept of power that has been relatively appreciated in literature (Orlikowski, 1991; Coombs et al., 1992; Hayes et Walsham, 2000; Leclercq, 2008) and remarkably relevant for the discipline of management.

In his *disciplinary society*, Foucault (1975) indicates that individuals keep on moving from a closed world to another, all of them having their own rules: first the family, then school (“you're no longer in your family”), then the army and the military service (“you're no longer at school”), then the factory, and occasionally the hospital, possibly jail, which is the ultimate place of confinement. As a matter of fact, global and industrial capitalism has been largely inspired by these models of prison in order to build its own disciplinary procedures (i.e., the description of the panopticism by Foucault (1975), where people who control are not visible to the ones they control).

Foucault (1975) used the terms *disciplinary power* to refer to the fact that individuals and groups often discipline themselves unconsciously, even without visible external controls present at the moment. Under disciplinary power, conformity to control is not obtained by physically and personally exercising power over the ones being controlled. Instead, social actors interpret that they should be subject to control and choose to behave properly even if alternative courses of action might relieve their oppression. Since disciplinary power “is exercised through its invisibility, [meaning that] it is the fact of being constantly seen, of being able to always be seen, that maintains the disciplined individual in his subjection” (Foucault, 1975): this is in accordance with the description of panopticism.

In situations of disciplinary power, control is exercised indirectly, impersonally, and in subtle ways. The organization operates as a set of spaces whose development itself is proving to be a surveillance structure based on the visibility of individuals (Fischer, in Chanlat 1990). People who are controlled experience compulsive visibility, meaning that at any given time, they can potentially be visible to the people who control them, although it is not the case at all times. This sort of supervision invokes the panopticon (Foucault, 1975), entrapping individuals in their own control because its effectiveness depends not on its actual exercise

but on their belief that they are subject to it. Paradoxically then, as disciplinary power becomes less visible, its object – individuals and their behavior – become more visible (Orlikowski, 1991).

By applying the theory of Foucault to remote-work universes, we understand that information systems enable a certain centralization of control, which considerably limits the flexibility of organizational actors, while providing them with an illusion of empowerment (Rosen & Baroudi, 1992). Rather than emerging through coercive forms of control exercised by hierarchies and bureaucratic mechanisms, Foucault's concept of disciplinary power eventually leads to the observation of invisible means of control, which apparently do not seem to be restrictive but which come from a set of organizational values that affect behavior. The notion of "coercitive autonomy" describes this "very subtle form of control" that is based on norms and values and that is more powerful and authoritative than direct control (Foucault, 1975). It is the idea of the iron fist covered by a velvet glove (Jermier, 1998). Individuals still feel subject to a system of authoritarian control and feel that they must make their activities visible to their superior, because of the technology to which they were fitted. According to Hayes and Walsham (2000), information systems play a central mediating role in the establishment of coercive autonomy in the sense that the decentralization of activities, telecommuting, and empowerment are only possible because there are effective ways to control employees and their visibility at work.

This phenomenon is related to the dual nature of ICTs, a dual perspective created by the ambivalent effect (Kalika, 2002, Leclercq, 2008) of these ICTs that simultaneously create a greater centralization and decentralization (Robey & Boudreau, 1999). When information technologies mediate work processes, they create an information environment that facilitates decentralization and flexible operations. But information technologies also generate in the meantime a matrix of control by increasing the dependence on centralized knowledge and power (Orlikowski, 1991).

Information systems should then be considered simultaneously as means of liberation, empowerment and democratization, but also as tools for monitoring, surveillance and repression (Hayes & Walsham, 2000). On the one hand, the increased use of IT facilitates the strengthening of control systems with various forms (outcome control, social control, self-control, etc...) that can be developed: information systems are enhancing vectors of control because of recording and traceability capabilities they allow (Reix, 1990). But on the other

hand, direct communication through ICTs makes possible the improvement of coordination, and provides a certain autonomy in management.

The development of IS in organizations has given rise to much controversy, alternately optimistic and pessimistic, focusing on decentralization and the allocations of power to individuals, or, on the contrary, centralization of power and control along with the strengthening of governance structures (Robey and Boudreau, 1999). However, it is clear that new ICTs offer an opportunity for both decentralization and increased autonomy, although establishing real time control and monitoring systems at the same time (Kalika, 2002). In this debate between centralization and decentralization of authoritarian structures, we then rather agree with Bloomfield & Coombs (1992) for a third alternative permitted by technological systems of control: centralization and decentralization cannot yet be regarded as opposed or alternative concepts. Instead, they are mutually dependent (Bloomfield & Coombs, 1992). In the case of remote-work environments, there is a double movement of strengthening control and promoting decentralization of decisions that is driven by information systems.

The subtle forms of controls described in the disciplinary societies of Foucault illustrate this observation by first allowing a distant management. This distant management is made of substitutions of forms of control, including personal and direct supervision (Rosen & Baroudi, 1992). Initially, control seems then more human, less coercive, more sophisticated, less visible, subtle and insidious for individuals (Leclercq, 2008).

But if the use of information systems initially promotes individual autonomy, communications, networking, and decentralization of the decision, it is nevertheless accompanied by an intensification of work, continuous self-discipline and emotional involvement (Rosen & Baroudi, 1992, Fulk & De Sanctis, 1995). These enumerations are symptomatic for the evolution of our societies, societies that another French philosopher Gilles Deleuze characterized as societies of control (Deleuze, 1990). Although Deleuze resumed Foucault's argument regarding the balance between decentralization and reinforcement of control processes, his reflection goes further in the reconsideration of our space-time continuum, thereby providing an even more relevant framework for the understanding of control in remote-work universes.

3) Limitations of Foucault's theory and contributions of Deleuze:

Foucault's work and its implications for our better understanding of control have been questioned in the past, especially with respect to its obsession with the duality of control and resistance¹⁶ (Townley, in Delbridge and Ezzamel, 2005). What is however even more interesting is Foucault's judgment of his own model of disciplinary power. Paradoxically, Foucault himself did not consider the model of disciplinary societies as reflecting contemporary society, because, just as he conceptualized it, he had already foreseen the end of this model¹⁷. Deleuze observed this paradox: "Foucault is often regarded as the philosopher being at the origin of disciplinary societies, and of their main technique, which is confinement (not just in hospital and prison, but the school, the factory, the military camp). But he is one of the first to assert that the disciplinary society is what we are leaving, what we are already not anymore" (Deleuze, 1990a), and took advantage of it in order to propose a more accurate concept according to him though the societies of control (Deleuze, 1990b). For Deleuze, it is clear that at the end of the 20th century, disciplinary societies are already declining: the profound change of our economic system, which became more dispersive and less confined and concentrated, definitely leads to new ways of monitoring and controlling. According to Deleuze, our environment has shifted from *disciplinary societies* - characterized by societies that equipped themselves with machines involving energy, to *societies of control* - those which operate with machines of a third type, computers, etc...By considering "societies of control", Deleuze seeks to characterize the global crisis of our institutions, and the progressive and dispersed installation of a new system of domination.

In order to replace the concept of disciplinary societies, Deleuze noticed the emergence of societies of control that are extended well beyond structured sites of social institutions through a mechanism of flexible networking, adjustable and fluctuating (Hardt & Negri, 2001). Societies of control do not lead anymore, unlike the disciplinary societies, to a physical confinement of individuals but rather exercise a continuous control through instantaneous communication permitted by the numerous developments in Information and Communication Technologies (Leclercq, 2008). Control is short-term and involves rapid rates

¹⁶ "An undue focus on control prompts a renewed focus on resistance, so that with overt identification and dis-identification, not only is everything control, but apparently everything is also resistance. There is no outside!"

¹⁷ "I examined how the discipline [in an European society] was developed, how it has changed according to the development of industrial society and increases in populations. Discipline, which has been so effective in maintaining power, has lost some of its effectiveness. In industrialized countries, disciplines come into crisis. [...] It is obvious that we must abandon in the future the current disciplinary society." (Foucault, 1994)

of turnover, but also continuous and without limit, while discipline was of long duration, infinite and discontinuous. Our society shifted then from the man of discipline to the man focused on control, with individuals who must continuously report their results to the hierarchy.

The disappearance of disciplinary societies and emergence of societies of control can easily be related to the increasing development of Information and Communication Technologies over the last century. Indeed, the use of ICTs provided a unique opportunity to develop a disciplinary authority that can be applied to both individuals and sets of people: something that Foucault thought impossible (Zarifian, 2004). The geometry of the control tower described by Foucault has disappeared and evolved into a multiplicity of light and fast virtual centers, which participate in the subtle panoptic view of information through mechanisms of visibility and continuous monitoring (Hardt & Negri, 2001). Societies of control are based on these assumptions of subtle but powerful processes of control that are facilitated by work-at-distance especially.

Although the emergence of work-at-distance has truly constituted an improvement in employees' approach to emancipation, it remains paradoxical as it creates a more subtle form of isolation than the confinement of disciplinary societies. Thanks to the decrease of confinement that they introduce, societies of control seem at first to offer new freedoms to individuals, but "participate as well in mechanisms of control that are equal to the harshest of confinements" (Deleuze, 1990b) by introducing a new system of domination. The work-at-distance, by promoting flexibility in time and space for employees, accords with this description. For example, direct supervision has been substituted by more subtle modalities of control facilitated by the intrusive use of technologies – "a matrix of control, fusing together a range of capabilities that facilitate a repressive and more embedded means of control" (Orlikowski, 1991). Finally, unlike the disciplinary societies of Foucault where individuals feel subjected to a system of authoritarian control in which they must make their activities visible to their superior, control in societies of control is far more subtle, because individuals are not even aware of control of which they are the object. Making our analysis of work-at-distance universes and the global approach of control within it through the contributions of Gilles Deleuze emerged then as an interesting solution for us.

4) Relevancy of Deleuze's works for our research perspective:

Although Deleuze's works are far from being intended for the disciplines of management, we recognized that considering this Deleuzian approach could be a good way for us to address the limitations of past studies. As opposed to Foucault's approach, that also permitted more general understanding of power and control within organizations, Deleuze proposes a more relevant and accurate framework for our current society since he has anticipated the reconsideration of our space-time continuum due to the massive development of ICTs. Referring to Foucault's disciplinary society is not relevant in our perspective since both authors, Deleuze and Foucault himself, recognize the inadaptability of this concept to our current period. These observations explain and legitimize our choice of developing an analytical framework based on Deleuze's philosophy, since the concept of societies of control is an appropriate expression of the balance between managing a control relationship to employees and providing them an illusion of decentralization through the usage of ICTs.

This analysis of control will be made through the study of mechanisms of control as previously identified (behavior, outcome, social, self controls, control-enactment processes) since post-structuralist approaches place a considerable importance on mechanisms of control and their potentially significant implications for individuals, organizations and society. According to these approaches such as the one of Deleuze, control mechanisms will be identified, articulated and engaged with by individuals in an effort to make sense of the consequences for their own experience. (Debridge and Ezzamel, 2005).

Deleuze's philosophy is made up of a prolific number of works that are extremely complex and sometimes difficult to be familiar with. Admitting that we are not a specialist in his discipline (*i.e.*, philosophy), we do not pretend that we have grasped all the details of Deleuze's works or that we propose here a philosophical argument. However, we could qualify this observation by arguing that, according to Deleuze, "doing philosophy is creating, imagining and designing concepts" (Deleuze & Guattari, 1991) so that the philosopher will be considered as an architect.

Within this Ph.D. document, our aim is to use a set of Deleuzian concepts that are related to our research work, and to eventually adapt them in an original way to the discipline of

management¹⁸. As a result, we propose to investigate how this Deleuzian approach can possibly bring new insights and contributions to the theme of control and distance management in remote-work environments by developing an original analytical framework. With this ambition, and according to Deleuze's own criteria, we even believe that our research work can be considered as a philosophical work in a certain way.

Conclusion of the chapter:

Apart from leading to a reconsideration of organizations' management, distributed-work also leads to a modification of control processes. Because of their own characteristics, ICTs modify organizational control modes (Orlikowski, 1991; Leclercq, 2008). Taking into account such an important observation, traditional models of control in management could not be considered as relevant responses to the numerous constraints produced by the emergence of work-at-distance practices. Instead, a more dynamic and general approach to control has to be proposed in order to globally address the concept of control with regard to the managerial challenges introduced by work-at-distance

Despite initial perceptions regarding flexibility, work-at-distance practices do not offer the expected radical rethinking in terms of freedom that could be granted to employees (Desreumaux, 1996). On the contrary, distributed-workers would rather be the object of more important forms of control, even though these processes are more invisible and subtle, thereby promoting the image of an iron fist in a velvet glove (Jermier, 1998). These observations are symptomatic for societies of control (Deleuze, 1990), where control no longer leads to a physical confinement of individuals but rather exercises a continuous control through instantaneous communication permitted by the numerous developments of ICTs.

At a time when distributed organizations are more and more present, we propose to consider the development of a Deleuzian approach as a response to limitations of approaches of control in organization theories. Following on the two preceding chapters, and through the development of this original analytical framework based on Deleuze's philosophy, we aim to address the following research issue:

How is control reconsidered within the managerial challenges introduced by distributed-work?

¹⁸ We respect here Deleuze's wish since the philosopher promoted the notion of "pop philosophy" (Deleuze, 1990a) as a sort of toolbox that is accessible to everyone, and where his ideas can be applied to a variety of domains – even those remote from philosophy

Deleuze brought into light an interesting argument about the evolution of our societies and the role of control within it. His philosophy directly responds to the call for the development of a critical theory of control, as more extreme forms of control are emerging from work-at-distance environments and management (Jermier, 1998). Since Deleuze's philosophy has mainly focused on the reconsideration of our traditional spatio-temporal environment, like for instance the one that could be produced by the introduction of work-at-distances practices, we propose the application of Deleuze's work and concepts to the role of control within remote-work organizations for the development of our analytical framework. The conception of this framework will be elaborated in chapter IV, directly after the methodological chapter (chapter III).

The following methodological part will permit a detailed description of our method for understanding fully the elements to be confronted during our field investigation. Such field research investigation is required for answering our research questions. After the completion of the literature review above with chapters I and II, the need to reconcile the theory with current managerial practices has been expressed. In order to do so, we could benefit from the theoretical grid coming from these two preceding chapters (*Table 3*).

This table summarizes all the phenomena examined in our dissertation, and the practical illustrations of them that are likely to be effective in the field. By completing such field research investigation in collaboration with four remote-entities based on two multinational companies, we aim to address the call for future research initiated by Piccoli et al. (2004) asserting that *“future research should investigate how these findings generalize to organizational workers, rather than just looking at students. This paper is just a first step investigating one type of managerial control: behavior controls [...] Future research should explicitly investigate different forms of control (i.e. output control) and different applications of control tools (i.e. making tool available but optional) in the virtual context”*.

	Phenomena	Associated data to collect
Temporal distance	Management of time-zones and asynchronous communications Social and professional isolation Definition of private/professional lives' boundaries Identification and perception of the team structure and membership	Interdependency of the members Integration among members Clear and common objectives Individual perception of the other Exchange between members
Geographical distance	Virtuality of exchanges Electronic rather than physical interactions	Antecedents of virtuality : contextual factors, task-media-member compatibility, temporal dynamics Dimensions of virtuality: extent of use of ICTs, informal value of ICTs, synchronicity of ICTs
Cultural distance	Creativity Open-mindedness Innovation Conflicts Complex communication	Physical and verbal interactions Relationship between the individual and the group Relationship with hierarchy Relationship to rules Relationship to time Relationship to the environment
Need of control for the management of distances	Development of specific forms of control	Behavioral control Outcome control Social control Self-control Other specific control modalities

Table 3 - Theoretical Grid, as a result of the literature review regarding the theme of managerial and control issues in remote-work universes

PART II

Methodology and design of the core of research

PART II: METHODOLOGY AND DESIGN OF THE CORE RESEARCH

The second part of this PhD dissertation is devoted to the methodology and design of the core of our research. Indeed, we aim to propose in the following sections a description of the development of our research framework. This framework will allow us to benefit from a theoretical grid facilitating the analysis of concrete situations thanks to key concepts of the Deleuzian perspective. In order to do so, this part contains two chapters:

- Chapter 3 is used to elaborate the ontological and epistemological foundations of our research. Our field research followed a protocol established in coherence with our research objectives and our conceptual framework that is described below. This chapter allows thus the description of the research approach and modalities adopted.
- Chapter 4 is devoted to the development of our conceptual framework based on the works of French philosopher Gilles Deleuze and the conduct of our exploratory case. Given the theoretical foundations presented in previous chapters, the use of a Deleuzian framework legitimately appeared as a strong and relevant tool for better understanding our research issue. Significant Deleuzian concepts are then identified with respect to the forms of distances derived from distributed-work universes, constituting a research framework from which three precise research questions emerge.

Chapter III: Methodology of research

The literature review made in the initial part of this research document constituted a theoretical framework for facilitating our interpretation of empirical observations. The Deleuzian approach that we advocate would permit a better understanding of how processes of control are reconsidered in distributed-work environments. The aim here is to comprehend how the specific characteristics of remote-work impact the management of individuals, thereby leading them to adopt new behaviors and appreciations of control.

The methodology of research and its epistemological posture have to be selected in order to reach such objectives. Indeed, various research methodologies are available in management sciences, but the relevancy of this research method will be essentially evaluated as to its ability to answer the questions asked during this work. In the following chapter, our aim is to clearly address the epistemological posture and methodology that have been selected, in order to show how this research method permits the balance between the framework, empirical research and data analysis of our Ph.D. dissertation.

More precisely, we will start to develop our epistemological posture, meaning the way we conceptualize the world and reality. From this basis, we will propose a description of the means that we used in order to understand this reality and generally support the reliability and validity of our research work. Finally, we describe the global process of our research with a depiction of both our data collecting and analysis that enabled us to conduct our research in coherence with our theoretical and epistemological choices.

I) Research design:

1) Epistemological posture :

a) Description of epistemological mainstream:

Any research work, whether fully developed or not, follows a number of criteria and methods corresponding to a precise epistemological posture. The compliance with these characteristics justifies the validity of the actual research. Epistemology, the study of the sciences, focuses on knowledge in general, and on how to attain it (Klein & Myers, 1999).

There are three streams in epistemology: positivism, interpretivism, and critical studies (Chua, 1986). Through the following paragraphs, our goal is not to propose a course or a literature review about epistemological mainstreams, but rather to briefly present the characteristics of each of these current streams. Our own epistemological positioning turns out to be somewhat original as explained below, and we feel we should provide first a general overview of these streams in order to express paradigms and elements that we meet or not.

Positivism is based on the strong assumption that reality is objectively represented. The measurement, the description of this reality can only be made independently from the researcher and his/her instruments. This paradigm corresponded to the desire for the creation of a discipline of “social physics”, and would consist of the study of human society through the use of the methods of the Natural Sciences: this is why Lee (1991) describes it later as the “Natural Science of Social Science”. However, there is not only a single form of positivism, but three divergent branches: empiricism, rationalism, and functionalism.

The first branch, empiricism, is directly inspired from the work of Auguste Comte. Through a hypothetical-deductive process, the purpose of researcher analysis will be the formulation of theories and laws derived from multiple repeated experiments. All knowledge so produced is thus temporary, and proposed assumptions are never true: they are just considered as not-false until they have been proven as such.

At the origin of rationalism, there is belief of an ideal, of a rational decision. This approach posits rationality as the main source for all true knowledge of reality. Rationalism asserts that physical science is a good model for studying human society, and that it is possible to ignore the study of conflicts at a global level as well. The world is considered as purely objective: there are factors, and their influence is sought through a principle of causality.

The third and final positivist, functionalism, is based on the principle that every

society must be studied as a whole, without regard to conflicts and actors' subjectivity. Organizations are then conceived as "bodies", where we do not really care to learn about changes, but rather about how these systems work. Although these three branches have multiple distinctive specificities, they all converge on several assumptions of the general positivist approach: the identification of formal propositions, being based on quantifiable measures of variables (even though research can be positivist and using qualitative methods like case-studies), the constitution of hypothesis testing, and the establishment of phenomena inferences from a sample to a bigger population (Orlikowski & Baroudi, 1991).

As a response, the Interpretivism paradigm has been developed in complete opposition to Positivism. The main concept here is a search for subjectivity, meaning that the world does not exist independently from the researcher. The world is thus socially constituted by the actors. Research will be considered as interpretive as long as it assumes that our knowledge of reality is achieved only through social constructions such as language, knowledge, or shared meanings (Klein & Myers, 1999).

In contrast to positivism, interpretive researchers do not predefine dependent or independent variables, but focus on the complexity of human existence at a precise time. Therefore, interpretive studies help researchers to better understand the reactions and thoughts of actors in specific organizational and social contexts. Nevertheless there exists confusion one must avoid, as the term "interpretivism" is considered synonymous to "qualitative research". Actually, qualitative studies can be conducted within each of the three epistemological approaches described in this work.

With global methodology, phenomenology, and hermeneutics are two methods that are used in Interpretivism: they even constitute its philosophical basis (Boland, 1985). By using both research approaches that are characterized by singular philosophical world views, Interpretivism is often related to Constructivism. Nevertheless, these approaches are relatively distinctive, especially regarding two specific points (Thietart, 1999):

1) The process of understanding has an incidence on the construction of reality for the actors being studied. For instance, according to Piaget, knowledge corresponds both to a process and an outcome.

2) The concept of understanding is related to the project of knowledge targeted by the researcher.

A third and final epistemological mainstream is constituted by Critical Studies (Klein & Myers, 1999). This stream is opposed to the previous ones as it assumes that social reality is historically constituted and, therefore, is produced and reproduced by actors. Although critical researchers can consciously act to change their social and economic status, they recognize that their ability to do so, however, is subject to various constraints such as social, cultural, or political dominations (Klein & Myers, 1999). The main purpose of these studies is based on the establishment of social criticism, in order to emphasize the constraints that lead to status-quo. Consequently, critical research is focused primarily on oppositions, conflicts, and other contradictions present in our contemporary society, while promoting the empowerment and criticizing the concept of consensus. Changes within the organization are produced by human beings, and not mechanically.

b) Specification of our epistemological posture :

The epistemological posture of a researcher is not a minor indication, as it indicates the conditions of validity of his/her theoretical knowledge (Hlady-Rispal, 2002). Now that we have explained the characteristics of the three epistemological mainstreams, we need to provide our own epistemological posture and justify its use all along the conception of this research document. This previous paragraph has enabled us to highlight the oppositions between the current epistemological streams, being positivist, interpretive, and critical. After being mainly marked by the prevalence of positivist studies, the IS domain is now more and more the object of interpretive and critical analysis, such research being appreciated for its contributions with respect to the interactions between technology, individuals, and the organization, and focusing on elements of subjectivity and conflict. Nevertheless, although interpretive and critical studies have been identified as opposing criticisms of positivism, these approaches still present a certain number of limits, which bring us to envisage the adoption of an original perspective combining positivism and critical studies, through the use of a Deleuzian analytical framework as discussed above.

In this study, we use the case study methodology for collecting our data from the field. We try to meet criteria of validity proposed by Yin (2004) or Miles & Huberman (1994) as explained below. As the result of such observations, we can say that our positioning is somewhat close to positivism. However, this dissertation is mainly based on the work of French philosopher Gilles Deleuze, using one of his main concepts for providing a reconsideration of work-at-

distance management.

Deleuze is known as one of the major representatives of the Post-structuralist school, which can be associated with the stream of critical studies. Consequently, as holding another epistemological position is possible, so this research study will also be influenced by standards of the critical research stream. This is especially the case in studying the societies of control, and ideas of coercion, oppression or emancipation to which they relate. We will adopt an original position, one that will combine elements and standards from both the positivist and the critical studies paradigms. We will see in the following paragraphs that such epistemological construction is even suggested by Deleuze himself, and this ensures a relative coherence with this research work.

c) Adoption of a multi-paradigm approach: the « bastard empiricism »

The main issues of this research work are the reconsideration of the work configuration and our spatiotemporal perception, desire for employees' emancipation as they are the object of stronger modalities of control, or even the understanding of cultural differences that may lead to conflicts and socio-cultural tensions in the workplace. These elements are concepts usually considered in critical studies. However, we also base the methodology of our study on case studies, mainly using criteria and standards proposed by Yin (2004) or Miles & Huberman (1994) who are strong representatives of positivism.

Through this wish to combine both critical and positivist elements, we follow what Deleuze (1968) celebrates as a "*bastard empiricism*". This is in accord with the assertion of Spicer & Fleming (2001) who claimed that "in order to make social constructivism critical by evoking the traditional notions of structure and contestation, we recommend a sort of bastard empiricism". This notion is also often characterized as "transcendental empiricism" (Deleuze, 1953), where a parallel is made between the empiricist epistemological stream and the *transcendental* concept from Kant, relating to anything that is a condition of possibility (applied to knowledge, it refers to knowledge's conditions of objects, a priori).

Such empiricism is not necessarily the one presented in the previous epistemological part, as a subdivision of well-known positivism. Here, through what could be recognized as a grounded transcendental empiricism, we rather have to interfere with an illegitimate lineage of empiricism (Spicer & Fleming, 2001). One of the best examples of bastard empiricism is provided by Bourdieu's book *Distinctions (1984)*, where the French sociologist uses a range

of empirical evidence from photographs through large-scale surveys for examining how artistic taste is related to social structures (Spicer & Fleming, 2001).

Applying transcendental empiricism implies the acceptance that the discovery of conditions of an experiment involves an experiment in itself; the use of a specific ability. In transcendental empiricism, the experiment conditions are never general, but are defined according to cases. In opposition to other epistemological streams mentioned above, in transcendental empiricism, the object does not exist before the subject, nor does the subject constitute an element of experience (Sauvagnargues, 2009).

These assertions are clear in Deleuze's work, especially in *Difference and Repetition* (1968), where he presents his points of disagreement with radical forms of empiricism with respect to the establishment of general laws derived from the repetition of experiments. For him, cases repeated or derived from their general original case are extremely different from both the general and other specific articulations. He gives the example of festivals, describing the fact that a general format or blueprint is repeated each year by festivals, but each repetition must not be conceived as a copy of the original blueprint:

“To repeat is to behave in a certain manner, but in relation to something unique or singular which has not equal or equivalent. And perhaps this repetition at the level of external conduct echoes, for its own part, a more secret vibration which animates it, a more profound, internal repetition within the singular. This is the apparent paradox of festivals: they repeat the unrepeatable. They do not add a second and a third time to the first, but carry the first time to the ‘nth’ power” (Deleuze, 1968).

In a methodological observation, Flyvbjerg (2001) suggests that the most suitable methodological approach for understanding this epistemology is the study of cases, as “it is the only method that holds the general and specific together in a strange dialectical dance”. The extended case study method captures the nuances of repetition of the generalized concepts of structure, text, and contestation in organizational situations. By employing this case-study method, we hope to grasp the rich complexity of specific organizational contexts like the ones present in remote-environments.

Finally, the type of empiricism we should aim at is more what Flyvbjerg (2001) characterized as he argues that in order to understand the content of general concepts, one must try to communicate, live and experience life with those who are being studied. It means

becoming an object of the reality as well as the observing subject. These assertions would lead us to adopt typical methods of data collection like observations, trying to bring together information from interviews with more researcher derived forms.

2) Our research assumptions:

In this section, we aim to provide the elements of our strategy to be used in approaching and understanding field research.

a) *The global logic of our knowledge's constitution :*

Testing and exploring are two specific processes often used in creation of knowledge through research. These processes are opposites, as they adopt opposing modes of reasoning, induction and deduction (Anderson, 2004).

- Induction: Using a process of observation starting at the level of practice over a period of time, some general propositions about the nature of what has been observed can be furnished, and a theory can be generated. This is characteristic of the inductive approach, which enables us to switch from the individual (meaning the facts established by observation) to the general (through the enumeration of proposals, laws, and universal theories).
- Deduction: Theories can be generated through a process of testing established generalizations. Here, the process will involve taking into consideration a proposition that is thought to be true and testing it in diverse situations. We refer to the deductive approach. On the basis of evidence that is generated through this testing process, the theory can be provisionally confirmed, amended, or discarded altogether.

Regarding our own investigation, we adopt a diverse mode of reasoning for the constitution of this research work. While our thinking, starting from the literature and from several elements of our field observation, might be assimilated to a more inductive approach, we cannot dismiss the influence of our knowledge over our research observation. Through the identification of contributions and limits of previous research work done regarding our topic of interest, we have been enabled to propose the emergence of several issues, and then to propose a more original perspective and framework for better understanding our organizational ways of working.

The whole literature review, besides our analytical framework mainly based on Deleuze's work, or even the research issues proposed above, should thus be considered as a support for the observation of our research. They have really been used as a guideline for both collecting and analyzing the data coming from the field research. What is true about our approach of doing research is that it is more based on the constitution of numerous way-

rounds between the literature analysis and the empirical data collected on the field: we kept on going back and forth between these two specific elements, trying to provide and make sense of our observations in to this process.

Therefore we could observe that our research is primarily based on a principle of exploration, since it presents exploration that is “fed” by the contributions and limitations of the literature, with field observations possibly enriching prior knowledge. Consequently, the principle that more likely applies to our research work is one of abduction. Nevertheless, in any case such research processes should be considered as if in total ignorance of the literature: emerging theoretical developments only constitute original products of our research work. Realizing such a round-trip between data and literature is something that is promoted by grounded theory (Suddaby, 2006), which is the methodology influencing the design of our research. Instead, these mechanisms helped us to recover several theoretical limitations. In order to provide concrete evidence for this observation, such research processes will be precisely illustrated in Chapter IV with the chronological construction of our analytical framework.

As opposed to induction, the process of abduction leads to conceptualization, explanation, or speculation, rather than universal laws. Abduction consists of providing a certain inference, comprehensive or explicative, that would require several tests in order to finally be considered as a law. Concretely, the first conceptual frameworks have been constituted thanks to the literature review, as described in the first parts of our document, and have guided our first research steps on the field. Nonetheless, new categories have gradually emerged from the practice and have enriched the final conceptualization in this study (Chapter IV).

During those specific research stages, we often expressed a feeling related to what Hlady- Rispal (2002) describes as “a tightrope walker in his/her learning phase”. As a young researcher, it is sometimes difficult to strike a balance between two types of collected data:

- Information that we would favor because they conform to our a-priori assumptions, our mental constructs regarding the observed reality, and because they determine what we believe to be the future success of our work. A specific example concerns the emergence of the phenomenon of deterritorialization. Once it was mentioned by interviewees that no cultural differences could be identified or recognized, we were pretty satisfied with our idea that this phenomenon of deterritorialization was emerging within this entity. However, we

still needed to control our positive feelings, as we needed to verify whether this information was shared by other participants or not, and we needed to identify the reasons for such a phenomenon.

- Data that are opposed to our expectations or that tend to disprove our construction. In this case, our first reflex would be to avoid them. This feeling has of course to be controlled as quickly as possible. We then had to struggle somewhat to reintegrate them back into our analytical framework, an operation that required a permanent challenge that is complex but finally essential. The hardest part in this process consisted in succeeding in overcoming our inability to find an immediate and definite explanation for the data gathered.

The best example for this observation concerns the issue of control, which is at the core of our research document. At first, while interviewing members of the first entity, few of them asserted that they were the objects of any forms of control. These observations were fairly disappointing for us as issues of control constitute our research focus.

Then we interviewed their managers, who confirmed to us that many forms of control and supervision were put in place, but in more subtle ways. Only at that time did we change our mind about the disappointing results of first interviewees, and realized it was a manifestation of societies of control where a new sense of freedom is offered to individuals but some control mechanisms are still present in a less visible way. The numerous loopbacks with the theory and literature have been significant with regard to these situations. These constant loopbacks, permitted by the adoption of an abductive approach, are what made us able to identify, refocus, and refine our conceptual categories defining the management of distance in remote-work environments.

b) Method of investigation :

Qualitative methods have been used for the conception of this research work. The reasons for this choice, as opposed to quantitative methods, are numerous. If the quantitative approach focuses on facts and causes, the qualitative approach aims at providing an understanding of human or organizational behavior by considering the individual perspective and by taking an interest in the subjective states of actors (Hlady-Rispal, 2002).

This is the case of our research study, which aims to address managerial issues, especially about control, in remote-work environments. Thanks to our conceptualization based on Deleuze's work, we seek in this research to analyze empirical data. Our aim is not the confirmation or refutation of a unique theory, but rather consists of trying to succeed in

assimilating and enriching several theoretical propositions exposed above, as shown by our choice of the use of an abductive approach. Such an initiative will be permitted by the use of qualitative methods.

Secondly, as already exposed previously, the epistemological perspective adopted in this research design (i.e., « bastard empiricism » or transcendental empiricism) postulates the existence of a process of mutual constitution between action and the social structure, thereby rejecting the idea of an external, objective social reality that is independent from the researchers. Clearly, taking into account the goals and principles derived from our selected perspective, the adoption of a qualitative approach is justified, as it provides us with a significant range of interpretive techniques for understanding the meaning of observed phenomena.

3) Research strategy for apprehending reality : the case study

Similar to the epistemological paradigms, there exist many tools, techniques and methods that allow access to the field research. Among these methods, case study is considered as the qualitative research method most commonly used in Management Science, especially in Information Systems research (Orlikowski & Baroudi, 1991). Furthermore, with our epistemological choice, we have already emphasized the fact that Deleuze (1968) or Flyvbjerg (2001) consider the case analysis as the most suitable methodological approach, especially employing transcendental empirism.

According to Yin (2004), the need for case studies arises out of the desire to understand complex social phenomena. Case studies are the preferred strategy when “how” or “why” questions are being posed (or a “what” question being exploratory), when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context. Concretely, a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2004). Hence, case study research recognizes that any managerial situation is closely related to its environment, and that any organizational phenomenon cannot be understood without an interpretation of individuals’ actions, perceptions and intentions.

Adopting such a method is supported by the fact that it offers an understanding of relational processes, creation modes of decision-making, or even examination of facts and perceptions that individuals attach to actions. As we definitely would like to cover contextual conditions, and as we assume that these contextual conditions might be possibly significant regarding our research topic, the use of this methodological tool is fully justified in our case. Below is the figure summarizing the case study method employed in this research study (*Figure 4*). We will also take advantage of the following paragraphs for emphasizing the global characteristics of our case study method.

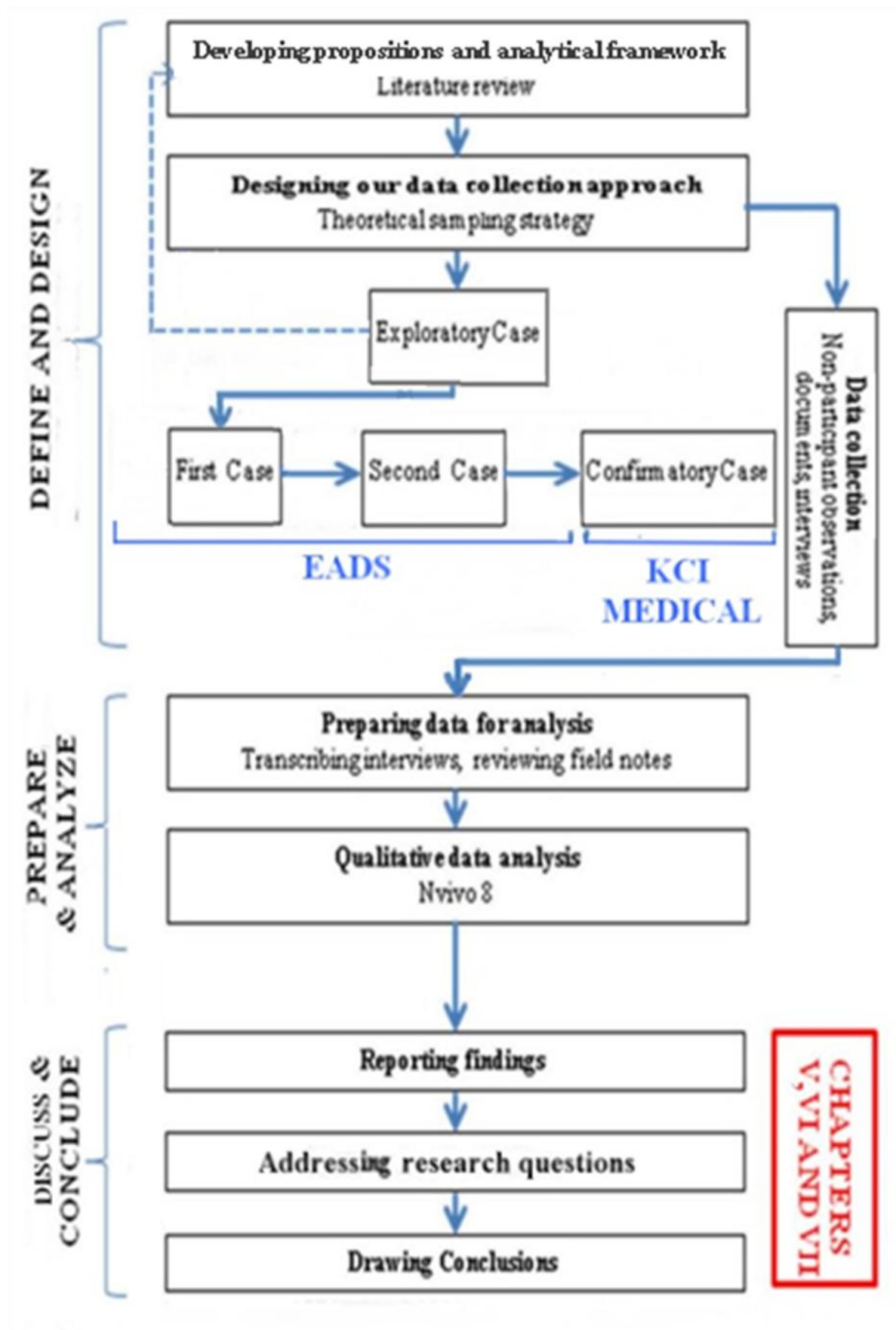


Figure 4 - Our Case Study Method

a) *A research design influenced by the grounded theory:*

For the conception of this dissertation, we establish a research design based on case study and analysis techniques from grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 2004) in order to address our research questions. We are aware that one can question the reference of grounded theory in our research design by taking note of the relative importance of Deleuze's theory. With regard to this argument, several elements have to be underlined.

The reference to Deleuze's work emerged through our reading and the constitution of our literature review, after the field research had already started. We did not enter the field research with a hypothesis in mind coming from the application of Deleuze's work. As addressed by Suddaby (2006), grounded theory should not be presented "as an excuse to ignore the literature review". Clearly, the use of Deleuze is valuable in our research thinking. But as recognized by Glaser & Strauss (1967) themselves, it is "difficult to find a grounded formal theory that was not in some way stimulated by a substantive theory" – a theory grounded in extant research in a precise subject area.

Globally, grounded theory is considered as "a general analytical methodology related to data collection, which uses a set of systematic methods in order to generate an inductive theory about a substantive area" (Glaser, 1992). More than a set of procedures, grounded theory is a unique way of thinking and understanding the world (Strauss & Corbin, 2004). Grounded theory is often depicted as an inductive method. However, deduction and abduction processes also take a major place in many stages of this research method (Garreau, 2009). Hence our reasoning combines inductive theory-building from cases leading to the production of new theory from data and a more deductive theory-testing, completing the cycle by using data to test the theory (Eisenhardt & Graebner, 2007). This recursive circling among the case data, emerging theory, and extant literature, is constitutive of the theory-building process (Eisenhardt, 1989, Eisenhardt & Graebner, 2007) observed in this research study; a theory-building process that is based in grounded theory.

The analytical process will be inherent to a constant round-trip between data and analysis where successive analyses enable the reconsideration of the whole data previously collected (Strauss & Corbin, 2004). Grounded theory requires that data collection be tightly interwoven with data analysis. In the research process, both activities occur simultaneously: data and theory are constantly compared and contrasted during data collection and analysis.

The emerging theoretical account generated from analysis of data collected in early stages guides the data collection in later stages (Locke 1996). As expressed below in the

detailed description of our methodology, the interwoven nature of data collection and analysis makes it possible for analysis to direct the process of theoretical sampling, with the identification of elements that are relevant to the emerging theoretical framework. We can plausibly assert that we had learned from our research fields, in the sense that our goals for data collection and analysis have become more specific over the progress of our research. As a concrete example in our dissertation, this mechanism explains why, after our exploratory case, we took into account that each of the forms of distance emerging from remote-universes had an influence on others (see Step 4 of the building of our analytical framework). Or the fact that systems of beliefs and individual interpretations of cultural particularities should be included in our analytical framework regarding the cultural aspect of our dissertation, as they can possibly explain the emergence of the phenomenon of deterritorialization.

While using the grounded theory approach, divergent methods can be adopted and will lead to the embracing of several assumptions: relative attention has then to be paid to these assumptions. Grounded theory should not be considered as an excuse for the absence of a methodology (Suddaby, 2006). When the “Straussian” school encourages researchers to take an active, even provocative role when collecting and analyzing data, but still maintaining an objective position, the “Glaserian” school suggests that academics should limit their impact on the data and allow the data to speak for themselves.

For this dissertation, we rather follow Straussian guidelines all along our research process. As an example, taken from the non-participant observations made at the German offices of the exploratory entity, we took the initiative to move beyond the distinctive units and we definitely have a pro-active role in the collection of such data.

What were finally our motivations, our justifications for adopting a methodology influenced by grounded-theory in our research work? First of all, this choice of adopting such a methodology is due to the nature of our research investigation. In grounded theory, researchers do not specify theory a priori, thereby they do not need to confirm the theory empirically: this form of theory can instead be useful when no prior theory has been established to date. And although control theories in general have existed for a long time, we saw in the first parts of this research document that they could not be directly applied in such a new organizational environment as distributed-work differs from traditional office-based work universes.

Second, it is essential to specify that our original intention is not to produce a universal model, but rather to discover and explain mechanisms of the management of distances in remote-work universes, in relation to a given situation. With regard to it, grounded theory remains an instrument for “putting in order empirical materials that describe the world by presenting a certain number of regularities” (Koenig, 1993). Following this, we aim to develop true and real propositions based on the comparison of observed situations. Again, we are not looking for immutable sequences and predetermined processes, in the sense that we do not seek to establish universal laws, but rather to realize and understand how these processes emerge and evolve.

Finally, because we think that we totally correspond to the profile of researcher depicted by Strauss & Corbin (2004). We appreciate working with data rather than simply dealing with abstract ideas, and we like to express a certain flexibility and open-mindedness at this level. Besides, we expect that our research will make an eventual contribution at both academic and non-academic levels. Consequently, we claim that it is definitely appropriate to use a research design by the grounded theory approach, with an aim of extending control theories and generating an original theoretical framework for the phenomenon we investigate.

b) Selection of our level of analysis:

According to the type of research works established, case studies can consist of one or more cases, additionally allowing a focus on one or several levels of analysis. Interestingly, these levels of analysis, even multiple, can then be combined within a single case study (Yin, 2004). In this research document, we have adopted an original perspective that we justify below. The purpose of our study differs from the commonly expressed duality distinguishing individual and holistic analysis.

What rather interests us, as repeated since the beginning of this document, is above all the global analysis of control and the management of distances in distributed-work, and thereby the study of processes that coordinate this activity between individuals. We consider that the social system within which work-at-distance operates allows the articulation of both the subject (the actor, the individual who is concerned) and the object (the organization, the society) as two indivisible sides (Dameron, 2000). This argument follows the position taken by Giddens (1987) who expressed the fact that “the basic domain of study of the social sciences is neither the experience of the social actor, nor the existence of any form of societal totality, but social practices across space and time”. This observation meets our research

interest where issues do not emerge from the analysis of an individual or an object, but from managerial practices coming from a reconsideration of spatial and temporal universes.

Besides, the use of case-study research in management science contributes to the contextualization of an issue in a concrete managerial situation: it constitutes an opportunity for improving knowledge of individuals and organizations, both of which were placed in situational contexts whose influence is extremely significant (Leclercq, 2008). Finally, this specific choice (or non-choice between individual and holistic levels of analysis) is consistent with the adoption of Deleuzian philosophy for analyzing remote universes. Proposing a virtual ontology, Deleuze enables us to have a cross-individual analysis, therefore not specifically focused on either individual or holistic levels of analysis. Such an approach is extremely useful and relevant with regard to the phenomenon that is observed in this research work – control reconsideration in the management of distributed-work, since the usage of ICTs provides a unique opportunity to develop a disciplinary authority that can be applied to both individuals and sets of people. Something that Foucault, for instance, thought impossible (Zarifian, 2004).

These observations enable us then not to restrict our research investigation to a specific type or level of analysis. Again, we remind our readers here that we investigate the cross-individual processes that coordinate distributed-work. In consequence, the processes of data collection and analysis have been applied to distinctive groups of professional individuals, these being a combination of functional, production, and project teams according to the cases.

c) *Case selection:*

A major distinction in designing case studies is between single and multiple-case designs (Yin, 2004), each design having its own specificities. There is a rationale for single-case studies, for example, when a critical case in testing a well-formulated theory, or when the case represents an extreme or unique situation. On the other hand, the multiplication of case studies should enable the identification of recurring events, as well as differences among the observed situations (Eisenhardt, & Graebner, 2007), a context that takes into account the rich, real-world context in which the phenomena occur.

In this research study, we have opted for a multiple-case design especially for the replication logic (Eisenhardt, 1989) since each case is a diverse experiment that stands on its own as an analytic unit (Eisenhardt & Graebner, 2007). Moreover, we are here describing theoretical replications, since we sought to vary the conditions likely to influence the

observed phenomenon (i.e., distinctive characteristics of entities and forms of distributed-work analyzed). Besides, a multiple-case study typically provides a stronger basis for theory building (Yin, 1994), by being better grounded, more accurate, and more generalizable, a condition which can be deeply appreciated by our research motivations. Constructs and relationships are more precisely delineated because it is easier to determine accurate definitions and appropriate levels of construct abstraction, and this makes for a broader exploration of research questions and theoretical elaboration from multiple cases.

In our desire to achieve a greater level of representativeness, we have selected cases with some similarities (similar organization for $\frac{3}{4}$ of the cases for instance) but they also expressed some diversity (organizational levels, temporal constitution of the entity, distinctive preferred work-at-distance forms,...). In the following section, we will provide an explanation for the selection of the cases studied. As the qualitative case study requires good interaction with observed data, participants studied and the academic researcher, whose separate interests can sometimes be inconsistent (Hlady-Rispal, 2002), the choice of these different cases and organizations is thus something that should not be made randomly. It will depend on the ability of the observed organization for providing a better understanding of the analyzed phenomenon. Therefore, the number of cases observed will respond essentially to a *theoretical sampling* and a *theoretical saturation*.

➤ ***Theoretical sampling strategy:***

The purpose of this research is to develop theory, rather than to test it: adopting a theoretical sampling, not a random or stratified sampling, is appropriate (Strauss & Corbin, 2004) in this research. The theoretical sampling indicates that cases are chosen for theoretical reasons and will be representative of the research object (Miles and Huberman, 1994). It simply means that cases are selected because they are suitable for enlightening and extending relationships and logic among constructs (Eisenhardt & Graebner, 2007).

The data gathering is driven by concepts derived from the evolving theory and based on a wish to make comparisons. This general method of comparative analysis (Glaser & Strauss, 1967; Strauss & Corbin, 2004) will maximize opportunities to discover variations among concepts and obtaining denser categories in terms of their properties and dimensions. Reasons justifying the adoption of a theoretical sampling are then numerous, including the revelation of an unusual phenomenon, the replication of findings from other cases, contrary replication, the elimination of alternative explanations, or the elaboration of the emergent

theory. Although multiple cases are likely to result in better theory, as explained above, theoretical sampling is more complicated. In order to select the number of case studies, several theoretical sampling criteria have to be respected in order to follow rigorous procedures of analysis development:

- *Theoretical representativeness*: selected cases should permit the homogeneous study of the issue identified by the researcher in a theoretical and a practical manner. Cases need to have a sufficient number of common characteristics. We could assert that our cases conform to this criterion, as each of the cases we have selected are representative of a concrete remote-work situation in a specific organization, and theoretical elements identified in the first parts of this work are likely to be applicable to these entities. This is principally due to the nature and the structure of the entities observed.

The totality of our cases has been realized within the companies EADS and KCI Medical. Among their common characteristics, both organizations are global companies that offer goods and services for customers all around the world. Moreover, they both adopt a matrix structure, which means a structure that combines two criteria of specialization distinguishing their divisions or strategic business units, and geographical areas (KCI for instance distinguish geographical zones like for instance North America, and EMEA (Europe-Middle East-Africa)). As their customers' needs are global, and so are those of their staff, most of these companies' work groups have to collaborate remotely¹⁹, and have to confront the phenomena identified in our theoretical section daily²⁰: specific entities observed in this research are definitely one of them.

- *Variety of cases*: having a significant variety in our choice selection allows a better understanding of the observed phenomenon and its complexity. As elaborated in the following table (**Table 4**), similarities and differences in our cases are numerous with respect to several fundamental elements. For instance, there are common features of our cases that are part of each of the organizations that are studied: three of the four cases come from the same company EADS. But, on the other hand, and at the same time, diversity is expressed through numerous varying characteristics. Indeed, within the three cases realized in collaboration with

¹⁹ It is not the case for the entire population of the group EADS: the operational staffs who build specific pieces for aircraft in factories do not work remote but mostly on assembly line.

²⁰ *i.e.*, the emergence of three forms of distance and the results that they lead to in terms of identification and communication issues.

EADS we talked about above, one has been realized within the HR department at the headquarters of the group, and has a specific working population (functional); a second one has been realized within a specific division of the group, which has a dissimilar organizational culture; and a last case has been realized within the same division, but with a very technical engineering team (a distinctive professional culture).

Moreover, what distinguishes these four cases is that the national cultures and locations investigated are entirely different in each situation. Finally, an interesting element concerns the forms of distributed-work investigated in our study, which provides the best example of this comparative analysis where similarities (three of the four cases are based on the study of virtual teams) and differences (the analysis of the ultimate case within KCI provides an investigation of the broader forms of work-at-distance) are taken into account. We try to approach the various forms of work-at-distance: this is why we have mainly focused on virtual teams within the company EADS, but also on different forms such as telecommuting or nomadic work within the company KCI Medical.

Another critical difference between the cases, which will be valuable in the analysis of results especially with regard to the cultural aspect, lies in the startup date for these entities: we could expect differences between entity #1 and entity #3 since they definitely do not benefit from the same amount of experience of collaboration (more than 10 years for the EADS Corporate entity, but only one year for the second entity observed within the Cassidian division). We could assert that our case selection takes this aspect into account. This is particularly important as we address here what Glaser & Strauss (1967) illustrate through comparative analysis.

The purpose here is primarily to ensure control over the two measures of generality: the conceptual level and the extent of population. Second, by appreciating the magnitude of differences and similarities between data and optimizing it, we are able to better control the theoretical relevance of our body of data (Glaser & Strauss, 1967). Such comparative analysis is a tool for understanding an object in the most objective way possible, rather than naming or classifying it before a thorough examination (Strauss & Corbin, 2004).

VARIETY OF CASES	Case #1 : EADS Corporate entity	Case #2 : EADS Cassidian entity	Case #3 : EADS Cassidian entity	Case #4 : KCI Medical
	<i>Exploratory Case</i>	<i>Cases</i>		<i>Confirmatory Case</i>
Organization	EADS - Engineering			KCI MEDICAL - Surgery
Organizational Level	Headquarter	Division		All levels
Working Population	Functional	Functional/Operational	Operational, technically-oriented	Functional
National cultures and locations	French, German	French, German, English		Dispersion on French territory, Europe-Middle East-Africa
Remote-work forms	Virtual Team			Virtual teams, Telecommuting, and Nomadic Work
Years of service of the entity	Created at the date of merge (2000)	7 year-old	1-year-old	Varied

Table 4 - Variety of our case selection

Thanks to this table, we also justify the choice of our confirmatory case at KCI Medical. We notice here that the positioning and characteristics of this entity enable us to reach a broader analysis of our studied phenomenon, eventually providing us with a relative generalization of results.

- Criterion of balanced distribution of data:

As a researcher, we seek to obtain a balanced distribution of our data and observations, although it often happens that logistical problems, like for instance the unavailability of people or resources, arise. Once again, the preceding table can help us to address such criteria. We can see that characteristics are homogeneously balanced so that various diverse situations could be investigated. Regarding the sources of data, we can also specify that the number of interviews realized for this research document is relatively balanced between the exploratory case and other two cases from EADS (respectively 14 and 12 interviews), or between these two Cassidian cases and the ultimate case from KCI Medical (respectively, 7, 5, and 6 interviews done). Although it is true and normal that the exploratory case study benefits from a broader analysis, none of these cases have been favored and we tried to balance the data between them. Adopting a triangulated perspective of data collection combining non-participant observations, interviews and internal documents is additional evidence for our wish to address this balance criterion.

- *Richness of available data*: this criterion that determines the potential for data collection and data analysis is critical. In our specific case, it has been facilitated by the collaboration agreement signed with the company EADS before our entrance on the research field, and thanks to the collaboration, commitment and support of the CEO of KCI Medical France. These agreements have enabled us to benefit from a relative freedom in the collection and analysis processes, a condition that lead to a better understanding of research design. Moreover, individuals who were contacted and interviewed were directly and concretely affected by our research daily.

- *Consideration of the research potential*: the choice and the selection of a case are primarily determined by the goals targeted by the author in his/her research work. This research objective is the main point that has to be kept clearly in mind so that verification rules do not prevent the production of theory (Glaser & Strauss, 1967). For this dissertation, we had the opportunity to realize four case-studies. The first one, realized at the HR department of EADS Headquarters will be treated as our exploratory study. This case will be the most valuable for us, especially with regard to the data resources employed.

Second, we have brought together two other cases within the EADS division called Cassidian²¹. Both have necessitated approximately the same amount of resources for their constitution, and have been focused on the analysis of similar teams, especially regarding their structure. These two cases benefited from modifications made to the grid analysis of our exploratory case (i.e., within the HR entity of EADS Headquarters). In order to enclose this case selection, a fourth and last case has been studied at a totally distinct organization, named KCI Medical. The contributions of this company to our research stem from its completely dissimilar characteristics from the previous cases studied.

Most of these dissimilar characteristics have been addressed in the preceding table describing the characteristics of our case selection. Among them:

- the sector in which this organization operates (medical-surgery); a sector that is different from those of EADS (civil and military aircraft, communications systems, missiles, space rockets, or satellites).

²¹ At the time of the first case study at this division, its name was still "Defence & Security".

- forms of distributed-work developed and used at KCI Medical (telecommuting and nomadic work, in complement of virtual teams) are more diverse than the ones observed at EADS (virtual teams).

- while the three EADS entities had diverse years of service, we also meet this temporal variety within the various units investigated at KCI Medical, enabling us then to have a global understanding of this specific issue.

Consequently, it is clear that this final case constitutes a major step in our analyses, by providing a confirmatory study. Thanks to the global characteristics of this case where variety and differences are enhanced in comparison with previous ones, we sought to increase the overall validity of our research contributions.

- Summarization of theoretical sampling criteria:

Criteria of the theoretical samples are designed for application to a methodological process combining data collection and analysis and a joint development of the theory (Strauss & Corbin, 2004), which is the case of this research document. Through their enumeration of such criteria for a theoretical sampling strategy, we sought to justify the validity of our case selection. These criteria and their justified applications are summarized in the following table (*Table 5*).

Nevertheless, the theoretical sampling is not the only element that enables us to determine the number of cases selected. The case selection and number of cases observed in this research study is also derived from theoretical saturation.

➤ ***Theoretical saturation:***

The number of cases that constitute the theoretical sampling has to meet an objective of theoretical saturation. This concept is prevalent in the literature, as expressed through the:

- *Concept of theoretical saturation* (Glaser & Strauss, 1967; Eisenhardt, 1989; Hlady-Rispal, 2002). It means that the observed relationship within a group under certain conditions will be the same for another group under similar conditions. Theoretical saturation is simply the point at which incremental learning is minimal because the researchers are observing phenomena seen before (Glaser & Strauss, 1967).

Criteria for theoretical sampling strategy	Implications	Requirements	Application of criteria in our research study
<i>Theoretical representativeness</i>	Case homogeneity regarding the research issue and components	Essential	Each of these cases are representative of: <ul style="list-style-type: none"> ➤ a concrete distributed-work situation in a specific organization ➤ theoretical elements (forms of distance emerging from distributed-work, forms of control, Deleuzian concepts) identified in this research document All cases fit our research interests
<i>Variety</i>	Similar cases but different at the same time with respect to several key points	Essential if the case study research aims to propose a theory-building	- Common features: 3 cases out of 4 have been realized at the same organization - Diversity: <ul style="list-style-type: none"> ➤ nature of cases (diverse organizational levels, organizational culture, professional culture). ➤ in terms of national cultures and locations ➤ each entity has different number of years of service. ➤ the fourth case concerns a different organization using diverse forms of distributed work on its own
<i>Balance</i>	Selection of cases that propose a balanced range of different approaches	Appreciated	- Homogeneity in the distribution of data sources between cases - Triangulated perspective of data collection, combining several methods
<i>Discovery potential</i>	Data coming from the cases should be abundant and representative of the research topic. At the same time actors in the field research should be receptive to deep investigation	Essential	- Signed agreement, support, and commitment for developing such research collaboration - Relative freedom in collection and analysis processes - Actors of the field research mostly accessible, fully concerned, (key actors regarding distributed-work issues) and receptive to our research approach
<i>Adequacy with research goals</i>	Case selection dissimilar according to the research goal targeted	Coherent	Four cases selected with distinctive characteristics enabling to globally investigate the issue of control in distributed-work (several forms of work-at-distance are analyzed)

Table 5 - Criteria for theoretical sampling strategy, adapted from Hlady-Rispal (2002)

- *Concept of replication logic* (Yin, 2004). When sequential, the replication logic facilitates generalization: when no new result appears after data analysis, it means that the replication process is over.

Therefore, it is obvious that the number of cases permitting the reach of theoretical saturation cannot be necessarily predetermined (Glaser & Strauss, 1967). Concretely, this theoretical saturation is often combined with very practical considerations, including the time you have for realizing your research or the amount of funds you have for it. In addition, the number of cases has to be limited so that the duration and length of the research enables completion within a reasonable time for Ph.D. thesis (Van de Ven, & Huber, 1990). In fact, it is not uncommon for researchers to plan the number of cases in advance (Eisenhardt, & Graebner, 2007).

Nevertheless, in order to establish an appropriate number of cases, Yin (2004) suggests comparing two or three case studies while adopting a logic of discovery. By adding one more case in our research (*i.e.*, we have a total of four different cases: one case being exploratory, the two following being study cases, and a last one being confirmatory), we aimed to associate a greater effort of comparison to this logic of discovery. By doing so, we also validate positively the claim of Eisenhardt (1989) that while there is no ideal number of cases, a number between 4 and 10 cases usually works well.

➤ ***Case-study generalization :***

Some readers make the faulty assumption that cases should be representative of some particular population, as are data in large-scale hypothesis testing research. In other words, they ask, *how can the theory generalize if the cases aren't representative?*

The first way to ensure the generalization of our research is by putting in place procedures and methods to achieve the objectives of theoretical sampling and replication logic. Eisenhardt (1989, 1991) for instance systematically insists on the replication potential and on the methodological rigor of multi-case studies that are essential for the generation of theories. Then, again, we recall that our original intention is not to produce a universal model, but rather to discover and explain the mechanisms of management of distances in distributed-work, and in a specific situation. We are not looking for immutable sequences and

predetermined processes, in the sense that we do not seek to establish universal laws, but rather to realize and understand how these processes emerge and evolve.

Consequently, we opt here more precisely for a perspective of analytical generalization (Yin, 2004), rather than statistical generalization. It is worth recalling this observation here in order to make a clear distinction from survey research: unfortunately, the analogy to samples and universes is sometimes mistakenly established, and remains totally incorrect when dealing with case studies. In our specific situation (i.e. analytical generalization), we are rather striving to generalize a particular set of results to some broader theory.

4) Research Roadmap :

The presentation of our research process is an opportunity for us to provide to our readers descriptive elements of the approach followed during the constitution of this dissertation. We have already observed repeatedly that this research work is primarily based on round-trips between the theory and the field. The purpose of this section is to present in detail actions, decisions and other choices made throughout our study, and to propose a more realistic presentation, one that is somewhat less linear than in some other academic works.

The constitution of a Ph.D. dissertation is a long and difficult process, which is sometimes fraught with difficulties throughout the whole research process: ours is no exception to the rule. We had what could be considered a chaotic start, with a primary year of research work marked by a difficult collaborative atmosphere with our first supervisor and a dissertation topic somewhat imposed and not really representative of our expectations. Finally, we had the great opportunity to come back to the investigation of a more appreciated research issue, close to the one treated in our master's thesis, and under the supervision of another Ph.D. supervisor. We can thus make the plausible claim that our work on this Ph.D. dissertation had really begun in September, 2008.

The construction of the research protocol follows this iterative and changing approach as well, where our analysis grid only emerges gradually in accordance with the process of development of both the research issue and research questions. Concretely, this research had first begun with the establishment of an initial literature review focused on the topic of distributed-work, its manifestations, and its multiple components. It ultimately leads to the achievement of a literature synthesis that has eventually been presented at the SIGMIS Doctoral Consortium in Limerick, May 2009²². The purpose of the research synthesis was mainly to underline the emergence of the three types of distance that emerge more or less significantly according to forms of distributed-work that are used, and which require the adoption of specific control procedures to limit their effects.

The data collection process has been planned from this initial conceptual framework. The data collection process started with the first observations and interviews realized at EADS in May 2009. This first phase, which constitutes our exploratory case study,

²² Chauvet, M. "The role of Cultural Diversity on Control of Distributed Teams," *Proceedings of the special interest group on management information system's 47th annual conference on Computer personnel research*, May 2009, Limerick (Ireland).

was finished at the end of 2009. If we had consistently formatted our research data (research journal, transcripts of interviews), the deep analysis of this data only have begun after this first period of immersion within the research.

This first data processing revealed the emergence of new issues and themes regarding our research topic. For instance, although we thought with our first field study that dimensions of national culture would have a strong negative impact on the management of these entities, we had difficulties in explaining why our participants did not identify this matter, and more importantly, were even suggesting the opposite. Our initial analysis grid needed then to be improved in order to take into consideration these new elements coming from the field investigation.

In parallel to these observations, new theoretical fields like the philosophical work of Gilles Deleuze enabled us to relate to the contributions emerging from the collaboration with our research participants. Therefore, as examples, the prevalence of perceived rather than objective geographical distance, or even the fact that the concept of deterritorialization would likely explain the fact that our participants cannot recognize the impact of national culture eventually confirmed our research work. Other evolution of our analysis grid can also be identified at that time. The bi-directional relationship between forms of distance, identification, and communication processes, leading to the formation of a virtuous circle, is one example. Indeed, we had originally envisioned this relationship as only being unidirectional.

Through analysis of these initial interviews, a new form of control and particularities (peer supervision and employee-initiated controls) appears as well in our analytical framework, and represents an element that had previously escaped from our reading of the literature. At that time, it was also possible for us to identify the numerous elements of correlation between the three distinctive forms of distance emerging from the practice of distributed-work. Once these changes were realized, the field research could restart after a three-month period of stepping back in order to see the bigger picture. Such theoretical reorganization has been made possible by the research design adopted in this dissertation, a research design influenced by the grounded theory as explained previously.

This period also allowed us to make contact with a second team, thereby enabling the realization of a second case study between March and June of 2010. While this specific structure allowed us to apply our new analytical framework previously established, a third

case study - again at the EADS division Defense & Security²³ - has been added to our research framework as well. This study lasted from May to September of 2010. Finally, a fourth and final case study has been conducted at the company KCI Medical with totally divergent characteristics, and allowing us to analyze the replicability of our grid analysis in a completely different context.

From this specific date, our work of data analysis processing has been combined with the writing of our dissertation. Through the development of this redaction, we aim to express the chronological evolution of our research process and of our analytical framework. In this sense, the first part ending with the establishment of a method for providing a global operationalization of the management of distances in remote-work universes already constitutes an original result and one of the first contributions of our research work. The following case analysis confirms the value of our analysis grid by affirming its descriptive capability. In the final synthesis part of this document, we will further emphasize the conditions of emergence and evaluation of the three forms of distance and the control issues that are related to them.

²³ This division became “Cassidian” in the meantime.

5) Research occupational hazards:

While reading academic documents, readers often express the impression that everything worked fine and well for Ph.D. students or researchers during their field studies. The writing of the Ph.D. document usually being the final step of our global work, the phenomenon of posteriori-rationalizations might help to reinforce this perception of process without barring accidents. Our aim is not at all to present ourselves as a victim or to use our experience to soften readers up. But since the beginning of this document, we have tried to provide as many elements as necessary for readers to understand the steps, motivations, and decisions taken throughout our approach. Our concern is to provide evidence that the realization of this document has not been like a boat-trip on a long quiet river, although we have enjoyed the process.

The beginning of our Ph.D. was a little bit chaotic due to misunderstandings with our primary French Ph.D. advisor. For the good of both individuals, we finally decided to break the collaboration up. After I was a Ph.D. student for one year, we finally started our research work on this specific issue, taken from my former Master thesis, under the supervision of a new French Ph.D. advisor, Pr. Dameron. We sincerely felt lucky to rely on the comprehension and empathy of our new Ph.D. advisor, and to quickly immerse ourselves in the field research study, a little bit more than half-a-year after the beginning of our collaboration. This quick immersion in the field research study has been permitted by intensive preliminary regarding the literature on distributed-work. Such preliminary work has been undertaken after the completion of a Master thesis on Telecommuting in 2007, and the constitution of a literature review since September 2008, 6 months before the beginning of our field research investigation.

Concretely, our first steps in the field have been facilitated by the creation of the Chair “Management & Diversity”, launched in January 2009 by the Foundation Dauphine. The aim was to develop the research and teaching of business practices in terms of diversity management, thanks to a partnership with 4 major companies in the French economy: GDF Suez (energy), La Poste (mail), MACIF (insurance) and EADS (aerospace and defence). As the co-director of this Chair, our French Ph.D. advisor brought us into contact with the EADS Senior Vice President and Head of Leadership Development and Learning at that time, a relationship which has massively facilitated our work within the company. Thanks to the partnership, everything worked well during the constitution of the first case study.

One year later, when it was time to present our first results and expectations to the same person, he expressed doubts regarding the final practical contributions of our research work. Unfortunately for us, at that time, we could not yet present evidence of tangible results as expected by this person. Future collaboration being then questioned, we knew at that time that we had to develop different channels of collaboration within the company. Indeed, we learned of the resignation of this EADS Senior Vice President and Head of Leadership Development and Learning from the EADS group only few days after this meeting. As a young doctoral student, this episode showed the importance of developing partnerships with sponsors in whom one can collaborate over time.

Our relationship to companies was then even clearer: we were in a position to request the collaboration and they had the power to end the collaboration for their own reasons. The Head of the Department, who was also involved in the Chair, and who was willing to develop such research collaboration supported us, but people interviewed who were not at the source of our project were not always supportive. Sometimes the people who were contacted felt suspicious and reluctant to disclose any confidential information²⁴, or were skeptical about the usefulness and relevance of a study that was not eventually likely to implement a desired change within their group²⁵. But most of the time, we succeeded in developing a pleasant and trustful atmosphere with interviewees, an ability which supported us in our “management” of the field research – an achievement for a young academic.

With the help of Manager #4, who had multiple connections within different divisions, we eventually succeeded in achieving research collaboration with the Head of the IM Security team within Cassidian division. We are extremely grateful for his collaboration and the kind participation of all his team. This person was also the link for setting up contacts with the team of our third case study.

Finally, although the unusualness of our situation could have lead to difficulties and challenges, these cases studied within the Cassidian division worked well. Again as a young and relatively inexperienced researcher, we felt some right to be proud of succeeding in achieving this research collaboration with a team operating in such a sensitive domain. Being

²⁴ Especially regarding case studies #2 and #3 realized within the Cassidian division, where activities are related to very sensitive topics. A manager from the second case study did not allow us to contact or to collaborate with her subordinates,. In addition, we never had knowledge of the identity of persons interviewed for the case study #3: the manager of the team was the only intermediary between us.

²⁵ One interviewee from the first case study did not pay much attention to our interview by only proposing uninterested and insignificant elements of response, and making it clear that we were bothering her.

a research partner in this environment, where confidentiality is the major element, enabled us to develop a very rigorous protocol. We consider such experience as being beneficial for our life as an academic researcher, and we believe these specific cases contributed extensively to the global conception of our dissertation, especially regarding the significant care we had to build and acquire the data. Regarding the final case study realized within KCI Medical France, we also were in touch with the CEO of the company thanks to the Chair “Management & Diversity” and its Certificate. This person kindly welcomed our approach and adopted a direct discourse, based on trust and recognition of interests from both sides. Following the gathering of data through various case-studies in time, their treatment has been done chronologically. Similarly then, the results from these cases, which are presented later in this document, are described chronologically as well.

II) Data collection:

The purpose of this section is to describe how we have bridged the gap between theory and field research. This section is essential as it provides a concrete exposition of our approach, thereby permitting its evaluation regarding the relevancy of results. Our field research field began on June 2009. Research made so far through the constitution of a previous Master's Thesis on telecommuting and an intensive literature review on distributed-work enabled this quick immersion on the field study. These first steps in the field were made only after the research had been accomplished. Our main aim for the realization of these field investigations was to compare emerging data with theoretical elements previously collected.

Our data collection processing is based on data triangulation (Hlady-Rispal, 2002, Yin, 2004) in order to improve the construct validity of our research. This approach is especially justified by our methodological assumptions presented here:

- regarding our method of investigation (*i.e.*, qualitative methods): qualitative research is based on specific procedures and methods, including observation, a technique that is considered "essential to the contextualization of the phenomenon" (Hlady-Rispal, 2002), the use of unstructured and semi-directive interviews, analysis of the ways of saying things, or the understanding of used categories. Our research work is based on these procedures, as we show in detail in the following paragraphs. As pointed out by Miles and Huberman (1991), qualitative data have the potential for developing "rich descriptions, explanations and processes that are securely based and anchored in a local context. [...] Words, especially when organized into a narrative form, have something concrete, meaningful and evocative that are often far more convincing to the reader than pages of numbers".

- regarding our research strategy for understanding reality (*i.e.*, case study): An interesting element of the case studies is the fact that they do not employ a unique methodology, but rather combine different methods of data collection such as interviews, document analysis, or observations, thereby allowing the principle of triangulation (Yin, 2004). Case studies are therefore based on general theoretical constructs for guiding the collection and analysis. In the following paragraphs, our aim is to provide more detailed information about the entrance to and the methods of understanding, through data collection tools, of our research field.

➤ *First steps on the research field :*

Our entrance to the research field has been permitted by both companies thanks to the support of valuable members of the organization: the Senior Vice President and Head of Leadership Development and Learning at EADS, and the CEO of KCI Medical France²⁶. Before entering the research field, we had interaction with these people in order to discuss the relevance of our research to the management of their companies, and to decide with them what teams or entities would be suitable for working with us, given our research needs and interests. These interviews also helped to take into consideration the general management of their business, their short-term economic context, and the terms of our involvement within the company. Consequently, as a first step, each of these contacts has been really supportive of our research within the companies. We will describe in detail below and more specifically in the chapter “cases analysis” the concretization of these contacts, as well as the achievement of the other case studies.

➤ *Non-participant observations :*

The first source of data collection we used was the non-participating observation of individuals in their daily work activity. The principle of observation permits the comprehension of situational logic that is related to a specific time and context, besides the observation of what is left unsaid while a different viewpoint is obtained in other ways like interviews. Non-participating observations have only been possible in the collaboration with the company EADS, especially in the partnership with the first two units - respectively the Human Resources/Competency Development department within the corporate division (Headquarter), and the IM Security team within the Cassidian division.

Regarding the first unit, we had the opportunity to spend five non-consecutive days – two days in June and three days in December 2009 - within the dedicated offices of Ottobrunn, Germany. During this period, we enjoyed a certain freedom in our mobility, and finally had the possibility to observe most of the German unit in its daily practice of distributed-work. By being present in their offices, we observed most of individuals’ work activities, and their exchanges with other members through phones being individually or in call-conferences, and especially through email or collaborative tools developed by these teams. Moreover, we also had the opportunity to accompany these people outside their own work activities, especially during daily lunches or more informal discussions around the

²⁶ The achievement of contact and collaboration with these two persons is largely described later, but once again, we would like to thank the University Paris Dauphine and its Chair “Management & Diversity”.”

coffee machine. These episodes have constituted considerable sources of informal information, and were extremely useful for gaining participants' trust.

We have also been able to spend two complete days in the offices of the second unit, which is the IM Security Team. This was during a special event: the monthly face-to-face meeting of the team in London. This regular meeting is an opportunity for most of the members of the team, meaning the managers responsible for each country (France, Germany, and England) and some specific 'guests', to sum up their own individual viewpoints. The event is also a way to consider collectively major topics for the development of the unit.

Our participation in this meeting has been extremely fruitful for our investigation. First we had a nice overview of their collaboration and expressions of informal attitudes. We had the possibility to observe them collaborating face-to-face, and addressing some differences in their individual interpretations and to their understanding of distributed-work. But we had benefited from fortunate circumstances at that time. This meeting had been planned in May 2010, at a time when air traffic was considerably reduced because of the Icelandic volcanic eruption. Because of this incident, the German manager could not make the journey to London, and so had to participate in the meeting remotely: we had the opportunity to observe a significant manifestation of work-at-distance among these individuals, and to apply characteristics and elements from the grid analysis based on the exploratory case.

We also took advantage of this opportunity to analyze the use of EADS' state-of-the-art collaborative tool, named DS Live. The tool facilitates the organization of collaborative distant meetings as distributed collaborators have the opportunity to take control of the computer from which the presentation originates. However, we regret that we could not have the opportunity to better develop our understanding of general concepts by trying to further communicate, live, and experience life with those who were studied. Unfortunately, realizing such involved observations regarding our research interest (i.e., the reconsideration of control in the management of distributed-work) was difficult, since we were not able to be together with all the members of the virtual interaction. As the team members were geographically dispersed, we only had one side of the virtual process. The quality and expertise required by the jobs these individuals practiced also prevented us from playing a more significant role, like intervention-research for instance. Nevertheless, these observations remained extremely useful as they enabled us to combine words and interpretations coming from previous individual interviews, concrete acts, and contextualization.

The observations and comments from different types of interactions were recorded systematically and chronologically in a research journal. More precisely, this journal helped us to report several types of information about these non-participant observations: site notes where we detail what concretely happened in the field, personal notes that recorded our feelings, our awareness about observations, and theoretical and methodological notes regarding possible changes to consider in our research work. Therefore, this work of reconstitution has finally allowed us to establish and maintain rich descriptions of context, or to recount some interesting talk or specific atmospheres.

	Place	Time	Participants	Conditions
Human Resources/ Competency Development department of the Corporate division	Ottobrunn	2 days (June 2009)	All members of the German part of the department	<ul style="list-style-type: none"> - Office located in the same room as the “Program Management HR and Leadership Initiatives” and “Corporate Business Academy” units - Free access and exchange with all other units of the department - Exchange with members of the department during their “time-offs” (lunches)
		3 days (December 2009)		
IM Security Team of the Cassidian division	London (Offices of the Head of unit)	2 days (May 2010)	<ul style="list-style-type: none"> - Head of Unit - French national manager - Britain national manager - French IT security officer 	<ul style="list-style-type: none"> - Monthly face-to-face meeting of the team - Finally become a remote-meeting because of Icelandic volcanic eruption limiting air travel, and thus the presence of all participants - Both had the opportunity to observe the team working face-to-face and remotely

Table 6 - Details about our non-participating observation

➤ Interviews :

- Introduction to interviews:

Although, as pointed by Wacheux (2006), interviews are not sufficient in themselves (extensive documentation collected upstream is also needed), they still are the centerpiece of our methodology as elements of data collection. Interviews are mostly used in the field of Science Management as the researcher’s access to “facts, representations and interpretations of situations known by the actors” (Wacheux, 2006) due to face-to-face interactions with the interviewee. However, as argued by Romelaer (2005), perfectly managing these discussions

requires some experience as they depend on specific characteristics and practices. They represent, at the same time, a powerful tool as long as we manage its systematic techniques of recording, coding, and analyzing (Wacheux, 2006).

In a global way, an interview can be distinguished in five specific phases:

Introduction	Development		Ending	
Step 1	Step 2	Step 3	Step 4	Step 5
Explanation Interaction Exchange about roles	First formulaic speech (30 to 50 minutes)	Personal speech	Debriefing and final comments	First analysis and description of the context

Table 7 - The five phases of an interview (according to Wacheux, 2006)

However, several forms of interviews can be distinguished, depending on the direct interventions of the researcher during exchanges with the interviewee. Commonly accepted practices are that the more you ask the actor to reflect before answering a question, the less the researcher should intervene in the discussion. In our case, we chose to conduct a series of semi-structured interviews, and justify this choice due to their characteristics described below.

- General description of our interviews:

In this part is described the general constitution of our 33 interviews conducted with participants from our research field investigation. Moreover, for this PhD dissertation, we have conducted 6 sponsor-interviews – with persons in charge of these teams or organizations, and 10 exploratory interviews - with members of the first unit during our first period of non-participant observations in June 2009 at Ottobrunn - that followed a different framework (without a data collection grid as described below). First of all, one has to be aware that other types of interviews, like non-directive interviews, are generally used in Psychology, Social Psychology or Sociology, and very little in Management.

Romelaer (2005) expresses two main reasons for this observation: first, because “interviews should probably be even less directive as phenomena are more complex and

unknown. Phenomena addressed in Management are somewhat simpler than those discussed in the other three disciplines mentioned above, especially as they start to be more after fifty years of research. In addition, interviews should probably be even more formalized that the research objectives are clearer. And in general, research in Management are likely to be more focused on objectives than those of other disciplines” (Romelaer, 2005). Conversely, even if semi-structured interviews represent a tough and costly research tool, their realization, transcription, and analysis require special attention that is only equivalent to the richness of their content.

For the realization of such interviews, we obviously have followed elements of our data collection grid (see **Table 7** below): interviews were thus thematically structured. This grid is used as an interview guide and a list of topics which the interviewer is interested in. As demonstrated in the primary section of this document, the choice of these themes is not randomized: they truly constitute a reminder for the researcher towards which he/she will try to make the discussion drift.

Our data collection grid has been constituted in correlation with the previously established research questions (see Chapter III). On its own, we recognize the three singular forms of distance that we seek to understand in our study of remote-work practices. Finally, in addition to elements of contextualization that we seek to identify because we believe they are extremely critical to our analysis, this grid also incorporates key themes for our study, such as forms of control, identification, and communication processes.

THEMES	Aspects	Example of related questions for interviews
<i>Context</i>	Organizational characteristics	Would you like to walk me through one of the recent projects you did? (activities, collaborators, services,...) How are people working within your organization?
	Individual characteristics	
<i>Temporal Distance</i>	Individual role	If you had to define which team you are part of, what will it be? How is this entity structured? Could you describe for me the field of action of your team/structure?
	Structure of the entity	
	Asynchronous relationships	
<i>Geographical Distance</i>	Virtuality	How do you perceive the distance between members of the team/or other collaborators within your work? How do you manage this virtuality?
<i>Cultural Distance</i>	Cultural awareness	For you, intercultural refers to what? Could you see and express differences between an intercultural management and a more traditional management? Through your virtual exchange with collaborators, have you ever experienced episodes characteristic of cultural specificities? (positive or negative)
<i>Control</i>	Control forms	How do you control your co-workers/subordinates? How are you controlled? How are the results evaluated? What are the managerial skills needed for evolving in such environment?

Table 8 - Data collection grid of our research study

Regarding the building of these specific interviews themselves, direct questions were avoided as much as possible. Research shows that direct questions might lead to the

formulation of erroneous responses and constitute a threat factor for the validity of research (Hlady-Rispal, 2002). As explained above, with the adoption of semi-structured interviews, we have rather focused on questions having a more explanatory opened mode, and other questions whose purpose was to verify that we understood well what had just been expressed.

Our role has consisted more in proposing reformulations, by trying to help respondents express their thoughts, refocusing their discourse or making them remember their last comments if necessary. These interviews always started with the enumeration of an opening question ““Would you like to walk me through one of the recent projects you did?””), which attracted the interest of the person, and made him/her talk about a topic related to his/her activity. It also aimed to build a trust relationship between us by proposing to first discuss general topics on which these persons are necessarily qualified.

As an example, we have for instance noticed during our data collection that German members often were suspicious at the beginning, always mentioning the excuse of confidentiality not to discuss certain topics. The introductory phase enabled us to establish a relationship of trust, and then to collect the answers to the questions we sought to have answered.

During the interview, we proposed several questions introducing each of our research main themes, which also allowed us to refocus the discourse on issues related to our analysis. Finally, we asked guide consolidation questions allowing us to get into the heart of our subject, and to gather extremely significant elements from the respondents. The concluding phase allowed us to formulate a final assessment regarding the previous discussion and to eventually discuss with them about the future development of our dissertation (which represented a sign of their interest and involvement) or for obtaining new contacts.

- Detailed description of our interviews:

➤ Sponsor and explorative interviews:

In a preliminary phase, we have conducted interviews whose goal was to prepare and to facilitate the management of our data gathering. First, we have conducted a total of six sponsor-interviews with persons in charge of observed teams or organizations. One interview has been conducted with the Head of Human Resources France, two interviews with the Senior Vice President and Head of Leadership Development and Learning at EADS (Case Study #1), one interview with the French manager of the IM Security team (Case Study #2), one interview with the German manager of the Architecture Management team (Case-Study

#3) and a final sponsor-interview with the CEO of KCI Medical France (Case Study #4). These six interviews were necessary in order 1) to provide insights and objectives for our research work and 2) to delimitate my area of intervention within the organization.

We needed to identify the groups that would accept us in accordance my research interests and goals. But it was also required to set officially the details of our collaboration (see the “collaborative agreement” document in Appendix p.357). Withal, these six interviews were extremely useful for us in order to collect and learn global information regarding the organization or future observed entities.

Then, we also took advantage of our first period of non-participant observations in June 2009 at Ottobrunn (Germany) to conduct a total of 10 exploratory interviews with members from the German part of the department of Human Resources/Competency Development. We did not record them, but we took notes during these meetings. And although we did not followed a typical guide during these discussions, these interactions as well as non-participant observations made during these two days were extremely useful for the future constitution of the data collection grid. The purpose of such interviews was principally to get to know the members of the entity, and their work activities as being part of a virtual team. Therefore once we came back in December 2009 for the second phase of our non-participant observations, we interviewed 8 of these 10 persons while benefiting from pertinent and individualized information about them.

➤ Main research interviews conducted with data collection grid:

These interviews constitute the most valuable source of data for our research work. This accords with the observation of Eisenhardt & Graebner (2007): “as research incorporates more cases and moves away from everyday phenomena such as work practice to intermittent, and strategic phenomena such as acquisitions and strategic decision making, interviews often become the primary data source”. For the establishment of this data collection, we have conducted a total of 33 interviews. The nature of these interviews was semi-structured, and the totality of these interviews was realized individually. Regarding the spatial modalities of such exchanges, about 30% of them have been realized through telephone communication, and the rest in face-to-face interactions.

Interviews were conducted according to the availability of respondents at a time and place of their choice, which meant essentially at their working places for the most part (for those

conducted face-to-face). These situations represented an advantage for us, in the sense that respondents were in a more natural environment which allowed spontaneous conversation (Hlady-Rispal, 2002). As noticed previously, face to face also had the advantage of enabling us to make some direct observations regarding the professional environments of these respondents.

These interviews were recorded, so that we could focus on listening and be aware of respondents' discourse. Recording facilitated physical interaction, especially with regard to looks or gestures, which are useful for building trust with the interviewee. We for instance have in mind the example of a French collaborator within the second EADS team who was expressing himself with gestures, or who stood regularly for drawing figures and providing explanations on a board. Only three of these interviews have not been recorded, but two of the non-recorded interviews have been the object of immediate transcriptions. These interviews last about 1h each, enabling us to benefit from an overview regarding our research issues. The full transcription has been sent to interviewees once complete, also allowing us to benefit from corrections regarding possible inaccuracies or missing information.

In detail, here is a brief description of interviews in accordance with the specific units presented above:

- *EADS 1- Corporate Unit :*

With the members of this unit, we conducted a total of 14 interviews, each lasting about 55 minutes. Four interviews were conducted in the Paris offices, while the other 10 were realized in Ottobrunn, Germany. Nine were conducted in French (on both sites) and the rest of them in English (all in Germany). These interviews were conducted face-to-face, individually, tape recorded and then transcribed as soon as possible to preserve the quality of information.

- *EADS 2 – IM Security Team at Cassidian:*

In this unit, we have conducted a total of 7 interviews, each lasting about 60 minutes. Four interviews were conducted in Elancourt offices, while two others were conducted in British offices, and the other one by phone. The four interviews conducted in the French locations were done in French, while the rest of them were in English. These interviews were conducted face-to-face, in an individual interaction. Four of them were tape recorded, while two others were immediately transcribed manually, and another one consisted of a discussion of 1h30 without any direct transcription.

This 1h30-long interview corresponded to a preliminary discussion, more preparative and informative, with the French head of the team in Elancourt: it was supposed to be a research interview *per se*, although we benefited from numerous interesting elements that we tried to transcribe later in our research book. The other two interviews that were not recorded were conducted the same day in the Cassidian offices: however, the tape-recorder stopped working because of a flat battery in the middle of the first interview; one more learning experience for a young researcher.

- *EADS 3 – Architectural Team at Cassidian:*

With the Architectural Team, we have conducted five individual interviews, all of them via phone and each lasting about 65 minutes. Two of these interviews were done in French, while the other three were in English. All of them were tape recorded and then transcribed as soon as possible.

- *KCI Medical :*

Thanks to our collaboration with KCI Medical, we have been able to conduct a total of 6 interviews, using telephone communications and each lasting about 65 minutes. All these interviews were done in French, with individual interaction. They were all tape recorded and then transcribed as soon as possible to preserve the quality of information.

- *Non-related company:*

During our field research investigation, we also had the opportunity to develop contacts with the Cultural Diversity program leader of Europe at IBM. As an interesting element of our investigation, we have conducted a 70-minutes phone interview with him. A similar collaboration such as the previous ones with EADS and KCI Medical had been planned, this manager is to provide us contact information of managers possibly interested by our approach. Although the interview involved several interesting elements for our research analysis, especially regarding cultural understanding, we have not been able to obtain specific information from this person, making such research collaboration impossible.

Despite some minor accidents due to difficulties associated with conducting interviews in a foreign language (lack of clarity in your words or formulations, difficulties in staying focused and lucid, which eventually leads you to miss some interesting interventions during the

exchange, ...), we believe that these 33 interviews (along with the six sponsor interviews and 10 explorative interviews) constitute our main contributive source in terms of data richness.

- Secondary source of data:

With the collection of primary sources described above, we had the opportunity of gathering a certain amount of secondary data as well, especially with the group at EADS that constitutes the major actor in our research analysis. These concrete sources of information take the form of sectorial studies and activity reports, some of them reserved for the internal use of the company. At the beginning of the collaboration, we also had made a review of the papers devoted to the company.

The advantages of this written data were that these documents belonged outside the context of our own study, and were objective material for our research. These documents were relatively useful for identifying possible errors in respondents' interpretations, what was left unsaid, or information that would be perceived as secondary by interviewees. Consequently, this data source served a dual purpose by providing, on the one hand, an understanding through the reconstruction of past events and a comparison with current events, but, also, on the other hand, providing a validation when they clarify, or contradict, the data gathered through other methods of data collection. Although this type of document is sometimes particularly rich, especially in terms of economic and financial information, we mostly used them as a complement for accuracy, or support for the management of our interviews.

Conclusion of the section:

The elaboration of this section has enabled us to lay the foundation of our data collection. With these sections, we aim to provide a better understanding of the field research, as the observed entities were sometimes diverse in their structure and nature. In such contexts, the data triangulation, made possible by the combination of three diverse sources of collection, is necessary for reaching a better consideration of these particularities; a process that might ensure the quality of research analysis. Another element permitting the quality of research contributions is the principle of data analysis. In the following paragraphs, our aim is to provide an overview of our own methods regarding this issue.

III) Modalities of data analysis:

Qualitative research like ours is generally based on various steps, starting from an initial coding of the information necessary for the formation of the themes dictionary, then constituting an explanatory construction through the identification of similarities and differences and links with concepts and themes from the literature (Wacheux, 2006). Accordingly, our collection and treatment of data has been made chronologically, with a first exploratory case enabling us to realize an initial coding of information towards the building of our final themes dictionary, and three more case-studies that have been used for the explanatory construction of our work.

The data, consisting in our case of interview transcripts and other notes from sponsor-interviews, non-participating observations or summaries of documents, count for a total of over 500 typed pages. The first step in the analysis of such data is clearly to reduce them, so that we have the capability of organizing and making sense of them: one way to exploit these data consists then in codifying them with the purpose of classification. Although the final version of our themes dictionary will only be presented at the end of Chapter IV (“Reconfiguration and design of our analytical framework”, see p.241) and the description of results coming from our exploratory case, the aim of the following sections is to provide readers with a clear idea of our forms of data processing, so that he/she knows how we managed this critical phase.

1) Data analysis process:

a) *Coding procedure:*

Once we had collected our data according to the specific means discussed above, we still needed to analyze them in order to better address our sources of investigation. This analysis was conducted through the content analysis of our notes, and the utilization of specific processes of coding. Content analysis begins with the identification of themes, and with the allocation of codes for field notes and observations. A code corresponds to a designation assigned to a segment of text, usually a sentence or paragraph of the transcript, in order to obtain a certain classification. As such, coding consists of a technical operation that allows the classification of data into categories (Miles & Huberman, 1994).

According to Thiétart (1999), "the coding process involves cutting the content of a discourse in analysis units (words, phrases, themes) and inserting them into categories selected in accordance to the research purpose". Data coding, also known as procedure of

“data thematization”, is thus a process of contextualization and recontextualization of data (Deschenaux, & Bourdon, 2005). This approach consists of making several paragraphs semantically independent, in order to get them out of context, through the creation of code (*i.e.*, decontextualization), and then associating the codes for obtaining something coherent and intelligible (recontextualization) (Leclercq, 2008). This thematic codification represents both an arborescence of significativeness (from main themes to sub-themes to dimensions) and a temporal coding, in the sense that our analytical framework has been enhanced during processes of data collection. Codes have to be linked together in a coherent way, in direct contact with the study: they must fit into a dominant structure (Miles & Huberman, 1994).

All these codes are listed in our original theme dictionary (see *Table 8* below), which provides the architecture of the coding rules at the beginning of our research field²⁷. The goal through the constitution of such a grid is ultimately to hold a list of initial codes, adapted to research questions and conceptual variables, and defined with sufficient precision for enabling external researchers to have a common language and clearly know whether and how a specific data segment fits into a category. Thanks to the realization of this coding grid, we address the idea of conceptual organization (Strauss & Corbin, 2004), mentioning the organization of data in discrete categories according to their own properties and dimensions.

Whatever the nature of the codes is, clear operational definitions are essential, so that researchers can assign them univocally throughout their study, and so that they all have in mind the same phenomena during coding. In order to characterize such codes, descriptors have been identified and illustrations of such concepts have been provided. Indeed, our themes dictionary has enabled us to code our semi-structured interviews in their entirety, by distinguishing paragraphs that are relevant to one or more themes. A paragraph can indeed address several issues of our coding grid, by being for instance both related to descriptions of control and a specific distance. This coding procedure was conducted following the construction of descriptors that permit going from verbatim to the related concept represented by a descriptor, and vice-versa.

²⁷ Note that our themes dictionary has evolved according to our filed research and took the final form presented at the end of Chapter IV. This new and modified themes dictionary is the one actually used for the management of our case-studies in Chapter V and VI: you can have a direct look at this new themes dictionary on p.241. Its modifications of the original themes dictionary presented above are explained later.

THEMES	SUB-THEMES	DIMENSIONS	CODES
<i>Context</i>		Organizational characteristics	CTXo
		Individual characteristics	CTXi
<i>Temporal Distance</i>		Individual role and membership	TEI
		Structure of the entity	TES
		Asynchronous relationships	TEA
<i>Geographical Distance</i>	Virtuality	Use of technologies	GEU
		Differences with face-to-face work	GED
<i>Cultural Distance</i>		Cultural dimensions	CUD
<i>Control</i>		Behavior Control	COB
		Outcome Control	COO
		Social Control	COSo
		Self-Control	COSe
		Control enactment	COE

Table 9 - Original themes dictionary table

Descriptors define the characteristics that we can associate with a concept and that allow both to describe and to explain it. Thanks to descriptors, researchers are then able to go back in the field in order to check whether these descriptors are actually identified or not. The construction of these descriptors reflects the conceptualization of our analytical framework, since the construction of our coding grid was also marked by a strong iterative movement coupling numerous round-trips between our field and the academic literature. This table has then evolved significantly, especially after the realization of the exploratory case, thereby leading to the definitive construction (including descriptors) that is presented in the conclusion of Chapter IV (see p.241).

b) Use of NVivo 8:

In order to facilitate the coding procedure identified above, several software programs including qualitative data analysis software NVivo 8 can be used. We opted for this specific software in our research:

- because we had the opportunity to attend a seminar devoted to this tool during our time as a Ph.D. student, it was a better choice for us to use software that we already knew how to manage.

- NVivo 8 is known for being the most relevant data analysis software for the treatment of thematic content. Besides, we already had identified themes and sub-themes for

the coding of our data. NVivo 8 is more suitable in this case, rather than Atlas, which will be more relevant for analysis where categories of coding need to be created and identified.

For each case, interviews were coded entirely in accordance with the thematic arborescence (themes → sub-themes → dimensions) coming from our data collection grid. NVivo software was used to create these “nodes”, which are the main classification system of information enabled by this tool:

- We first started to create hierarchical nodes, which relate directly to our interview guide. This type of node corresponds to deductive logic, nodes being created a priori thanks to the literature review.

- Our approach in addition consisted of the creation of free nodes based on more inductive logic: when a theme, sub-theme or dimension emerged and attracted the attention of the corpus text, we created them, although they would eventually be attached to hierarchical nodes later. This approach can be compared with the encoding method that Glaser and Strauss (1967) called “open coding”, which enables the examination, comparison, conceptualization and categorization of data. The final version of our theme dictionary, as presented on p.241, presents various modifications with regard to the original themes dictionary used for the initial coding of our first interview. These modifications are explained later, in accordance with the presentation of this new and modified themes dictionary.

Finally, the resulting coding, being both closed and open, can be described as mixed coding, in the sense that it depends on both a priori codes from the literature, and emerging codes. Thanks to the utilization of NVivo software, we can reasonably assert that our initial thematic coding, consisting of associating verbatim to specific themes, has been finally supplemented with:

- a descriptive data coding, which systematically enumerates attributes of interviews and case-studies;
- an analytical coding, which is based on the interpretation of data collected. This coding is not just an identification of information based on the association with themes, but rather consists of a consideration of their meaning and the generation of new ideas in an ongoing questioning process.

➤ Reliability of the coding process:

The reliability of this coding process was assessed:

- upstream from our analysis, by a verification of the coding grid made by our French co-advisor

- downstream, through a submission to the criticisms of a PhD student fellow, Anne-Sophie Fernandez, PhD student at Montpellier I University – ISEM, who we would like to thank again. This checking process cannot be considered as dual-coding process *per se*, since it only consisted in checking a single interview²⁸. This dual-coding process has been done on the basis of our final analytical grid. It consisted initially in presenting our analytical framework and our conceptualization of control and distance management within distributed-work universes to our partner. Through this process, our goal was not only to identify the same codes, but also to be able to compare our two different perspectives with the emergence of descriptors and to ensure that our dimensions permitted to code the all-interviews. This work has then facilitated the “operationalization” of dimensions coming from our themes dictionary and the clarification of its understanding. The results of this dual-coding, although not being representative of the whole databases, were then considered as relatively positive, leading us to continue our research work with equanimity.

²⁸ By being engaged in the process of preparing our PhD dissertation, we have not been able to devote more time to dual-coding (for instance by checking 30% of the verbatims coming from our databases).

2) Rigor and Relevancy of our research data :

In the preceding paragraphs, we have tried to provide more indications about the design of our methodology. The following step of our investigation will consist of the verification of the relevance and validity of this operationalization, by 1) enumerating its contributions and motivations for use, and 2) enumerating several objective criteria for assessing the quality of its construction.

a) Potential contributions of our grid analysis :

We consider that the research operationalization could be constructive and valuable for several reasons. The first one is its uniqueness, since we have currently no knowledge of the constitution of similar methods enabling the global consideration of management of distributed locations. In this document, we propose a methodological tool permitting a rigorous connection between the concept of work-at-distance and data empirically gathered. Thanks to the grid analysis we propose, we aim to provide an instrument for constituting a methodical and detailed examination of distributed-work in managerial practices.

Paradoxically, the second potential contribution of this grid analysis lies in its generalization, since it provides an analytical framework possibly usable in any kind of situation where individuals collaborate remotely. Further, this grid analysis is an interesting tool for any academic interested in the understanding of managerial issues related to distributed-work, as it has been established with a high level of independence with respect to the organizations investigated in this study.

Finally, we would like to think that an ultimate contribution of our research operationalization is its originality. For its foundation, we use the work of French philosopher Gilles Deleuze as a theoretical framework, taking into account that he developed “a new set of conceptual tools which offer a basis for reassessing the ontological status of organization in the changing and virtually shaped environment of the twenty-first century” (Linstead & Thanem, 2007). Deleuzian concepts have been influential in several different areas, not just philosophy, but also theater, literature, contemporary painting, and architecture.

Yet, Deleuze promoted the notion of “pop philosophy” (Deleuze, 1990a) as a sort of toolbox that is accessible to everyone, and where his ideas can be applied to a variety of domains – even those remote from philosophy. Nevertheless, with the exception of a few studies (Linstead & Thanem 2007) or occasional references to the concept of societies of control (Zarifian, 2004; Leclercq, 2008), management and IS researchers have paid little

attention to his philosophical contributions. By using these sources in this document, we aim to provide both a relevant and rigorous original tool to measure the management of distances in remote-work environments.

Thanks to its uniqueness and originality, but also its generalization provided in particular by our confirmatory study, the analytical potential of such operationalization seems to us particularly attractive. As it provides a major reconsideration of work-at-distance universes and their management, we suggest that this tool might be especially productive and fruitful for future research on this domain. In more or less developed forms, this analytical tool has for instance already been the core foundation of two communications in influential conferences, European Group of Organization Studies - EGOS 2010 in Lisbon (Chauvet & Fernandez, 2010), American Conference in Information Systems - AMCIS 2010 in Lima (Chauvet, 2010), and Association Information et Management 2011 in St Denis de la Réunion.

b) Adequacy with criteria of research quality:

In order to evaluate the quality of our method of operationalization and possibly consider it as a primary research contribution of our work, an accepted manner in qualitative methods is to use the criteria from Mucchielli (1991). The following table (**Table 9**) represents the current and future expected elements of adequacy of our method of operationalization with these specific criteria. First, researchers have to look for the *completeness* of their analysis.

This criterion is the one related to the quality of the synthesis presented: a synthesis that has to reconstitute the observed phenomenon in its totality, through the intersection of gathering and analytical techniques. The targeted goal of this approach is to obtain “a coherent set that owns a meaning by itself, and that allows a comprehensive understanding of the phenomenon” (Mucchielli, 1991). Reaching this completeness criterion depends in part on techniques used in the processes of data gathering (*i.e.*, which can be described as what is called the triangulation). Unlike quantitative methods, the representativeness does not have any sense in qualitative research, but is replaced by the criterion of *saturation* (Mucchielli, 1991). This saturation appears when the data we collect are not new. Regarding the semi-structured interviews used in our study, Romelaer (2005) notes that the whole set of research themes are adequately addressed when the researcher observes a:

Dimension	Criteria	Evaluation for adequacy
Reliability	Completeness	<ul style="list-style-type: none"> - Large and diverse literature review - Chronologically coherent presentation of the evolution of our research work - Possible generalization of the method of operationalization
	Saturation	<ul style="list-style-type: none"> - Theoretical saturation : any new element identified theoretically can be hosted into the concepts of our final grid analysis - Semantic saturation : no real major elements have been introduced by our ultimate data collection
Validity	Internal Acceptance	<ul style="list-style-type: none"> - Good acceptance from researchers and academics. Research work defended in several seminars and influential conferences, and submitted to the approval of two Ph.D. advisors (one specialized in Organizational Studies, and the other one in Information Systems) - Good acceptance of analysis suggestion: feedback and approval from professionals regarding the primary elements of results and managerial contributions (research work presented at the “Rencontres Doctorales de la Chaire ‘Management et Diversité’” in front of 200 non-academic and professional individuals, exchange with managers through our participation at the ‘Certificat Management & Diversité’)
	Internal Consistency	<ul style="list-style-type: none"> - Good internal consistency: monthly meetings with French Ph.D. advisor leading to modifications and changes in the constitution of our analytical tool. Significant exchanges with the US Ph.D. advisor, numerous Ph.D. students, and attendance at numerous methodological seminars for improvement - Checking of the coding process by a PhD student colleague
	External Confirmation	<ul style="list-style-type: none"> - Acceptance of primary result elements in conferences and seminars - Validation of the research by members of both French and US proposal defenses

Table 10 - Adequacy with Mucchielli's criteria of reliability and validity

- Semantic saturation: when new interviews no longer provide descriptors or modalities distinctive from the ones identified so far by old descriptors and when the sample is disparate enough.

- Theoretical saturation: happens if each descriptor identified in an interview could be assimilated to the framework of a theory or model, whether the one proposed by the researcher or one taken from the literature.

The *internal acceptance* corresponds to the fact that the results of research are recognized as relevant by the social actors on which the research is exercised. Internal acceptance is a fundamental criterion for validity as it permits for instance the distinction with extreme interpretive approaches where such internal acceptance is non-existent (i.e. the case in psychoanalysis). When conducting interviews, this internal validation is effective at the beginning of the exchange when the researcher submits his/her background and his/her research interests for justifying the presence and the solicitation of the interviewee. Then, the internal acceptance takes the form of an approval of return analysis that allows the endorsement of data collected by the researcher.

Then, the *internal consistency* will represent the expression of the internal logic peculiar to the observed phenomenon, a phenomenon made understandable through the inclusion of a whole system having its own coherence (Mucchielli, 1991). In other words, if respected, this criterion would allow any other researcher to recognize clearly the organizing logic of the author, to take his/her position and to understand the analyzed universe. These observations explain why internal consistency is a fundamental element of qualitative research. Indeed, internal consistency is characteristic of one of the qualitative assumptions (i.e., the subjectivity).

Finally, the ultimate criterion for the validity of qualitative methods is provided by *external confirmation*. External confirmation is defined by the approval of the results by specialists and experts in the field who have not yet conducted the study (Mucchielli, 1991). These individuals use their own skills and knowledge to certify (or not) the reliability of the method used. With this certification, these 'experts' provide their confidence and a certain credibility to the study.

In the end, these criteria are essential in a quest for obtaining three elements to achieve a good qualitative study: reliability, validity and fidelity. The validity of results, means a good translation of the reality of social phenomena (Mucchielli, 1991), and is given by both criteria of internal acceptance, internal consistency and external confirmation. Conversely, the perfect fidelity of the research (i.e., when a researcher would like to obtain the same results using the same conditions) remains very difficult to realize in qualitative research because of

the dynamics of social phenomena. However, the criterion of completeness will allow the researcher to contribute significantly to the fidelity of his research. Finally, the criteria of completeness and saturation will ensure the reliability of our qualitative research.

IV) General description of cases:

In the following section, we aim to illustrate the field research in which we have operated for the last few months, besides providing additional elements of description of the management of these entities. The following sections will enumerate the characteristics of the four entities within the two companies (EADS and KCI Medical) we have collaborated with (*organizational characteristics*), and the descriptive elements of members and their roles within them (*individual characteristics*). We could have presented such descriptions in the analysis part of our dissertation. However, we noticed that many elements described here correspond to methodological aspects and are relevant to enumerate in accordance with the section III.B) 3. Cases selection exposed above. Besides, this final section of Chapter III) Methodological chapter combining both methodological and analytical results enable us to make an appropriate distinction with Chapter IV where this same type of combination is permanent. Indeed, elements presented in the following paragraphs have been established thanks to secondary sources of data (internal documents), our non-participant observations and of course interviews, contextual dimensions (i.e., organizational and individual characteristics) that were identified thanks to our grid.

1) FIRST CASE: functional team within the company EADS – Corporate Department:

In the following section, we aim to illustrate the field research in which we have operated for the last few months. The following sections will enumerate the characteristics of the four entities within the two companies (EADS and KCI Medical) we have collaborated with (= organizational characteristics), and the descriptive elements of members and their roles within them (= individual characteristics).

➤ *The EADS Company: presentation and history*

EADS (European Aeronautic Defense and Space company) is a large European company that develops and markets civil and military aircraft, as well as communications systems, missiles, space rockets, satellites, and related systems. EADS is active across the entire aeronautical industry where it currently holds several leadership positions: #1 worldwide in the field of aircraft with Airbus, helicopters with Eurocopter, commercial and space booster

rockets with Astrium. The company employs a total of nearly 120,000 people spread all around the world.

The group was formed by the merger in July 2000 of DaimlerChrysler Aerospace AG (DASA) of Germany, Aerospatiale-Matra of France, and Construcciones Aeronauticas SA (CASA) of Spain. Most of these national entities were themselves the result of former mergers, or division between private and public companies. Understanding such repartition and the importance of state ownership throughout these organizations is essential.

The EADS company is atypical in the sense that its structure, its strategy, its way of functioning will be influenced by both economical variables, like any organization in the world, and also by political and national variables, since this company is also a symbol of the European construction and cooperation. The purpose for creation of such company was to provide Europe with an organization on a global scale that will be able to play a role and compete with large foreign groups, especially those of the U.S. The EADS company cannot be considered as an organization similar to any others: its own issues can be at the origin of more global political crisis. The last one to date for instance led to a complete reconsideration of its board structure, and was due to political causes

Since its creation and until October 2007, the 22th EADS was led by a dual-headed management structure, with two Chairmen and two co-Chief Executive Officers (both French and German), a structure which was intended to provide a certain balance and stability for a company with such a unique industrial and multinational heritage. In order to spare feelings, the group even opted for neutrality regarding two key symbolic areas: the location of its main headquarters (Amsterdam, Netherlands) and the official language (English). During the summer 2007, the company suffered an internal crisis due to delays in the production of its future star product, the A380. At that time, the French authority in charge of the control of financial markets identified suspicious financial transactions with regard to the group. Several leading managers and stakeholders were finally charged with illegal insider trading. Following these financial and political scandals, and under the national social pressure, governments related to the group felt obliged to make several modifications regarding the structure and the functioning of EADS.

A new management and leadership structure has since been implemented, requiring for instance that the Board of Directors no longer be comprised of executive directors, apart from

the Chief Executive Officer: this Board of Directors is now responsible for the management of the company. Political aspects, due to the European constitution of the group, are critical elements to take into account when analyzing such an organization. These aspects have often been identified, especially regarding the structure of the group:

“Sensitivities are always present, and we constantly have to ‘surf’ with them. Mostly, the higher we go up into the hierarchy, the more you will find suspicions from both sides, either French or German: everyone wants to turn the situation to its advantage, for having strategic functions, etc...However, there is always this wish from the level of states and governments...there is always this desire to share, to obtain sort of a perfect 50/50.[...] And thus, at the end, there is much more political negotiations than considerations of the company as a real business, which has to be profitable. Because every time, everything grows in an anomalous size and takes a political dimension.” (Manager #7, part of the exploratory team, translated from French by the author).

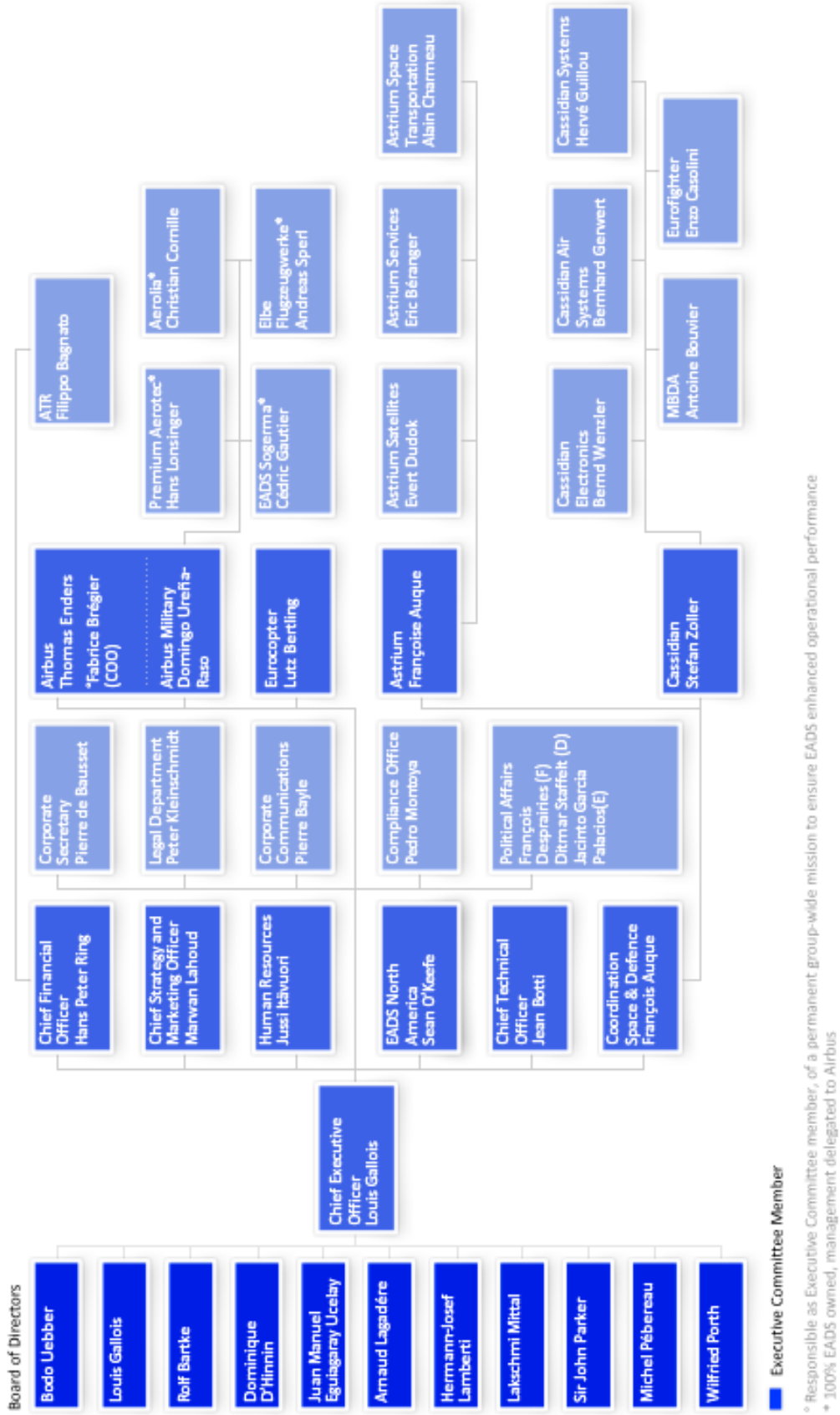
The structure of the company is first constituted by a corporate entity, which is divided into diverse group functions. This Corporate entity oversees four major divisions, each devoted to a specific domain (**Figure 5**):

- Airbus: civil and military aircraft manufacturing, employing 57,000 people at sixteen sites
- Eurocopter: global helicopter manufacturing
- Astrium: aerospace subsidiary of the group, devoted to civil and defense space systems and services
- Cassidian (ex-Defense & Security): defense and security subsidiary of the group, specialized in global security solutions, lead system integration, aerial, land, naval and joint systems.

For members who are part of this entity, the main goal of the corporate entity is:

“to manage the adoption of projects. But our customers are divisions, [...] the client stands above all the operational function, which deals with business. Therefore, the projects we propose have to make sense and add value to people who are really at a level of the concrete issues, close to the business” (Member #5, translated from French by the author).

EADS Management



■ Executive Committee Member
 * Responsible as Executive Committee member, of a permanent group-wide mission to ensure EADS enhanced operational performance
 * 100% EADS owned, management delegated to Airbus

Figure 5 - EADS Management Structure

The relationship between the corporate entity and its divisions, which are its subsidiaries, is atypical, as members of the corporate entity are often regarded as project “sellers” by their “clients”, the divisions. As a result, tensions arise frequently between these two levels of the EADS structure, between:

- an entity that seeks at all costs to propose solutions for adoption, mainly as a wish for harmonization
- and other entities responding that these same solutions do not necessarily correspond to their needs or expectations. Initiatives proposed by the upper level seem to be imposed on them and they consider them as an offense to their autonomy²⁹.

These tensions and their remediation is a permanent issue for headquarters. The existence of a strong divisional culture, especially from Airbus that is by far the largest division of the group, would eventually overshadow the natural authority of headquarters, initially coming from its organizational and hierarchical positioning. As a consequence, it could even damage corporate’s structural policy which comes into conflict with the singular initiatives of the divisions:

“When doing cross-divisional training, for instance, we have to be particularly careful at mixing all divisions and nationalities. Because at the end, if you actually let people sitting wherever they want in a room, what you will actually obtain is tables from DS³⁰, tables from Astrium, tables from Airbus, etc...It is obvious: you finally look for groups of people like you! But this is not the purpose of our trainings. At EADS, our activities are always made with a networking purpose, for individuals to actually create synergies. Therefore if we let them do whatever they want, naturally...I mean, it is human...everyone would react like that and will head towards people like them. This aspect is thus really important to take into account.” (Member #3, translated from French by the author)

As observed with the previous chart describing the structure of EADS, this structure is relatively similar to most of the biggest organizations in the world by being a matrix

²⁹ “For Airbus, it is particular, everything seems to be slower and decision making is harder, and processes take longer. They are very reluctant to accept anything that comes from headquarters or corporate offices. Normally, if you propose a process, they say “OK, but we have this, this, and this”. [...] So they feel whatever comes from EADS is unwelcome...” (Manager #12)

³⁰ Defence and Security, which became Cassidian afterwards.

organization. Indeed, while four diverse divisions can be easily identifiable under the supervision of the corporate entity, these exact divisions are partitioned mostly geographically and managed by a national leader. With this organization, members sometimes express difficulties in identifying their hierarchy, as their managers can be sometimes numerous:

“I have a hierarchical manager on one side, and then another on which I depend at the national level. Every time, I have two heads above me.

And then I have another manager who is responsible for the security of information systems at EADS France: for this one, it is purely functional. And finally, here, I have a manager who represents the person responsible for the information technology at EADS. So I actually answer to four people...” (Manager #15, translated from French by the author)

Obviously, these interpretations of the hierarchy are related to the structure of the company itself:

“A group of this size, with a matrix organization, often leads to complex hierarchical links. It is even not necessarily a hierarchy anymore, but actually more of a grouping of power relations” (Member #13, translated from French by the author).

The EADS company has characteristics of its own. The multicultural aspect is obviously one of them. Fundamental to its origins and to its commercial functioning, multicultural aspects are a critical element for the company: EADS is especially well-known, at least in Europe, for its multicultural characteristics.

Such geographical dispersion, originally based on the infrastructures of the French, German, Spanish, and British members of the merged companies, inevitably led employees of the group to collaborate remotely most of the time. Besides, by being a leading company in terms of innovation and technologies, EADS was assumed to be perfectly equipped for such a unique way of organizing. Thanks to its characteristics, EADS was a relevant object of investigation for our research on managerial issues linked to work-at-distance environments.

➤ *Contacts and collaborative achievement:*

In January 2009, Paris Dauphine University, through its Foundation, launched the Chair “Management & Diversity” with the aim of developing research and teaching business practice in terms of diversity management. The University developed a partnership with 4 major companies of the French economy: GDF Suez (energy), La Poste (mail), MACIF

(insurance) and EADS³¹. The constitution of this Chair has been a tremendous opportunity for us to enter in contact with the management of the group EADS, so that we presented them our research interests and motivations for collaboration.

After a brief talk with the Senior Vice-President in charge of the Leadership Development and Learning, a formal meeting was organized in order to elaborate the basis of an agreement for collaboration between the company and us. This meeting was extremely useful for us in order to start taking into consideration the particularities of the company, and to understand together with this manager the possibilities of such collaboration. He was the most suitable person for knowing which entities within the company would fit my research expectations and needs. Finally, a tripartite collaborative agreement³² between EADS, Paris Dauphine University, and us was signed, leading to the establishment of a research partnership. As a first research field within the company, the team managed by the Senior Vice-President in charge of the Leadership Development and Learning himself was selected for my research investigation.

➤ *Description of the observed entity:*

This field work was conducted within the department of Human Resources/Competency Development, which is a part of the corporate unit of the group EADS. This department was divided into five units, each dealing with a distinct domain, but all still interacting with the numerous units and divisions of the group (see the organization chart of the department on **Figure 6**). The Competency Management unit is in charge of the conception of projects for reviewing the process of individual competencies. Competency Management then offers the opportunity for each employee of the group to benefit from training solutions enabling them to align their personal skills to the levels required by the positions of their work. As an example, the 5 members of this unit were setting up a tool for the skills management: a massive project that will considerably transform how the HR function is managed. This tool is based on three main pillars (strategic, resource-planning, evaluation of individual skills) and will integrate all the other RH functions of the organization such as information, recruitment, mobility, etc...

³¹ A fifth company, SFR (telecommunications), is now currently part of the Chair

³² See in the Appendix part, p.357

Human Resources/Competency Development Department

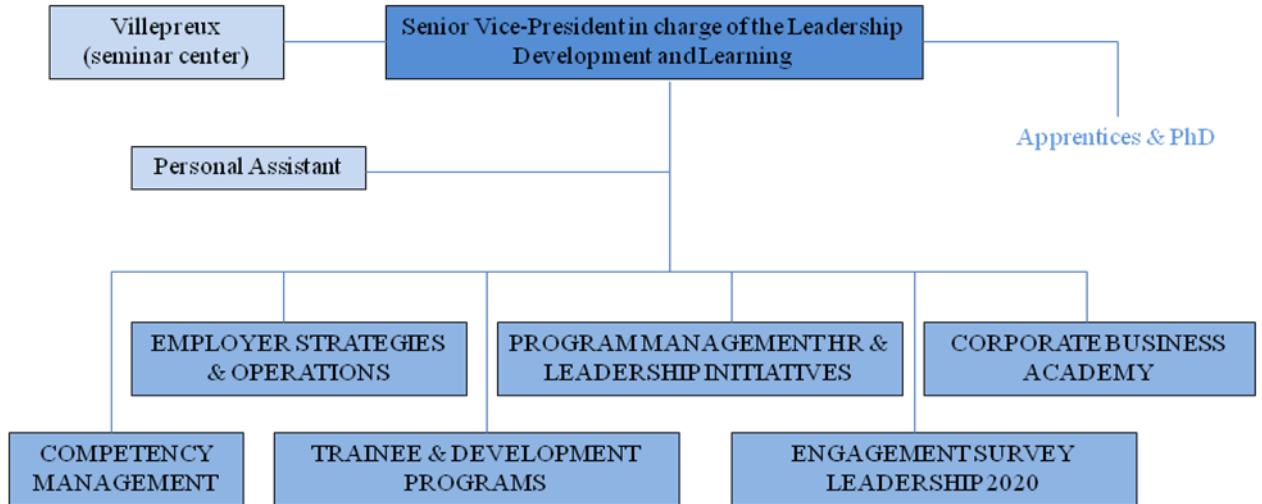


Figure 6 - Organization chart of the HR/CD Department

The Employer Strategies & Operations unit is responsible, for all countries where the group EADS is located, for all that concerns the branding of EADS, and also for what is related to partnerships and relationships with universities or business/engineering schools where EADS hires most of its employees. As such, members of this team daily work on the preparation of “road-shows” (i.e., going around the most prestigious European universities annually) or specific initiatives in order to make the promotion of the company EADS – and in order to attract potential candidates. This unit is constituted by 13 members, most of them (10 out of 13) being young internships who especially works for sporadic events like for instance the annual International Paris Air Show - Le Bourget, which is the world's leading aviation and space event.

The Trainee & Development Programs unit is in charge of the recruitment process, with few distinctive particularities regarding services devoted to Financial, Marketing & Sales, or Ph.D. applicants. As exposed by the manager in charge of the unit, the 6 members can be compared to “service providers. So if the CFO (Chief Financial Officer) says “OK I need financial talents, do something with them”, I offer them the services to design the program to find these guys, to develop them, etc...And then, afterwards, the CFO will be responsible for them” (Manager #9).

The Program Management Human Resources & Leadership Initiatives unit is both responsible for the promotion of project initiated by the group, and for the development of leadership initiatives enabling EADS managers to improve their skills on that specific domain. In concrete terms, the work activity of the four members of this unit consists in implementing, designing, and organizing different approaches, designing career-path models on project and program management, organizing training like in-class room teaching, providing e-learning on project management, managing development centers or mentoring programs for program managers, etc...

The Corporate Business Academy (CBA) is a corporate university for employees with management potential, and whose aim is to offer training and international development programs so that these few managers reach the top-position of the company with the maximum of needed qualities. Three different programs are devoted to the professionalization of the thousand most qualified managers of the group and the development of a pool of substitution. The five members of this unit are in charge of the management of these specific programs.

At least one person, and a maximum of four persons, has been interviewed in each of these five units from the HR/CD department. The Engagement Survey Leadership 2020 unit was a temporary unit established for the realization of a commitment survey measuring the motivation level of EADS employees. Unfortunately, despite our numerous solicitations, no one in place within this unit has accepted an interview with us. We assume that the relative sensitivity of this topic, and the disappointing global results finally obtained, have prevented us from observing and exchanging ideas with the two persons in this unit. The following table summarizes the characteristics of participants interviewed in the units of the HR/CD department (highlighted in grey is the person who is part of both CBA and Program management HR & Leadership Initiatives units).

	Managerial role	Used form of distributed-work	Relationships to International	Langage of the interview
Corporate Business Academy	Programme Manager	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Programme Manager	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Programme Manager	Virtual Teams	Daily multicultural collaborations (Europe)	French
Trainee & Development Programs	Senior Manager/ Head of Unit	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Programme Coordinator	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Programme Coordinator	Virtual Teams	Daily multicultural collaborations (Europe)	French
Employer Strategies & Operations	Senior Manager	Virtual Teams	Daily multicultural collaborations (Europe)	French
Competency Management	Senior Manager/Vice President Learning & Competency	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Senior Manager/Head of Unit	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	English
	Programme Manager	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Programme Coordinator	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	French
Program Management HR & Leadership Initiatives	Senior Manager/Head of Unit	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Programme Manager	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Programme Manager	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Programme Support	Virtual Teams	Daily multicultural collaborations (Europe)	French

Table 11 – Case-Study #1: participants

Globally, these units all function the same way, with a leader ensuring the management of employees situated in both France and Germany. In their daily work, most of these

individuals are responsible for the conception and development of global projects for divisions of the company. The management of projects is then the typical way of functioning for this whole department. In concrete terms, these employees spend their time at their offices exchanging and cooperating through ICTs with their collaborators at the unit (between Paris and Ottobrunn) or within the divisions. Mostly, business trips are limited to physical meetings bringing together the members of the unit. But the purpose of these business trips can evolve depending on the nature and lifecycle of the project.

For instance, German members of the Competency Management unit very frequently have to move to the various sites of the divisions of EADS group in order to manage homogeneity in the global management of their project:

"I work on a specific project: the EADS project "Competency Management" that seeks to review the existing process for the management of individual skills and processes. It consists in combining the assessment of individual skills with the ability to offer training solutions to each employee. I mean, training solutions that allow aligning precisely the attitude of these employees to the levels required by the position they work for. Our project is intended to standardize the process within the four divisions, taking into account that the four divisions evolve at maturity levels that are very different from each other. And therefore, well, every day, the challenge is to manage, coordinate precisely the analysis, and try to find a common ground on this subject between four partners who have not necessarily the same design problems, not necessarily the same objectives, and try to move forward" (Member #5, translated from French by the author).

As such, these individuals have to travel intensively at diverse stages of the projects in order to meet their collaborators/clients:

"So for instance, tomorrow, we are going at Eurocopter in order to meet them. So we are going to do a personalized session Corporate/Eurocopter in order to know where they actually stand on their road-map, on the advancement of the project. So really, we do it case by case, just forgetting the other divisions, and see "OK, so now your division, where are you in the project? Where do you stand at in relation to the definition of your new business? With respect to the validation of new processes with your partners? Are there any problems? ". So we go to their own sites, and we immerse ourselves for two days in the issue specifically for a division. And then, we do it for others" (Member #5, translated from French by the author)

The staff from this department is essentially comprised of French and German employees, who are evenly dispersed between two sites (Paris, France and Ottobrunn, Germany). As a whole, this population consisted of functional employees, highly educated and tasked with significant responsibilities for the most part. Besides sharing a relative interest in international experiences as shown by their:

- education (study journeys abroad)

“I was very interested in the multicultural aspect because I have done my graduation report on the Franco-German intercultural management by taking the example of two companies: BMW, where I had a working experience, and EADS” (Manager #7, translated from French by the author)

- professional background (previous job experiences internationally oriented or abroad)

“The multicultural aspect was part of...was an important criteria for me as a job seeker. Improving my English level, using English daily: it was part of my expectations of career evolution. When I moved from Research to HR, this was especially true because I wanted to go to a multicultural world and speak English. For me, it was part of something that I wanted” (Manager #2, translated from French by the author)

“When I started to work, I worked for a subsidiary of Daimler; it is supposed to be in the IT environment, which was very local and German. And then I worked for an Internet start-up in the entertainment business like online and television companies, which was again very national. And now, it is just nice to have English as a common language, to travel so much, to see other countries, other cities, other companies...individually, it is very rich” (Manager #10)

- or their own personal lives (family origins),

“I have a multicultural background in my family, thus, the multicultural aspect, I know it pretty well” (Manager #1, translated from French by the author)

these employees and managers show relatively similar individual profiles, a fact which will have an influence regarding their perception of cultural distance for instance.

2) SECOND CASE: functional and operational team within the company EADS – Cassidian division:

➤ *Contacts and collaborative achievement :*

The second team examined in this research investigation was part of a separate division of the group EADS. As we preferred to bring our research questions to a specific population of the group (more operational, possibly in one of its divisions), we have benefited from the collaboration of a manager who was part of our exploratory investigation. Indeed, this person frequently collaborated with hierarchical managers of the Cassidian division (ex-Defense & Security). We then contacted these hierarchical managers of the Cassidian division once we concluded our data collection with the HR department (Case Study #1).

This process took approximately three months and concluded positively. Although we got in touch with these persons through the recommendation of a manager of the corporate entity of the group EADS, we were confronted with situations where people did not answer us or who forwarded our request to other managers after a latency period. Finally, through numerous exchanges of emails with different persons of the division, we finally succeeded in communicating with the worldwide manager of the IM Security team, who sent us first to the French part of the team for obvious logistical reasons.

➤ *Description of the Cassidian division :*

As already noticed above, Cassidian is the defense and security subsidiary of the group EADS. In terms of population, it is the second largest division of the group (21000 employees worldwide). Until September 2010, it was known as EADS Defense & Security.

The division focuses on global security and systems, lead system integration, platforms and value-added products and services for civilian and military customers around the world. Its portfolio includes land, naval and joint systems, air systems (aircraft and unmanned aerial systems), intelligence and surveillance, secure communications, cyber security as well as test systems, missiles, services and support solutions. Cassidian's purpose is to support the people whose mission is to protect the world. Its headquarters are located in Unterschleissheim (Germany) and Elancourt (France), but it has several offices located across Europe, USA, India, Mexico and the Middle East as well.

➤ *Description of the observed entity :*

For the realization of our case-study, we had the opportunity to communicate with members from Unterschleissheim, Elancourt, and Newport (UK), besides attending one of the monthly-meetings of this IM Security team in London. The activity of this entity is globally related to the security of Information Systems within the group. The IM Security Governance ensures that information assets of the organization are efficiently and effectively protected. Its members have to understand current and emerging security threats, have to engage these security threats while being able to explain them to the users.

In concrete terms, this work consists of defining processes, policies, guidelines...related to work-instructions. Moreover, these individuals are in charge of the certification of the infrastructure, which is made before the implementation of the infrastructure by the IT department, in order to check that new systems are not changing the security level. The role of this specific unit is extremely important, since consequences can be tremendous:

“I am responsible for the IM security, so that is Information Management Security: it is...in fact we look at the regulation, the governmental regulation in terms of projects, not just governmental regulation but also international law. And you know, we have regulation and we have compliance to maintain, and our job is to construct the policy, and make sure that we explain the policy to our users, to our IT community. [...] So we do the risk assessments, we do the analysis of this, we say to the business “this is a risk”, what is the impact, as this impact could be reputational damage. Another impact could also be that we lose contracts. If we do not look after government data as we agreed to do in the contracts, they could take the contracts away from us. So our job is to make sure that security aspects are respected.” (Manager – Case-Study #2)

Such tasks, which involve the consideration of global and international issues³³, necessitate the implementation of a distributed collaboration between members of the team. The need for a distributed cooperation was obligatory in the configuration of the group, making it an interesting object of field research for our investigations (see the table summarizing participants we interviewed).

³³ *“You have a global security environment which is everything outside the organization’s fence. Then you have the local security environment which is everything inside, and then you have the electronic security environment which is IT. So protecting that IT is going to work if only relevant with other team levels, it is logic.” (Member #2 – Case-Study #2)*

	Managerial role	Used form of distributed-work	Relationships to International	Langage of the interview
IM Security Team	Senior Manager/ Head of Unit	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Senior/National Manager ³⁴	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Senior/National Manager	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Senior/National Manager	Virtual Teams	Daily multicultural collaborations (Europe)	English
	IT Security Officer	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Analyst	Virtual Teams	Daily multicultural collaborations (Europe)	French

Table 12 – Case-Study #2: characteristics of participants

The management handled by these workers is mostly virtual, with national managers (we interviewed three of them from France, UK and Germany, besides their own boss, who is in charge of this unit) having weekly virtual meetings and day-to-day interaction with their collaborators through ICTs. In parallel, physical meetings are still organized once a month, in order to set up the priorities and goals of the team. Basically, national managers have the mission of supervising staff from their own area (France, UK, Germany), and for the daily management of projects. Separately, we also interviewed two members of the French staff who had more operational missions. The IT Security Officer is also responsible for auditing and compliance analysis regarding issues of IT security. The last participant collaborates and helps the IT Security Officer with these operational activities as an analyst.

Regarding the organization of this entity, we are close to a matrix, characterized by a distinction made according to functions but also countries. However, the current purpose of the division is rather going from a security approach based on a national model to a more international scale that will take into account both the requirements of international business

³⁴ 2 interviews (one sponsor, and one semi-structured) interviews have been conducted with this French national manager.

and national regulations. In this perspective, the cultural aspect has a major role to play. The core team – the one that has been observed for the realization of this case-study #2 – is centered on countries of France, UK, and Germany:

“My main prime job is being head of IM security for DS (Defense and Security). Now within it, I have a team, core team. Predominantly, the businesses or the structure is international, with national businesses, which starts to change now within DS because we’re looking to change to an overall international approach. But I still have an organization made up on a national basis. So I have several guys in the UK, I have three in Paris, and the rest of my team is German.” (Manager- Case-Study #2)

Several differences with our exploratory case can be identified. Since this IM Security team is part of the Cassidian division, they exclusively have interaction with members from this division within the EADS group. Consequently, we expect their perceptions of organizational culture would be less significant than for the corporate unit investigated in case-study #1. The construction of this team has also been decided more recently: the IM Security team is a seven-year old entity. As a result, distinctive apprehensions of culture might be identifiable, especially as the observed population has dissimilar characteristics³⁵ as well. For instance, the level of English is significantly dissimilar between individuals: two of the French participants confirmed us their difficulties to communicate with others, in the sense that English is not a language that they used regularly in the past. In order to contact other members of the team, they will favor written ways of communication in order to better be understood.

The realization of this case-study finally necessitated special requirements to respect and take into consideration, especially because of the sensitive activities (management of the IT security within a military corporation) made by this entity. Following a very rigorous attitude was an obligatory factor while realizing our non-participant observations for instance. As an example of the level of sensitivity respected within this entity, at the end of their interviews, participants had to bring us personally to the exit of their building. It is forbidden

³⁵ This IM Security team is not exclusively constituted of functional people such as in case-study 1. Instead, as already mentioned, operational members such as analysts or IT security officers are also present in this team.

for an individual coming from outside the company to be alone and isolated on such sensitive sites, with all the risks of industrial espionage that this situation could possibly imply.

3) THIRD CASE: Operational team within the company EADS – Cassidian division:

➤ *Contacts and collaborative achievement :*

We have been able to collaborate with this Architecture Management team thanks to the previous partnership established during Case-Study #2. Owing to their high engineering profiles and the type of missions they main have to accomplish, members of the prior IM Security team have to closely collaborate with a specific Architecture Management team in order to conceptualize systems in total conformity with security requirements. Giving a positive answer to my request, the executive responsible for the IM Security unit agreed to provide me with the contact information of the Architecture team manager.

The effectuation of this collaboration took a relatively long time (almost 3 months), and required the exchange of numerous emails with the manager of the Architecture Management team. Possible explanations of such delays can be the extreme attention paid to confidentiality and access to data for an individual coming from outside the EADS company. Although we made a collaborative agreement with the EADS company stipulating the details related to these sources of concern, concerns nonetheless held by the manager of the team were important. Besides, during our research investigation, we also observed that German workers were much more cautious, and watched over their transmission of information.

As an example, and once again despite the establishment of our collaborative agreement, this German team manager never gave us the name of participants we interviewed: we only got their phone number, and these were also exclusively provided by this manager himself. Unfortunately because of this fastidious process, we have not sent individual interviews' transcriptions to this participant for review as we do usually, since we could not get their email address. In order to provide transcriptions to these participants, we should have had to go through the manager of the Architectural Team. Knowing that we placed considerable weight on the anonymous part of our interviews, we did not want the Architectural team manager to take into consideration the discourse or thinking of his subordinates.

➤ *Description of the entity :*

The purpose of this Architecture Management team is to develop methodological aspects/tools for the architecture of information systems within the Cassidian division. As an example, one of their main current projects, which is called “diamond”, is changing the whole

IT landscape that supports all the business processes of the division. As a result, members of this unit seek to drive the harmonization of these business processes.

The main activity of this Architecture Management team is an internal project, only involving the members of this Architecture Management team, and leading them to have daily distributed collaborations between them. With this project, members of this team have “a function of IT architect, which is a function of individual support. Let's say that we operate as a service desktop, a support function” (Member #2 – Case-Study #3, translated from French by the author). As such, these IT Architects move regularly to Cassidian sites in order to support the implementation of these IT infrastructures.

	Managerial role	Used form of distributed-work	Relationships to International	Langage of the interview
Architecture Management Team	Senior Manager/ Head of Unit	Virtual Teams	Daily multicultural collaborations (Europe)	English
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	English
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	French
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	French
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	English

Table 13 – Case-Study #3: characteristics of participants

This entity owns a specific organization, which consists of an ongoing combination of local requirements and international expectations, in a similar way to the IM Security team. As a result, the Architecture Management team comprises a population of distributed-workers dispersed all over Europe (France, Germany, and UK especially):

“Our organization today is actually international. What I tell you about our Architecture Management team is true for all the teams dedicated to IT. It means that although we are located in a particular country, we work principally for international projects. It is rare today to have a project that only involves a single country. If that should be the case, we will simply put in place a local representative. Once again, the purpose of this team is actually to support developments that are international. So within this team, we have individuals who are in France, others who are in Germany or in England.” (Member #2 – Case-Study #3, translated from French by the author)

As with the previous teams investigated, this unit displayed the appropriate characteristics for our research interest. But this entity had its own specificity, regarding its life cycle: it has only existed for less than one year at the time our interviews were conducted:

“Since the team is relatively new - it was created in October 2009, we tried at first to meet up as much as possible in order to get to know each other, to have longer discussions, to do what is called team-building. Nowadays, we do still have some travelling but, we have less because there are some budget cuts...But we still have a significant need for direct communication because, again, our activity is just starting, and is not extremely structured.” (Member #2 – Case Study #3, translated from French by the author)

Thanks to this characteristic, we expected interesting and original elements emerging from the data analysis.

4) FOURTH CASE: Functional team within the company KCI – KCI Medical France:

➤ *KCI Medical: presentation and history:*

Kinetic Concepts Inc. (KCI) is a leading U.S.-based multinational corporation that produces medical technology for wounds and wound healing including therapeutic beds, wound care and tissue regeneration technology. The headquarters of the company is situated in San Antonio, Texas, but it also has local offices all over the world. Most of KCI's sales are concentrated on the North-American continent, nonetheless.

These KCI offices are divided into two main regions: Asia-Pacific (APAC area) and Europe-Middle East-Africa (EMEA). The EMEA region today includes a dozen countries and contributes to about 25% of global sales. Like the global company, the EMEA region is divided into three areas with:

- the major region being the DAR area and representing the Eastern part of Europe (Germany, Austria and Switzerland).

- North EMEA, including England, Ireland, the Netherlands and Nordic countries.

- South EMEA, including with France, Italy, Spain, and South Africa, which is the area where our research attention has been focused.

Regarding the structure of the company itself, KCI is composed of three business units: Active Healing Solutions, Life Cell and Therapeutic Support Systems. As part of the global mission of KCI, these three business units operate in the wound care, regenerative medicine and therapeutic support systems markets. The largest of these business units is dedicated to wound care, which means primarily negative pressure wound therapy for the treatment of traumatic wounds, pressure ulcers, chronic wounds and diabetic ulcers but also assistance with surgery.

The therapeutic support systems developed and supplied by KCI are largely for the treatment and prevention of complications associated with patient immobility. These include support surfaces for hospital beds and home patients designed to address pulmonary complications in immobile patients. KCI also develops specialty beds for use in hospitals or in long-term care facilities.

Created in 1976, the company has expanded its activities into the regenerative medicine market in 2008. Through its subsidiary company Life Cell Corporation, KCI develops and supplies tissue-based products. These include tissue-based treatments used in

surgical procedures to repair soft-tissue. Nowadays, the staff of these three business units is more than 7000 employees.

Like most multinational companies, KCI has adopted a matrix structure, combining both business units then departments with geographical area³⁶, and this structure means that managers have more than one boss. Although this matrix structure is relevant for the global management of the company, it constitutes an additional difficulty for identifying hierarchical superiors in remote-work environments as explained by one of our participants:

« I am not convinced at all by our matrix structure. It might be appropriate in the context KCI finds itself today, which is a situation of massive transformation. But eventually, when the organization will be transformed and stable, I am not convinced that it will entirely be appropriate because there is no ... You know, when having multiple hierarchical superiors, we tend to hide behind each other. And you never know who to listen to [...] Currently, I find myself in a situation where, increasingly, I have to deal with more than two managers. I have to deal with my local manager: he asks me for projects. Then, I have my boss in Holland who asks me for tasks and tells me how to manage them. And then, I have to deal with the boss of my boss from Holland, who lives in San Antonio, Texas, and who also asks me things. So it starts getting pretty complicated. Anyway in the end, I feel like this organization leads to create free electrons » (Manager #6 - Case-Study #4, translated from French by the author).

➤ *Contacts and collaborative achievement:*

During the development of the Chair “Management & Diversity” that has been launched in January 2009 at the Paris Dauphine University, the Foundation Dauphine has launched in January 2010 a certificate program “Management & Diversity”. This certificate program raises the awareness of operational and functional managers in their supervisory role of various backgrounds, besides strengthening their management policy of diversity through the:

³⁶ “So the organization of the company is now combining a functional organization with a regional organization in terms of geography. It means that people referring to Finance depend on the Finance function up to the Chief Financial Officer. And it is the same for the Logistics Operations where there are managers who refer to an European Director of Operations who then refers to someone who a World Director. Just as the Commercial level: there are business units and therefore everyone refers to the function they are assigned to” (Manager #2, Case-Study #4, translated from French by the author)

- participation of highly-skilled faculties,
- participation of experts on diversity from private companies
- feedback from different companies
- national and international comparisons from public or academic research

Being a PhD student who is part of the Chair “Management & Diversity”, we had the opportunity to attend the 14 sessions of this certificate program. We collaborated with managers who participated in the first class 2010 of this certificate program, and then had the opportunity to cultivate special relationships with these individuals. Among these participants, we had a long discussion with the CEO of KCI Medical France who expressed a lively interest in our research work. As such, he kindly proposed the collaboration of his institution for the data collection conducted in our PhD dissertation.

Eventually, we together had a sponsor interview in order to further present our research contributions and expectations. According to these elements, the CEO of KCI Medical France advised us to contact a certain number of individuals within the organization, knowing that input of these persons would be of great interest for our research work.

➤ *Description of our participants’ managerial characteristics:*

More than a specific entity that we could have investigated, our research collaboration with the company KCI Medical France rather consisted on the conducting of phone interviews with six of its managers. Most of them have typical roles and situations within this organization, and were not exactly related between them: we then benefited from original comments and elucidations from each of these individuals.

In the general description of the KCI group, we explain the characteristics of this organization, especially identifying the matrix structure divided into geographical area and business units. These specific characteristics in part justify the use of distributed-work³⁷ for our participants to collaborate with their superiors, since these hierarchical managers are often geographically dispersed³⁸. Distributed practices are even more enhanced since our

³⁷ “What I meant is that all people from the Finance function, all financial managers of the four countries [that are part from the South EMEA region] and their teams refer to me directly. So there is actually a remote-work dimension...I mean, a remote management dimension rather, which has to be taken into account” (Manager #2 – Case-Study #4, translated from French by the author)

³⁸ I.e., be they at the headquarters in San Antonio, at the EMEA main location in Holland or at KCI Medical France office in Chilly-Mazarin.

participants are themselves in charge of employees dispersed over large territories – French regions, French territory, or EMEA area – and being mostly nomadic workers. Indeed, most of the managers we interviewed were in charge of sales persons whose job consists in canvassing hospitals or medical populations for selling the various products of KCI.

	Managerial role	Used form of distributed-work	Relationships to International	Langage of the interview
KCI Medical	French regional manager	Telecommuting	No	French
	Financial Officer	Virtual Teams	Europe-Middle East-Africa	French
	Sales & Order Planning Manager	Telecommuting	Europe-Middle East-Africa	French
	French regional manager	Telecommuting – Nomadic work	No	French
	Sales National Director	Telecommuting – Nomadic work	No	French
	National IT Manager	Virtual Teams	Europe-Middle East-Africa	French

Table 14 – Case-Study #4: characteristics of participants

The main particularity of participants of this case-study #4 finally is the form of distributed-work that they use. While two of them managed similar virtual teams as the ones already observed in previous case-studies, others managers conducted telecommuting by working from their own houses. Interestingly, this specificity is somehow motivated by the guiding principles of KCI in terms of corporate responsibility, looking especially to “continually reduce travel to minimize [their] carbon footprint” (KCI website: <http://www.kci1.com/KCI1/environmentalstatement>).

Distributed-work is then a permanent characteristic of the management of our participants. The various characteristics listed above (i.e., typical structure of the organization, telecommuting used by these participants in order to manage their nomadic subordinates) enabled us to benefit from unique and totally new dialogues since the beginning of our data collection. The situations of our participants are concisely summarized by the positioning of this KCI manager:

“As far as I am concerned, I manage seven sales persons, five men and two women. Our area is the part that is below a line connecting Toulouse – Clermont-Ferrand – Lyon – Grenoble, it means the south part of France. I'm not in Paris [...] because I am, I work from home. [...] And the major part of my activity is conducted from my home. Anyway, I have no office: I do not have an office life if you prefer. And I manage people who do not have offices either as they are all on nomadic work most of the time, you know” (Manager #5 - Case-study #4, translated from French by the author)

Depending on their own managerial characteristics, and besides their few regular business meetings at the offices of KCI Medical France in Chilly-Mazarin, these individuals often express the need to meet physically with their (geographically) distant subordinates. This is especially the cases of Managers #4 and #5. As such, their work activity is balanced between a major part of telecommuting and nomadism the rest of the time, with all that it involves in terms of mobile work³⁹.

We did not have the opportunity to observe these managers during their work activity. Based on our interviews, the functional management of these telecommuting participants (i.e., managers #1, #4 and #5) consists in concrete terms of using ICTs in order to communicate with and coordinate their nomadic sales subordinates. This activity is mainly dictated by a daily-management rather than a management of projects, dedicated to the constitution of objectives, the checking of sales figures and the development of reporting documents for general management. As perfectly expressed by Manager #1, this job mainly consists in two axes: on the one hand taking stock of the situation, analyzing and implementing actions, and on the other hand creating a link with this team and making them identify with these sales projects.

Although the activities of managers #2 and #6 are slightly dissimilar – respectively Financial officer and National IT officer –, their own management can similarly be compared to a daily management. This is especially the case of Manager #6 who is for instance in charge of a brand-new entity in Italy, and who has to permanently guide his subordinates at

³⁹ « As I am living it right now, 70% of the time I am in my car, I am on the phone. I mean I do not take risks at all... But between 50 and 70% of this time, I phone while driving. For me, five hours in a car does not mean five lost hours. It is not five hours of doing nothing. Of course I am not as productive, I cannot call a client, I cannot take notes, etc...But you see: I left the office at 16h, I was in Chilly-Mazarin: since then, I keep on making calls” (Manager #4 – Case-Study #4, translated from French by the author)

distance by being their interface between local needs and the international resources of the group.

Finally, the work of Manager #3 consists of managing the sales forecasts regarding the various countries he is in charge of, and being the intermediary between the US and the EMEA part, regarding the sales forecast and stock management parts. His function of Sales & Order Planning Manager leads him to have a slightly special managerial position in comparison with other participants, since he is not in charge for instance of a specific team:

“It is absolutely a cross-functional position. I have dropped any sort of team management. Now, one could say that it is a cross-functional management, a cross-functional collaboration, or whatever vocabulary used...My representatives became all Operations managers from EMEA countries, but also people from Marketing, General Management, Finance, etc ...I am the link between any EMEA entity and people of the company from the United States (i.e., from the Headquarters). [...] Due to the nature of the position, and since I work with 15 European countries and the United States, I could hardly work differently than remotely with these people” (Manager #3, translated from French by the author)

Because of these participants’ own characteristics and the form of distributed-work that they used (*i.e.*, telecommuting for most of them), we considered the conducting of this final case study as being extremely attractive for the contributions of our research document. As our six interviewed managers from KCI Medical, working in a completely dissimilar business area than the one of the EADS group, this final data collection will enable us to propose a confirmatory case to our research work.

Conclusion of the section:

This final part combining both methodological and contextual analytic elements was necessary for understanding the following chapter about the construction of our analytical framework. In accordance with our research design, which is influenced by the grounded theory, this chapter proposes a chronological description of the construction of our framework; a construction that has been effective through a permanent arrangement between theoretical concepts and elements emerging from our exploratory case. Therefore, providing a general description of these specific entities above was totally justified.

Chapter IV: Reconfiguration and design of our analytical framework

In the following sections, we propose a chronological description of the construction of our analytical framework. By detailing the specific steps of this analytical construction, we intend to provide a better understanding of the relevant framework developed in this dissertation, and to show how the works of Deleuze significantly influenced our reasoning. We consider the operationalization proposed below as an early contribution of our research-work in itself. Indeed, we would like to think that it proposes new and interesting insights, taking into account that, so far, there is no solid and accepted basis for an operationalization of distributed-work management⁴⁰.

Through this grid analysis, we make the correlation between theoretical concepts and data elements collected on the field by our exploratory research work. Following our research design, which is influenced by the grounded theory, we explain the modifications in our themes dictionary table thanks to new critical elements emerging from the analysis of our exploratory case. As a result, a new themes dictionary table is proposed at the end of this chapter, and will be used for the analyses of the last three cases (two cases, and one confirmatory case) of our dissertation.

D) Reconsideration of types of distance constitutive of remote-environments through Deleuze's works:

The emergence of distributed practice several years ago has drastically changed our day-to-day managerial perspective. At the time when work-at-distance started spreading, our society

⁴⁰ While many valuable contributions are available, no comprehensive approach to effective management of the challenges in distributed software projects has been developed (Powell et al. 2004)

“There is a need to understand and support the integration of existing knowledge to develop comprehensive approaches to manage effectively the challenges in distributed software projects” (Persson et al., 2009)

was still accustomed to a physical office-based way of working that had been the norm for decades. Any organization was constituted according to a traditional space-time continuum that both managers and employees accepted for generations. As we have seen in the previous sections, the revolution created by the emergence of distributed-work consisted of the reconsideration of this traditional space-time continuum; it introduced new challenges that were difficult for individuals to overcome especially with respect to forms of control.

This analysis developed in the previous chapter has also especially highlighted the need for conceptual development in order to better understand the issues involved with work-at-distance management. The utilization of French philosopher Gilles Deleuze has finally emerged as a perspective that might provide possible answers, particularly through his concept of societies of control. The use of this theoretical framework for our research investigation is relevant.

Gilles Deleuze anticipated the evolution of our work organization through the emergence of societies of control characterizing the transformation of the classical form of capitalism, the social and economic system which predominated for more than a century. According to Deleuze, “at the complementary and dominant level of integrated (or rather integrating) world capitalism, a new smooth space is produced in which capital reaches its ‘absolute’ speed, based on machinic components rather than the human component of labor” (Deleuze & Guattari, 1980). In global terms, this “smooth” space is a space of distances and proximities, open and non-polarized, associated to nomadic work, and in opposition to previous “striated” spaces made of measures, metrics and properties, organized in hierarchy and associated to sedentarism. In the following sections, we will explain the main characteristics of this new environment, focusing on the three distinctive forms previously identified (temporal, geographical, and cultural distances), and show how Deleuzian concepts like that of rhizome structure, actual/virtual dichotomy and deterritorialization are essential for better understanding distributed-work environments.

1) The rhizome structure:

In traditional teams, supervisor–subordinate relationships are often characterized by hierarchical roles embedded in responsibilities, with more formalized rules, procedures, and structures (Picherit-Duthler, et al. 2004). On the contrary, important social/contextual information, such as a member’s social status or level of expertise, are lost or distorted in

virtual team environments characterized by high levels of anonymity (Dubrovsky et al., 1991). The distributed structure is less linear than that of traditional teams. The lines of responsibility, authority, and even seniority are less apparent in virtual teams than in their traditional team counterparts⁴¹. Finally, researchers have argued that in virtual organizations, the structure that emerges is a more amorphous web of connections, close to a network, changing constantly in response to their information processing needs (Ahuja & Carley, 1999). Such observations can be addressed by Deleuze's concepts, especially the rhizome structure concept.

As described by Deleuze, smooth space would be open, non-polarized and eventually be conducive to a *rhizomatic* growth, it means with no real organization in hierarchy. When considering the structure of an organization, Deleuze no longer refers to or indicates a central organizational point (*i.e.*, the individual as a subject) but he rather refers to a spatial structure as a whole. The rhizome structure will thus be a dynamic and chaotic "weed" formation that, opposed to the hierarchical structure of the tree, involves spontaneous, unpredictable and distant connections between heterogeneous elements (Linstead & Thanem, 2007). Regardless of its position, each element in the structure can influence other elements' behavior and thinking (e.g., without consideration as to hierarchy or location) (Deleuze & Guattari, 1972). Belonging to a rhizomatic structure would considerably modify members' interactions with their colleagues/managers as well as the perceptions of their roles.

The rhizome structure fits the socio-technical nature of organizations where the dissipative relationships between humans, technology, and organization structures form a complex, dynamic, and transforming entity with no clear, formal, or necessarily logical order. Such an organic metaphor has already been used in the managerial literature in order to address the structure of virtual entities. Millward & Kiriakidou (2004) investigated the efficiencies of virtual teams; they claimed that the most effective of these teams would be those that can operate as a team even without having had the opportunity to learn to do so, because each member is skilled in teamwork. For them, an effective virtual team will be "like an amoeba (*i.e.*, a parasitic organism with disorganized and changing forms) evolving in both form and substance to suit its requirements: it is flexible, having the ability to adapt to circumstances,

⁴¹"This structural form (*i.e.*, network organization) emerged in the communication structure and was not equivalent to an authority structure based on status or tenure differences. In many traditional organizations, the centralization or hierarchy is in the authority structure and is related to status and tenure differences." (Ahuja & Carley, 1999)

drawing in resources (e.g., expertise) as and when required” (Millward & Kiriakidou, 2004). With this description, the parallel with the concept of rhizome is here valuable and relevant. Interestingly, in practice and theory, these close metaphoric descriptions relating the idea of strong multiple non-hierarchical influence between their staff is also clearly utilized by managers:

“If I had to describe my team, I would say that it is like the metaphor of an onion: there are different layers. Everything is linked between them: this is why I talked about co-construction” (Manager #4, translated from French by the author).

2) The actual/virtual dichotomy:

Besides leading to a rhizomatic growth, we posit here the hypothesis that the smooth space initiated by Deleuze corresponds to a model representative of our society and some of its contemporary phenomena such as the dissolution of boundaries and structures, the valorization of fluidity, and of unplanned and spontaneous elements. The concept of smooth space must be interpreted as an accurate tool for conceptualizing *virtual* environments. The Internet is actually the ultimate manifestation of smooth spaces and virtuality by being a non-directional and non-polarized space. In contrast, the striated space would be the paradigm of traditional media, with their linearity, their construction, their depth and their perspectives (Buydens, 2003).

We have seen earlier that the concept of virtuality is difficult to measure as there is no real consensus on a so-called accepted definition of the term. The understanding of such a concept as virtuality is however critical, especially taking into account that its development as a concept that underpins a team's characteristic has recently emerged in the academic literature (Dixon & Pantelli, 2010). With regard to these observations, the work of Deleuze can once again be of real interest.

When speaking about virtual environments, the terms *virtual* and *real* should not be in opposition with each other, but instead the term virtual will rather be considered as an opposite of something that is *actual*, which exists concretely. Consistent with these observations, Deleuze (1996), while referring to virtual, considers an aspect of reality that is not material, but still is real. The virtual is opposed to the territorial, to what is already settled.

It is then possible to distinguish two aspects in Deleuze's conception of what is virtual: first, the virtual can be interpreted as a kind of surface effect produced by the actual causal interactions that occur at the material level. When someone uses a computer, an image is projected on the monitor screen, which depends upon physical interactions occurring at the hardware level. The image does not exist in actuality, but is nonetheless real and the computer user can interact with it.

This observation leads to the second aspect of the virtual as specified by Deleuze, which is its generative nature: virtual is conceived as a kind of potentiality that becomes fulfilled in the actual. It is still not material, but it is real. Deleuze expressed this specific aspect in his statement that "the virtual is not opposed to the real, it possesses a full reality itself" (Deleuze, 1968, p.169). Lévy (1995) used the metaphors of the tree and its seed to

describe the notion of virtual: within the seed lies the possibility of the tree, a virtual tree that has not yet been actualized. The tree's form is not however completely determined by the seed, as numerous elements take a part in shaping its development (weather, nature of the field, etc...).

Links between virtuality and actuality will then be made by the concepts of distance and especially the one of presence that Lee (2004) defined as “a psychological state in which virtual (para-authentic or artificial) objects are experienced as actual objects in either sensory or non-sensory ways”. It implies that presence should be operationalized in a psychological way rather than in an objective way, in order to finally be better understood.⁴²

These observations lead us to ascertain that the confrontation between the traditional physical way of work and distributed-work should primarily be considered as a distinction between objective (actual) and perceived (virtual) proximity (Wilson et O'Leary, 2008). Treating distance and proximity in purely physical terms provides an incomplete view of how people experience distributed-work. A technologist developing an application for virtual proximity might not care about users' actual proximity at all, but rather about their perceived proximity (Kiesler & Cummings, 2002). Similarly, Dow (2000) showed that the impact of geographic distance is largely dissimilar from that of psychological distance and, therefore, using geographical distance “as the sole indicator of psychological distance would be severely flawed”.

Consequently, we suggest that the notion of *perceived proximity* – an asymmetric construct describing the relationship between coworker dyads, one person's perception of how close or how far another person is (Wilson & O'Leary, 2008; Brunette, 2009), is a more relevant concept for analyzing and understanding the effects of geographical distance emerging between distributed members. Like many other perceptions and attitudes, perceptions of proximity have both a cognitive and an affective component. The affective dimension identifies the fact that people's sense of perceived proximity is subject to emotions and feelings. Illustrations of these feelings are reflected in comments like ‘I feel close to the other person’ or ‘I feel isolated from the other person’. The cognitive dimension refers to a

⁴² “The issue of presence has not been sufficiently explored nor well-articulated in studies on virtual organizing” (Panteli, 2005)

mental assessment of how distant a teammate seems to be. This assessment might be reflected in comments like ‘when I think of the other person, he or she seems far away’ (Wilson & O’Leary., 2008). Distance is clearly tied to the issue of connection: as such, the geographical distance is an important organizational and management concern (Leonardi et al, 2004).

The asymmetric (i.e., affective and cognitive) nature of perceived proximity is central to understanding distributed teams – as a coworker relationship that is perceived as *far* to one person may be perceived as *close* to another (Harrison-Hill 2001). People often perceive the same objective geographic distances quite differently. Being actually in the proximity of someone does not only mean being near him/her, it might also mean having a strong complicity with a person who is geographically distant, whether that person belongs to the same circle of friends, family, or even the same network of firms or professionals (Rallet & Torre, 2005).

The judgment about a colleague’s proximity is based not only on the number of kilometers, but also on the individual’s perception of this physical distance (Wilson & O’Leary, 2008). This individual’s perception can be assimilated to a sort of cognitive distance characterizing a mental representation of actual distance molded by an individual’s social, cultural and general life experiences. Interestingly, such cognitive distance estimates have been reported as significantly differing from actual distance measures (Harrison & Hill, 2001). By focusing on perceived proximity in this research work, we eventually aim to address the point made by Heuser (2009):

“Future research should examine perceptions of proximity in addition to physical distance. Namely, it would be beneficial to know whether and under what conditions perceived distance between team members serves as a predictor of team effectiveness results. Also, research examining factors that influence perceptions of perceived proximity (e.g., frequency of communication, content of exchanges) particularly over time could be informative. Finally, it could be valuable to understand how differences in intra-team proximity perceptions impact team processes and subsequent results as well as if a minimum amount of perceived proximity is necessary for a team to function effectively. In better understanding factors that affect perceived proximity, organizations can implement practices that can bridge the emotional divide between distributed-workers”.

3) The deterritorialization:

While considering distributed organizations, the issue of territory is critical. Unfortunately, this element is sometimes misinterpreted in academic research, as researchers often neglect to distinguish the *territorial genealogy* of organizations - any organization has a territorial origin: it is founded originally in one given territory, from *their nature* - the interactions, the explicit or implicit rules which define it - which is a-territorial (Rallet & Torre, 2005). Thanks to the territory, it is possible to better understand the link between our societies and spaces.

In accordance with this aspect, the emergence of distributed-work in our society has lead to the reconsideration of the workplace as a structural element of the individual territoriality. Indeed, while benefiting a specific office, employees usually tried to customize, to individualize it by constituting a “habitus” (Bourdieu, 1980). This appropriation allows the individual to incorporate a specific social world and interpret it in his own-self way, so that this space constitutes a territory for him/her (Moriset, 2004).

This transformation into a territory requires the appropriation of specific rituals, such as decorating the office booth with private pictures and artifacts, until it constitutes an extension of the individual’s home. This phenomenon is obvious while taking into consideration a termination of contract between a company and a specific employee: the first thing the employee is asked to do is to pack his/her personal belongings, just before leaving the office with his/her property under the arm. By collaborating remotely, people lose this ‘habitus’ and can no longer constitute such a territory: by not owning their own office or place of work, individuals are destitute of this ability to ‘mark their territory’. The fixing point, at least the one where the most part of the professional activity should be realized, has progressively moved from company to home, transit points or customers’ sites (Bonnivert et al, 2003). The company itself is not a place of work execution anymore, and only constitutes a place of socialization if informal meetings with colleagues or participations to social activities are organized by the management.

Consequently, it happens that the territory is both the product and the matrix of territorial practices through which any individual constructs his “socio-spatial metastructure” (Di Meo, 1991), in other words, his/her experience and socialization. The territory is considered as “an appropriate space and a support for individual and / or collective identity” (Fournier, 2007).

Building such construct of experience and socialization will then consist in a phenomenon of territorialization, a social process for constructing a territory in general. However, collective identities do not necessarily coincide with geographic features: several groups, with their own identity, can live in the same territory without having the same relations to it in terms of belonging, ownership, or appropriation. As a reverse process of territorialization, the deterritorialization will illustrate the disappearance of this social process from a certain location.

But according to Deleuze, the phenomenon of deterritorialization is necessarily followed by a re-territorialization, where a sense of belonging, ownership and collective identity is eventually reintroduced, characteristic of a collective re-appropriation through the means of participatory management (Moriset, 2004). Finally, the terms of territorialization, deterritorialization and re-territorialization must be understood as describing the successive phases, always evolving, characterizing the relationship between society and space.

In Deleuze and Guattari's (1972) original philosophy dedicated to a criticism of capitalism, territorializing referred to the transformation of a potential into a material for a specific use (function) in a restrictive space. Conversely, deterritorializing consisted in distorting some material elements from their initial use to potentially relieve it from coercion and oppression. The sense and meaning of deterritorialization are now understood differently from the one that was originally expressed by Deleuze & Guattari (1972). Globally, the term deterritorialization means taking the control away from a land or place (territory) that is already established: undoing what has already been done.

In anthropology, deterritorialization refers to the exclusion of cultural subjects and objects from a certain location in space and time, which is interesting in a context of distributed-work where certain cultural aspects tend to transcend specific territorial boundaries. When a person, a community, or some information deterritorializes itself, it detaches from the ordinary physical and geographical spaces and from the confines of time and space. Despite this deterritorialization, these members are not totally independent of the referential space-time continuum, as they must still have a physical location and they must still be, and keep being updated. This is consistent with the concept of "everywhere" (Lévy, 1995), characteristic of tools and services to which we can have access from any place at any time, especially through the Web and by working-at-distance.

Through this phenomenon of deterritorialization that he introduced, Deleuze, who has been considered by himself as post-structuralist, agrees with the critical approach to culture proposed by Vaara, in the sense that individuals' cultural differences would only exist if these individuals become aware of them during their social interactions. According to Deleuze, because of deterritorialization and the organizational emancipation from territorial constraints that it brings, distributed-work would lead to the smoothing of cultural differences and idiosyncrasies. Besides, we have seen in the first theoretical part of this dissertation that the main cultural elements that are suffered by virtual entities correspond to difficulties in languages. As a characteristic of deterritorialization, communication in different languages is better understood by members in a way that it is no longer an issue⁴³. The understanding and communication between members of the team will thus be significantly improved since previous research suggests that intercultural differences in communication occur due to differences in cognitive styles and cultural values (Earley & Gibson, 2002).

⁴³ Thanks to the following processes : focus on and a development of systems of beliefs, individual interpretations, or territorial awareness.

II) Global management of the three forms of distance using Deleuzian concepts:

The aim of the following parts is to address the impact of Deleuzian concepts and works on rhizome structure, virtual/actual dichotomy and deterritorialization over the forms of distances emerging from distributed environments. Although each of these concepts has its principle impact on specific forms of distance, its influence in distributed environments remains general. The following observation lead us to the development of a critical observation: the need for managing distances globally in distributed-work, as forms of temporal, geographical and cultural distances are all related through the development of the rhizome structure, perceived distance and the phenomenon of deterritorialization.

1) The impact of the rhizome structure on forms of distance in distributed-work:

a) A major impact on temporal distance:

In the first part of our document, we have been able to show that the emergence of remote-work environments has first lead to the introduction of temporal distance. This temporal distance was first of all at the origin of challenges related to the management of asynchronous communications. While suffering the emergence of temporal distance, distributed-workers are extremely penalized by asynchronous communications. Various studies, like the one made by Favier & Coat (2002), have shown the importance of formal and informal communication in international virtual teams, since their absence will lead individuals to express feelings of dissatisfaction, stress and isolation. More precisely, while experiencing these difficulties in communication, workers have the continuing impression of chasing information and of having access to less information than their colleagues.

By collaborating with their own colleagues from the department, or with their partners within the division, our research participants have obviously to deal with this type of irritating issue for communication:

“Sometimes working at a distance is difficult, especially at the beginning. Of course there is a clear lack of responsiveness, and it is hard not to have the opportunity to go into an office and knock at the door. [...] It is obvious that we always have a little temporal distance. In terms of productivity, of work efficiency, it still remains a small penalty, even if we have tools that help us well” (Manager #7, translated from French by the author).

“The worst thing is when you send e-mails, when you want to know how it is going, and when you cannot get any answers...There, it's complicated, because you cannot just go

put your head in the office in order to know what is actually happening...Really, what is complicated is to be stuck without having any news.” (Manager #1, translated from French by the author).

More precisely, this issue of silence or delayed answers will be problematic for newcomers and persons who are not used to distributed-work, especially when dealing with asynchronous relationships is accepted and recognized within the organization. Indeed, inexperienced members with limited familiarity with this type of work environment may for instance experience anxiety or trust decline due to negative interpretations of silence or delays associated with time dispersion⁴⁴:

“It is a bit difficult for me, for example, who is quite new in this big organization, when I send questions to the divisions. [...] It is not the culture here in the company to give a short statement of confirmation such as “hey (Manager #9), thank you for your help, I just have to coordinate that with (in French) ‘Charles, Philippe et Isabelle’, and I will come back to you next week”, which will helps me a lot to know “OK, is he working on it or not? Is he ignoring or is he...?” So this is a bit difficult for me, because I do not know if he is just like (she mimes a yawn) ignoring or really doing something. And, because of the distance, you never know “is he really helping me?”. And of course sometimes, after weeks, a second reminder seems, from their point of view, a bit rude, because they are “come on girl, I am working on it, leave me alone, I just need some time, leave me my freedom”. And I can see their point of view as well, but when I do not know if they are working on it or no, I do not have another chance than asking again. So that is sometimes a bit difficult.” (Manager #9)

Fortunately, the decentralization, the non-sequential flow of information, and the better sharing of data introduced by the rhizome configuration helps the team to develop a distinctive but fortified form of communication among members:

⁴⁴ *“This type of management style is perfect for someone who knows where he’s going, someone with a bit of experience with his/her position. [...] Nevertheless, it’s a management style that, for someone who is relatively new, a young intern for instance, will not give the same result, in my opinion. [...] Myself, I am fully in accordance to this management style. It is a management style that really suits a team where people are in place, where people know what they have to do. But I do not know if it would give the same results with a trainee or a beginner” (Member #13, translated from French by the author)*

“Since there is no real hierarchical relationship appearing, we definitely need to develop sort of a lobbying instead. [...] it means a work of communication, both formal and informal. (Manager #3, translated from French by the author).

In the second place, temporal distance has been posited as being at the origin of challenges related to the position of individuals in distributed teams, and members’ perceptions of their team and its structure. These issues can be problematic as the understanding and acceptance of personal roles and contributions is one of the main elements for the effectiveness of the team (Millward & Kiriakidou, 2004). Numerous examples of such difficulties in role and structure perceptions have been illustrated in our exploratory case.

Thanks to the description of the HR/CD department (see part General description of cases), we noticed initially that the nature of the work realized by the diverse units that constitutes it is sometimes similar. The unit in charge of Leadership Initiatives and the Corporate Business Academy are both in charge of developing managers’ skills, the only difference between both being in the level of their importance:

“There is obviously interaction among our different units. For example, in all the programs such as Progress⁴⁵, or also within the CBA with programs such as Fast, Expand and Achieve⁴⁶. These are all internal development programs for employees” (Manager #2, translated from French by the author).

Such similarities in the nature of the work obviously permit sharing and interaction (“we have our own specific projects and programs but we do share best practices, or ideas, we have some brainstorming sessions on things we can do on each of the programs” (Manager #11)) but can also however limit the perception of boundaries from your own working-team or unit within the department. It is a fact that members we interviewed expressed difficulties in providing a clear definition and delimitation of what they consider as being their “team”. In order to do so, it is interesting to notice that basically, and understandably, they first follow the guidelines of the department organizational chart, actually mentioning individuals who are

⁴⁵ Internal development program managed by the unit “Trainee & Development programs”

⁴⁶ Internal development programs managed by the unit “CBA” and dedicated to high-potential managers, according to their experience in the company (managers from Achieve are older than the ones from Fast, and are supposed to become future potential Senior Vice-President of the group)

supposed to be appointed to their unit. Nevertheless, the reality is much more complex than that.

First of all because the situation is somewhat complex for some of these people: as an extreme case, one interviewed member belongs to two separate units, and works on separate projects for each of them; this member is considered as 50% in Program Management HR & Leadership Initiatives and 50% in CBA. Besides, this same participant has to work under the supervision of a manager located with her in Germany, and of another one located in Paris. Such characteristics can make the perception of a role and position within the entity rather complex.

Moreover, issues of identification and membership are made more challenging by the complexity of projects that these members try to conceive. It sometimes happens that people from the same unit, like in the Competency Management unit for instance, who usually collaborate together, work on different projects according to their location⁴⁷ (Ottobrunn or Paris). Then, paradoxically, it often happens that members collaborate more with other members from different units than with individuals who are supposed to be part of their unit according to the organization chart. This may be explained by the various similarities existing in the nature of projects. But it may also be explained by the fact that these projects are essentially transversal in their conception.

Most of the solutions proposed and developed by units of this department are usually global, and so they necessarily involve actors from various disciplines, thereby creating variety difficulties for communicating or collaborating:

“What is quite interesting is that, in our project team, we have people who are specialized in management skills, others who are HR. We have business-partners, others who are not at all in the HR function, etc...So it really makes an interesting mix [...] It is also a project that involves working with people from Information Systems, which also gives some diversity. But even if you're in the same country...IS people...they do not work the same way as pure management people. It is not the same professional culture. Therefore there is a huge task that has to be accomplished in order to really

⁴⁷ “In our case, we have Manager #4 who is at the head of this small team. But in the portfolio that he manages, there are plenty of things that are irrelevant for Manager # 6 and I (i.e., both Situated in Ottobrunn). [...] Recently, we observed that we do not necessarily communicate enough about the activities we have and that are not interfaced with those of others within the team” (Member #5, translated from French by the author)

learn how to work and cooperate together. [...] We really are evolving in a project that is broad, transverse, very, very complex, with people who have different backgrounds and different skills.” (Manager #4, translated from French by the author).

For these numerous issues related to temporal distance, the development of a rhizome structure as proposed by Deleuze can be a relevant solution. Using such a metaphorical illustration (*i.e.*, the rhizome) is in general valuable for cooperative forms of work-at-distance, where virtual teams for instance are often temporarily constituted without having a concrete or stable hierarchy from the start. These asynchronous environments are characterized by nonlinear topics, where team members may experience information overload as they attempt to cope with a seemingly disjointed set of communications. In such contexts, the non-sequential flow of information may eliminate or significantly reduce points of reference, so that individuals may have difficulty in identifying how messages fit within the overall context of group communication (Millward, & Kyriakidou, 2004) - as explained above with the example of our exploratory case. As depicted by De la Vega (2005), what Deleuze & Guattari described as a rhizome structure can be considered as what is now referred to by the term ‘network’.

This follows from the development of network organizations (Miles and Snow, 1986), which are characterized by vertical disintegration, the formation of autonomous groups, and the flexibility of organizational boundaries that substitute traditional methods of control. The network organization can replace rigid hierarchies by networks of formal and informal communications, as information systems make the connections between all parts of the organization. By being extremely decentralized, this structure is one that is fully connected and allows immediate feedback and error-correction (Ahuja & Carley, 1999). ICTs are critical in this perspective, as they eventually provide a strong decentralization, coordination by mutual adjustment, and a high degree of expertise (Leclercq, 2008).

In a first preliminary analysis, the rhizome should be understood as an abstract concept, an alternative to the hierarchical structure, to suggest the logic of organization and transformation of our society. But in a second interpretation, more concrete this time, the term refers to a form of decentralized interrelationships. The rhizome supports a horizontal form with decentralized coordination where members are able to reach agreement without the intervention of a hierarchical person, by receiving and transmitting information to and from all stakeholders of the entity, thereby inducing several results in terms of control. Hierarchical

levels reflect the number of levels one must go through in order to obtain information (Ahuja & Carley, 1999); levels which are relatively limited when the collaboration is supported, and the coordination is decentralized within distributed teams.

Our exploratory case confirms this significant delegation of authority for decision-making through a decrease of leadership power and the support of decentralized coordination. Managers' constant worry is to provide autonomy and a feeling of liability to their staffs. The decrease in leadership is also expressed every day in our participants' daily work, as the relationships that team members can have with their managers seem to them completely dissimilar from a classic boss/subordinate relationship:

“There is no real control at all, because we did not really have hierarchical relationships. We rather have what I would call links that are just functional.” (Member #3, translated from French by the author)

“The thing is that with (the manager responsible for the CBA), we advance together and it is true that we do not have the sort of ‘boss/subordinate’ relationship [...]. She suggests new topics that we explore later, but it is really a close collaboration with her, it means that sometimes, if she has a point of view different to mine, well, we talk about it together, we try and see what we can keep, what we do wrong, what we should put aside for the moment, etc...So it's really collaborative, but always with inputs that are well stimulated by her.” (Manager #7, translated from French by the author)

In such virtual contexts, managers' main functions undergo a real transformation as the hierarchical principle that was at the basis of the organization is challenged (Bellier et al., 2002). Managers' roles would thus be different and consist of remaining active, moving from one project to another, being in permanent contact with their contacts in order to capture good ideas and collaborate with the best people, rather than controlling and supervising (Boltanski & Chiapello, 1999). As a practical result, units' members have to take part in a decentralized coordination⁴⁸, since their managers are limiting their expected leadership. ICTs are especially

⁴⁸*“There is a real consistency of the global model. I think it is important to have such a work distribution: we could have the possibility to distribute the work in silos, so that everyone has nothing to do with others. I chose to distribute the work so that everyone is working with others, it means that they are forced to work as a team otherwise it collapses. [...] The idea behind it is really working as a team, have a common objective, not five goals side by side, and make them all work and decide together. This coordination is the wealth of the team: it is what makes the final result being a success or not. It is also what I call the “morphism”, in order to use a*

called upon to enhance this free coordination and dynamic collaboration within the department, as a substitute to hierarchical managers:

“Collaborative tools are quite interesting because they allow the combination of different uses from anyone within the entity. For instance, we did not actually use the Wiki type as a pure Wikipedia. It means we rather used it as an information tool, for storing information that allowed everyone to find information quickly. [...] In fact, we used it as a tool for project management. It means that calendars, key documents, or any functional descriptions were stored on the Wiki. It was also a tool that was used to give access to people who were not directly in the project team, and to allow them to have some information about the project”. (Manager #4, translated from French by the author).

b) General impact over other forms of distances :

We observed in our exploratory case the development of this rhizome structure as shown by a decentralized coordination, a decrease of leadership, a non-sequential flow of information sharing and dynamicity in lines of responsibility and hierarchy. Undeniably, the specific characteristics of this structure support the negative effects of the temporal distance in terms of asynchronicity and perception of their role within the entity they are part of. But, although the most significant effects of the rhizome structure are derived from the management of temporal distance, the development of this specific structure has been found to be especially useful for the management of the geographical and the cultural distances as well.

Regarding the geographical distance especially, it is clear that the development of the rhizome structure and the decentralized coordination or non-sequential flow of information sharing that it permits will considerably facilitate the collaboration among individuals being geographically dispersed and compensate the absence of direct and face-to-face interaction. The network structure has been recognized as a strong facilitator for the development of perceived distance (Wilson et al., 2008): there is indeed ample evidence that network structure affects both communication and identification (Pfeffer 1983). An individual in a dense network is likely to identify more strongly with other individuals in the group, and to engage them in the frequent and in-depth communication that fosters perceived proximity.

barbaric term: the idea is that everyone has a global view of the project, and that each of them can speak and decide about the whole project.” (Manager #5, translated from French by the author).

Thanks to its characteristic of remarkable density, it is then clear that the development of the rhizome structure will keep pace with the development of perceived proximity between individuals, thereby facilitating the management of the geographical distance.

Moreover, the decrease of leadership promoted by the rhizome structure leads to a better management of the geographical distance between members as well. Since autonomy is treated as a core notion, members of the team have to search by themselves for information that allows them to adjust to the functioning of the team, by defining the expectations of others and orienting their behavior to the behavior of others. Relationship building is indeed critical for them in order to understand the rules and norms of behaviors, and how to get things done (Picherit-Duthler et al., 2004) since their hierarchical superior is less concerned with this kind of monitoring activity. At that point emerges the necessity for these employees to socialize with their colleagues, leading them to reduce the geographical distance existing between each of these distributed-workers. Eventually, this phenomenon will correspond to the development of perceived proximity between individuals as well, illustrating the strong links between the management of the temporal and the geographical distances.

Along with the development of a feeling of proximity and socialization between members, these are eventually expected to better know each other. If individuals have successfully identified with the team, they are willing to communicate better and more frequently with other members, as their knowledge of other colleagues is improved. Since these elements are able to explain significant improvements in the processes of collaboration between distributed-workers, a better identification of these individuals will also enable them to disregard their cultural particularities and possible challenges in terms of communication especially that these differences can introduce. Indirectly, the development of the rhizome will have a positive incidence on the management of challenges related to the emergence of the cultural distance.

2) The impact of Deleuze's work on the virtual/actual dichotomy over distance in distributed-work:

a) A major impact on geographical distance:

Geographical distance is a critical element of distributed entities. Clearly, while talking about distributed-work, it is commonly understood that we first of all talk about geographical distance and collaboration between members situated in geographically dispersed locations. The main concern of our research investigation would primarily consist then of understanding members' perception of the geographical distance separating them from their partners. Such investigation is especially significant concerning the team observed in our exploratory case. By working remotely, its members often use ICTs to cooperate. Although the geographical dispersion between them is a strong justification for it, this frequent use of email and/or phone is also preferred, in comparison with face-to-face meetings with collaborative partners, for the following elementary reasons:

- first, it means saving money, as travelling to each of the divisions' sites in order to meet partners could quickly become expensive⁴⁹. It is a similar issue if the Ottobrun's members of the department had to regularly travel to Paris in order to exchange with their unit's colleagues, and reciprocally.

- then, it means saving time. Traveling to the divisions is extremely time-consuming for our research participants. And the fact that while being on the move, individuals do not work on other topics, which leads to major delays afterwards.⁵⁰

Of course, such a relative privation of face-to-face interaction due to financial or time-saving reasons is detrimental in certain ways, mostly in consideration of a humanistic perspective:

⁴⁹ "We try and avoid meeting people physically excessively because it's expensive, and otherwise, we no longer do anything but move from one place to another. At the same time, at Headquarters, it is actually our role. But it is tiresome, extremely tiresome...Moreover, while we are away, our daily work does not progress. If you're always in meetings, you cannot focus on something else, especially other topics that are pending" (Member #3, translated from French by the author).

⁵⁰ "The best way, I think, is to be able to see people physically. However, it is true that moving in order to meet people physically is extremely time-consuming. While you move, you're going to see a particular stakeholder but in the meantime you are not necessarily available for others. [...] For instance, when I'm at Eurocopter, I have no Internet connection. So I am with them, and during that time, I am isolated from others...Therefore, you have to catch mails or calls sent from other divisions during the following days! So OK, you progressed with a particular partner. But in the meantime, you fell behind with others..." (Member #5, translated from French by the author)

“(Geographical) Distance introduces a problem very clearly, especially regarding time, information, communication, and everything else... I think that the issue of distance is very clearly closely related to the issue of human relationship. I seem to state the obvious, but I'm sorry, these are basics: from the moment you see someone, from the moment you have the opportunity to share or sympathize with him/her, it is much better than when you cannot see the person or when you see him/her pretty rarely.” (Member #13, translated from French by the author)

This limitation in human relationships is clearly observed: it has to be taken into consideration by the managerial staff, and above all, its influence and possible effects have to be reduced through the adoption of initiatives. In order to do so, as explained above through the contributions of Deleuze's works for the management of distributed universes, we use the notion of perceived proximity. This construct describes the asymmetric relationship between coworker dyads, one person's perception of how close or how far another person is.

The actual distance explains only slightly less than half of an individual's feelings of subjective distance (Coshall and Potter, 1987). Although physical distance may have some direct effects on perceived proximity, research from other fields leads Wilson et al. (2008) to believe that the connection between physical proximity and perceived proximity is primarily mediated, with the processes of communication and identification having a more direct effect on perceived proximity. As communication become more frequent, deeper in substance (i.e. more personal and more personally significant), and more interactive (i.e., characterized by more interdependent and reciprocal communicative exchanges), physically distant colleagues will seem nearer. Besides affecting perceptions of proximity through three mechanisms - increasing cognitive salience, reducing uncertainty and envisioning the other's context -, frequent, deep, and interactive communication provides opportunities to learn about others. But at the same time, processes of communication help individuals to discover that they share some valued social categories and thus enable the improvement of identification processes.

Identification processes affect perceptions of proximity between two distant people by creating a basis for common ground, by reducing uncertainty (like communication processes), and by engendering positive attributions when real data are absent (Wilson et al, 2008). Having a common ground means developing a mutual understanding or common stock of knowledge between two people through shared background and experiences. Therefore, the more two people identify with some social category, entity or experience (e.g. profession,

gender, ethnicity, common political views, shared trauma, etc.), the more common ground they will have between them and, thus, the closer they are likely to feel. This development of socialization of organizational values and expected behaviors is effective through mediated interaction (Leonardi et al., 2004). “A shared identity can create a psychological tie between distant team members that helps them bridge the physical and contextual distance that otherwise separates them” (Hinds and Mortensen, 2005): this “psychological tie” is actually perceived proximity.

Numerous examples of perceived proximity can be observed in the analysis of the team in our exploratory case. Individual expressions of affective and cognitive elements signifying a strong connection between distant members of the department support the predominance of such perceived proximity, and maintain the apprehension of geographical distance between them. We confirm that work-at-distance universes are not deprived of social interactions. On the contrary, distributed employees can succeed in developing some of these:

“I became very attached to members of the team in Munich⁵¹, although it is true we do not work on the same site, but it is enough for creating an ‘affective’ connection...I mean...social links: we really like each other, and I do not think it is absolutely necessary to be situated at the same location for working together and having a nice atmosphere between us.” (Manager #1, situated in Paris, translated from French by the author)

From the managers' point of view, a reduced perceived distance will facilitate the choice of means of communication, the conflict resolution, the control and the coordination as well. It will also improve the quality of interventions in order to motivate, mobilize and guide employees, thereby facilitating the performance of e-leadership (Brunelle, 2009). Consequently, managers have to pay attention to facilitators (Wilson & O’Leary, 2008) of perceived distance, being:

- Socio-organizational:

- the *network structure*, especially with respect to its density, meaning the average strength of the relationship between team members. Network structure has been defined as “the arrangement of the differentiated elements that can be recognized as the patterned flows

⁵¹ Ottobrunn, actually. By being situated close to Munich in Germany, the Ottobrunn location is often spoken of as Munich in the interviewees.

of information in a communication network” (Ahuja & Carley 1999) and is better explaining organizational behavior than formal structures.

- the *structural assurance*, conditions that make things seem safe and fair in an organization (promises, contracts, regulations, guarantees, legal recourse, standard processes, ...). Concretely, it amounts to allowing employees to choose their own work contexts or environments, building natural rewards into the process of performing a task, or encouraging employees to psychologically focus on the pleasant aspects of their work.

- Individual:

- the *openness to experience*, the more individuals are open to experience, the more they are flexible, tolerant, and inquisitive when facing new situations, the more they are expected to express perceived proximity with their colleagues
- the *experience with dispersed work*, the more individuals are experienced with dispersed work, the more they learn to communicate frequently, start tasks promptly because of time-delays, and disclose personal information, the more they are expected to express perceived proximity with their colleagues

Such *facilitating* elements are concretely identified in our exploratory case, in particular through the specific use of ICTs. Indeed, the desire to develop the perceived distance in many ways has given even technology tools for basic management practices a new purpose:

“We have developed a team platform called "CD platform"⁵² with Netquarks, [...] a platform that was initially more administrative, so that (the Senior Vice-President in charge of the Leadership Development and Learning) validates invoices, even he is based in Paris. Now, thanks to it, we of course have the opportunity to assign invoices on that system, and he validates them. But ultimately, we were also asked to make this platform more collaborative, so that we could all use it not only as a pure management tool, but also as social networking, for our team going more and more diverse, located everywhere, and always on the move. So we have allocated a small space for exchanging through forums, a place where we are able to store documents of general interest to the team. [...] So now we benefit this "HR / CD platform", which initially began as an administrative tool but truly became a team platform.” (Manager #7, translated from French by the author)

⁵² Competency Development platform

Perceived proximity between individuals of the team will be enhanced by such implementations facilitating more informal exchange between employees. Face-to-face meetings will greatly facilitate the emergence of a feeling of proximity, and will deeply help to reduce the psychological distance as well. This sharing of experience is supported by specific initiatives, including the development of dedicated events that offer socio-organizational motivations for the reduction of the perceived distance. These events can adopt the professional framework, such as regular weekly meetings organized during the working hours in the offices⁵³, or be organized outside both working hours and regular locations:

“Actually, more and more with (Member #14), we also try and promote exchanges between people through the creation of platforms, or for instance, we lunch together on Thursday: we organize a "Team Lunch" every Thursday here in Ottobrunn”. (Manager #7, translated from French by the author)

We clearly observe that in order to compensate for this perceived lack of connection, our participants advocated a number of communication strategies. Obviously, the most common is to create special occasions for coworkers to come together for conversation and interaction in a face-to-face context. A second strategy is to use technology to maintain or increase employees’ level of conversation with others. In a sense, by increasing connection between them, workers decrease distance. A final communication strategy for increasing connection is to organize or arrange social engagements such as lunch dates. In distributed-work, spatio-temporal environments are fragmented. The main social issue will then be how to develop collective actions in such fragmented environments. In order to develop collective actions, individuals need to benefit from a common space, which is especially created through initiatives listed above.

As a result, the development of perceived proximity became such a priority, that it became a strategic interest. This is especially explained by the specific situation of the observed entity, from the headquarters, which must collaborate with all the divisions of the EADS company. As in many organizations, people from Headquarters are often negatively considered by the more operational populations as distinctive, distant or pedantic persons.

⁵³“We actually exchange more informally together through the common platform than face-to-face: we do not schedule, let's say once a week, a meeting around the coffee machine, like (Manager #2) does with her unit every Monday for sharing more informal issues.” (Manager #7, translated from French by the author)

Developing such a perceived proximity between them through informal exchanges, or the sense of shared or mutual goals benefited considerably the organization and the global collaboration between these diverse structures: it became a key asset for the department in terms of credibility and role of Headquarters.

“We had to improve the credible role of the corporate entity ...I mean, the relationship between us at EADS headquarters, and our different divisions. And therefore, in order to establish this credibility, it is of course all about constant contact to show them that we were there to help and not to force anything, that it is a common project being built together and not another thing that is forced on them. Therefore yes, meeting these persons physically pretty often, trying to knowing them, talking more informally with them, traveling to their locations, etc ...was also actually a way to reduce that distance between us and a way to bring us credibility. I think that's relatively important.” (Member #3, translated from French by the author)

Finally, besides the numerous benefits in terms of communication and identification, the development of the perceived distances provides additional advantage through profit in terms of time-saving:

“I really appreciate a lot to meet my...the people I meet or send email quite often with: just to have met them once in person, just to have the face behind the email, so that I know...I do not know...something personal about her, like does she have a young child at home, or something like a personal relationship because then it is easier to say “I know you are under water, I am sorry to ask you, just embarrassing you once more, but...”. Because without having meting them, it is like I do not know where the problem is. So it is very difficult, it helps to have met them once. [...] Or the same, they know me better, the same way, like I do: I know how to treat them. Because there are people for whom writing an email sometimes is thinking about political correctness, and how to put this in and being polite. And when I know someone, when you know someone, you just say “hey! What is going on?” And it is OK because you know each other! So I think you can save a lot of time without all these political correctness things, when you know someone. Because then, I do not have a problem with someone writing to me and emailing him. It is less tough when he knows me because he can say “OK (Manager #9) knows how to interpret this, no problem”. It is really time-saving.” (Manager #9)

Clearly, we see it with this practical situation: the main concern regarding the management of the geographical distance will consist of reducing the perception of distance between individuals to the greatest extent. A relatively low psychological distance “ensures a higher level of employee commitment, a greater cohesion among members, increases the satisfaction of individuals, facilitates communication between colleagues, accelerates the process of building confidence, allows to create a culture and ultimately increases the performance of workers” (Brunelle, 2009). Whenever it would be possible, people have to take advantage of their interaction for developing a more human relationship between them: as a result, the effect of the objective distance will be replaced by the sentiment of perceived distance.

b) General impact over other forms of distance :

In accordance with these observations related to the management of geographic distance, the importance of perceived proximity has an influence on the management of both temporal and cultural distance as well. The openness to experience, which has been demonstrated as a strong individual facilitator of perceived distance (Wilson et al., 2008), will especially be critical for the management of the temporal and cultural distances since it describes the experience for team members to adapt to requirements of virtual communication (Colquitt et al. 2002). Openness to experience encourages the development of communication processes which are well suited to the needs of dispersed groups. As an example, when faced with a delayed response from a partner who is geographically distant (asynchronous issue related to temporal distance), a team member who is highly experienced would be more likely to react with inquiry rather than judgment. This individual who is open to experience will then preserve the relationship, and not seeking to label the other in a different social category (Wilson et al., 2008), a reaction which helps to significantly improve the management of the cultural distance.

As a matter of fact, both temporal and geographical distance can be addressed simultaneously. As addressed by Ibert (2010), physical proximity is no longer a prerequisite for interaction: more important is the factual accessibility of key actors. This accessibility that is critical in the asynchronous communications between people will be supported by the development of the perceived proximity between them. Through the development of

perceived proximity, which helps to manage challenges derived from the geographical distance (in terms of lack of human interaction as demonstrated above), members finally succeed in identifying together better by sharing more informal characteristics, hobbies, interests, and mutual goals. And as individuals better identify with each other, they improve the fluidity and clarity in team communication, thereby reinforcing the density of the network structure and facilitating the management of temporal distance.

As an illustration, the unit investigated in this explorative case has consolidated its rhizome structure by continually working on driving and motives initiatives in terms of decentralized coordination and these are completed by more temporary events such as the organization of team-building seminars. By reducing the perceived distance between them, thereby better identifying and communicating with the team, the staff succeeded in working efficiently without the need for intervention from their hierarchical supervisor as previously:

“Besides, we actually made several team-building seminars where we really tried to make people getting to know each other a little bit better. And finally, it has started to work so far, and people suddenly started to appreciate working together a little bit more. [...] We start functioning better as a team now and, this is why actually today, we currently succeed in working remotely”. (Manager #4, translated from French by the author)

Since the development of perceived proximity will be beneficial for the accessibility of actors, it will also be particularly useful for the reduction of the perception of isolation (being social or professional) that is one of the main challenges related to the temporal distance in distributed-work.

Affiliation with the management of the cultural distance can also be established, especially through the investigation of a specific domain of the management studies, which is the social geography literature. Contributions from this organizational research stream assume that concepts of distance and proximity have to be opposed in terms of cultural value (Ibert, 2010). In such cases, distance will specify the degree in which publicly shared values, worldviews, or interpretation schemes diverge. The relational distance (i.e., the perceived distance) will contrast units of research analysis in terms of their dissimilar places within systems of cultural norms, in other words, their socio-cultural tension. On the other hand, the relational proximity (i.e., the perceived proximity) will be considered as the common interest

among community members and a precondition for effective collaboration (Ibert, 2010) by reducing the perception of cultural differences in terms of values and worldviews. Consequently, according to the social geography literature, the reduction of perceived distance (or the development of the relational proximity) will be a strong facilitator for the decrease of issues related to cultural diversity in distributed-work.

Indeed, the improvement of the process of communication, facilitated by the perception of proximity with others distributed colleagues, would reduce the misinterpretations that collaborations with several different cultures can introduce. As people identify with each other, getting to know their colleagues and sharing common values with them, the perception of cultural differences will be reduced.

Moreover, better ways of communicating will substantively moderate the conflicts and thus the cultural awareness of any individuals, who will have the tendency to consider the cultural idiosyncrasies of other members as one of the least of their difficulties in communication. Improvements in processes of communication and identification that are introduced by the developed of the perceived proximity will render issues coming from cultural differences less significant and discernible, thereby reducing the challenges posed by cultural distance.

3) The influence of the phenomenon of deterritorialization over distances in distributed-work

a) A major impact on cultural distance:

Cultural distance is an inextricable element of remote-work entities, as the development of such organizations has been increasing with the globalization of our contemporary world. Multinational companies, which require the management of cross-cultural teams, are the best example of this phenomenon. With this in mind, the choice of EADS as the subject of our exploratory case study is not coincidental: EADS is a perfect symbol for the European constitution, with all that it implies in terms of mix of numerous national cultures interacting and collaborating together. The national culture is everywhere in this organization: at its origin, in the upper echelons of its hierarchy, in the day-to-day work. Clearly, the cultural aspect is the major aspect of this organization, which makes this corporation so specific:

“When I have a look at my team, I have one German at the moment, two Frenchmen, and, hopefully a Romanian girl will be starting in January. So, I have four

nationalities in my team⁵⁴ ... I am German [...] and the typical German is not really open to putting himself in the position of another. So for example, when I had...the first meeting with the French community or the French team, my understanding of what was a successful meeting or not was different from their understanding. And there are two ways to handle that: one way is...just to accept and try to understand the other side, or just to say 'I do not like them, they are crazy, they are lazy,...I do not know what'. And I think you need people trying to look on the other side, and to be open for the differentiation there. I sometimes wonder if you asked what the culture of EADS is, would it be German, French, Spanish or English. I cannot really answer. Because it is really a mixture of these, and perhaps it is a special new EADS nationality culture. Because we are all dealing with this complexity of nationalities, and we are trying hard to find some ways to work on it.” (Manager #9)

Although the cultural aspect is a major characteristic of the organization, the conduct of our exploratory case enables us to remark the paradoxical comprehension of cultural distance that is made by our participants. Even though cultural diversity can sometimes be considered as a constraint to team functioning, especially when members of such distributed teams try to communicate and cooperate, our participants recognized this diversity as an opportunity and a “richness” (this word was used by our interviewees a total of 14 times). Nevertheless, although they almost all extol its merits, paradoxically, interviewed members cannot identify or recognize cultural differences between themselves and their counterparts located in another country – as if they had overlooked this cultural aspect from their daily activities as distributed-workers:

“Today, I really think the divisional structure is more important than...countries, or the national aspect. I do not really think...I mean ‘oh, this is because Germans act like this’ or ‘you see, this is how French react, or how Spanish, etc...’. This is not something that strikes me every day. I would rather be willing to say ‘oh, you see that: this is an Airbus perspective, or an Astrium perspective’ ” (Manager #4).

⁵⁴ Actually, three distinctive nationalities (German, French, Romanian), for four different members being part of the team.

“Personally, I really do not sense it (i.e., the cultural diversity in terms of national culture) because it is something totally obvious and normal for me, I mean, I do not really consider it as a difference” (Member #8).

In the end, few of these individuals ultimately managed to identify some global distinctions between national cultures in the practice of their day-to-day remote-work activities. But these people remained mitigated in their argumentation, recognizing finally that such differences might be linked to individualities and personalities rather to cultural generalizations⁵⁵, or asserting that such cultural differences might be identifiable somewhere else within the group, but not in practice within their own entity⁵⁶. Observed participants, for the majority, seemed to have overlooked the cultural differences in their distributed activities, a fact which shows the emergence of a phenomenon of deterritorialization. The topic is not significantly prioritized internally for the internal management of the group although the company takes this cultural aspect into account referring to it especially in its communication:

“I do not know, I mean, if we are talking about diversity in a bigger sense, I think the question of diversity is important, I think...but I do not think EADS asks the right questions when it comes to diversity, because they never ask why they need diversity. EADS works, it makes money, it works as a German/French company, and there is no reason to be any different than that. And if you are going to some of...if you go to Ulm or if you go to Mensing where you got MIS, Defense MIS, these are German companies with mostly German people and everything is done in German. You go to France, EADS France is all done in French, it is a French company and...but they all somewhat work it out, they manage to work it out eventually I mean, you can also find

⁵⁵*“The only thing I have ever learnt about multiculturalism is that OK, you can make generalizations about different cultures, you can say French people are like this, German people are like this, but you are dealing with an individual. So you kind of have to try to take each individual for who they are and not for their nationalities. So...although you can...because many consider that Germans are very organized and that the French really like to do some networking around the coffee machine, but...” (Manager #11)*

⁵⁶*“I experienced differences between French colleagues and German colleagues, but not...not really necessarily let’s say in a way that is somewhat restricting or limiting. With colleagues who are directly in my team, it is very easy to work with them, and there is no cultural difference at all, so I do not think about any differences. It is more like dealing with individuals, with one liking this way of working and other liking this way of working. So there is really no cultural difference with this regard. When it comes to EADS in general, I think that they are sometimes differences in the management style or in communicating or in how to approach hierarchies, or how decision making is done. But in my environment, I do not experience that too much and there are not too many differences.” (Manager #10)*

places where it does not but...For me, multicultural means that you do not think about the culture of the other person, you are just working together.” (Manager #11)

While Deleuze has introduced the phenomenon of deterritorialization and its possible results, we still need to investigate the causes of such a phenomenon: how can such phenomena emerge from this specific situation and context? Several explanations can be proposed regarding the proper characteristics of the observed entity. First of all, the lifecycle of the department can provide a primary element of understanding.

As already mentioned above, deterritorialization is the consequent reverse process of territorialization; a territorialization that consists of a social process for constructing a territory in general. This HR/CD department has been conceptualized by the Senior Vice-President in charge of the Leadership Development and Learning at the creation of the group EADS, meaning that these units have been functioning for a certain time so far. In a primary phase (i.e., territorialization), all members constitutive of the department first start to collaborate remotely by bringing all their own idiosyncrasies and national differences: the social process of creation for a common environment ran at top speed. We could then understand that over time, employees finally learned to deal with their own cultural idiosyncrasies, national differences, and might have accepted them: by considering the exclusion of cultural specificities from their management and not even taking into account these national differences anymore, they all led to the phenomenon of deterritorialization.

“It really comes down to the individual basis again. Sometimes we have people who are very Airbus-oriented and they may be German or they may be French, there is no difference, they are just Airbus. And others they are maybe more French and not so much Airbus so...it depends on the person and maybe it also depends on the length of the service. It means the longer you are in the company and the longer you are in a specific environment, let’s say BU, divisions, sites, ...the more you are blind or the more you focus your view on certain things.” (Manager #10)

“Nowadays, there are French people in Germany, Germans in France...this phenomenon did not happen overnight. [...] Now, we got used ... we got used to it. And so we do not even really see cultural differences, we do not even see them anymore; we do not feel them anymore. But someone who had to, in 2000, July the 11...who had to start working overnight with a Franco-German team, with sort of a trench warfare in

the middle, and thinking things such as "I do not know my what my responsibilities are, I do not know what my future is"...There, cultural differences were exacerbated! I would say that, nowadays, we are in a rotation mode, which has been in place for several years, and everything is going well now. Everything kind of has to be completely smoothed. [...] That is because people, by working together over time, do not see differences anymore." (Manager #2, translated from French by the author)

Some academics however, downplay the significance of culture in virtual teams, most notable being Jarvenpaa and Leidner (1999) who admitted that there was a lack of cultural effects in their study and suggesting that it is part due to electronic based communication which eliminates any evidence of cultural differences, (for example, by removing accents), thereby reducing the salience of dysfunctional instances resulting from cultural differences in virtual teams. Such observation could be consistent with the development of "hybrid team culture", whereby the varying national cultures of a team develop a shared and simplified set of rules and actions that shape the team after mutual interactions, also mentioning that heterogeneity in cultural/national diversity is often characteristic of dysfunctional teams (Earley & Mosakowski, 2000). An Emergent culture substitutes for the mix of various national diversities, and eventually offers a common sense of identity that becomes specific to the team and facilitates their interaction and performance.

A second possible explanation of this relative non-identification of cultural differences by our interviewed participants could be part of their own individual characters. As described above in the general description of the observed entity, these individuals present global similarities in their individual profiles. Among these similarities, we especially observed that most of our interviewees expressed coherent systems of beliefs and a certain likelihood for working in an intercultural management.

Having such an international experience in your background will facilitate your propensity to operate in this very kind of work environments. Conversely, the contrary might be disabling⁵⁷.

⁵⁷ "Especially for the young people, they are used to not speaking in their mother tongue. For example, before I joined EADS, I worked for other companies that were also international, or they called themselves international, but in fact it was rather that they have a purely German team, with a purely German boss, and a purely German structure. OK the headquarters was in France. But it was so German that it was not really international. And EADS is really international. So when you join the company and you are not young...I am not young anymore (smiling), then it is really...yeah you have to learn something, and you have to get used to that. Because I remember well the first time I joined the company, it was an effort for me to speak in English or in French

All of the members of this department are well-educated, and all benefit from studies in an Engineering or Business school – where the internationalization is promoted through classes or exchanges with foreign academic entities, and/or study abroad. Lots of them are even more influenced by the multicultural aspect, by enjoying a multicultural entourage (diverse cultures in their blood relationship, or being married to foreigners)⁵⁸.

Finally, their commitment to such a multicultural department has been the result of their own wish and desire: they did not suffer from multicultural conflict as would have working populations coming from two foreign entities that merge and have to collaborate together overnight⁵⁹. Being part of this multicultural distributed department was a personal choice that they took responsibility for and that they were looking for:

“We actually already are a fairly-open company, for which the topic (i.e., the multi-collaboration of national cultures) is an old subject. But still, it always seems to be a bit redundant, historical, but it is still relevant and current in relation to sensitivities and this political aspect is part of the group since its conception. Regarding myself, it is definitely something I like: it was a personal choice to come to Germany and to work with Germans, I mean, being based in Germany and learned personalities of people coming from all nationalities. This is enriching, and it is also a way to grow faster and get out of his comfort zone such as working in France with French people. And so far, I have really got to like this little special status, which is actually not that

during the day, because I was used to speaking German. And after few weeks, it became like “did I do that in German or in English? I do not remember...”. Then it was normal, so you need some time of adoption there.” (Manager #9)

⁵⁸*“At the origin, there is still actually an obligatory condition: you have to be open, you have to like the contact with different cultures, and it should really boost the individual and make him/her go beyond rather than becoming an issue. And I observed that: all the persons who were exposed to the International were already people like this, who were open, who were stimulated by diversity. And when I looked even personal aspects of these people, there were people responsible for regions that were then divided by market, and actually in their own private lives, they were all either married...French people married with German or Chinese, or with a person from Scandinavian countries: they had already some affinities, a certain likeliness for cultural mixture. This wealth they actually owned, they always had the wish to share it.” (Manager #7, translated from French by the author)*

⁵⁹*“Above all, it is actually a very personal choice. I mean we are not like teams that have been designated to work together, like it was often the case at Eurocopter for example, where, overnight, they said “OK, well, such departments, you go and you have a common goal together. And whatever it takes the things you actually implement, you have a common goal to take into account and target”. Therefore sometimes, it is a process where everyone comes with his/her own culture, department, processes, own way of doing things, and they have to deal with each other. Often it has really been imposed, and you obviously have to appropriate things again: it really represents a challenge”. (Manager #7, translated from French by the author)*

specific at EADS since everyone is working and moving a lot...It really was something I wanted to do, yes, maybe starting in Germany, and after going to another country or coming back to France...I mean, in any case, seeing and understanding differences.”

(Manager #7, translated from French by the author)

While understanding the issue of national cultures and the possible emergence of the phenomenon of deterritorialization in organizations, we do need to consider the peculiar elements related to systems of beliefs and individual interpretations of cultural idiosyncrasies. More than others, these elements can provide relevant explanations for cultural phenomena.

b) General impact on other forms of distance :

Correspondences are likely to emerge regarding the influence of the management of geographical distance on cultural distance. Although Deleuze and Guattari present deterritorialization as a form of disintegration of oppressive structures, other authors including Rodota (1999) use this term more in the sense of the disintegration of territorial structures, making the parallel with issues of types of distance and proximities. Through this consideration, they express a position previously brought up in the analysis of the geographical distance.

As much as reducing distance was essential in a local world, enjoying proximity is fundamental in a global world: we have recently moved from a world constrained by distance to a world where our main challenge is to manage proximities. With this regard, a managerial link between geographical and cultural distance can be established in distributed universes. A few academic studies, including the one of Persson et al. (2009) for instance have already identified managerial techniques that serve to address both geographical and cultural distribution. Improving capabilities to manage cultural differences, promoting humor and openness, developing liaisons between sites and adopting appropriate communications technologies are obviously some of them.

Besides the phenomenon of deterritorialization that is essential for improving the relationships of individuals being geographically dispersed, the reterritorialization that is mandatorily following will above all permit individuals to share mutual values and feel more proximal. According to Deleuze indeed, a phenomenon of deterritorialization is always followed by a

process of reterritorialization. This process of reterritorialization is characterized by the emergence of the divisional culture. The disappearance of local cultural attributes (national culture) gave way to the emergence of cultures specific to each division, and the creation of an "esprit de corps" manifested by processes of identification (sharing of common values) and communication (use of a similar technical language). This feeling of membership towards a group or an entity is the result of an effective management of geographical distance based on the development of perceived proximity and a management through social control.

As people identify with each other, getting to know their colleagues and sharing common values with them, the perception of cultural differences will be reduced. Moreover, better ways of communicating will substantively moderate the conflicts and the cultural awareness of any individuals, who from then on will not consider cultural differences as a major challenge in their remote communications. In both ways, improvements in processes of communication and identification through the development of perceived proximity will make issues coming from cultural differences less significant and discernible, thereby increasing the development of a phenomenon of deterritorialization. The improvement of the management of both cultural and geographical distance can thus be taken as a virtuous model, and this suggests that these types of distance are dependent in the way they are managed. We could then admit that in major cases where the national culture is balanced by the emergence of an organizational or divisional culture – characterizing the shift between processes of deterritorialization and reterritorialization -, cultural distance is at the origin of a creation of social control as well.

As a conclusion to these sections, it is clear that the links between the various forms of distance and their management cannot be neglected. On the contrary, **the management of the three forms of distance needs to be considered as a whole**: this observation can be identified repeatedly thanks to the Deleuzian concepts mentioned above. Consequently, it is critical that the three forms of distance should not be understood in an isolated and individualized way, but rather as requiring global management, especially in terms of organizational control.

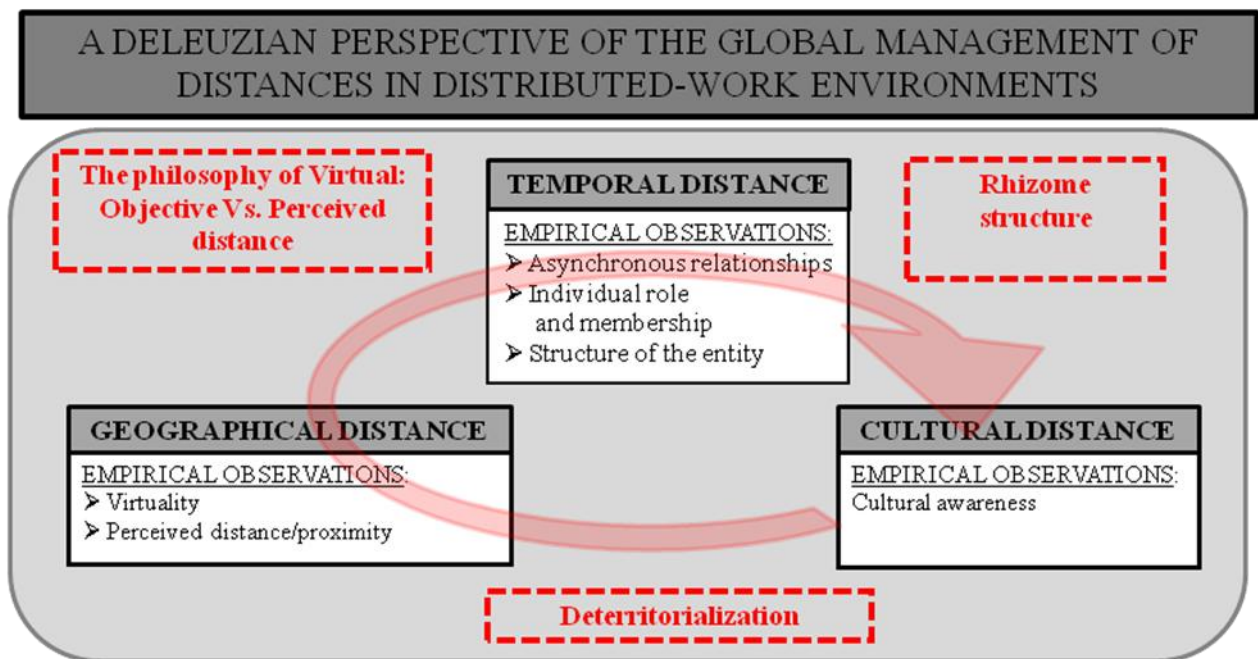


Figure 7: A Deleuzian perspective of the management of distances in distributed-work environments

III) Logic of control for managing the different forms of distance:

As addressed in the previous theoretical part of our research document, the issue of control is truly critical when considering the management of remote-work universes. The main challenge here is that managers can legitimately express the feeling of losing a certain authority over their employees since physical direct supervision is not feasible anymore in distributed contexts. The ability of leaders to monitor team members and to implement solutions to work problems is severely restricted by the lack of face-to-face contacts.

Unsurprisingly, such is the case in this exploratory investigation, where the absence of real behavior control is identified. Team members are relatively clear about that, there is no formal control adopted by the management:

“Pretty often, I go to see her (i.e., his manager) saying "Here, see that: I have finished it". So it is...if you want, it's very natural, it's really natural. Everyone knows what we have to do, we do it, and (Manager #9) looks at it. Really for certain things, she leaves us free at 100%, not controlling it at all...It really is, as I told you, it is very natural. This is... how can I say that? It's not a procedural control at all. There are certain things for which she gives us total confidence, and as we know how to do them, there is no problem. [...] I know what she wants to have a look at, I know what I can do naturally. And this whole process is done pretty unconsciously. [...] I really have some trouble telling you that there are control processes and everything, because everything comes very naturally: every time, we know what she wants to have a quick look at.”
(Member #13, translated from French by the author)

“No formal controls, you know...Actually I had started the job before she started her job, so the relationship is just "you do your job and they see what you have got for results" You share with your manager what you are doing along the way quite naturally, but there is no formal...Monday morning session. (Manager #11)

The absence of behavior control, which is often considered the most simple (managers) but most restrictive (employees) form of control, shows that this issue of control is managed differently in work-at-distance environments than in more traditional physical ways of working:

“One of my team members, she has once a week, a home-office day. So she is not in Munich...she is not in the office, she is working at home, because she says “OK there, the telephone is not there and I just have more concentration” so it was a common

understanding that once a week she would not be in the office. And it takes a bit of trust on my side to believe that she is not at home watching television, or doing her shopping or so on...but she is actually doing her work. And this trust I have to give her. Of course I watch what is coming during the day from her side. Is there an email? Did she call? Does something happen from her side so that I can say “OK, she is working”? So hopefully it works...[...] I would actually prefer to have them with me sometimes. I think the difference is, when I see people, I know they are committed. They are committed to their tasks so they will deliver the results I am looking for. [...] And that is the difference because it is easier when you are in a room, in person with someone and to have a feeling of “is he committed or not?”. You cannot have this one via email because it is so difficult to get the feeling about if he is really in or not. That is the difference.”
(Manager #9)

The three emerging forms of distance in distributed-work have to be controlled in order to be better understood. Each of them requires specific control modalities, which this dissertation aims to identify.

1) Temporal distance:

Again, the establishment of a rhizome structure for the management of temporal distance in remote-work universes has been postulated. The rhizome supports a horizontal mode with decentralized coordination where members are able to reach an agreement without the intervention of a hierarchical person by receiving and transmitting information to and from all stakeholders of the entity. The establishment of this rhizome configuration will necessarily lead to several results in terms of control management, especially with respect to the manifestations of power.

As discussed by Courpasson (1999) and Flamant (2002), we are witnessing a failure of legitimacy of power with a progressive disappearance of its traditional manifestations. In an environment where direct coercion is less and less socially acceptable, and where the complexity of organizations makes it more difficult to control individuals, power no longer corresponds to the ability to influence others in order to get them adopting/prohibiting particular behavior. It rather corresponds to the ability to act on the representations of individuals so that they adopt by themselves the behavior they are expected to. Clearly, in entities that have adopted a rhizome structure, the manifestations of power will no longer be pyramidal but rather more complex as they are distributed in a different way. Manifestations

of power will not be determined by a hierarchical position anymore, being legitimate or not, or on criteria of legitimacy such as the authority, the scholarship origin (*i.e.*, example of the “Grandes Ecoles”), or the time a person holds a specific position within the company.

In a rhizome structure, the power will be based on the perceived contribution by other peers and members of the team and determined by characteristics such as your visibility, reputation, influence, expertise, the amount of information you provide, etc...As such, we understand that the strategic position of individuals is not only assessed in terms of physical distance/proximity to someone anymore, but rather according to their location within an information network and their ability to intervene (Fischer, in Chanlat 1990). Using such a structure, organizations adopt more flexible and decentralized procedures of control, such as self-management, and more interestingly, peer-supervision. Self-management implies that a person behaves in a way consistent with organizational goals without being subject to external controls. With regard to it, self-management practices will be associated with practical activities such as techniques of environmental planning and techniques of time management to ensure that an individual satisfies the requisite organization of the e-worker.

Peer-supervision processes are especially developed within this observed distributed entity. Members create work regulation for themselves for the development of their collaborative projects, since the hierarchical intervention is often limited. As a consequence, unusual cooperating processes emerge, and lead to special behavior by individuals who are not supposed to have any hierarchical power towards others. The most problematic issue with respect to this phenomenon of power and influence⁶⁰ is that it might finally lead to the absence of decision-taking or initiatives taken for the project achievement:

“EADS is a group where the hierarchy is very present, you can see that with the titles and status for instance...Vice President, Senior-President,...you can easily feel that it really means something: from a certain level, the status, the politics really plays a major role. But at the same time, on the other hand, there is also a lack of hierarchy within EADS since you are often required to work with people who have the same hierarchical level as you, who do not have the same manager as you. Therefore, in that case, the best way to work with them will depend on your ability to influence them, and this is not an easy task...How to make sure that people who have the same level as you subscribe to your ideas and work effectively with you? This is something that requires a

⁶⁰ We have here again an illustration of the parallel between concepts of control, power and influence

considerable effort from us, employees, and which is not given to everyone. And if you want, the bad side, the inconvenient thing, is because of that, some projects do not progress fast enough, or some projects do not progress at all. Because of the effective lack of hierarchy and the fact that no one really succeeds in having an influence! [...] I am well aware that a basic hierarchical model, where a leader says "do it" and to whom you actually comply, might not be the ideal model. But conversely, the model where you constantly have to be trying to influence someone, where it is almost tricky for that person to subscribe to your ideas and everything, is not, to my mind, something that provides a certain guarantee of efficiency. [...] Well, after all, I agree that something still remains that makes you develop communication skills, or building social skills, etc ... So it could be fine in a certain way, but you will always finally find someone in front of you that will not stick to it." (Member #13, translated from French by the author)

Basically, such peer-supervision, where ‘manipulating’ others is the key, could be part of management without seeming to actually doing it. This is mainly visible when observing relationships between members of this unit and their partners within the divisions with whom they collaborate remotely (“*We are also here mainly for stimulating them, I mean...we have to be careful still for not losing them, because there are also our customers. So we have to be careful not to torment or bother them, otherwise they would tell us "good bye, you keep on without us"..."* (Member #5, translated from French by the author)).

Self-management and peer-supervision are linked since both will lead individuals to develop employee-initiated controls (Wang, 2008). Employee initiated controls refer to the phenomenon where the employees take the initiative in reporting their work status to their peers, even when it is not actually required. Employee-initiated control is similar to traditional self controls in the sense that both are initiated by the employees and not imposed by the employer.

But they are dissimilar in the sense that the whole process of traditional self control does not involve the manager while employee-initiated control involves both the peer and the employee him/herself. Both of these controls serve the purpose of ensuring that people work responsibly. However, the driver of the employee-initiated control is that employees desire to gain visibility and recognitions of their expertise, taking into account that “the principle of

visibility in space is related to an inherent need in the organization of work, which is to dominate” (Fischer, in Chanlat 1990).

According to our exploratory case, the emergence of such employee-initiated controls can be explained by the hypothesis that members will, in fact, look for a greater monitoring framework: they utilize employee-initiated controls to counterbalance the lack of hierarchical supervision and the disappearance of behavioral control over their work. The aim for employees is therefore to provide concrete evidence of their work, seriousness and commitment to their managers, be they distributed or otherwise:

“I always show her before I prepare all the materials, like presentations, or information sheets, or deadlines, or participants list...And then I always...When she comes into the office normally in the morning because she is there very early and I am too, so I always have like one hour or two in the morning where we are the two of us. So I just step in her office and say “OK I have to prepare this and that” and she normally takes a look. [...] So she always takes a look and says “sure, that is fine”. So I always show her what I intend to do and she “yes”, or sometimes she wants to change something.” (Manager #12)

“Regarding supervision processes, actually, there is no real reporting table concerning what is done daily, etc...Truly, we have some goals, we have distinctive deadlines, and we organize, we adapt to them. Myself, I still leave some feedback every time I have a meeting with my stakeholders to (the manager in charge of the CBA). I always provide her with feedback automatically, in a natural way, either as a report if she is not available or by calling her. I do that spontaneously as [...] we do not have something formalized. I think it really helps to provide certain collaboration, and very close communication in real time.” (Manager #7, translated from French by the author)

Eventually, it is up to managers to appreciate or not such initiatives, and to understand whether individuals who send evidence of their work activity are the most serious and professional, or rather constitute those who feel guilty and have something to prove...

Through these observations specific to the management of temporal distance, we described a shift in the creation and origins of control, from the hierarchical manager to peers or individuals themselves. This phenomenon in part explains the disappearance of behavioral controls in distributed-work since these control mechanisms generated by hierarchical

managers formerly usually tended to identify and stigmatize undesirable behaviors, such as absenteeism, or lack of commitment and participation in work (Ben Naoui Jawadi, 2008). Individuals' incapacity to fulfill their obligations and participate in work achievements are then highlighted and negatively perceived, which can lead to trust decline in the remote-entity (Piccoli & Ives, 2003). Consequently, control processes initiated by peers or members themselves, which at first seem relatively less visible and intrusive, are finally better regarded by distributed-workers. More than just a simple disappearance of behavioral controls, these observations will lead us to question whether behavioral control is reconceptualized by control-enactment processes.

2) Geographical distance:

We have several times in this research document had occasion to emphasize the importance of the network structure in the perception of distance. An individual in a dense network is likely to identify more strongly with other individuals in the group, and to engage them in the frequent and in-depth communication that builds perceived proximity. Following this observation, it is clear that network density has to be intensified, a move that will be effective through the establishment of strong norms within the community (Garton et al., 1999). A relevant way to ensure the development of these norms is obviously the establishment of a social control, as it enables the promotion of common values, beliefs, and philosophy between members of the entity.

It follows from this observation, (Rallet & Torre 2005) that the perceived proximity between two distributed-workers will be enhanced by *a logic of belonging* (two members are close to each other because their interaction is facilitated by explicit or implicit rules and routines of behavior that they follow), and *a logic of similarity* (two individuals are considered as close because they are « alike » (i.e. they share a same system of representations, which facilitates their ability to interact)). These individuals not only share the same language, but also the same system of interpretation of texts, results,...As exposed above, they share a “same identity , [it means] common beliefs and cognitive maps” (Rallet & Torre, 2005).

Now we observed in our exploratory case the use of social control. We know that this form of control, which is implemented by promoting common values, beliefs, and philosophy within a group of individuals who are dependent on one another and who share a set of common goals, is ideal for developing a positive and motivating working climate. With regard to it, observed managers do not hesitate in rewarding and congratulating their subordinates with the purpose of setting-up acknowledgements and mutual aids as a norm for individuals of their unit:

“I think it is just nice to have, let’s say once or twice-a-year meetings with them, to be connected, just for having...OK we are all in the same room, we are “goaling” the same target, and something like that...just to be sure. And perhaps also to...because I am, I think in some cases, I really need their assistance. So sometimes I am happy just to have the opportunity to say “thank you” when I have them in person. Because it is still easy to write an email thank you, and you do it in every email, whether you are really thankful or not, because it is polite, but when you have them with you in a group

and you say “that was great, thank you!”, it is absolutely different. Sometimes I really appreciate that: to have the chance...because they helped me, and I think they should know that they helped me.” (Manager #9)

Through the description of social control processes, a parallel can be established with methods for reducing the perception of geographical distance existing between dispersed members. Perceived proximity is favored for instance by the development of mechanisms such as the creation of a basis for common ground, the reduction of uncertainty, or the engendering of positive attributions when real data are absent. By providing a structural assurance as described in the previous section, the development of social control constitutes a factor motivating the reduction of perceived distance between distributed members.

The incidences of social control in the reduction of the perception of geographical distance between members are corroborated by Amin and Cohendet (2004) who emphasize this issue through their study of what they call “relational or social proximity”, (i.e., perceived proximity). After arguing that it “involves much more than ‘being there’ in terms of physical proximity”, their approach underline the fact that modern corporations can mitigate physical proximity and “achieve relational proximity through translation, travel, shared routines, talk, common passions, base standards” (Amin and Cohendet, 2004). The setting-up of a social control therefore is appropriate for the management of the geographical distance, as part of the development of a perceived proximity it could introduce between people.

3) Cultural distance:

It has already been proposed in this dissertation that Deleuze's cultural perspective, which has been considered by himself as post-structuralist and been highlighted by the phenomenon of deterritorialization, would be closed to the socio-constructivist approach of culture proposed by Vaara. Especially in the sense that individuals' cultural differences only exist if these individuals become aware of them during their social interactions. Therefore, according to Deleuze, because of deterritorialization and the organizational emancipation of territorial constraints involved, distributed-work will lead to the smoothing of cultural differences and idiosyncrasies.

In terms of control management, since all/any cultural differences would no longer be identifiable, the focus of managers would not necessarily be on social control and the development of shared values or norms. As previously observed above, there is less relevance for social control for managing the effects of cultural distance since "excessive cohesion and standardization of team norms and processes may curtail the strategic benefits of cultural diversity and local responsiveness and stifle innovation" (Gibbs, 2009). It follows that the support of shared values of norms is rather relevant to the reduction of perceived distance, as explained in previous sections.

As cultural differences would no longer be managerial issues, managers might instead be able to use simpler forms of control, ones that would operate like formal controls (especially outcome controls, as traditional behavior controls are not suitable in this specific environment (Wang, 2008)). Through the development of this phenomenon of deterritorialization, the management of cultural distance does not require any specific forms of control, since the major sources of difficulties (i.e., the emergence of cultural differences between members) are impacted relatively less. Such entities will provide managers with the opportunity to settle a more minimalistic approach to this matter, especially the development of an outcome control (i.e., desired outcomes or goals are articulated, and controlees are rewarded for meeting these specific goals, regardless of the approaches they develop in order to reach them).

Such observations benefit from practical observations derived from the exploratory case. In which, undeniably, the most common modality of control selected by managers of the observed entity remains the outcome control. By expressing desired outcomes or goals, and rewarding controlees for meeting these goals, managers confirm a pleasant and fair working environment. Two cognitive processes have to be emphasized in consequence:

- the concept of trust, as managers sometimes do not have a single indication of their employees' work evolution between the deliverable checkpoints. Consequently they have to develop a certain confidence to their subordinates, and hope that these individuals really succeed to progress without their hierarchical help or intervention:

“First you have to delegate a lot and then you can just check the deliverable but you need to rely more on people than if they are not in the room. You cannot just walk by and look over their shoulder. So it is really a lot of...I think it requires more autonomy from the people as there is no one around. You can check the deliverable; you can ask that they send a status of what they are working on. If they are working on, for example, a catalogue, you can ask to have an intermediary status or a draft version, draft version 1, draft version 2...”yes that is OK”. But anyway, if you rely on them for several days or weeks, they will know what to do. So it is really more delegation. (Manager #6)

- the concept of autonomy. This employees' skill is necessary for the achievement of such form of control, confirming the forms of self-management required for the understanding of the temporal distance. Distributed-workers are barely left to their own devices between deadlines defining the accomplishment of desired outcomes: they have to be used to these specific situations and know how to handle them without expressing any anxiety or discouragements. Of course, not everyone has this specific ability⁶¹, but it turns out to be one of the primary criteria for hiring individuals for such distributed job:

“We absolutely need individuals who are autonomous. The person has to know what s/he has to do, and has to do that without any issues linked to autonomy. This is one of the most important criteria for recruitment: the autonomy.” (Manager #2, translated from French by the author)

Nevertheless, according to Deleuze, a phenomenon of deterritorialization is always followed by a process of reterritorialization. We have noticed that, in our case, the disappearance of

⁶¹ *“I think for some people it is easier to be left alone on remote, and for some people it is very difficult because they need this face-to-face, they need this “OK you have done a good work!”, they need all this more close attention. And I think then, for these people, it is really hard to work in an environment like EADS, because most of the teams in EADS are spread all over, and there are more remote leaderships than anything else. And I think for people like that, it is really...yeah, it is difficult.” (Manager #9)*

local cultural attributes (national culture) – process of deterritorialization - gave way to the emergence of cultures specific to each division, and the creation of an "esprit de corps" manifested by processes of identification (sharing of common values) and communication (use of a similar technical language) – process of reterritorialization. This feeling of membership towards a group or an entity is the result of an effective management of geographical distance based on the development of perceived proximity and a management through social control. We could then admit that although the management of distance directly involves the development of outcome control through deterritorialization, the process of reterritorialization that necessarily follows will support and will strengthen social controls for the development of divisional cultures. As such, social controls might still be presented as indirect forms of control for the management of cultural distance.

4) Deleuzian perspective on logic of control for the management of distance:

As observed in the previous section, the adoption of specific forms of control for the management of these three different forms of distance is clear. This major observation still confirms the necessity for organizations to develop a control portfolio in order to successfully operate such distributed entities. Practical elements can support such assertion. Of course, the feeling of losing relative authority and the trust that can be provided to their employees could vary individually according to the personal characteristics of each manager. But in general, it is interesting to notice that observed managers have to, in practice, develop a complex and specific monitoring system, one which corresponds to a combination of various forms of control. The best summing up of this observation is provided by the manager in charge of the Program Management HR & Leadership Initiatives unit:

“Let’s say there are formal processes, for example an annual interview where we talk about general objectives and target setting etc. etc....but this is more or less just a framework. Actually the daily business and the entire operational task is made day-by-day, and so if there is anything that I need, I ask them and they deliver to me whatever I ask for. And if there is anything that I want to have differently, it is a back and forth process. So normally I am always available even if I am not here, so I am available by mail or by phone and it works perfectly well. I am not the controller type of manager, so I normally leave my team with a lot of self-responsibility. I say “this is the objective, this is the goal and this is the way it should be done” and then normally they just do it and then we keep in touch and see that we go in the same direction. But not that I want to see a certain to-do list that is tipped and is done or anything on that. I rely on my team and I know they are performing very well, and that they are doing a great job. So I am lucky because of this great team (laughing). There is no need for procedures because they do a great job, they perform, they deliver all the results on time and with quality And therefore I try to involve them as much as possible, to give them all the information that they need, to be really transparent, to let them know why this is needed, when this is needed, so that they really have all the background information. I also invite them to meetings so that they can take the information first hand. So this is really my way to be really transparent, communicate a lot, tell them why and how, and treating them as equal partners.” (Manager #10)

Clearly, the management of remote-universes implies the use of a control portfolio, where monitoring practices are combined for ensuring the global participation of employees. All these control modalities are at disposition for distributed managers, who can use and combine them according to singular capabilities and aptitudes of their subordinates:

“It really depends on everyone's individual capabilities, but it also depends on the manager: s/he can have in his/her 'hat' several systems of management to apply to distinctive individuals. A more flexible kind of control for more experienced people, and on the other hand, a stricter and more severe supervision for those who are less experienced. ” (Member #13, translated from French by the author).

The use of these numerous control procedures also confirms the emergence of what Deleuze called the societies of control as well. Paradoxically, observed members, who are however the object of multiple forms of supervision, seem not to be aware of them, in the exercise of their remote-work activity. This is in partly due to the fact that the outcome control is the only formal form of control that is used for ensuring the monitoring of the observed staff.

Other forms, such as social control, self management and peer supervision are much more informal: their influence is less significant towards individuals' perception of being controlled. And as outcome control is unlike behavior control because it does not involve permanent, standardized, and restrictive work procedures, it finally leads to employees who do not even express and recognize the control mechanisms of which they are the object. As a representation of the emergence of Deleuze's societies of control, the control no longer leads to a physical confinement of individuals but rather exercise a continuous control through instantaneous communication permitted by the numerous developments of ICTs:

“There is no control at all, it works by objectives: it is a management by objectives. There is no control at all. I mean, I can come whenever I want, I can leave whenever I want, I can work from home... I am totally free. My business trips? I organize them however I want: I go, I do not go...[...] We are really very autonomous regarding how we go about our work, regarding the way we deliver at the targeted date, and how we do it. And it is not ...of course, there are validations, you talk about it to your boss, etc...but there is no control at all. With regard to it, I can totally admit that we are fortunate to have such open managers.” (Member #3, translated from French by the author)

“She does not control me actually (laughing). [...] She is not really someone who...How would she control me? Maybe also by setting objectives. She gives me lot of autonomy. [...] I think she just relies on me to do it right and she does not really control or supervise. (Manager #12)

Conclusion of this section:

Contributions coming from this analysis of control management might therefore be valuable, as they recognize the reconsideration of the establishment of forms of control for managing globally remote-work entities. As we can see with the following Figure (**Figure 8**), control forms observed thanks to our analysis based on Deleuze’s work are considerably different from the ones that could be expected at the reading of classic approaches of control in organizational theories⁶². Such distinctive observations can be explained by the limitations of traditional control theories. For this we may thank the constitution of our analytical framework. Such limitations are illustrated for instance by the fact that approaches to control in organizational theories usually forget to address the aspect of temporal distance related to individuals’ roles and perceptions of the structure they are part of. Or they do not pay attention to who is controlling whom, thereby neglecting to analyze the fact that distributed members could be the ones initiating controls and who can have influence over the real motivations of control processes.

⁶² The motivations for and control modalities proposed by traditional control theories have been presented in **Table 2**, see **p.86**

From control modalities expected from traditional control theories...

	Control motivations	Expected control modalities
Temporal distance	Need for control so that employees succeed in better identifying their work/life balance and are not disturbed by personal distractions	Self-control
Geographical distance	Need for control so that managers, who deal with virtuality and the impossibility of implicating direct supervision, can be sure that their employees actually do the job they are expected to do	Formal form of control: outcome control, especially
Cultural distance	Need for control in order to manage cultural differences and their impact on team cooperation, communication and social collaboration	Social control



... To control modalities actually identified in practice thanks to our analytical framework

	Control motivations	Expected control modalities from our analysis based on Deleuze's work
Temporal distance	Need for control so that employees: - succeed in better identifying their work/life balance and are not disturbed by personal distractions - succeed in better perceiving their role within the confusing structure of distributed entities	Self-control, <i>control-enactment mechanisms</i>
Geographical distance	Need for control so that distributed workers collaborate successfully together despite the lack of direct and face-to-face interactions	<i>Social control</i>
Cultural distance	Need for control in order to manage cultural differences and their impact on team cooperation, communication and social collaboration when individuals achieve to be conscious of them in social interaction	<i>Formal form of control: outcome control</i>

Figure 8 - Comparison and shift of control forms from approaches of control in organizational theories to our analysis based on Deleuze's work

With the construction of our analytical framework, we have been able to address and analyze globally the management and control practices of this first distributed entity within the EADS group. As a result, we observed the development of original and unexpected forms of control in comparison with the ones usually proposed by approaches to control in organization theories, observations even including examples of Deleuze's societies of control. Consequently, in order to conclude this first exploratory analysis of remote-work universes, we would like to propose below our analytical framework providing a reconsideration and a better understanding of the management of distance and control in distributed universes (**Figure 9**). Thanks to this useful and relevant tool, we then aim to answer our three research questions, thereby addressing how we can explain (research question #1), support (research question #2), and understand (research question #3) the reconsideration of control within the management of distributed-work:

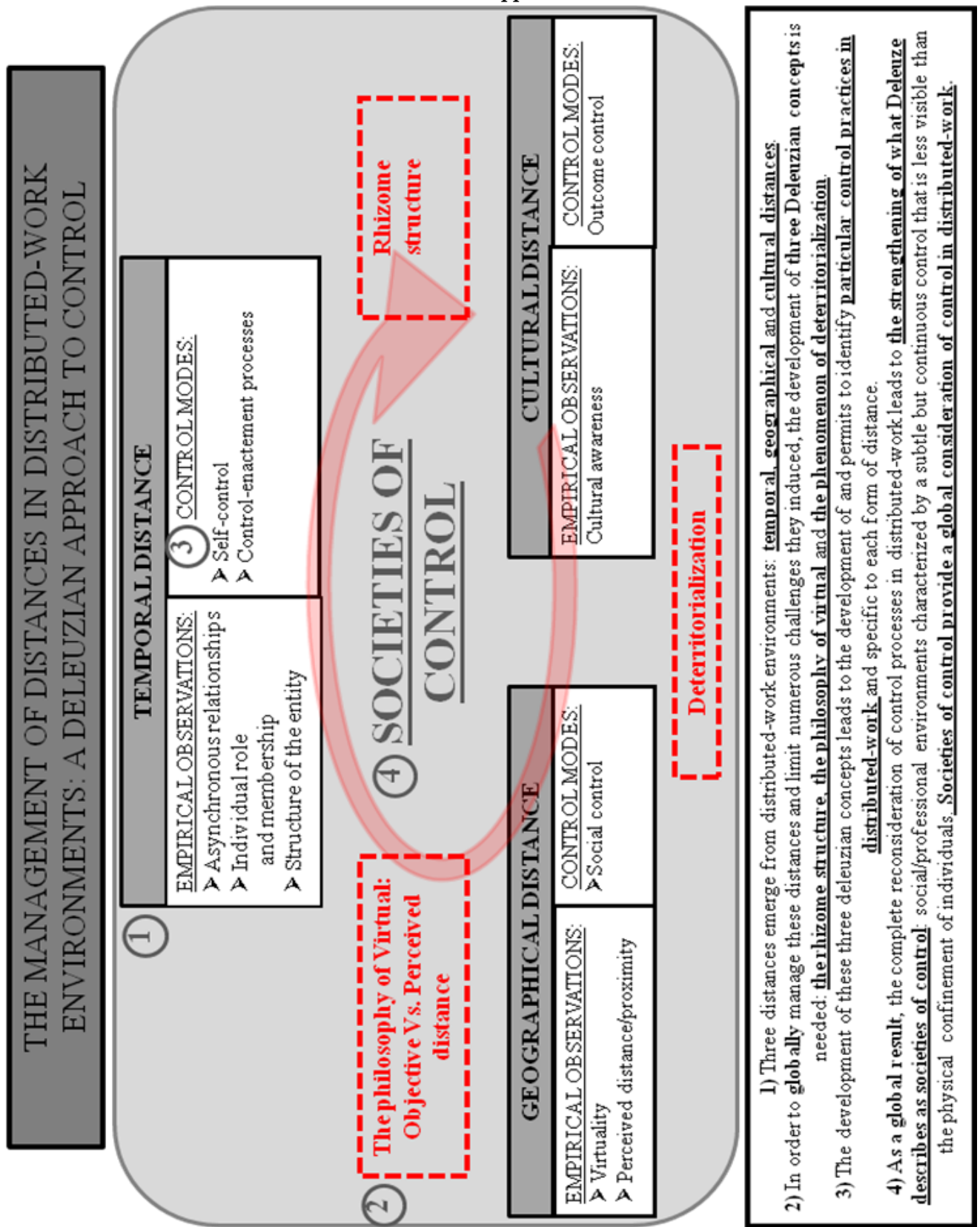
- What managerial changes necessitate the requirement of control practices in remote-work environments?
- What will be the forms of control practices used?
- What do this reconsideration of control means to our global vision of management?

Finally, as a result and contribution of this chapter, and in accordance with our research design influenced by the grounded theory justifying such round-trips between theory and collected data, modifications have been made to the initial themes dictionary table proposed in the Methodological Chapter. This table below (**Table 14**) therefore presents the themes dictionary used for the data analysis of case-studies #2, #3, and #4, and incorporates critical elements emerging from the analysis of our exploratory case. These modifications of our original themes dictionary presented on p.138 are listed below.

➤ Modifications of the original and final versions of our themes dictionary:

The analysis of our explorative case and the reference to Deleuze's works and concepts especially lead us to modify our themes dictionary over time in order to describe the most global perspective of management of distance and control in distributed-work environments. Among the changes that you can observe, we notice:

Figure 9 - Analytical framework: The management of distances in distributed-work environments: a Deleuzian approach to control



THEMES	SUB-THEMES	DIMENSIONS	CODES	DESCRIPTORS
<i>Context</i>	Organizational characteristics		CTXo	Nature of the activity History of the entity
	Individual characteristics		CTXi	Presence within the company Presence within the observed entity
<i>Temporal Distance</i>	Individual role and membership		TEI	Private/Pro. lives balance Decrease of leadership power Decentralized coordination
	Structure of the entity		TES	Dynamicity in lines of responsibility, seniority, authority Non-sequential and non-hierarchical flow and sharing of information
	Asynchronous relationships		TEA	Delays Absence of response Management of time-zones
<i>Geographical Distance</i>	Virtuality	Use of technologies	GEU	ICTs used ICTs characteristics
		Differences with face-to-face work	GED	Advantages and Inconveniences
	Perceived distance/proximity	Manifestations	GEPm	Affective and Cognitive elements for connection
		Facilitators	GEPf	- Individual factors: openness to experience experience with dispersed work - Socio-organizational factors: network structure structural assurance
<i>Cultural Distance</i>	Cultural awareness	Cultural dimensions	CUD	Cultural specificities regarding: Physical and verbal interactions Relationship between the individual and the group Relationship with hierarchy Relationship to rules Relationship to time Relationship to the environment
		Systems of beliefs	CUS	Open-mindedness and Background
		Individual interpretations of cultural idiosyncrasies	CUI	Likelihood to work in an international environment Understanding of intercultural management
<i>Control</i>	Control issues due to distributed-work		COI	Idiosyncrasies
	Control forms	Behavior Control	COB	Work procedures
		Outcome Control	COO	Goal setting process Focus on deliverable checkpoints
		Social Control	COSo	Values sharing and internalization Trust and relationship building Norms Common goals
		Self-Control	COSe	Techniques of environmental planning Techniques of time management
		Control enactment	COP	Peer supervision Employee-initiated controls

Table 15 - New and final themes dictionary table

- The emergence of “Perceived distance/proximity” as a significant characteristic of geographical distance. Indeed, we have observed, thanks to Deleuze and works on perceived distance, that the confrontation between traditional face-to-face work and distributed-work should primarily be considered as a distinction between objective and perceived proximity (Wilson et O’Leary, 2008). As such, the role of virtuality in the observation of geographic distance will be addressed by perceived distance, a concept that fundamentally then needs to be observed in our analysis (through its manifestations and facilitators).
- The consideration of “cultural awareness” as an illustration of the cultural distance, leading to include the dimensions of “systems of beliefs” and “individual interpretations of cultural idiosyncrasies” as additional dimensions to characterize it. These modifications are motivated by our wish to identify the phenomenon of deterritorialization as described by Deleuze and one that perfectly fits into the adoption of the socio-constructivist approach of culture proposed by Vaara (2000, 2005). It follows that: 1) we worked on the assumption that individuals’ cultural differences would only exist if these individuals become aware of them during their social interactions. 2) we agree that the specific population of participants interviewed during our exploratory case (functional employees, highly educated and submitted to significant responsibilities for the most part) and their relative openness to international experiences through education, professional background or their own personal lives, might affect their feelings of cultural distance. Individual characteristics, besides providing specific cultural behaviors, can have an effect on the identification of cultural idiosyncrasies. Modifying the observation and coding of cultural distance with this in mind seemed then particularly significant to us.
- The inclusion of “control issues due to distributed-work”, within the coding examination of control in addition to control forms, appeared as a necessity to address the Deleuzian concept of societies of control. According to the author, control in societies of control is so subtle and so entirely invisible that individuals are not even aware of being the object of it. In order to evaluate the emergence (or not) of these societies of control, we then needed to consider such individuals’ “control awareness” and illustrations of control practices in their day-to-day work.

All these elements that emerged from the literature and our exploratory case finally lead us to modify our original themes dictionary in order to get the most complete but precise

examination of control and distances management within distributed-work universes. We believe these improvements to be some of the contributions of our research work, and wanted to present them at the conclusion of this chapter IV in order to provide evidence of the thinking leading to their modifications.

Transition to the case analysis section:

In the following chapters, the analyses of the two cases made within the Cassidian division, and the confirmatory case made in collaboration with KCI Medical will be presented. Besides the numerous arguments made in the methodological part to justify conducting these additional cases (see the theoretical sampling strategy part for instance), several practical and valuable elements of the exploratory case led us to:

- *realize cases studies within the EADS company, but at another level of the organization and with entities marked by distinctive technical cultures*

The analysis of this exploratory case provided evidence for:

- the importance of the *technical culture*. EADS is a technically oriented company, in particular because of the products the company manufactures and creates, and especially because of the engineering oriented people who staff it. As a result, this similarity in employees' profiles inevitably leads to a scientific culture replication (some interviewees even use the term "hardcore" in order to qualify the technical profile of certain employees of the group) that spread over time and finally overcome all the diverse idiosyncrasies of EADS individuals.

"I think that the core business is technical, it is about engineering tasks, scientific research and development, and technological trends...and I think there you do not have such a variety (of national cultures). Because you are always driven by technology and by science, so I think that if you are looking at the engineering part, there are some basic things, best practices that are somehow quite the same, because they are driven by technology. [...] You know, for EADS, it should be technically-driven, and I think there is no such a big difference. So for EADS, (the cultural diversity) should not be so dramatic." (Manager #6)

- the significance of the *organizational culture*, the analysis of which is one of the main interests driving this research. The corporate entity was the focus of the most general level of the company, with members browsing general topics for the whole group, thereby creating numerous collaborations with all the divisions of EADS. By benefiting from a general view of the company, our interviewees were able to provide their perceptions regarding the differences, if some could be identifiable, between the four divisions of the

company⁶³, as they maintain daily relationships with all of them. And through their numerous comments, it is undeniable that distinctions between divisions exist, in particular regarding their own organizational culture. Obviously, being part of a precise division means something to its employees. For most of our interviewed participants, the organizational culture, more precisely the divisional culture, represents the most significant membership aspect of the entire company over time:

“You have the nationality plus the divisional culture. And this is really challenging in there. I think that, for people who stayed a few years within the EADS...so, let’s say, more than three or four years...then the national culture becomes less important, and the divisional culture more so. Because then the person is engaged, he identified himself with Airbus for example. Then he is an “Airbusian”. And if he is German or French, it is not so much more important. So at the beginning, you have to learn how to handle all this, but after a few years you are just “no OK, I’m in Airbus, and in Airbus we do it like that”. And then you are sticking more to the division. So from my point of view, it is a proportion, a balance: at first, the national culture is more important, and then it is divisional”. (Manager #9)

By investigating two distributed entities within the division of the company EADS, each with its own technical culture (juridical and very engineering-oriented respectively), we aim to delimit the effects of both organizational and technical cultures in the validity of our analyses.

- *realize a case outside EADS, where specific characteristics are globally shared by all members of the company*

As confirmed by interviewees from this exploratory case, while making our investigations within EADS, we dealt with entities from a very engineering-oriented company, with people and members globally using or willing to use technologies. The use of ICTs will consequently hardly be considered as an inconvenience for these personnel. On the contrary, recent technologies are even more used: this is the case for instance of emails, which are usually preferred to phone. It even is an issue of culture characteristic of EADS:

⁶³ i.e., Airbus, Eurocopter, Astrium, and Cassidian (ex-Defence & Security)

“I think that in EADS, the culture is like that: you prefer writing an email, and not picking up the phone. So it is more like...of course, it is more flexibility, because we have a lot of travelling, and it is easy to answer your emails waiting at the airport. I do not know why it is like that but on the other side, it is, for me, when I need some information or an help from the division, I do an email “Dear all” ...So mostly, I write to several divisions and then I say “I hope that you are fine...”, doing some relationship-building, then coming back to my task saying “OK I need your help on that, there are these and these...please give me feedbacks, I need your approval” or I do not know something...Send! [...] And then, when they are not the right person, they can just forward the email to the next one, which is much easier than telling another one the whole story again. [...] Telephoning is not really used from my point of view, because it is always the question “do I disturb or do I email? It is not as disturbing””

(Manager #9)

Basic email is the principal ICT used, since the use of more sophisticated technologies (e.g., videoconferencing or audio-conferencing) is avoided, or even restricted, due to logistical issues⁶⁴ (i.e., the large number of potential participants on a conference call) or structural barriers⁶⁵ (high-security computer servers forbid the use of videoconferencing, in part due to the potentially sensitive nature of the aerospace projects in which EADS is engaged).

⁶⁴ *“For instance for the University Database, a working group was formed with all divisions. Well, in order to avoid costs and expense involved, as we meet with all divisions of all countries...it remains expensive each time...we really need to avoid inviting lots of people. Still, we organize that teleconference. But when you're seven or eight partners, it is very difficult to achieve something, to reach an effective work by telephone. First, when there are more than eight people, we no longer know who is speaking. It is really stupid but you cannot even recognize who is giving his opinion on what. So we must organize, implement. As soon as we speak, we give our name, etc...[...] But it is the same problem with video: as soon as it is a discussion over 3 different sites, it is actually a complete mess, there's always one participant who accidentally logs out in the middle of the discussion...It is impossible” (Manager #2, translated from French by the author)*

⁶⁵ *“Regarding videoconferences, there are always technical constraints that make it very annoying. First of all, I can assure you that a conf-call with more than three or four participants never works: there is always one participant that spend three hours logging in, you cannot hear him/her, sometimes you finally see him/her...Besides, we cannot technically share presentations with all divisions because it is very secure. Astrium and DS , for example, are obviously sites that are extremely secure and that cannot be accessed easily through a conf-call. We really suffer huge technical constraints, and there is also usually a multitude of users: therefore it is impossible, as we are always a dozen for such kind of meeting... (Member #3, translated from French by the author)*

PART III

Empirical examination of our framework through case studies

PART III: EMPIRICAL EXAMINATION OF OUR FRAMEWORK THROUGH CASE STUDIES

The third part of this PhD dissertation treats the empirical examination of our research framework. Thanks to various case-studies, our aim here is to confront our research framework with the concrete situations emerging from reality, so that we can better understand these specific remote situations. The examination of these numerous and interesting insights will be made in two chapters:

- Chapter 5 provides a deep analysis of two case-studies conducted around the three research questions developed in our research framework and our initial exploratory case within the same company. These two cases have been put together as having been made within the same corporation. Results coming from these two situations are presented here, providing support for our research framework.
- Chapter 6 provides the results of a fourth final case study, which might be interpreted as our confirmatory case as it has completely different characteristics from previous cases. Results from this case are then presented differently. Similarities and differences from previous cases are identified, and this is intended to significantly contribute to the contextualization of our research framework.

Chapter V: Case analyses

In this fifth chapter, we seek to compare the conceptual model presented above and resulting from the realization of our exploratory case, to new data coming from two different research fields. As already mentioned in the sections related to the global presentation of cases, these investigations have been made at Cassidian, which is a division of the group EADS. Characteristics of these teams were specified earlier in this research document. Nevertheless, it is worth noting that the same logic of analysis has been followed in both cases throughout the time, in accordance with modalities expressed in the methodological part of this work. These results are presented in the following sections, in accordance with the organization of our analytical framework.

I) Identification and consideration of temporal distance:

Temporal distance is too often underestimated in favor of another way of evaluating distance, that is to say geography. However, even though the global consideration of distributed-work is generally place-based, it nonetheless incorporates a temporal dimension, wherein time is used as proxy for physical distance (Kolb, 2007). But time is not just a proxy for spatial distance: it also represents another dimension to distance, which is synchronicity. For that reason, temporal distance is an issue when considering the management of distributed-work.

As explained in the first chapter of our work, it will in practice introduce issues regarding individual membership and roles within the structure. With regard to it, distributed-workers interviewed easily recognized the possible issues that could emerge from their day-to-day work. Their organizations are characteristic of distributed entities, since they transcend traditional organization boundaries:

“Well you’ve got... this must be unit. You’ve got country, then you’ve got division, then you’ve got corporate, and then you’ve got this very big matrix approach. [...] And reporting from the security perspective is difficult because if I find an incident, I have to report it to my local security manager, to my business security manager, then to my line manager, depending on how bad it is, then up to the chief information officer. Five or four people to report one incident depending on the severity, and that is difficult.”
(Member #2 - Case Study #2)

Although this relative fuzziness in the identification of roles might consequently be problematic for individuals from these distributed entities, issues of structure and membership represent a critical concern for their hierarchical managers as well. Obviously, these managers are in the need of concrete solutions in order to take into consideration such practical problems and facilitate their day-to-day management:

“What I’m trying to do is to set a culture that has a... not a culture, but set a framework within my organization, where we can just add people and build them into... It is very difficult to try and get some structure because it is not just my team trying to get structured, it is the IM organization to be structured. If I can get structure and they do not, they create chaos. And then I cannot work. But this is why I like structure. I know what I want and this is what I expect”. (Manager - Case Study #2)

While issues related to individuals’ identification and recognition are obvious, these so frequent and undeniable problems lead to difficulties regarding communication between distributed members, since their expertise and visibility are not clearly evident within such complex organizations:

“It’s not always simple to have people communicating directly with each other. That is the hardest part. Why? Because you already have to know people’s particularities. But this is not always obvious. Because people do not express themselves automatically and you have to find them out, find out who key people are, who will be able to...and this is not an easy task. And moreover, you have another problem, which is the identification of this expertise.” (Member #1 Case Study #2, translated from French by the author)

With regard to such specific observations, differences between virtual and traditional ways of work are unquestionable. Improving your visibility as a unique member of an organization will be relatively problematic when working at distance because of the loss of physical sight. For this specific concern, meeting individuals personally becomes necessary:

“It's important to meet people, to be visible. Because you can send an email, but no one will respect you. Even if I send a mail on behalf of ‘the Director of something’ ... When you are at a meeting, you can see how others view a particular person, this person, or that person. You are there, you participate, and you can see that. It is a bit like a royal court, it is the same. A court...the court of King of France, or a particular protocol. It is exactly similar to a protocol. But through email, you do not have this protocol.

When in a meeting, you have it. You can see who is important, you know who you have to be friends with, etc...” (Member #1 - Case Study #2, translated from French by the author)

Suffering from a lack of visibility still is a critical concern for distributed employees: Interestingly, these feelings are among one of the few negative perceptions of distance gathered during our overall investigation. The fear of social⁶⁶ and professional⁶⁷ isolation is persistent:

“I will only let myself work at home one day a week. Because I think one day a week, if I have a lot of non-interactive work to do, then it's fine, you know, it saves only an hour of travel-time. I can, you know, I can perhaps try to collect my children from school or something which I think is important. But I limit it to one day a week because otherwise, again, I will become even more invisible. Because if I am not physically here at my desk in the UK, people assume I am in Germany. If I were never here, they will forget that I exist. So it is very important that I am seen in the office a few days a week in order to remember that I still work here. That is a rich and strong concern to me...[I need] that all the hard work, all the influence, all the benefits that I bring to Cassidian as a group are recognized in the UK: that is where my pay and my career are established. So that is a really strong concern for me.” (Member #1 – Case Study #3)

⁶⁶ *I.e.*, absence of social or physical interaction with their colleagues.

⁶⁷ *I.e.*, fear of being neglected by hierarchical managers in favor of other employees who daily, physically interact with them, regarding issues such as work assistance, or career's promotions, etc...

“All my work happens in Germany. I work for a German boss, I work on international projects. Mostly the project is run from Germany, [...] so from the point of view of my reputation’s, the carrier’s point of view in the UK, going back to my point that the administrative process is different in the UK than in Germany, it is very difficult for my impact and my benefits in the UK business to be understood. So it is possible that all my work could happen unnoticed because my pay and my career are managed from the UK business, not by the Germans. As much as they think they do, it is not. So yes, there are disadvantages in that my... that I am almost invisible to the UK business. You know, what I do. I do not have much indirect interaction with my boss. You know, I cannot work and talk to him, and start a conversation about lots of different topics. I have to collect my topics and discussions, and then arrange a thirty-minute meeting, which I would much rather do face-to-face than on telephone. Especially for personal discussions.” (Member #1 – Case Study #3)

Indeed, the main problem consists in the fact that such concerns about lack of gratitude have already come true for few interviewed members, thereby heightening their fears about how distance creates professional isolation. The following observations confirm that managing an individual remotely is completely different from having a traditional hierarchical relationship:

“I have two bosses. With the first one, it has been very, very funny since when he arrived, he imposed annual evaluations and assessments. [...] But my French boss was also there attending this interview for evaluation. And thus we made a joint, collaborative assessment. The interesting fact is that both had a very different evaluation. [...] Their evaluation of my success was viewed completely differently by my two bosses. Why? Because one was on-site with me, and the other was remote.” (Member #1 - Case Study #2, translated from French by the author)

Facing these managerial challenges from the emergence of temporal distance between individuals, some initiatives have been proposed in order to facilitate the management of these entities. Through the development of most of them, we recognize basic elements of the rhizome structure.

Among them, we have noticed the significant decrease of leadership in the management of these teams:

“As a member of this team, we are here to participate in the project achievement, and once again, this is why if you talk about control, there is obviously no direct hierarchy between a project manager and us. Let's say that it is rather a functional hierarchy. The most important point is that the project got answers to its questions. [...] There is no possibility for a hypothetic hierarchy to exist since we are all on the same hierarchical line. In comparison to others, there are no such questions about that. We do not feel that we are more or less exposed than others: we are all exactly on an equal footing.” (Member #2 – Case Study #3, translated from French by the author)

Clear manifestations of hierarchy, status or seniority seem to be avoided in order to create a quiet and easy-going atmosphere within the entity. This shows that such individual characteristics are less influential in remote-entities (Ahuja & Carley, 1999). Initiatives discussed above show the desire for decentralized coordination of the work activity, while encouraging the involvement of employees (which is especially highlighted by the prevalence of the notion of autonomy, see the following section on control). With regard to these practical elements, one might therefore question the impact of such managerial policy on perceptions of professional isolation expressed by distributed-workers. Although we could imagine that employees appreciate a certain smoothing of their superior/subordinate relationships, clear manifestations of hierarchy are sometimes expected by these individuals: it is for the instance the case when distributed-workers are facing very sensitive issues. At that moment, they expect their hierarchical manager to intervene in order to solve this specific problem:

“Conversely, hierarchy plays obviously a certain role when we are dealing with very specific topics. Actually, when I say very specific topics, it is not a technical problem: it is rather a sensitive one, that is to say issues that are very sensitive. Then, we ask our manager to intervene, to be in position of ‘fronting’, to be in the front line, or even escalate the dispute... It means that we have a typology of particular issues that will be resolved by the hierarchy. Therefore, for these specific questions, in these circumstances, we call our manager. And actually, it is sort of a reflection process. It means that it does not even consist in a case over 10, because, once again, we are extremely autonomous, as we know the organizations very well and are all aware of each others’ positions, and we do not interfere with other missions or other particularities.” (Member #2 – Case Study #3, translated from French by the author)

We could also expect that subordinates are willing to see managers playing their hierarchical role when dealing with work assistance, or career issues: When this is not the case, these employees legitimately express feelings of professional isolation.

This policy of decreasing leadership and decentralized coordination will obviously foster collaboration between members of the team, eventually showing a good example of the rhizome structure. The purpose is to provide positive signs and evidence of the involvement and the role of any individual within the team: every worker needs to be aware that his contribution can be useful to others, regardless his/her hierarchical position:

“Nowadays, [the work] is extremely collaborative. Finally I cannot see work that is ... well there is individual work, of course, because every day we work each of us from our side and we are working on an individual basis. But we cannot do anything without others. It is not possible anymore. For that reason, the work is highly collaborative.”
(Member #4 – Case Study #3, translated from French by the author)

With these various observations showing a decrease of leadership, decentralized coordination or improved and ubiquitous collaboration on the team, we illustrate the development of a rhizome structure in these observed entities. Through the establishment of such a unique organization, managers and remote-members express their willingness to overcome managerial challenges caused by the emergence of temporal distance, especially with respect to the identification of membership and role within the structure.

II) Perceptions of geographical distance:

In our society today, physical office-based work has been the norm for decades. The introduction of remote-work has considerably modified individuals' conception of management, especially through the geographical distance established between them. Employees had to collaborate together while being geographically far from each other, a context that limited their interaction, and managers expressed a certain fear of losing control over their distant subordinates.

We can clearly say that managing at distance turns out to have particular characteristics. Hence the fact that managers are still reluctant to engage in it. Most of the time, this concern is due to control issues, with managers having difficulty trusting employees working far from their direct supervision. We still see this in our interviews:

“How do I change something if I do not know what they do? This is why, every week, they generate flash-reports for me to look at. It is just a one-sheet paper with issues they are working on in order to give me, so that I can read it. And if I have questions I can telephone. [Besides], you can never take away the personal meeting. I am sure you know about the iceberg model. You know the iceberg model? We always deal with the twenty percent above the water, and less with the eighty percent below, where we have issues with. And this is why we ... the only way you can trust our eighty percent is meet face-to-face. It causes me problem. I want to engage my team more but you cannot do that to... this is due to workloads and pressures and constraints that we have, which disturb my control.” (Manager - Case Study #2)

Interestingly, the perception of geographical distance seems to be different for remote-employees. More precisely, this geographical distance do not actually introduce any tensions or anxiety for them:

“I don't see the distance. I only see... I feel very comfortable with the relationship that I have and the way that [my colleagues] are geographically away from me. It is not like they are in, I don't know...like being in Australia or something.” (Member #1 – Case Study #3)

Such observation is relatively interesting insofar as geographical distance is normally the major and most expected manifestation of distributed-work. Regarding their day-to-day

interactions, a few individuals even mention that geographical distance would be less significant for them than the two other forms of distance:

“So, distance, how do we measure it? Again, simply by the fact that we all respond to each other on extremely short notice when ...Today, measure of time is more important than measure of distance. The fact that whatever the question we address...and, conversely, when you have colleagues asking questions, I answer spontaneously. So we are all aligned. There is no distance at all, no ... and here is what I told you earlier: even though we were on the same geographical site, it would not work any better. Maybe we would observe certain differences regarding cultural or personal aspects; we would more appreciate more the fact that we can sometimes have a drink together, in the evening, etc...This kind of activities would certainly happen more naturally and more easily, but among us, with respect to the main professional goal of our projects, it does not change that much.” (Member #2 – Case Study #3, translated from French by the author)

If we analyze more precisely this statement, we can see a paradox emerging, a perception that is, however, often visible when examining remote-entities. With the development of new and advanced ICTs, remote-users are more and more numerous in claiming that collaborating remotely is not an insurmountable handicap, laying down the importance of geographical distance. But meanwhile, most of them are bemoaning the fact that human relationships with their colleagues have been reduced.

That is the reason why they express a certain desire for obtaining an improvement of these human interactions. Developing such human, affective relationships is however extremely valuable since it will enable the reduction of the perceived distance, and thus make individuals even more confident to collaborate with their dispersed colleagues. Finally, many interviewed remote-workers have succeeded in developing a relationship with some of their colleagues, even though these individuals have been geographically separated:

“If you want, regarding such kind of things, what are the social ties that I had with my colleague the first time we met together? It was in a meeting. I did not understand what she said. She had a completely different approach from me. I did not understand. And then, little by little, we started meeting regularly [...] there were exchanges, and the level of trust between us started to grow, despite cultural differences. We communicated. Then, we had dinner once with her husband in a

restaurant, close to the Danube. And therefore, thanks to that, we have developed together a completely different approach.” (Member #1 - Case Study #2, translated from French by the author)

Obviously, as expressed in the preceding citation, physical meetings are valuable elements for the construction of such relationships, eventually leading to the reduction of the perceived distance between remote-workers. Especially since physical interaction facilitates the sharing of private or informal discussions among collaborators who evoke personal topics and interests. Conversely, tools like videoconferences do not necessarily permit this kind of interaction:

“You have something else that is also particularly important in a conference-call. Well, let’s say that you are in a meeting with everyone around the table. After one hour of discussion, coffee-break. Everyone has coffee: ‘You want a coffee?’, and you talk about something else, something that you would not have said during the meeting for instance, but that you would have agreed to tell near the coffee machine, being face-to-face with the person. Thus, it is sort of you continue to work during coffee-break. Or during lunch. [...] When you are in a conf-call, you do not have any coffee-break. Therefore you do not have any intimacy with others. The only thing you can do is phoning afterwards, but it is only once the conf-call is over.” (Member #1 – Case Study #2, translated from French by the author)

Nevertheless, physical meetings cannot be extensively organized. First of all, obviously, for financial reasons, especially taking into account that remote-work has also been developed within these organizations for generating savings. For these reasons, physical meetings are sometimes limited⁶⁸. Besides, travelling to a specific place for meeting your colleagues/managers face-to-face is particularly time-consuming and therefore not always conceivable:

⁶⁸ *“The problem now is that... for example, we just received a note from the CEO of Cassidian, saying that travel has to be limited until the end of the year in order to save money. Therefore, during this period, starting now and for about three months...During three months, you no longer travel, so you do not have a clear social relationship to develop with the team, with the group. And inevitably somewhere, everyone is going to close up into his own shell...everyone will uniquely do their job, and that’s all: you do not have any social relationship with the group anymore.” (Member #4 – Case Study #3, translated from French by the author)*

“And sometimes I might just, you know, I might make [Manager – Case Study #3] aware that I have to compromise on something, and cannot normally do the travelling. So I say ‘I do not have to come for the five next weeks to Germany, I cannot do it because my children would not recognize me when I come home’, [...] which means my impact will be reduced and it may be a question mark about my participation in the project. But that is the position I have to take, and so I take it and I keep my boss informed about the decision I have taken.” (Member #1 – Case Study #3)

In order to compensate for this reduced use of physical meetings, the company tries to develop specific collaborative tools that enable a simulation of such physical meetings. A symbol of this willingness for virtual collaboration is illustrated by the DS Live technology, which is a new system implemented by the company EADS in order to facilitate the management of its remote-entities. As a non-participant observer, we for instance had the opportunity to attend a meeting of the IM Security team where DS Live has been used during a whole working-day. Such ICT tool gives solutions for reducing most of the issues related to the emergence of distance, as can be seen by someone using it:

“The different means that we put in place in order to discuss and work in this global environment? First, we work a lot through videoconferences with a tool that is called DS Live: it actually allows us to share documents on the network, on our screens, and we have the possibility to contact our correspondents so that they view these documents on their computers at the same time. This actually enables us to have the tool on one side - it means that we can view the document, and have a videoconference on the other side, where a dozen of individuals are connected and can interact together. We are all connected on our PC with the document and also connected thanks to the phone. So these are the means that we implement: a tool that enable us not to always be travelling but still, to remain extremely efficient because...well, being extremely efficient together in the sense that we do not lose time in traveling and going to a meeting in Germany or in France anymore.” (Member #4 – Case Study #3, translated from French by the author)

Anyways, since physical interaction is still fundamental to reducing the perception of distance⁶⁹, they are even supported by managers themselves. They even go further, regretting for instance that their initiatives to improve human relationships and reduce the perception of distance within their team are not globally followed by the whole company:

“When we present at meetings, with two of my French and German counterparts, they are very polite, very nice... ‘welcome, thank you very much for being present today’; and they are talking about business, bla, bla, bla...presenting ‘this is this, this is this’...that’s very nice. Are they engaged with those people? Take it to the next level, get personal with the people... ‘hey, my office-door is always open, if you want to come and talk to me, come on in’. ‘Hey, don’t email me, pick that telephone up, and phone me’. Make it personal. That is the way I deal with it: I like to think I am approachable. I have an open door policy. Normally, people exercise that really but... I have, you know...so I have got in my plan...like I said, to visit all the different sites with the people. So if there is someone busy, doing something, well... ‘do that, ok’. I’ll pull up a chair and have a conversation with him ‘Hi, that is interesting, what are you doing? Just talk to me about your work’. Try to connect with the people. This is where I think we are failing. [...] It is all an issue of proximity”. (Manager - Case Study #2)

Through this policy, we also have a concrete illustration and explanation for the decreasing leadership enumerated above. Indeed, employees eventually develop a special relationship with their hierarchical managers:

“Personally, I don’t feel that way at all (refers to tensions due to hierarchical levels). It means that my boss is rather a colleague to me than a leader. And I guess that he considers me the same: more a colleague than being my boss. It basically means that the human relationship is completely different.” (Member #4 – Case Study #3, translated from French by the author)

If geographical dispersion does not seem to be a massive challenge identified by our participants, it is because the very few physical meetings that are organized with these groups

⁶⁹ *“In the past, we met once every three months or once every six months. We meet more often now. So obviously, relationships between us have tremendously improved. Nowadays, we can see that our relations are very good, and if we want to maintain them, we must continue to meet frequently.”* (Member #2 – Case Study #3, translated from French by the author)

are a clear pretext to develop and improve the quality of human relationships between individuals. Managers even support such activities, and this shows that reducing the perception of distance between individuals remains a priority of their management. Some effort has still to be made so that this managerial policy can be officially adopted by the whole entity. Such initiatives are differently developed by the various remote-teams of the group: we notice for instance that unlike the teams constitutive of Case-Study #1 and #2, activities to develop human relationships in the Architecture Management Team are exclusively made within a professional framework (informal exchanges facilitated by the organization of professional meetings, but no informal lunches or so on). More importantly, these benefits, the development of complicity and affect between individuals is often directly considered as a source of performance in itself⁷⁰, a development which proves that remote-members are open to such managerial practices enabling the reduction of perceived distance.

⁷⁰ *“I think that, in the team, we are all very very proactive at sharing information. So I think actually...it is a very subjective position....but I think we are probably the best international virtual team within IM (ndlr: the IM organization of the group EADS). Because we are really full of people who are good and open, honest, and our relationships are good. That is my personal point of view but...It is very subjective.” (Member #1 – Case Study #3)*

III) The consideration of cultural distance :

On both entities observed for the realization of Case Studies #2 and #3, cultural diversity can be easily considered. Three nationalities can be identified: French, German and English people being almost equally represented. In such a specific environment, difficulties due to cultural differences will mostly be related to communication between individuals. Of course, misunderstandings due to the use of English, which is not the mother tongue of most people within the teams, are the perfect illustration of this issue⁷¹. These difficulties in communicating, in understanding your colleagues, and in making yourself understood, will inevitably highlight cultural differences:

“When you start talking about a topic on the phone with someone who might be of another nationality, you will have from both sides ... first of all, we have a common point, which is the fact that...if I take the example of a German or French person, we have a common point, which is the fact that English is not our mother tongue. So both of us is going to make an effort in order to communicate in English, in order to be understood by each other. [...] But unfortunately, if we cannot succeed in communicating well , if we do not succeed in saying what we actually think, most of the time, cultural issues will emerge. [...] This is when we can have particular attitudes or adopt positions that could sometimes be misunderstood. Not because we do not like or are angry about each other, but simply because we have different perceptions with respect to our cultural references.” (Member #2 – Case Study #3, translated from French by the author)

Difficulties due to the management of various cultures are also remarked by managers, who say that they strongly have to take into consideration such differences all along the development of the project:

⁷¹ *“What we have learnt from our status in the past was that we did not meet enough, we did not collaborate enough, we did not share good experience...Because what happens in this team is that we all worked in Newport, in Munich, in Paris, and what we found is that they tend to act for themselves. I asked for it but it is very difficult to get them to collaborate. Why don't they collaborate? That is... we find that their level of English is different...the language barrier. For instance, we found that one of our French team members, a very good security...technical IT security officer...her English is not so good. So she is afraid then to pick up the telephone and talk to her colleagues. You see? Because of misunderstandings: this is one of the biggest things you do have in our complaints: misunderstandings.” (Manager - Case Study #2))*

“It just makes...as an international manager, it takes twice as much, I find, to do things. You know, because you are dealing with this culture, you are dealing with that culture, you are dealing with Spanish culture...So you get them thinking...’Oh gosh, I need to build it’. If you are building a project, you need to build it twice as long. Because you have to socialize it, you have to discuss it and explain it. You know, in Germany, I just say... I present it once. In France, you have to discuss it, to analyze it, you have to go in a more detailed...you have to talk to several more people until you get the fire, you know. I am not saying it is wrong but you need to be aware of this. And I found that, very often. And sometimes you lose patience.” (Manager - Case Study #2)

In these two case-studies, we observed that the feeling of distance was slightly different from that of our exploratory case, where the phenomenon of deterritorialization was important. In both IM Security team and Architecture Management team, the consideration of cultural differences is more mitigated, especially with regard to the issue of different languages, and challenges in terms of communication: distance really is problematic⁷². For these entities, a few cultural particularities are still present and are more difficult to understand. These differences with our exploratory case can be explained by the characteristics of these specific entities. Both divisional entities from Cassidian have been created more recently (entity #3, the Architecture Management Team, is only one-year old) than the HR/CD unit, which was created at the time of EADS merger. We could assume that these entities are currently evolving into a different phase than that of deterritorialization, and rather correspond to a phase of territorialization where a few social processes are still progressing.

Nevertheless, a few elements of deterritorialization yet start to be seen globally in these two entities , mainly because of the individual characteristics of their members. Among these individual characteristics, the notion of open-mindedness is extremely significant⁷³.

⁷² *“Myself, I mean, I have trouble with foreign languages... I learned English a few years ago when I came to the company. The issue of language through phone communication, but it's horrible: IT IS HORRIBLE! Because while working face-to-face, well uh, I have plenty of other ways than talking to express myself. I can make drawings on the blackboard, I can mimic...finally there are plenty of other opportunities. From the moment I want to talk, by speaking English, in order to say the thing that I want, I will use uh...two or three sentences in order to finally apprehend the concept”.*

⁷³ *“It is also an issue of open-mindedness. A person who will mention a certain number of things that are related to the last World War...this will not help his relationship with Germans. Personally, I spoke about it with my German colleagues, in a very open way, and it did not cause any*

Here, the parallel can be made with the peaceful and collaborative environment that is supported for reducing the perceived distance: if initially the atmosphere is relatively quiet, individuals will have the possibility to talk about possible cultural tensions without animosity or excess. Thanks to such exchanges, they will better understand their own cultural particularities, and then develop their own open-mindedness, and will eventually collaborate without being subject to challenges coming from these cultural idiosyncrasies:

“You might think everyone speaks English, and within a business culture, it is easy to operate. But you have to be aware that there is always the underlying culture and that things are different, and you have to be sensitive to that when you work in that environment.” (Member #1 – Case Study #3)

As already mentioned above, we noticed that the major part of this staff benefited from a relative experience within the company EADS. More precisely, most of them were experienced people in intercultural management, a fact which helped them and still does in their day-to-day activities, as one of them explained:

“Regarding the cultural aspect, it turns out that most people in the team have already worked with international issues for a certain time. And it is easy to notice that adjustments between us happen extremely easily: exchanges between us are made relatively easily.” (Member #2 – Case Study #3, translated from French by the author)

Having previously worked in an international environment certainly helps with developing awareness of these unusual contexts, and thus, your open-mindedness.

Finally, it is obvious that working in such an entity will be favored by your willingness to be part of it, rather than by being forced to do so. Investigating these two particular teams, it is clear that individuals were willing to work in an intercultural environment, and were aware of this special environment before applying⁷⁴. One can see from all this that several

problem at all. Yes, I think that it is also a question of open-mindedness. , A human being may or may not have an openmind. He/she can be in search of a positive rather than negative human relationship. Thus, really, it will entirely depend on the individual.” (Member #4 – Case Study #3, translated from French by the author)

⁷⁴ “Personally, it turns out that I wanted to join such a company, with a significant international position. I have looked for this position for myself, personally, with regard to my career. I found it and I can tell you that I am really pleased. [...] It turns out that, within our team, we are all extremely happy to evolve in an international environment. [...] Therefore, we are all fairly open

members of both entities recognize the initial development of the phenomenon of deterritorialization:

“I do not think it is a cultural issue, it is more individual. You know, of course, there are these cultural areas...This is why I think face-to-face is important because you will know from these individuals how they approach things. You do not immediately think ‘ok, there is a French man coming through the door, therefore, I will speak or act in accordance, because he is a French man’. You do not look at nationalities: this is a wrong thing. You do not think about culture, you think of these persons and what they have to deliver. For me it is like this: I do not generalize. (Member #2 – Case Study #2)

As a symbol of this gradual disappearance of cultural considerations, our EADS participants have developed their own specific language lacking in local idiosyncrasies. They do not use strict and correct English, they actually use an EADS English:

“It's not too much different in daily working. It is about having awareness. So, on the surface, because the language is English, in our country...The core language is English. And all of my colleagues speak that, at very good levels. So it is easy to forget cultural differences. Yeah, so it is... I can work here, I have a conversation in English, you know, it is a really fluent conversation, lot of humor... And the thing is that, actually, there is this kind of... It is not UK, it is not French, and it is not German. It is virtual culture that we have. Probably very American influence, quite informal, good discussion. And you can think that there is no cultural difference.” (Member #1 – Case Study #3).

“I have done German courses, and after a month of German, I understood better this ‘Genglish’. I can immediately understand it now. For example, the key word, or two key words ‘argumentation’ and ‘prolongation’: they are not English words; they are not regularly used in English. Rather, ‘I have an argument, you’ve argued, or you argue’... Or ‘prolongation’ when ‘you have a delay’ or ‘it has been delayed’: never

regarding our cultures, our ways of doing things, how we operate, our thoughts, etc...Of course, we all have our own models of education, because they are rooted in us and they are difficult to remove. This is true for each of us, and for every country. [...] What is important is the fact that we have succeeded in identifying these differences, to understand how they might eventually lead to issues in relation to our activities or relationships.” (Member #2 – Case Study #3, translated from French by the author)

'prolongation'. And I have been trying to look for thesaurus to understand the words but I have not found them. And we just do not know where they come from but... The thing is French... Our English here is just a mix of French and German and Latin anyway.' (Member #2 - Case Study #2)

Globally, our participants will concur with members of our exploratory case that they all think that working in such intercultural environment is definitely a chance and an advantage. At least, at their organizational level. Because, in a common way, they all admit that things could be completely dissimilar at a higher level of hierarchy within the organization:

"Personally, it is extremely beneficial. Afterwards, when you further look at it, it means when you look at it higher in the hierarchy, you can see that there is a political aspect that is much more present.

[At our level] you will have relationships with other people, with other colleagues, human relationships ... it will be extremely nice and correct. I never had any problems with my German colleagues. I never had any problems with my English colleagues. I would even maybe say that I had more problems with my French colleagues. Actually, it is pure human relationship, professional relationship, and usually, it goes pretty well. On the other hand, the vision that we can have of multiculturalism in EADS is much more ... it is rather a political vision, especially when you go up in the hierarchy, observing the decisions that are made, etc...I would say that regarding the company's strategic decisions, you can find some negative aspects of multiculturalism, because it becomes political decisions rather than economic decisions." (Member #4 – Case Study #3, translated from French by the author)

IV) Global management of distance :

Although we could think that geographical distance is the main challenge of remote-work, our participants recognize the temporal and the cultural distance as being similarly significant. One assertion is relatively clear while analyzing these two case-studies: those three forms of distance have definitely to be managed globally. We have already briefly mentioned the parallel that has to be made between the management of geographical distance and cultural distance. In these two cases-studies, it is clear that the perceived distance is predominant in relation to the objective distance.

Therefore, individuals have succeeded in developing specific human relationships with their colleagues despite the kilometers separating them. We noticed that the development of such affective relationships is especially supported during rare physical meetings where individuals talk informally about their private interests. As a result, these remote-workers finally succeed in getting to know their own colleagues or managers and rather easily deal with their cultural differences or perspectives. In these cases, the management of geographical distance eventually enables the consideration of cultural distance:

“But probably the biggest thing is cultural difference. I would not feel comfortable picking up the phone to someone I have never met before and then having a long discussion. It is nice to once have met the individual, and built a good rapport, a good “complicité” (in French) with my colleagues...And then, I could pick up the phone, I can email, I can ask stupid questions because they are my colleagues and I do not have to worry. And obviously, all my colleagues, like you, have a very good English language skill, so it is very easy. We have a lot of humor in our discussion as well, which, again, breaks down ... It breaks down the cultural differences. We are very open, we have very good communications, so you could break down the cultural differences. All of these colleagues have a very open view so... they are very open for sharing, very forward looking, and because of that, we have a strong complicity, and I can use all the different technological means to contact them. And all those things reduce the distance. So if I have colleagues whom I find difficult to talk to or I find that...I have difficulties in understanding their cultural perspectives, then I would not feel comfortable using technologies. I mean, technology, it is an enabler. It is a strong enabler, but you have to use it once you have previously established a contact with the individual.” (Member #1 – Case Study #3)

Similarly, it is clear that the development of the rhizome structure for reducing temporal distance, and the development of collaborative work it leads to, has eventually facilitated this integration of others' cultural characteristics by permitting employees to spend more time communicating. The parallel is even made by one of our interviewees:

“There is the first level, the operational one, for sharing the same processes, the same procedures, the same documents, sharing the same knowledge about the tools we are working with. And then the second aspect, which is to me equally important to the first one, is the cultural aspect. Because between French, German and English, we all have our own culture, we all have our own models of education, and these face-to-face meetings allow us to identify with others, to know each other much better, especially because we have the opportunity to be together outside regular meetings, and have the possibility to spend some time together. And finally, informal aspects have ultimately gained the upper hand over formal aspects. Besides, and I am glad to say it because it is for real: we are people who get along together very well, we even enjoy more meeting outside regular meetings. And today, we take the benefits of it into consideration.”
(Member #2 – Case Study #3, translated from French by the author)

Through these practical examples, and as in our exploratory case, we have the opportunity to show that the concrete relationships existing between the three forms of distances emerge from remote-work environments. Such observations legitimate the global management of these distances, since they all have an impact on each other, and developing initiatives to reduce one of them will enable the limitation of others.

V) Control portfolio and societies of control:

As with our exploratory case-study, various forms of control are used by the management of the IM Security team and the Architecture Management team. Managers of such entities are well aware of the range of control modalities they can use to succeed in managing their staff at a distance. Among this variety of control forms, there is however no use of any form of behavior control or direct supervision. Once again, especially because this kind of monitoring is almost impossible to set up while managing remotely, but interestingly also because these control processes will definitely not match subordinates' characteristics:

“But in terms of ... I do not realize...the Architecture Management team is full of quite strong individuals who do not need daily management. We are all able to overcome our workloads and to work unsupervised, I suppose. So, primarily, it is alignment. It is face to face with my team, and a sharing of discussions.” (Member #1 – Case Study #3)

Since they do not really appreciate or accept the intervention of their managers, these remote-workers favor self-management instead:

“At the moment, it is up to us to manage that, and I...again, I think the level of team members appreciate not being micro-managed. There are quite senior people in the team, and they really would not appreciate being given tasks and ‘have-to-do’ things. [...] We essentially self-manage, we self-manage our workloads. Basically, we are very autonomous, we are self-managing, and I think, as I said, I think again it is strongly appreciated by the teams about the way we work. But, I cannot... It is the only way that this virtual team could work: [...] I do not think there is an effective control that can normally permit us to do that.” (Member #1 – Case Study #3)

These observations provide credit for the development of societies of control where methods of monitoring are subtle and less direct. When control is too visible, which means coming directly from their bosses, employees immediately oppose a certain reluctance and rejection, thereby leading their managers to use different and hidden control forms. By assuring self-management, they think they are the only ones to control the situation; a feeling that is also part of outcome control where employees manage their own activities and the way they want to achieve objectives.

Particularly present while dealing with telecommuting, self-management practices are also frequently used in the Architecture Management team, especially since these practices logically facilitate the management of the private/professional lives' balance :

“The balance between work and private life is definitely a personal issue that everyone manages as he/she wants. Personally, I use...for instance, the day when there are some transport strikes, I will stay at home to work. Anyway, I know that I do not have any meeting, I have no one to see at the office, I am not going to spend two or three hours on the road, and being stuck in my car, with no possibility of doing anything else. So here was an example: it is definitely an issue of personal organization.”
(Member #2 – Case Study #3, translated from French by the author)

We have here the perfect illustration of the link between self-control and the management of temporal distance. Since the rhizome structure developed to reduce the challenges emerging from temporal distance leads to a decrease of leadership and a certain dynamicity in hierarchical lines, remote-members take the liberty of adjusting their own work activity, and developing self-management practices in accordance. In order to set up such initiatives, individuals who self-manage and take the responsibility for a certain leadership and power necessarily need to be extremely autonomous. The need for this skill was emphasized by managers interviewed during our exploratory case. Similarly, remote-members of case-studies #2 and #3 recognize that they definitely need to have this ability, as expressed by one of them:

“I would say that we must be autonomous. Someone who is not autonomous will not be able to complete such missions. Because our boss, once he has given us ...when we have been named elsewhere as a support for a specific project, he will no longer pay attention to this project, except when we do some reports from time to time in order to inform him about how it goes.” (Member #2 – Case Study #3, translated from French by the author)

Logically, taking into consideration individuals' ability to be autonomous in their work should be prioritized while selecting candidates for remote-work projects. Nevertheless, it remains extremely difficult to measure such a notion:

“The problem we currently have is the evaluation of candidates' profile: we do not have any index for assessing the autonomy of individuals or their ability to work

remotely. You know what I mean? [...] Nowadays I cannot identify, in the definition of individual profiles, [...] something that measures the intrinsic human capacity to be autonomous, the ability to work remotely. Still nowadays, I do not have such kind of index.” (Member #4 – Case Study #3, translated from French by the author)

Since managers of such teams cannot be sure then that their subordinates have the required abilities to work efficiently within these specific remote-environments, other forms of control have to be established in parallel, in order to maintain the performance of the entity. One of the other major forms of control observed during the realization of these two case-studies is the control-enactment processes, and processes of peer-supervision especially. We recognized here the emergence of a specific form of control that is part of the management of temporal distance. This can be explained by the development of the rhizome structure, which is used to reduce this distance, and finally implies a shift in the leadership power, a decrease of hierarchical managers’ importance. As already noticed during our exploratory case, unusual cooperating processes emerge then between remote-members and lead to unusual monitoring behavior for individuals who are supposed not to have any hierarchical power towards others:

“If you want, from the moment you are part of a group, you have a certain task to do. Otherwise, you do not belong with the group anymore. It means that it is obligatory...since you participate in several groups; you are required to provide all the elements for the work of the groups. From that moment, there is a perpetual control that is done by your peers who are in the same groups as you are.” (Member #4 – Case Study #3, translated from French by the author)

This perpetual monitoring made by other members of the remote-entity is relatively important. For internal actors, this phenomenon could be explained through the importance of email-culture⁷⁵ within the company:

“I have been in a management meeting with my boss, and they liked to point their fingers at me, ‘oh [Manager - Case Study #2], yeah, we have asked you two weeks ago’... ‘Did you... did you think about picking up the telephone and confirm it to me?

⁷⁵ *“That is an email culture, yeah: people send emails to transfer tasks, issues, responsibility... ‘Hey I have sent the email two weeks ago, so it is not my problem anymore’. That culture, it is an email culture” (Manager - Case Study #2)*

Send me an email with all the information, and half an hour later, call me and say '[Manager - Case Study #2], I have sent you an email really urgent, can you have a look at it?' ...'

This is a blame culture, you see. I do not like this, and people should be accountable for their actions, but people do not like to be...they want to make other people guilty...This is a bad culture at the end, that is it. I see it every day, and it is not very nice when to be part of...I am a little bit critical now while I say it but... I am aware of what I am saying." (Manager - Case Study #2)

While such enactments seen here in the preceding citation can legitimately be negative, they illustrate the issue of visibility within remote-teams, a notion that is also a source of explanations for the development of employee-initiated controls⁷⁶

With the numerous initiatives that are being developed to enable the reduction of the perceived distance between remote-workers, we also noticed the prevalence of social control in these two observed entities. This is not surprising since we keep on seeing that the collaboration between remote-members is the leitmotiv of these two units. As a result, these employees become totally dependent on others while sharing a set of common goals. Since social or clan control is implemented by promoting common values, beliefs, and philosophy within a remote-group, we easily understand why this form is present here:

"If you do not have values to share, the organization in itself does not have any reason for living. This organization only makes sense because it defines values that we all share. It is not possible otherwise. It means, as everyone in the team is an expert in his own field, what we build, what we individually bring to the team, it is not our expertise actually: it is a common vision of development, a common vision of achievement like I said earlier, a common solution that will benefit to all within the organization. This is very important with respect to the objectives of our missions. When we talk, we talk for the whole team. We are not talking individually as an expert. We are not like an expert who comes from outside the company and who will be paid for giving a report. We actually support the identity of the whole IT organization regarding

⁷⁶ Actions consisting for instance in sending a report to your manager in order to show him/her that you have worked on and improved a specific issue.

choices that we corroborate.” (Member #2 – Case Study #3, translated from French by the author)

As with our exploratory case, numerous forms of control are used by managers in order to ensure control processes to their remote-workers, thereby supporting the issue of control portfolio. Moreover, we also observe that each of these control forms has a specific purpose with respect to the diverse forms of distance identified above (self-management and control-enactment used with regard to the temporal distance, social control used with regard to the management of geographical distance). Nevertheless, there are no control modalities that are identifiable by remote-workers interviewed on both case-studies #2 and #3, thereby characterizing again a manifestation of societies of control⁷⁷.

This feeling of not being controlled is increased by the major use of outcome control, which supports employees in their impression that they are free to operate the way they want. It is also a way of providing managers with an easy form of control to implement for the smoothing of cultural distance: they just have to express desired outcomes or goals, and finally reward employees for meeting of these specific goals. This entire process happens without paying any significant consideration to the management of cultural particularities. With regard to it, it is possible to understand why outcome control is used in both IM Security team and Architecture Management team:

“With this manager, it is all about objectives, so I have annual goals that I must reach. And I have specific tasks; let's say that I have topics that he asked me to be responsible for. And it is my responsibility to coordinate with my colleagues. It means ‘well, now, you participate in this project at the level of EADS, and you are the representative of the company’ .” ((Member #1 – Case Study #2, translated from French by the author).

“We are all united regarding project deadlines. We manage the functioning of a specific project of course, thus we always...we adapt our activities to the objectives and to the project’s schedule. But, again, the only thing our project manager is expecting is our results. It means that whatever the time we spend on it is, where we actually work,

⁷⁷ *“We serve a customer who is generally supervised by a project manager. Us, we are here for participating in the project's success. So this is why, once again, there is no control at all, no hierarchy. Of course we have a manager, but it is just a hierarchy that is functional.” (Member #2 – Case-Study #3, translated from French by the author)*

who we are working with,... our project manager does not care at all about all these elements.” (Member #2 – Case Study #3, translated from French by the author)

As we mentioned, although the predominance of outcome control suggests the notion of control portfolio used by managers, employees are still supported in their idea that they are not the object of any exercise of control. This can mostly be explained by the fact that all the various control forms presented above are relatively less visible than behavior controls or especially direct supervision. By rather promoting subtle and hidden forms of control that employees are not aware of, distributed-work undeniably suggests illustrations of societies of control, as described by Deleuze:

“Actually, I am not controlled at all. I mean, to me, they do not control. It means that I give my superiors information in a regular basis. [...] Control, as I told you, is not an appropriate word: I will be more likely to talk about collaborative work, since we all advance simultaneously. And eventually, control is something in which we all collaborate. Because it is absolutely necessary that we obtain results at the end.”

(Member #4 – Case Study #3, translated from French by the author)

Chapter VI: Confirmatory case: similarities and differences

In addition to the three case studies conducted within the EADS group, we sought to manage a fourth and final case study with the company KCI Medical France. Obviously, our research collaboration with this company is above all an opportunity that was offered to us and that we did not want to decline. Nevertheless, in the same way we sought to investigate entities with dissimilar characteristics in terms of population or organizational levels at EADS, the study of the company KCI Medical France is extremely legitimate, as KCI activities and the forms of remote-work used (telecommuting and nomadic work in addition to virtual teams already investigated so far) are different from those of entities observed within EADS.

From the distinct characteristics of KCI Medical France finally emerges a different understanding of distance by our participants, including a much greater focus given to temporal distance compared with that of EADS' virtual entities. Nevertheless, in the end, the general approach to control processes remains similar, and we find in this final case the specific forms of control used for the management of each type of distance similar to those addressed previously. Interestingly, the concept of societies of control is finally presented in a totally original way from the perspective of managers. Taken together, these results confirm the originality and contributions of the Deleuzian approach used for the development of our analytical framework.

I) Similarities with previous cases:

- 1) Temporal distance: manifestations of isolation, control-enactment processes and impact over visibility:

Interviews conducted during this final confirmatory case all concur with previous ones regarding feelings of isolation that are significantly expressed. This phenomenon of isolation

is extremely prevalent in the analysis of KCI case, especially among employees who telecommute from home and express both professional and social isolation:

“I have seen and suffered professional isolation. I have often talked about that to my managers and the persons around me, that is to my local and HR managers often, and expressed the fact that I had difficulties working with so few links and work instructions. And eventually not to have significant chances of career development. I almost suffer professional isolation since day one. Therefore, I do not think the company will like it, but I am going to do the opposite of what I was actually taught: I do not want my remote subordinates to feel like me, what I felt during these periods” (Manager #6 - Case-Study #4, translated from French by the author)

“I began to feel a bit more the effects of virtuality, the lack of social contacts. When you are actually in a place where other employees, some corporate employees come to work, even if you do not necessarily have a daily and direct working relationship with them, you have some exchanges anyway, you have contacts with them. But this situation does not exist when working remotely” (Manager #3 - Case-Study #4, translated from French by the author).

When facing these managerial issues of isolation, a logical solution proposed by organizations is to impose a mix between teleworking and regular visits at offices of the group. But prior to the implementation of these practices, the most valuable process is explaining to related people how such arrangements can be useful to them by reducing their feelings of isolation. Because many of them often interpret such required visits as a waste of time:

“When I go to the headquarters, I go usually once a week, or a bit less, let's say once every two weeks. When I go there, I feel like I am a bit forced. I actually feel a little bit forced to spend some time at the coffee machine, because you have to manage social links. I have to do it. I mean socially, I have to do it, but I also do it by often watching at my clock.. If I go there, it is especially because of the meetings. But outside the meetings, I have plenty of things to deal with. And the time I spend at the coffee machine, I do not deal with my problems. So yes, I feel a little torn between these two obligations” (Manager #4 - Case-Study #4, translated from French by the author).

In an effort to reduce feelings of isolation, organizations ensure the visibility of these individuals as well⁷⁸. This notion of visibility is critical as providing visibility will limit issues - already outlined in this document - regarding the identification of roles within the virtual organization⁷⁹. Increased visibility of individuals will be enabled by the development of a rhizome structure, of which we also recognize several manifestations in the case of KCI Medical France's virtual organization in the form of decreasing leadership and the disappearance of hierarchical lines:

"I will say I belong to [the team] almost as a consultant, since I work in a cross-functional way with these people, but I have no hierarchical relationship with them"
(Manager #3 - Case-Study #4, translated from French by the author).

Resulting forms of control will therefore be derived from the concept of visibility, and this explains why control-enactment processes are privileged for the management of temporal distance. They may be derived from:

- Peer supervision, where individuals' working contributions, their own visibility, is evaluated by peers and colleagues:

"The measure of your work is essentially done through the results in a formal way and, let's say, in an informal manner through feedback that we have or that others persons from the headquarters have. From other sales people who provide feedback such as how it goes, etc...It is clear that this uncontrolled information, which is not

⁷⁸ *"And we are almost all in working groups, in programs, we have cross-functional missions, etc.,...so participating to such processes enables us as well to see how we can move forward, how we can evolve and show that we are here"* (Manager #1 - Case-Study #4, translated from French by the author).

⁷⁹ *"I think that [identifying the roles of everyone in the virtual team] takes a little longer than ... it certainly takes a little bit longer than when you are physically in offices. Because when we communicate by email, we have a structure that is a little codified, fortunately. So we have the status of the person that appears with the signature. For many of them, not everyone, but for many of them. So it helps a little to understand what the other person is, to whom we are writing or who is writing to us through this exchange of e-mail. But I agree that it is easier to remember the role or position of a person when you physically see him/her, rather than only knowing his/her name"*(Manager #3 - Case-Study #4, translated from French by the author).

"[As a manager], you have to prove your added value. It is not always easy, but you acquire that credibility over time. How shall I say? The power of a supervisor is reduced in a remote environment. It means that the power I can have in this environment is less obvious for someone who does not see me, rather than if I were with them day-to-day. So it shows that there are more challenges for obtaining credibility [in these environments]. This is why the relationship needs to be established in the long term" (Manager #2 - Case-Study #4, translated from French by the author).

formal, is very interesting” (Manager #1 - Case-Study #4, translated from French by the author).

- Or employee-initiated controls, which enable workers to gain visibility with hierarchical managers by providing evidence of actual or simulated involvement:

“The difficulty is to put things in perspective when receiving emails. You have people who send emails at 7am or 9pm and who are not necessarily those who perform...Of course the notion of control is difficult to approach. There are those who anticipate the control, knowing that they are failing ... [...] Those who feel a bit in a position of weakness, [...] and as a result, they will anticipate controls and be like “oh you see, I have done my job” just in order to avoid being blamed on the other hand. And then, there are those who perform or over-perform, who say “controlling me is annoying: look at my results, I do not need your controls”. So we really have to understand this difficult process” (Manager #4 - Case-Study #4, translated from French by the author).

Control-enactment processes make it possible to give visibility, thereby responding to challenges from the disappearance of direct supervision. Managers might sometimes regret not being able to directly influence the behavior of their subordinates. As such, they can be reluctant to support the development of distributed-work in their organization:

“We had to talk about the need for some employees to telecommute temporarily last year when I was still working physically at the headquarters of KCI France. At that time, we had the problem of the bird flu. And I saw the great reluctance of our director [...]. The reluctance was to say ‘we will put people at home for health reasons. We will leave them at home so that they can work remotely. What guarantee will we have that they will do their job properly?’ “(Manager #3 - Case-Study #4, translated from French by the author).

Such reactions expressed by managers can logically be understood by their fear of losing the ability to supervise directly and to influence employees’ behavior. Nevertheless, control-enactment processes like peer-supervision or employee-initiated controls can constitute processes that enable the influence of a distant colleague or manager. The significance of these two mechanisms is rarely given enough emphasis in the academic literature. However, these control-enactment processes can interestingly be perfect substitutes for behavioral control in remote universes.

As a final result, obtaining and providing visibility through the development of a specific structure or form of control becomes then a critical issue for temporal distance and its management. But it is also a factor to consider for the understanding of geographical distance, and the development of perceived proximity. Indeed, providing visibility to people is above all considering them, thereby providing an impression of proximity despite the objective geographical distance existing between dispersed members:

“The most important thing is when competent persons work but express isolation ...this isolation/remoteness is the worst thing. You have to be visible, you really have to optimize the meetings proposed by the company, international meetings for instance. As a manager, I never hesitate to step aside. For example, on the development of a budget, it is expected that with the director ... I mean, depending on the issue, if my presence is not necessary, I will try to suggest that someone from my team should participate so that he/she earns a certain visibility. You have to develop people, you have to provide them with interest and consideration. [...] So what is important in these cases is really to allow a certain complicity and to provide some...you only become credible if you provide something more. I mean, we are even more demanding, in the sense of “what do you bring to me while being eight hundred miles away from me?”. The important thing is to leave the persons alone, not to make like a funnel, not wanting to tell them...[...] Therefore, every time people can be put forward, it is important to do so. So really, the goal is certainly not to centralize, to make a funnel, to create a functioning path between the CFO and the country's central director” (Manager #2 - Case-Study #4, translated from French by the author).

As already presented in case-studies related to the EADS group, we can see that the management of distances is not an isolated exercise, but requires a global support and higher interaction, especially for the management of temporal and geographical distance.

2) A common observation of perceived proximity and social control in the management of geographical distance:

As with our analysis of EADS cases, the predominance of perceived geographical distance over objective geographical distance existing between individuals is also observed in this KCI Medical case. Among other things, this observation is especially addressed repeatedly by our participants, both:

- regarding the objective geographical distance:

“Frankly, I do not care about working with a person either located in Bordeaux or be it in...It is the same for me that people live two or five hours from me. I am unable to make a difference. The geographical distance...if we are situated at more than half an hour from each other, it is already far. Afterwards, be it one hour or five hours, it does not change anything for me” (Manager #4 - Case-Study #4, translated from French by the author).

- and the perceived geographical distance :

“I think it is absolutely astonishing to see how the world can be reduced to a small area eventually. Distance no longer exists. [...] I feel closer to my Australian colleague who is almost a friend to me although we have met only two or three times, than my colleague who lives in France for example” (Manager #6 - Case-Study #4, translated from French by the author).

In order to develop this perceived proximity, as already observed with the example of EADS that developed a tool specific to the group called DS-Live, KCI distributed members benefit from a dedicated tool, Webex or GoToMeeting, for reaching a virtual collaboration close to face-to-face interaction. Through this means, the organization supports the notion of responsiveness, as individuals develop communications (audio and video for the oral and physical “body language” communications) and interaction (possibilities of working or making changes on a specific document during videoconferences) absolutely synchronous. This synchronicity in exchanges helps to ensure and increase feelings of proximity between individuals:

“Webex is used along with GoToMeeting for several meetings in which we exchange documents. So it becomes sort of a PowerPoint meeting, or it can also be a meeting where we both have audio and visual contact via computer, besides having the ability to exchange documents which is very, very effective. And the last way of

communicating is Skype, which is not a specific professional tool but still is very, very handy when we have not that much to interact, because we will also have sounds and images, although having some quality problems. But it is almost like instantly communicating face to face with someone, as we take advantage of gestures and expressions. So thanks to these tools, I would say that we are close to classical relationships” (Manager #3 - Case-Study #4, translated from French by the author).

Even though the attention paid to synchronicity and the specific use of advanced technologies with it can improve the perceived proximity between team members, physical meetings are not neglected at all. On the contrary, physical meetings are even claimed by participants themselves⁸⁰. We can interpret this desire to physically meet their colleagues as a way to fight against social isolation previously addressed in the management of temporal distance. Physically meeting each other is also an opportunity for individuals to develop informal relationships, to identify with other members as well as having the impression of being close to them:

“Obviously, remote-work does not allow a full cohesion. Or it is very, very long to build, because when using media, we can interact with professional relationships or colleagues, but we only communicate on professional topics such as “Did we reach expected results? Are we on time on the project? Do we have the answers on this or that issue?”. Exchanges are limited to these professional topics 99% of the time. However, when you have physical contact with people, you automatically have the opportunity to go over the professional aspect and will discuss other subjects. For example, most managers from the “Operation Europe” entity ride motorcycles. And so do I. This is the kind of subject that we discussed together during our first physical meeting, and it is something we would never have discovered if we only had relationships through phone or computer. [...] I deeply believe that when using means of communication to contact a person professionally, the discussion only stick to business topics” (Manager #3 - Case-Study #4, translated from French by the author).

⁸⁰ “We organize about two to three seminars during the year, national meetings. So it is not exactly related to my area, it is national. Besides these national meetings, there are two or three regional meetings. [...] Clearly, [members from his team] are willing for this. Habits before were to only organize two meetings per year. And the question was raised “Would you be interested in organizing a third meeting together?”, and their answer was “yes” unanimously” (Manager #4 - Case-Study #4, translated from French by the author)

Therefore, similar to the virtual entities observed during our research collaboration with EADS, KCI managers also try to have their members meet physically outside of hours traditionally devoted to their working activities. The aim is obviously to develop informal relationships, which are always extremely useful in order to bring together people and unity between them while again working remotely. Such exchanges happen for example through the organization of regular informal lunches, where more casual topics are covered:

“Well the first thing I do is meeting them, I invite them to the restaurant, that kind of things...If you want, I always try to put them forward as well” (Manager #6 - Case-Study #4, translated from French by the author).

Through all the specific initiatives that are developed by the organization, the goal is to create an auspicious climate for collaboration, where individuals work peacefully together as they identify and share values with their colleagues. In order not to ruin such a prosperous climate of cooperation, specific forms of control are developed in order to strengthen the impression of perceived proximity. Consequently, rather than creating an atmosphere of control where remote-workers would feel themselves to be constantly tested, managers use a form of social control. Common norms, beliefs or values are developed, shared and internalized, through recurring informal appointments like that already seen above, in order to manage the activity of distributed members:

“I will perhaps focus a lot on communication, on the marketing aspect. I try to introduce specific sentences, things like that, so that they... [...] I really focus on the marketing aspect for it, providing small “teasing” you see. [...] From time to time, we can always find examples that strengthen our positions, sort of adages, you see?” (Manager #6 - Case-Study #4, translated from French by the author)

“I tell you, one of the key points to success is the implementation of routine/recurring appointments, which sees that we get used to working together and sharing things. Indeed, the risk is actually, without being independent, to transfer only what you do individually or even not to transfer any information” (Manager #2 - Case-Study #4, translated from French by the author).

Those who do not respect these common social values and norms, by not being present and available for the weekly ritual videoconference for instance, will set aside or be excluded (*i.e.*, sanctioned with social exclusion) from the activity of the group. Although forms of social control might seem relatively flexible and cordial initially, these forms represent a

formidable tool for monitoring the activity of virtual members, be they from multiple cultures or not.

3) The omnipresence of deterritorialization:

The management of cultural distance, in terms of national cultures, is significantly less addressed in the KCI Medical case in comparison with EADS cases, since the working activity of our participants was often based largely in France – although we are well aware that subtler differences among distributed members from different regions of the same country may also be enough to negatively impact a virtual entity (Robey et al., 2000). Only half of the interviewed members were in practice in connection with individuals coming from different cultures. Despite this more limited focus on national cultures, we observed that cultural perceptions within KCI were similar to previous cases, particularly with respect to the understanding and identification of the phenomenon of deterritorialization.

In this regard, we could refer here to the symbolic example of KCI manager who was best able to judge the cultural distance since he was the one managing a virtual team composed by international members (not just European) including Italian, Dutch, Spanish and South African people. Thanks to his interpretations, we had the opportunity to compare his global vision with the one of EADS people only dealing with European profiles. According to these, the disappearance and smoothing of cultural particularities was aided by the fact that distributed individuals they managed at EADS were close culturally speaking, by being all European. EADS participants asserted that the situation would have been different for them if they managed European combined with African, Americans or Asian people.

Interestingly, the KCI manager in question who is himself confronted with this more global management by being in charge of a European and African team, provides a similar finding. It means paradoxically that:

- he cannot identify cultural differences among these individuals
- but asserts that these differences in management would be identifiable if people under his responsibility were coming from Asia for instance (i.e., a continent that none of his subordinates comes from)

“If I were facing a Japanese or an Indian person or someone from Middle-East, maybe, actually, I might tell you something different. But in my case... I mean, the ways of behaving are so similar that I do not see any cultural differences, apart from the fact of lunching at different times or having different holidays” (Manager #2 - Case-Study #4, translated from French by the author)

4) General management of distance and control:

Despite the fact that forms of distance are represented in different proportions (i.e., contrarily to EADS, temporal distance is much more predominant than cultural distance), we find in this ultimate study confirmatory elements that are extremely interesting for our research. Therefore, finally, we are able to confirm preceding observations such as:

1) The links between the various forms of distance and their management cannot be neglected and can be identified repeatedly. Consequently, it is critical that types of distance should not be understood in an isolated and individualized way. On the contrary, the management of the three types of distance needs to be considered as a whole. This relates to the idea put forward by Deleuze, through concepts like the rhizome structure, that nothing is structured, benefiting from a central position, but everything is connected through multiple and complex interaction. Managing a distributed environment requires taking all forms of distance and their complex interactions into account.

2) Even if forms of control might apply specifically to the management of a single form of distance (control-enactment processes and self-management to temporal distance, social control to geographical distance, outcome control to cultural distance), a global set of varied forms of control will finally be used since all three types distances have to be understood. Rather than a single control mechanism that will be applied globally for the management of a virtual entity, the creation of a control portfolio is a better choice⁸¹.

All control processes employed have a common point in that they are relatively flexible and allow an almost invisible supervision. This may be handled through:

- Control-enactment processes or self-management mechanisms that support the notion of visibility and challenge the traditional vertical "boss to subordinate" relationship,
- Social control used in order to create a climate of collaborative and serene work rather than an atmosphere of control where remote workers feel they are being constantly tested.

⁸¹ "(Regarding the control procedures used as a manager) I think I tend to do a mix of everything I knew, besides adding my own touch. [...] I use a mix of all of this. I will be both very close, and trying to give them autonomy. [...] I am more the kind of person ... I use a lot of energy to put people at ease and trying to give them satisfaction: I always try to be positive"(Manager #6 - Case-Study #4, translated from French by the author).

- Or outcome control that enables distributed members to organize their own work activities the way they want, on the strict condition that they succeed in achieving expectations and goals.

As a result, control processes that are selected for the management of remote universes mainly present a non-rigorous and non-rigid character. The perspective of a society of control that would include and govern the management of distributed universe is then supported by the analysis of that final case-study. Especially through the vision proposed by managers of the organization who show that modalities of control are still extremely present, but who adopt much softer and more flexible forms now:

“Today I think we have developed a control that is still far more rigorous than what existed 20 years ago, when there was no Internet or laptop or cellphone. Because today, I can still call someone and ask “where are you? What are you doing? Do you have ten minutes because I have something to check with you?”. The control is, I think, much easier than it was 15 or 20 years ago” (Manager #4 - Case-Study #4, translated from French by the author).

Thanks to the numerous elements collected in this final case, we had the opportunity to examine and confirm most of the observations made so far during the conduct of EADS cases. Nonetheless, our aim was also to compare and explain the distinctive dimensions that would emerge from this practical field work with such different characteristics (different forms of distributed-work used, working populations, sector in which the company operates, etc...). With regard to this aspect, this final case provided even more interesting insights that significantly contributed to the contextualization of our research framework.

II) Differences and original contributions:

1) Issue of distributed forms (telecommuting and nomadic work) with respect to perceptions of temporality :

As observed during interviews conducted with participants of this last case-study, temporal distance and its effects constitute a major part of their daily working activity. In an original way, forms of remote-work especially used at KCI Medical France (i.e., telecommuting and nomadic work, rather than virtual teams) revived the issue of perceptions of temporalities. These notions of diverse perceptions of temporalities were only sporadically mentioned in the study of EADS virtual teams – through the management of time-zones. Instead, the impact of temporal distance was rather shown by difficulties in individuals' identification of their role and the structures they were part of.

While facing situations of telecommuting and nomadic work, workers at KCI Medical first experience stress over issues related to the perceptions of diverse temporalities. These may relate to the boundaries between their private and professional lives, including related concerns about professional and social isolation, or the management of intermediary periods (i.e., time spent on travelling) that could be considered as ‘time-out’ from work but which in reality are not. As a result, we realize that the problem of visibility, which is endemic to the rhizome structure, remains central.

➤ The balance between private and professional lives is an element that emerged frequently from interviews made during this final case, which can be explained in a perfectly legitimate way by the fact that most participants were daily telecommuting. The uniqueness of their way of working consisted then in the mix of both professional and personal universes on the same location: their own houses. Despite the fact that this distinction between two universes is often depicted as difficult by the literature, working and living in the same location is however sometimes seen as an opportunity for participants, especially since individuals do not feel that they have been forced to live and work this way:

“For instance, it is now Friday night, [...] I can totally drop something I should have done for Monday and come back on it for one hour or two on Sunday: this is not an issue for me. I mean, I have to be clear about that: this is not because I say it is not issue that I sleep with my Blackberry under my pillow. Because, yes, you still have to introduce limitations. For instance, when I go to bed in the evening, I turn off my

computer. I do not turn my Blackberry off. [...] But my Blackberry is in my office and I do not take it with me everywhere in the house. But if at some point, I see two or three emails that fall during the weekend, I think: "Yes but at the same time, if I deal with it this weekend, it will be less to do on Monday." So it depends. [...] To sum up, I think that I will consider it if it comes from me. If it comes from me, I do not mind taking an hour or two on Saturday or Sunday. Because I know that thanks to that, I might get up an hour later on Monday. In that case, it comes from me and it is voluntary: it is not imposed by someone" (Manager #4 - Case-Study #4, translated from French by the author).

Again, we find in the description of this situation aspects that are closely related to the false impressions of emancipation expressed by individuals in societies of control. Employees do what their hierarchical superiors want (i.e., working during the week-end), while maintaining personally the impression that they are the only ones that control their activity. Individuals do this because they want it, but still, at the end, they answer positively to what could originally appear as an unusual (unfair?) request. Individuals admit having to set up a specific discipline to protect themselves from possible constraints related to the balance between personal and professional lives. But paradoxically, they believe this self-discipline will be less necessary than in traditional, face-to-face environments:

"For me, the distinction between professional and private lives is not an absolute necessity. I think that people who work in an office will rather need to make this distinction. But when working at home and when getting used to it, the need for making a distinction between the two universes is not that essential. [...] Of course, I know we must have to develop limits, and we have to organize ourselves, which is not always easy" (Manager #4 - Case-Study #4, translated from French by the author).

Finally, through these citations, individuals however show their awareness of potential challenges from having both private and professional universes in the same place. As such, they also indirectly benefit from past telecommuting experiences and insights provided by the literature concerning managerial issues previously identified. Such managerial issues are now better known and understood by organizations that train and inform their employees before the development of a telecommuting experience.

While facing such specific work experiences, individuals then know how to face possible challenges by developing self-control practices. Most individuals might then accept and perfect these self-control practices over time. Nevertheless, our participants recognize that all individual profiles are not able to develop such self-control practices as well:

“There were two points that appeared problematic to me when I agreed to take this position of remote-work. The first one was social isolation and the second was that separation between work time and private time. This separation demands lot of discipline. In order to approach it well and to make it sustainable, you need to develop a certain discipline, and some gymnastics of mind. So you must have reached a certain level of psychological maturity because, in my opinion, it is all about that. It means being able to partition in both directions. [...] So the project I am dealing with right now, I can totally work on it by night, from 9 to 10 as an example, just after having a break before from two or three hours: it is not an issue for me. It means that when I am in my working environment, although geographically I am in the same place, I am really focused on my work. And conversely, when I am in my private life, I am completely focused on my private life, although being at the same place” (Manager #3 - Case-Study #4, translated from French by the author).

“I have this ability...I am able to set up an hour until when I work. Afterwards, when I finish... Once I have turned off my computer, it is off. It is the same for my phone. So I'm ... I learned ... I learned to really make a difference. And my children...for my children, I am at work. Still at home, but I am at work. [...] In my view, [setting up self-management techniques] is a condition to make telecommuting manageable. And it is true that at the beginning, when I started as a commercial and I had a whole day to work from home, I got issues to work from morning to night consecutively. So, it is also something that has to be learned” (Manager #1 - Case-Study #4, translated from French by the author).

Among required capabilities expected for individuals to self-manage their distributed activity, autonomy is often presented as an indispensable asset. Autonomy was notably one of the major criteria for selecting virtual members at EADS. Although managers and other HR staffs should pay attention to capabilities of autonomy held by candidates, they need to be extremely careful that distant autonomy does not turn into independence and permission to be lax. Allowing remote working then should not be interpreted as a permission to work less,

demonstrating once again the main difficulty for distributed managers who constantly have to deal with the heavy arbitrage between autonomy and control:

“[Members of his team] often ask for more autonomy. But inevitably, my answer is the following “ok for autonomy but behind, you have responsibilities that come with it. Because I cannot give you autonomy if you are not able to tell me in six months where you are going to be and what you will do in order to get there”[...] People often get a little confused about the difference between autonomy and independence” (Manager #5 - Case-Study #4, translated from French by the author).

➤ The second example for perceptions of diverse temporalities specifically concerns participants practicing nomadic work. These participants move very frequently for their own work activities, for instance in order to meet physically with their dispersed workforce. With respect to it, individuals are expected to manage effectively both their work time but also more intermediate periods like the multiple hours spent in transportation. While these specific periods are however well separated from their work activity, corresponding to distinctive time slots in their agendas, they are not necessarily considered as time off work. On the contrary, these intermediate periods are used advisedly for individuals' work activity, even though being done outside usual hours devoted to it, thanks to the use of ICTs:

“And then, as I'm living it right now, 70% of the time I am in my car, I am on the phone. I mean I do not take risks at all... But between 50 and 70% of this time, I phone while driving. For me, five hours in a car does not mean five lost hours. It is not five hours of doing nothing. Of course I am not as productive, I cannot call a client, I cannot take notes, etc...But you see: I left the office at 16h, I was in Chilly-Mazarin: since then, I keep on making calls” (Manager #4 - Case-Study #4, translated from French by the author).

Perceptions of different time scales are then manifested in different ways according to the mode of remote-work used, be it telecommuting or nomadic work. By providing practical possibilities to observe such manifestations, this final case-study provided significant contributions regarding the understanding of temporal distance in distributed-work environments. It especially indicates the necessity for individuals working through telecommuting or nomadic work to self-discipline themselves according to temporal aspects, in order to better manage their time on or off work, or to balance between private and

professional lives. These indications finally raise the issue of control and modulation of individuals by time, which might be an aspect of these specific universes.

2) A different understanding of cultural distance and effects of outcome control on cultural deterritorialization :

Finally, a permanent observation emerges from interviewed members of both EADS and KCI organizations: cultural differences seem to only exist in external situations from those affecting individuals. One might then wonder whether this constant observation - that people are aware that cultural differences exist, but that they cannot identify them in their own situations- does not correspond to a way for these individuals to demonstrate a feeling of open-mindedness and sensitivity to a topic that can easily become controversial.

As multiculturalism is always presented to the collectivity as a positive asset and a chance (we saw however that cultural diversity can also be inconvenient in terms of issues related to communication and language), confessing that differences are made between cultures of people they are working with might be (mis)interpreted. In other words, this would display negative attitudes. As such, we could understand why some of them might possibly try to demonstrate the contrary by saying that this is not an issue for them and that they do not pay attention to the cultural particularities of their virtual colleagues or subordinates.

Based on our interviews, we however maintain that these attitudes rather have a theoretical origin, and are explained by the fact that cultural differences only exist for these individuals when people become conscious of them in social interaction.

As suggested by Vaara (2000), it is worth noting the dialectic understanding of cultures that takes into account both real manifestations of these cultures, and the reflexive processes where actors make sense of their cultures. Indeed, both phenomena can be totally distinct as illustrated in our case-studies, where manifestations of cultures exist in reality for individuals, but mostly in diverse contexts (i.e., outside their organizations and social interactions). With regard to this observation, we observe a major cultural deterritorialization as mentioned by participants:

"I do not focus. I do not calculate. We more or less all have the notion of empathy. So I do not feel I do significant intellectual efforts in order to adapt to multiple cultures. There are certainly differences. Today I cannot tell you...well I cannot tell you, yes. I mean, of course, there are differences. If I pay attention, there are inevitably differences that affect my management, but I did not realize. I try to manage my team in a respectful manner and there is always...Clearly I must not have the same attitude with an Italian and a French person. But right now, I cannot describe for you with precise words what that means." (Manager #6 - Case-Study #4, translated from French by the author).

If perceptions of interviewees are real, how can we explain such a deterritorialization? As part of our analysis performed within the EADS group, specific characteristics of both organization and individuals were considered in order to explain the phenomenon of cultural deterritorialization⁸². Characteristics from KCI Medical France and its members are nevertheless atypical in comparison with those of EADS. Consequently, in the case of KCI, participants explain the smoothing of cultural differences differently. For some of them, differences are reduced because of formal mechanisms of control, especially outcome control, that are developed in the exercise of their virtual collaboration:

“There are ways of working that are official for everyone, which are always the same. So everyone will be organized, but it is not the visible part that we will judge. [...] Since we pay more attention...since the management is more focused on facts, on deliverables rather than how to achieve them, the impact of cultural differences is less important” (Manager #2 - Case-Study #4, translated from French by the author).

Interestingly, we observe that outcome control will explain and facilitate the smoothing of cultural differences and their impact over the management of the teams as well. Logically, this will lead to the strengthening of outcome control mechanisms since this mechanism has been presented in our framework as the simplest to develop in a virtual environment lacking managerial challenges related to national cultures⁸³. Thanks to these

⁸² EADS is an organization that is accustomed to multiculturalism since its creation, and its interviewed members expressed a positive appetite for multiculturalism through their education, professional experiences, or family roots).

⁸³ *“I try to be available when they need me. Recently, I gave them their road-map, it means that I have set an outline, being more or less detailed. Obviously they have to find their own methodology, the best approach to proceed. So I fully trust them for that and I am even available if they need me. But I do not want to interfere at this level. I am only present when they face technical or organizational difficulties. [...] I try to handle the situation with them but the work is set previously through topics, projects and they have to...I am waiting to see how they will bring me a better understanding of my needs. And then I will check how they have done. And I especially want not to interfere at all stages of their process. I give them full autonomy and that is how I think it should happen to be correct. Because if I go and I do the work for them, it is not management anymore” (Manager #6 - Case-Study #4, translated from French by the author).*

“A key to success in this remote management is... it makes no sense to say “I am calling you, what you are doing right now?” Because it becomes meaningless. So it is all about delegation and control. It means that I never ask myself “what is this person actually doing right now?”. However, my concern is rather to control the result of what they have done at the end” (Manager #2 - Case-Study #4, translated from French by the author).

analytical elements then, we benefit from further evidence about the special cyclical relationship between forms of outcome control and the management of cultural distance, as already considered in our analytical framework.

Conclusion of the chapter:

The conduct of this final case was interesting for numerous purposes. First of all, thanks to the numerous similarities identified regarding our previous analyses, it constitutes a confirmatory case although benefiting from distinctive characteristics in terms of observed forms of distributed-work, populations and industry. But on the other hand, precisely because of these different characteristics of the case, our aim was also to benefit from possible interesting insights that would significantly contribute to the contextualization of our research framework. As a synthesis of this ultimate analysis, we propose the following figure representing the main similarities and differences observed in KCI Medical France case in comparison to previous cases:

SIMILARITIES	
Management of distances	Observations
Temporal distance	<ul style="list-style-type: none"> - Numerous manifestations of feelings of isolation, especially through telecommuting - Development of control-enactment processes so that individuals earn visibility
Geographical distance	<ul style="list-style-type: none"> - Prevalence of the perceived distance over objective distance - Development of specific ICTs tools in accordance, and organization of informal meetings during and outside working hours - Development of social control
Cultural distance	<ul style="list-style-type: none"> - Individuals' cultural awareness marked by phenomenon of deterritorialization
Issue of control	Observations
General apprehension of management and control	<ul style="list-style-type: none"> - All is connected through multiple and complex interactions - Use of a global set of varied modalities of control allowing a flexible and almost invisible supervision, supporting the development of societies of control by managers themselves
DIFFERENCES	
Observations	Related managerial contributions
Forms of distributed-work observed necessitate: <ul style="list-style-type: none"> - a strong balance between private and professional lives (telecommuting) - a self-management of time-offs (nomadic work) 	<ul style="list-style-type: none"> - Emergence of a self-discipline and autonomy imposed by temporal aspects - Control and modulation of individuals through time
Specific apprehension of cultural awareness and causes of deterritorialization	<ul style="list-style-type: none"> - Cyclical relationship between modalities of outcome control (as being both at origins and consequences) and cultural distance

Table 16 - Synthesis of main similarities and differences observed in KCI Medical France case in comparison to previous cases

PART IV

**General restitution and
discussion of the
empirical research:
stepping back towards a
bigger picture**

PART IV: GENERAL RESTITUTION OF THE EMPIRICAL RESEARCH: STEPPING BACK TOWARDS A BIGGER PICTURE

The final part of this document is devoted to general reconsideration and discussion of our empirical research. The aim of this part is to take some distance from the presentation of the empirical results and to try to conceptualize the various findings of our PhD dissertation in relation to the research issue. In order to do so, we undertake in the following two chapters:

- Chapter 7 is a general discussion leading to a recontextualization of our results. Our empirical reasoning is then synthesized through an ultimate model/framework summarizing the most important findings of our PhD dissertation.
- Final chapter enables us to bring a conclusion to this research work by summarizing the insights, limitations and perspectives of this significant work. Through these last paragraphs, we aim to solicit the thought and interest of readers of this PhD dissertation regarding the possible contributions and evolution of our research work.

Chapter VII: The reconsideration of control **in the managerial challenges introduced by** **distributed-work**

Through the conduct of this research work, we aimed to question the management of remote-forms of organization, especially with regard to processes of control and managerial considerations of distance. In order to do so, we based our analysis on an original analytical articulation dealing with concepts coming from the French philosopher, Gilles Deleuze. In this final part, we offer to put our theoretical insights into perspective and to discuss research questions that have emerged from the initial part of this document. In a certain way, the purpose of this ultimate chapter is to provide the assessment of our research work.

This logical process will consist in revisiting the various interrogations that have concluded the first part of our work, by answering research questions. Our initial research question focused on managerial changes that necessitate the implementation of control practices in distributed-work. The aim here is to elaborate the various forms of distance that lead to the emergence of managerial challenges, thereby justifying the use of forms of control.

Subsequently, we will focus our attention on the second research work. This research question is based on the identification of forms of control that are developed in order to monitor the effects of different forms of distance. The particularities of these forms of control will be the first issues we address. We will then be able to determine how the precise use of these forms of control eventually leads to a reconsideration of control practices in remote-work universes.

Finally, the third research question inquires more specifically into the impact of this reconsideration of control on our global management theory. Through the examination of the

emergence of societies of control that distributed-work makes possible, we will come back to the expected but restrictive commitment of individuals working remote. More generally, these observations will allow us to call into question the emancipatory and flexible character of distributed-work, through the values (*i.e.*, visibility, responsiveness, modulation) that are suggested and emerging from societies of control.

I) The managerial challenges introduced by emergent forms of distance and necessitating the deployment of control practices:

Among the initial insights that came out from our research analysis, our analysis enabled us to determine that managing individuals in remote-work environments requires the constant adoption of evolving processes of control. These have the benefit of reducing the effects of numerous organizational challenges. As such, the answer to our first research question⁸⁴ has been proved beyond the shadow of a doubt. Control practices are required in distributed environments because of the emergence of three forms of distance and managerial challenges that they involve (perception of distinctive temporalities, fuzziness in the identification of roles and structures, difficulties in developing social relationships at distance, challenges to communication because of different languages...).

In the case of distributed activities, organizations seek to reduce the challenges related to mobility and distance by creating a structure in time and space through appropriate technologies. Basically, the management of such organizations fears that their remote employees are not sufficiently in line with organizational objectives: maintaining a form of surveillance and discipline at distance remains necessary. The use of technologies is then motivated by the wish to develop a support for management, monitoring and managerial tools that permit supervising distant workers who are far from the sight of their hierarchy. Many control modes initiated by these technologies such as the visibility of behavior, performance analysis, focus on the objectives, shared calendars, etc...are required and implemented in order to counter this managerial challenge brought on by the development of distributed-work universes. Control appears thus concretely as the ultimate means for the hierarchy to bridge the issue of distance in management.

⁸⁴ What managerial changes necessitate the use of control practices in remote-work environments?

Managerial issues of distance are illustrated by the emergence of three forms: temporal, geographical and cultural distance. In this research work, original findings have been provided on the management and global understanding of each of them, starting with the temporal distance. Although the consideration of perceptions of temporalities (in terms of asynchronicity, management of time-zones, etc...) is critical, we have especially noticed the increasing incidence of issues related to members' perceptions about their team and its structure as a major – but often neglected – manifestation of the temporal distance. This distinction really needs to be made for the global understanding of temporal distance and its managerial effects, in accordance with our numerous observations of the parallel development of a “temporal” control based on issues of visibility, responsiveness and modulation (see below).

Concerning the understanding of geographical distance, the objective separation between individuals has been non-problematic for both managers and employees. Managers, who could legitimately fear a loss of supervision of their employees, still benefit from mechanisms to directly or indirectly monitor the behavior of these individuals. As for distributed-workers themselves, they benefit from constant measures enabling the development of perceived proximity between them (through the sharing or internalization of common values, norms, and beliefs especially) that facilitates their global coordination.

By positioning themselves for the most part at a purely individual level of analysis, academic studies proposed to identify cultural distance thanks to cultural attributes particular to each individual. These cultural attributes are logically dissimilar according to individuals' geographical location or culture around the globe (cf. Hofstede's cultural indexes). Nevertheless, by conducting a more cross-individual analysis, we noticed thanks to the Deleuzian philosophy and the concept of deterritorialization especially that these same individuals are not conscious of cultural differences during their social interactions, which lead them to think that cultural differences do not actually exist. Our research work enables then to identify the renewing of our appreciation of the multicultural aspects and their management, which have already been severely disrupted by the emergence of work-at-distance universes in the past.

As addressed in the initial part of this document through the conduct of our literature review, significant attention has already been paid by past academic studies to issues related

to space, time or culture in distributed teams. Nevertheless, a controversial concern can be identified regarding the work of these past academic studies that analyzed managerial issues in work-at-distance universes. Indeed, most of these studies have decided to focus their investigation or distinguish the management of single forms of distance in their analysis. As such, they do not address at all the need to consider globally the management of temporal, geographical and cultural distances as identified in our research document.

Our various case study illustrations provide evidence for the conduct of an analysis of distributed-work that should be global because of the large-scale interactions and dependencies existing between the forms of distance. None of these forms of distance might be isolated in a unilateral and single-focused examination. Instead, the management of distance should require a global support and a higher level of interaction.

Our study contributes fully to providing a global comprehensive analysis of the management of distance thanks to its methodology and the uniqueness of the developed analytical framework. By offering a cross-individual ontology that is present both:

- within the Deleuzian philosophy
- and reinforced by concepts like perceived proximity - which could initially be considered as part of a purely individual or cognitive level of analysis, but is yet well defined by “an asymmetric construct describing the relationship between coworker dyads” (Wilson et al., 2008),

this research document proposes a response to previously expressed limitations of past academic studies. Through this virtual ontology allowing us to have a cross-individual analysis, examples of relationships between forms of distance emerge much more clearly (as addressed during the construction of our analytical framework - Chapter IV).

Clearly, each of these forms is dependent upon the others. To make this clear, we still needed to provide evidence, taking into account that it is often neglected by academic studies focusing on a single form of distance. Although temporal, geographical and cultural forms of distance present various and dissimilar challenges, their management can be facilitated with a global understanding and managerial approach. A global approach is also appropriate for the concept of control itself in remote-work universes, as addressed by our second and third research questions, since:

- explicit forms are used in order to cope with managerial specificities of each temporal, geographical and cultural distance,

- but are combined in order to generate a global model of control practices, having direct and indirect impact on manifestations of distances, and illustrated by the development of societies of control.

If the initial purpose of our research was to determine the source and motivations for developing control practices in distributed-work, at that time of our investigation, we were still not in position to shed light on how control is exercised over the various forms of distance previously identified, and who is actually controlling whom as well - since this issue is often neglected by traditional control theories assuming the predominant role of the hierarchical superior in this process. Both managers and employees are confronted by managerial issues undoubtedly linked to the three types - temporal, geographical, and cultural - of distance. These issues are essentially related to problems of identification and communication, which are clearly much more important in distributed-work, especially because of the substitution of physical interactions by the use of ICTs. Because they support information and help coordination within organizations, ICTs will play a central role in the process of organizational control. Understanding the numerous managerial consequences due to the emergence of distance in remote-work universes is only possible through the establishment of control processes. An observation that motivated the development of our second research question: What forms of control are specifically used in order to cope with managerial challenges emerging from remote-work universes?

II) Control modalities and reconsideration of control in distributed-work:

Taking into consideration the insights emerging from our analysis of the first research question and practical elements coming from our case-studies, we quickly understood the decisive role of control practices in the perspective of globally managing the various forms of distances in distributed-work. The idiosyncratic characteristics of each form of distance necessitated the implementation of unique forms of control in practice. As such, we observed the deployment of a varied and complex control portfolio by virtual organizations. Regardless of the variety of this control portfolio, relative general conclusions can be addressed concerning the use of control modalities in distributed-work.

First of all, the predominance of informal forms of control have to be stressed, either through the use of self-management or control-enactment processes for temporal distance, or social control in relation to geographical distance. Although operating outcome control in the exercise of cultural distance will be interpreted as using a formal control, outcome control will be similar to previous forms as constituting a subtle form of control. By enabling virtual members to act freely and organize themselves upon condition that they achieve expected goals and results, the development of outcome control could be interpreted by these members as a wish to provide them with flexibility and autonomy. As such, this subtle of control, in a similar way to self-management, control-enactment processes and social control, will not be perceived as a rigid and restrictive constraint by individuals who are the object of it thanks to the medium of technology.

Technology indeed became the support for more flexible working methods, based on the availability of distant workers and the apparent destruction of hierarchical relationships. The goal here is not only to meet the aspirations of employees but to instill a sense of duty efficiency and responsiveness. By encouraging individuals to stay connected, available and responsive, even while being remote, technology permits the collapse of temporal barriers through forms of control, of control-enactment or an internalization of the goals and values of the company. Control thus involves a form of extremely high temporal pressure that individuals paradoxically establish for themselves such as self-discipline through time.

One of the main developments in terms of control systems emerging from our observations is thus this discipline based on time and responsiveness of individuals. Through the use of information systems and the development of the subtle forms control they permit, time indeed becomes an instrument of identification, a standard of organization, a technique of individual

governance. This evolution is characteristic of the shift towards societies of control through which continuous control is exercised by a need of instant communication (Deleuze, 1990b).

If we then had to reconsider these findings in connection with our second research question on forms of control that are used in remote-work universes, we would like to point out that our contributions are not related to:

- the novelty or originality of methods of control that are actually identified (although the motivations for use of control-enactment processes, employee-initiated controls above all, have rarely been described in the past),

- but are rather illustrated by the description of purposes and motivations for the use of these control methods, which are therefore significantly different from those proposed by the literature (*Table 2* p.71), as shown through *Figure 8* p.218.

This observation is extremely valuable in order to understand the scope and the contribution of our research study. By neglecting to take this observation into consideration, one could ask what the originality of the management of virtual teams and entities observed in this research work is. As an example, while we showed that specific forms of control are used in concrete terms, some could argue that peer- or self-controls were already present in face-to-face self-leading teams or community organizations as well. Moreover, isn't social control a key concept of participative management?

Once again, we are aware that each of these forms can be identified sporadically in other organizations. As such, the contribution of our research work does not consist in addressing that remote-entities use new and original forms of control. More exactly, this analytical framework enabled us to explain inducements and objectives for using dissimilar control forms to approaches of control in organization theories. Therefore, we have provided evidence that:

- Control-enactment processes are used along with self-management in order to address issues related to temporal distance. Since hierarchy lines are less visible in remote-universes, manifestations of power and status will be dependent on the visibility earned by individuals. Such visibility will be provided by the perception of the contribution of their work by other peers, and through individual initiatives of control by the manager of the team.

- Social control (rather than outcome control) is exercised for the management of the geographical distance. By sharing common values and norms, individuals feel close to each

other despite the objective distance existing between them. Feelings of proximity are then developed, and facilitate the communication and interaction at distance.

- Outcome control (instead of social control) is the form of control that is emerging from the management of the cultural distance⁸⁵. As evaluations of individuals are made exclusively regarding the achievement of results rather than the ways and processes developed by individuals in order to achieve them, attention to cultural differences is relatively less paid in distributed-work, thereby leading to a phenomenon of deterritorialization and the smoothing of cultural impact over management.

As addressed by these original insights, our research-work provides illustrations of the complete reconsideration of control practices in work-at-distance environments. Practical managerial implications resulting from this reconsideration of control practices are relatively numerous and significant. Their identification all along our case-studies demonstrates once again, if it was still necessary, the tremendous implication of the concept of control in distributed-work.

First of all, as already mentioned in this section, we have noticed the considerable development of subtle forms of control in these universes of distributed-work. A prevalence of subtle and informal forms of control that drastically contrast with the traditional use of formal/behavioral control in face-to-face environments. In addition to proposing a less visible and discernible control to individuals that are the object of it, the introduction of these subtle forms of control primarily finds its origin in the difficult arbitration that managers have to make between increasing worker autonomy and the need for supervision in order to monitor the activity of their subordinates. As distributed-work was originally developed in a perspective of flexibility and empowerment for individuals, control procedures that still are implemented should yet reflect this philosophy.

In the absence of a vertical control relationship marked by a strong supervision the hierarchical superior of their subordinates as in traditional face-to-face environments, we rather observe a shift in the exercise of authority with employees acquiring an increasingly active role in the monitoring process. Distributed members play a more and more active role

⁸⁵ We also noticed that outcome control might be accompanied by social control in cases where the process of reterritorialization, necessarily following a phenomenon of deterritorialization, leads to an increasing development of the organizational culture through a sharing and internalization of common values, norms and beliefs.

in the control process and even become the first source of control. In some cases, they are even initiating controls themselves through:

- A more horizontal relationship, involving an evaluation of individuals' work by their peers (an observation that is also mainly described in project management (Boltanski & Chiapello, 1999)). Peer-supervision induces a diffuse discipline, in which individuals directly participate,

- Or even a vertical relationship that still involves a superior and his/her subordinate, but this time illustrates forms of control that are not imposed, but are rather asked for by subordinates, through employee-initiated controls.

More powerful forms of control are then resulting from these distributed universes, in the sense that individuals accept more easily these types of monitoring in which they are directly involved.

Moreover, through this major reconsideration of control illustrated by a shift in terms of control relationships, the role of hierarchical managers in remote-work universes will considerably change. Now lacking the constant application of mechanisms for supervision, the activity of virtual managers is marked by less pronounced demonstrations of power. Indeed, as already considered, the transition to horizontal control relationships places the notion of visibility at the core of power relationships. In distributed-work, manifestations of power will not be determined by a hierarchical position anymore, being legitimate or not, or on criteria of legitimacy such as the authority, the scholarship origin (*i.e.*, example of the “Grandes Ecoles”), or the time a person has a specific position within the company. This observation is further confirmed by our investigation of the conventional circuits of power and their reconsideration by distributed-work.

As previously established by Clegg (1989) especially, there are three types of circuits of power through which this concept arises: the episodic agency circuit, the facilitative circuit, the dispositional circuit. Although the first episodic agency power only represents real acts of power, there is a real profundity in power, with all the advantages and limitations that it creates and that are manifested by second and third circuits (*i.e.*, facilitative and dispositional circuits). Facilitative and dispositional circuits are then much more complex and contextual. Based on Clegg's model of circuits of power, we better understand why manifestations of power are different in remote-work environments. Although the episodic agency power will be supported by the numerous issues and conflicts emerging in terms of communication

especially, facilitative and situational will be respectively affected by the original network of the entity (i.e., the rhizome structure. In that case, managers are disempowered in favor of members of the virtual entity), and practices and socially constructed meanings that are particular to these environments (i.e., by being influenced by the development of social control, control-enactment processes and the phenomenon of cultural deterritorialization).

In both cases, facilitative and dispositional circuits will then emphasize the dominant character of horizontal relationships rather than hierarchical relationships, and putting forward visibility as the fundamental elements of circuits of power rather than the hierarchical status or position. As depicted by Fischer (in Chanlat, 1990), “the principle of visibility in space is related to an inherent need in the organization of work, which is to dominate”. As such, gaining visibility will constitute a source of power and domination within a virtual organization. Such assertion explains the numerous manifestations of power and control illustrated in our research work and based on the perceived contribution of individuals’ work by other peers and members of the team. This perceived contribution is determined by the visibility principally, and others elements that contribute to it such as the reputation, influence, expertise, the amount of information provided by individuals provide, etc... **This observation finally leads us to locate the concept of control within a radically different perspective of power. In our analysis, control is (re-)conceptualized to be relational rather than the prerogative of sovereign authority: it is the result of a network, a rhizome of relations, where actors engage their knowledge and capabilities to negotiate their positions.**

Ultimately then, the manager’s use of power will be both disciplinary and enabling-oriented, rather than fundamentally and inescapably oppressive (Debridge and Ezzamel, 2005). Principally because of these characteristics related to the issue of power, the role of the manager will consist in maintaining an untroubled climate of collaboration and exchange within the team rather than an atmosphere where distributed-workers feel their implications to be constantly tested. Such managerial activity is for instance illustrated by the organization of informal meetings in order to unite and improve the development of close relationships and exchanges between members. But as already addressed in the literature related to leadership, managers are expected to pay close attention to socially-related activities as well in order to motivate team members and enhance their involvement and participation in effective work achievement (Ben Naoui Jawadi, 2008).

This perspective is related to the new understanding of control that will involve a convergence of efforts from members of the organization for organizational goals, bringing together both the abilities and motivations of individuals. It will then consist in “a vertical and horizontal animation process for linking actors, the ingredient of cold bodies, which makes them work in practice” (Bouquin, 2006).

Besides determining the motivations that lead to the development of specific control practices regarding the management of distance, our analytical framework enabled us to identify and better understand the modifications of control relationships and the role of managers within virtual entities. These uses of control have significant managerial and organizational implications. Our cases analysis confirmed the adaptation of our Deleuzian framework to issues of control in organizations and highlighted the existence of malleable control systems inspired by societies of control.

III) Societies of control and questioning of managerial motivations for distributed-work:

The reconsideration of control is relatively effective in distributed-work, as manifested by the development of specific forms of control and the shift from vertical to more horizontal control relationships. Obviously then, this complete reconsideration of control will have a major impact on managerial practice⁸⁶ – it is already the case through the modifications of roles and responsibilities of both managers and distributed members, and our global understanding of management. At a more general level, we had the opportunity to observe demonstrations of the emergence of societies of control, where distributed-workers undergo the progressive and dispersed development of a system of domination through the use of technology; a system of domination of which they do not paradoxically perceive the significance.

➤ *Societies of control and principle of modulation:*

Societies of control propose a dynamic and general understanding of control by providing interesting insights on how processes of control are felt by individuals who are the object of them. This is an element that was not clearly identified in past academic studies where the use of traditional theories of control only permitted the analysis of what control is exercised on. We are addressing as well the call for research to more closely examine the role of the global context on control choices and impacts (Kirsch, 2004). Although the emergence of work-at-distance has truly constituted an improvement in employee emancipation, it also paradoxically creates a more subtle form of isolation than the confinement of disciplinary societies. Such observations can be explained by the predominant use of ICTs in distributed-work.

If the use of information systems initially promotes individual autonomy, communications networking, and decentralization of the decision making process, it is nevertheless accompanied by an intensification of work, continuous self-discipline and emotional involvement. Unlike the disciplinary societies from Foucault, societies of control do not lead anymore to a physical confinement of individuals but rather exercise a continuous control through instantaneous communication permitted by the numerous developments in Information and Communication Technologies. But interestingly, this intensification of work,

⁸⁶ Impact of managerial practices that we aimed to examine through the answer to our third and final research questions : What do this reconsideration of control means to our global vision of management?

continuous self-discipline and emotional involvement will rarely be expressed by individuals, since Information and Communication technologies only become instruments of control when they are perceived as such by individuals (Leclercq, 2008). ICTs are primarily presented to distributed members and assimilated by them as tools for enhancing the distant communication and the cooperation, thereby conveying positive values. This ambivalence between positive contributions expected from the usage of ICTs and their effective final motivations for control in remote-work explains in part the emergence of societies of control where forms of control are extremely developed but remain unperceived by individuals.

In the absence of direct supervision from hierarchical superiors, the role of ICTs is then principally to maintain distributed members getting involved and committed through monitoring abilities that these technologies own (in addition to communicative and collaborative features). From this perspective, the particularity of societies of control is indicated by the emergence of what Zarifian (2004) calls the commitment control, and whose key-concept is modulation.

When we mention the concept of modulation, we obviously talk about:

- modulation in space: the mobility introduced by ICTs and other multiple continuing advances in communicative technologies enable the tremendous expansion of working spaces, such as working from home, at the airport, on the train,...The use of space becomes then flexible.

- modulation in time: where distributed members have the opportunity to radically free themselves from legal and traditional working hours (i.e., from 9 to 5). In that sense, individuals become flexible as well, as their working effectiveness and intensity evolves at any time.

By exclusively considering these two aspects of modulation, we only address the positive and emancipating side of this concept. Both modulation in time and space concretely provide to individuals the power to self-manage their temporal and spatial universes. A power for self-management that perfectly fits new expectations expressed by individuals for their social lives.

Nonetheless, although self-modulation of time and space is also a way for individuals to take initiatives from specific situations (as already seen in particular through employee-initiated controls), individuals are subject to a forced but agreed dependence in societies of control. Individuals, who freely manage their work activity, are still retained by an invisible link that controls them at the same time (Zarifian, 2004). This link is illustrated by

information and communications that remote-members benefit from and provide to others (colleagues or managers) through ICTs. Members' activity, their contribution, or their role will be evaluated through this link, which holds them in a real disciplinary confinement (i.e., commitment control).

As such, individuals are subject to a third aspect of modulation that is critical and emerging as part of societies of control: the modulation of subjective commitment (Zarifian, 2004). By modulating the subjective commitment of individuals, we refer to the propensity of distributed-workers to modulate their own working activities and having no visible disciplinary hierarchy to manage them. Such individuals have then to develop themselves and be careful to keep on being effective. The modulation of subjective commitment explains in part why individuals are for instance able to strike a certain balance between their professional and personal lives through the use of these otherwise very intrusive technologies, an issue addressed by our telecommuting participants especially.

These managerial developments are the ones that make forms of disciplinary control inefficient, but provide a new emphasis to more flexible and invisible forms of control. As already addressed, we do not identify in this research new forms of control for the management of distributed universes. Instead, we rather illustrated the coupling of forms of control with the various types of modulation recognized in societies of control. With societies of control, the immobility, the deep-rootedness in space, the confinement are no longer necessary for the control that now penetrates individuals through and through. Control is not interpreted as a power or a hierarchical control anymore, but as a liberation, a form of self-realization, and this is why societies of control might be qualified as pernicious. The introduction of societies of control has finally completely obscured the awareness users have of their autonomy and control that applies to them.

➤ *Questioning about the managerial motivations for the development of distributed-entities:*

Although the four case-studies proposed above concern various types of distributed-work – be they virtual teams, telecommuting or nomadic work -, characteristics of the entities we analyzed can be observed in many other virtual entities over the world or in the literature (“projective cities” form Boltanski and Chiapello (1999)). These entities – especially virtual

teams present in case-studies #1, #2 and #3 – can logically be considered with what is commonly named in literature self-managed teams (Manz, 1992).

Indeed, our virtual entities perfectly match a mode of work organization where employees are constantly jointly responsible for a complete sequence of work (i.e. process of production of goods or services for internal or external customers). These teams are responsible for their global results and members are in charge of management functions in addition to their activities of production. Their level of autonomy follows an evolutionary process: the more mature a team is, the more its members are likely to take responsibilities for the management and the organization of their work. The supervisors' role changes, going from a leadership role to facilitator, and consisting in managing the link between the team and the rest of the organization.

Conversely, our virtual entities cannot be considered as self-leading teams. Self-leading teams are an alternative that can potentially provide advancements beyond self-managed teams, since they would be more involved with organizational strategic processes. Unlike self-managing teams, self-leading groups really alter the traditional structure of decision (Manz, 1992), which is not exactly the case of our virtual entities as well since hierarchical managers still are in charge of the strategic evolution of the virtual groups.

As demonstrated by our observations, distributed members do not play any greater role in influencing strategic processes and higher level management decision-making. Their only influence, through self-control, social control or peer-supervision is on the coordination of - individual or collective - work. Yet, since the main decisions of the projects are taken by their hierarchical manager and since team members only have the possibility to coordinate their collective work, observed virtual entities cannot be viewed as pure self-leading teams.

Consequently, we logically assert the observations of self-managed teams within this research document. Nevertheless, contributions from our research-work lead us to reasonably question the legitimacy and the motivations for implementing such self-managed teams. We observe that through societies of control, these entities are constantly and subtly monitored, in a way that eventually fully coordinates the management of their activities.

We already knew that self-managed teams (not exclusively remote-teams, but also face-to-face self-managed teams) were in reality subject to significant control and supervision (Manz, 1983). However, these control forms were used in order to help members to organize and to provide support for the activity that was performed, by identifying clear boundaries for tasks, reducing ambiguity, coordinating the effort of multicultural individuals,... Such

processes were mainly illustrated by the use of social control in order to provide normative systems within work groups and develop organizational socialization processes.

However, interestingly, our research work demonstrates that control mechanisms used by self-managed teams are not exclusively confined to social control - whose motives may again be perfectly commendable. Self-management and outcome control are undoubtedly related to the activity of self-managed teams, since members are asked to be relatively autonomous (self-management) while conducting their activity the way they want so long as they achieve expected goals). In addition to self-management and outcome control, we observe that more specific control practices like control-enactment processes are developed as well with the aim to truly control individuals' behaviors.

Peer-supervision and employee-initiated controls do enable workers to earn visibility with colleagues or superiors. But although we mentioned earlier that behavior controls are difficult or even impossible to develop in remote-universes because of the lack of direct supervision, we only dealt here with a precise aspect of behavior control, which is the one involving physical sight. But physical observation is only one means of obtaining information about behavior (Eisenhardt, 1985; Kirsch, 1996).

Nonetheless, processes and structures are developed through control-enactment mechanisms in order to influence members, and make them engage in behavior that accomplishes goals over time. Although distributed members frequently rely on their teammates for information about their activities, they are also often able to monitor the behaviors of other members using electronic communication and practices. So that we assert that the formal concept of behavior control is reconceptualized in distributed-work through the shape of control-enactment mechanisms, and this addresses the call of Crisp and Jarvenpaa (2003) for refining control literature's conceptual understanding of monitoring needs in order to explain the non-physical sources of behavioral information in distributed-work.

Control-enactment processes strongly constitute non-physical sources of behavioral information. Through peer-supervision and employee-initiated controls, virtual entities reproduce or transfer this formal behavior control at a lower hierarchical level. Influences on behavior become then less visible and identifiable for individuals.

When talking about self-managed teams as characterizing teams that coordinate their own activities themselves - without influencing strategic processes and higher level management decision-making like in self-leading teams, we put forward a relatively positive

connotation in relation to values of flexibility and empowerment that could be provided on these teams for individuals. But by doing so, we also neglect a critical aspect that might moderate this idyllic picture. Indeed, we forget that these teams actually self-supervise, self-control themselves collectively (and not exclusively individually as is the case for self-management, which has to be acquired by distributed members), and lock themselves in a strong and powerful disciplinary confinement, paradoxically one less perceived by distributed-workers. This paradox addresses the "magic" side - and constitutes the interest for organizations - of societies control depicted by Deleuze and to which distributed-work becomes particularly established in.

In conclusion, our research work enables us to say that what is finally the consequence of societies of control is the project of a global society of information, where the renewal of forms of control is questioned. By entering into consonance with the regime of new ICTs in the contexts of distributed-work, societies of control finally facilitates the development of a specific organization driven by a constraint of commitment, a voluntary servitude that is hardly identifiable by individuals. Distributed-work constitutes a perfect scene for the development of a society where socio-technical mechanisms of flexible control are enhanced, and critical virtues of this management – in terms of visibility, responsiveness, modulation - are combined with the requirements of a culture of results.

Conclusion of chapter:

As a conclusion of this chapter, we would like to propose a brief summary of our results and answers to research questions of this PhD dissertation, since it was the aim of this discussion part to address how control is actually reconsidered within the managerial challenges introduced by distributed-work.

- What managerial changes necessitate the requirement of control practices in remote-work environments?

Managerial challenges in remote-work environments are introduced by the emergence of three forms of distance: the temporal, geographical and cultural distances. Each has its own characteristics, and their particularities have to be understood in order to succeed in better considering the management of distributed universes. As such, our research work

concentrates on significant elements for each of these forms of distance that should not be obscured while analyzing them:

- taking care of the increasing incidence of issues related to members' perceptions about their team and its structure with respect to the consideration of various perceptions of temporalities

- considering the prevalence of perceived rather than objective distance in the understanding of geographical distance

- paying attention to cultural awareness of individuals (cross-individuals analysis) rather than their own cultural particularities or specific dimensions (individual analysis)

While facing the numerous issues emerging from these forms of distance, maintaining a form of surveillance and discipline at distance remains necessary. In such specific universes, control is the ultimate means for the hierarchy to bridge the issue of distances.

- What will be the forms of control practices used?

The use of information systems required by distributed-work introduces an ambiguity. These tools are initially presented as improving communication over distance and worker cooperation through increased individual autonomy, communications networking, along with decentralization of the decision making process. But is also paradoxically accompanied by an intensification of work, continuous self-discipline and emotional involvement. The particularity of control processes in distributed-work will be to limit the awareness of individuals about negative effects of ICTs use, through the creation of subtle mechanisms. Subtle forms of control will not be perceived as a rigid and restrictive constraint by individuals being subjected to them thanks to the medium of technology.

Among them, self-control is motivated by the need for individuals to stay connected, available and responsive, even while being remote, thereby involving a form of extremely high temporal pressure that individuals paradoxically establish themselves. Control-enactment processes reconceptualize the formal concept of behavior control in distributed-work by proposing subtle monitoring and managerial mechanisms that permit the supervision of distant workers who are far from the sight of their hierarchy. In the same perspective, the development of social control consists of immaterial processes facilitating the reduction of perceived distance between distributed members. Finally, while technically a formal mechanism of control, even the development of outcome control is supported so that members

express a certain flexibility and autonomy, having the impression of acting freely and organizing themselves with the condition that they achieve expected goals and results.

Finally, the increasing development of such subtle and flexible modalities of control leads to the development of societies of control as illustrated in our analysis, with individuals perniciously expressing a sort of liberation or way of self-realization although they are still suffering numerous monitoring modalities.

- What do this reconsideration of control means to our global vision of management?

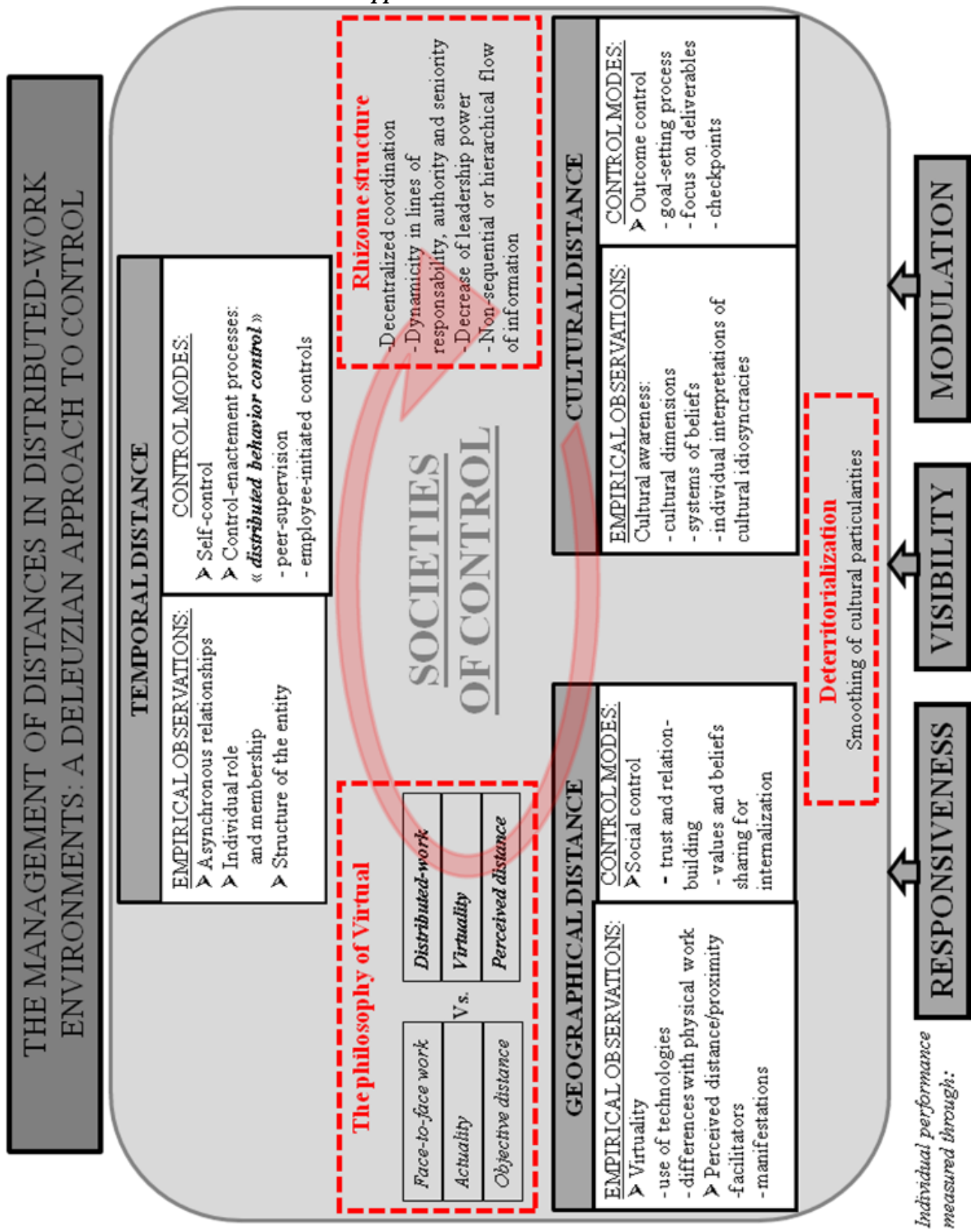
Societies of control are undoubtedly a concrete illustration of the reconsideration of control due to the development of distributed-work in our contemporary societies. With the emergence of societies of control, neither immobility, nor deep-rootedness in space, nor confinement are no longer necessary for control, which now penetrates individuals through and through. Such developments obviously lead to modifications in our global vision of management.

First of all, we observed the increasing shift in the exercise of authority with employees acquiring an increasingly active role in the monitoring process. Distributed members play a more and more active role in the control process and even become the first source of control. In some cases, they even initiate controls themselves. As such, processes of control change the perspectives of power. Indeed, control is here conceptualized to be relational rather than the prerogative of sovereign authority.

With these changes in the exercise of authority, the role of managers will be disrupted as well, and consist in maintaining an untroubled climate of collaboration. Their work will mostly involve numerous exchanges within the team rather than an atmosphere where distributed-workers feel that they are being constantly tested. More than supervising or monitoring activities, which will be reallocated differently through technologies and employees themselves, managers rather take on the role of facilitator.

Moreover, through these modifications in our vision of management and control within distributed-work environments, our own perception of success and performance will be changed. As a summary of our observations, we indeed notice that performance in distributed-work will be based on a particular triptych of core values, which are visibility, responsiveness and modulation of individuals. To adopt the most general vision of management of control and distance within environments of remote-work, we finally present in **Figure 10** the global fruit of our research based on a Deleuzian analytical framework:

Figure 10 - The management of distances in distributed-work environments: A Deleuzian approach to control



General conclusion: Insights, limitations and perspectives

For many years, we have developed a particular interest in distributed-work and organizations functioning that way. By channeling our interest to the concrete development of remote-work in our contemporary society, we have expressed the desire to question the evolution and practical benefits of this form of managerial work. Especially by taking into account that, from the outside, distributed-work seems to be relatively advantageous for both individuals and organizations because of the characteristics it supposedly offers: flexibility, autonomy, financial and environmental gains, etc...

Within the perspective of a managerial analysis of distributed entities, the issue of control has quickly proven to be essential. Control is the ultimate means for the hierarchy to bridge the issue of distance. With these control practices constituting one of the main differences between face-to-face and distributed-work, we focused our attention on issues of control in the work-at-distance universes. Finally, the analysis of this concept allowed us to obtain a global and original perspective for the management of distributed-work, thereby explaining the evolution of related organizations in our contemporary world.

1) Theoretical and methodological contributions:

One of the main objectives of our dissertation is to provide evidence for the value of an analytical framework based on the work of French philosopher Gilles Deleuze for better understanding control, and more generally, managerial practices in distributed-work. After justifying the use of this type of philosophical work and showing how such reference could address the limitations of approaches of control in organizational theories, we have constructed this analytical framework based on our own understanding of specific Deleuzian concepts and their potential application to the domain of management. This analytical framework first enabled us to demonstrate that although remote-organizations are subject to

various constraints due to the emergence of distances, taking into consideration these challenges requires a global management based on the notion of control.

Because of the special characteristics of remote-work universes, the notion of control is significantly reconsidered by the establishment of specific procedures (forms of control being principally flexible and informal) and a shift of control relationships from vertical to more horizontal modes. This reconsideration of control ultimately leads to a disruption of management practices both for:

- managers, who see their role evolving from a supervisory status to the one of facilitator,

- distributed-workers themselves, whose activity will be mainly affected and directed by core values that they have to manage ideally, especially in terms of visibility, responsiveness and modulation.

In this context, the acknowledgement of control-enactment processes, through peer-supervision and employee-initiated controls, constitutes a valuable insight for the better understanding of distributed-work.

Thanks to our analytical framework, we have been able to observe the concrete manifestations of what Deleuze calls the society of control, namely a subtle form of control and confinement that is made possible through the predominant use of ICTs in work-at-distance. The identification of these societies of control is therefore a last theoretical contribution of our work since the concept had previously been only briefly and sporadically discussed in management studies. Interestingly, the illustration of these societies of control enables us to understand more generally the management of remote-work by highlighting concepts of visibility, responsiveness, and modulation as critical values for performance in distributed-universes, and by reconsidering the expected contributions from such a management style.

From a methodological point of view, we can credit two types of contribution for this research work, which is centered around the construction of our analytical framework. First of all, this grid allowed us to identify and analyze the diverse managerial challenges from the emergence of temporal, geographical and cultural distance, as well as any control operations in virtual organizations. In its data processing capacity, this analytical framework also allowed us to address the cross-individual processes of control and management in organizations, through the treatment of interviews that do not focus on one specific level of

analysis - be it individual or holistic. The use of the Deleuzian ontology allowed us to develop a global tool that can be used for an overall analysis of all types of distributed organizations. Subsequently, regarding the usage of this analytical framework, we sought to clarify its operationalization by specifying our coding procedures. The application of this analytical framework 1) in two contexts as different as those in which organizations such as EADS and KCI Medical operate, and 2) supported by numerous criteria assessing the research quality in terms of reliability and validity, finally provides sure elements regarding its potential of use by other researchers and in external contexts.

2) Managerial contributions:

In addition to theoretical and methodological contributions, a PhD dissertation in management has to have major practical implications. It can be seen that our research work has such practical implications as it constitutes both an advanced diagnostic tool, and an effective steering tool as well. First of all, it stimulates organizations and managers to question the foundations and motivations of control procedures. Therefore, by establishing an inventory of control and managerial practices in their virtual organizations, managers will be able to determine what types of factors and managerial challenges have to be taken in special consideration in order to better understand the activity of their distributed staffs.

Our approach also finally made possible the construction of a monitoring tool for overall control relationships in these universes. By reconsidering control procedures in use, organizations will be able to adapt their management in order to reduce challenges related to their distributed activity. In this respect, organizations that have collaborated with the conduct of this research have shown a keen interest in expected results from this study: they hope to receive a relevant guide for their distributed activities.

3) Limitations of our research work:

Our contributions must be understood alongside the limitations of our research-work, be they methodological or theoretical. These limitations mainly concern the choice of cases and methods adopted, besides the use of an atypical theory in the field of management for the construction of our analytical framework.

➤ **Theoretical limitations:** The major theoretical limitation identified in our research work concerns the use of the Deleuzian philosophy for building and managing an analysis of distributed-work. Deleuze's philosophy has rarely been used as a significant material in management, although its use has become more significant in the last few years. Taking into account this observation, the construction of this unique analytical framework is finally based on our own understanding of these abstract notions and on their adjustment to concrete managerial issues. Besides, although being the critical element of analysis and reflection in this research document, the concept of control is not central in the philosophy of Deleuze. Control occupies only a few pages in "Post-Scriptum sur les sociétés de contrôle" and is not subject to more clear significant discussion in his overall literature. Nevertheless, Deleuze's analysis offers concepts that, as we have seen, can be extremely relevant for the study of remote management.

➤ **Methodological limitations:** We chose to study the reconsideration of control in distributed-work by conducting a total of four case studies in two specific organizations. The choice of these two organizations and their internal entities remains however inevitably limited in the sense that they were mainly based on opportunities that were presented to us. In order to remedy in part this limitation, we have sought to provide maximum information about the context in which these organizations, their entities and individuals work, in order to justify the value of studying them. In addition, we chose to develop our analysis at different levels of theoretical population, as well as contexts, since EADS and KCI Medical organizations operate in completely dissimilar areas and industries. By doing so, we hoped that the results of this dissertation would have the greatest possibilities of generalization.

Other limitations might however be identified in accordance to the characteristics of our methodology. While our research lists a total of four case studies, one could still regret the limited number of interviews that were conducted at KCI in comparison with those conducted at EADS. Similarly, the actual amount of non-participating observation, although being

already very useful for our analysis, would have benefited from an increase in order to get an even better idea of the management of distributed staff.

Finally, given that this research focuses on remote work as a whole, one could deplore the prevalence of virtual teams over other forms of distributed-work such as telecommuting and nomadic work. These latter forms have been addressed in the conduct of last case-study, but their proportion remains limited in our overall analysis.

Beyond its limits and contributions, this PhD dissertation allowed us to look at a particular research issue, and to better understand the thought of an author by trying to import the richness of his work in a discipline that has largely neglected it as yet. Therefore, this research opens the door to numerous questions that deserve to be addressed in future research. Among them, we would like in the future to continue our analysis on this tremendously interesting topic, especially in order to address the limitations identified above. Moreover, we aim to investigate the exciting issue of distributed individuals' or team performance thanks to the various insights emerging from our study and application from our framework. This PhD dissertation is not an end in itself, but instead constitutes an opportunity for future research, only some of which are suggested in this document. This observation means that we will spend numerous hours thinking, that is to say interpreting, explaining, or developing concepts in the future, which are activities illustrating the "pure creation" according to Deleuze.

REFERENCES

1. Ahuja, M., and Carley, K. 1999. "Network Structure in Virtual Organizations," *Organization Science*, (10:6), pp. 741-757.
2. Amin, A., and Cohendet, P. 2004. *Architectures of knowledge: Firms, capabilities, and communities*, Oxford, UK: Oxford University Press.
3. Anderson, V. 2004. *Research Methods in Human Resource Management*, The Chartered Institute of Personnel and Development (CIPD)
4. Anzieu, D., and Martin, J. 1990. *La dynamique des groupes restreints*, PUF.
5. Argyris, C. 1957. *Personality and organisation*. Harper & Row.
6. Armstrong, D. J., and Cole, P. 2001. "Managing distances and differences in geographically distributed-work groups", in *Distributed-work*, P. Hinds, and S. Kiesler, , Cambridge, MA: MIT Press.
7. Baker, E., Avery, G. C, and Crawford, J. 2006. "Home Alone: The Role of Technology in Telecommuting", *Information Resource Management Journal*, (19:4), pp. 1-22.
8. Barker, J. 1993. "Tightening the iron cage: concertive control in self-managing teams", *Administrative Science Quarterly*, (38:3), pp.408-437.
9. Barnard, C. 1938. *The functions of the executive*, London: McGraw-Hill.
10. Baskerville, R. 2003. "Hofstede Never Studied Culture", *Accounting, Organizations and Society*, (28:1), pp. 1-14.

11. Baruch, Y. 2001. "The status of research on teleworking and an agenda for future research", *International Journal of Management Reviews*, (3:2), pp. 113-129
12. Bell, B., and Kozlowski, S. 2002. "A typology of virtual teams: Implications for effective leadership," *Group and organization management*, (27:1), pp. 14 – 49.
13. Bellier, S., Isaac, H., and Josserand, E., Kalika, M., and Le Roy, I. 2002. *L'e-management : vers l'entreprise virtuelle ?*, Edition Liaisons.
14. Ben Naoui Jawadi, N. 2008. *Etude de la contribution du leadership à la gestion de la confiance et la performance dans les équipes virtuelles*, Thèse doctorale CREPA.
15. Bergeron, G. 1970. "Pouvoir, contrôle et régulation", *Sociologie et Sociétés*, (2:2), pp. 227-248.
16. Blanchot, F., Isaac, H., Josserand, E., Kalika, M., de Montmorillon, B., and Romelaer, P. 2000. "Organisation: explosion des frontières et transversalité," *Cahier de recherche numéro 50*, CREPA, Université Paris Dauphine.
17. Bloomfield, B., and Coombs, R. 1992. "Information technology, control and power: the centralization and decentralization debate revisited," *Journal of management studies*, (29:4), pp. 459-484.
18. Bolstanski, L., and Chiapello, E. 1999. *Le nouvel esprit du capitalisme*, Gallimard
19. Bonnivert, S., Rorive, B., and Xhaufclair, V. 2003. "Nouvelles formes de travail et relations sociales: la montée des faux salariés," *Relier*, Liège.
20. Bouquin, H. 2006. *Le contrôle de gestion : contrôle de gestion, contrôle d'entreprise et gouvernance*, Paris, Presses Universitaires de France
21. Bourdieu, P. 1980. *Le sens pratique*. Paris, Les éditions de minuit.

22. Bourdieu, P. 1993. *La misère du monde*. Paris, Seuil.
23. Brown, A. 1995. *Proximity and product development: A study of problem-solving in a United States and a Japanese firm*, Dissertation, Stanford University.
24. Brunelle, E. 2009. "E-Leadership: l'art de gérer les distances psychologiques," *Gestion*, (34:2), pp.10-20.
25. Buydens, M. 2003. "Espace lisse/Espace strié," in *Le vocabulaire de Gilles Deleuze*, R. Sasso, and A. Villani, Les Cahiers de Noesis n°3, pp. 134-135.
26. Cardinal, L. B., Sitkin, S. B., and Long, C. P. 2004. "Balancing and rebalancing in the creation and evolution of organizational control," *Organization Science*, (15:4), pp. 411– 431.
27. Carmel, E., and Agarwal, R. 2001. "Tactical approaches for alleviating distance in global software development," *IEEE Software*, (18:2), pp. 22-29.
28. Cascio, W., and Shurygailo, S. 2003. "E-Leadership and Virtual Teams," *Organizational Dynamics*, (31:4), pp. 362- 376.
29. Chanlat, J.-F. 1990. *L'individu dans l'organisation. Les dimensions oubliées*, Les Presses de l'Université Laval.
30. Chiapello, E. 1996. "Les typologies des modes de contrôle et leurs facteurs de contingence : un essai d'organisation de la littérature," *Comptabilité, Contrôle, Audit*, (2:2), pp. 51-74.
31. Child, J. 2005. *Organisation: contemporary principles and practice*. Malden: Blackwell Publishing.
32. Choudhury, V., and Sahberwal, R. 2003. "Portfolios of Control in Outsourced Software Development Projects," *Information Systems Research*, (14:3), pp. 291-314.

33. Chudoba, K., Wynn, E., Lu, M., and Watson-Manheim, M. 2005. "How virtual are we? Measuring virtuality and understanding its impact in global organization," *Information Systems Journal*, (15:4), pp. 279-306.
34. Clegg, S. R. 1989. *Frameworks of power*. London: Sage.
35. Cohen, S., and Bailey, D. 1997. "What Makes Teams Work: Group Effectiveness Research from the Shop Floor to the Executive Suite," *Journal of Management*, (23:3), pp. 239-290.
36. Colquitt, J., Hollenbeck, J., Ilgen, D., LePine, J., and Sheppard, L. 2002. "Computer-assisted communication and team decision-making accuracy: The moderating effect of openness to experience," *Journal of Applied Psychology*, (87:2), pp. 402-410.
37. Coombs, R., Knights, D., and Willmott, H. 1992. "Culture, Control and Competition: Towards a Conceptual Framework for the Study of Information Technology in Organizations," *Organization Studies*, (13:1), pp. 51-72.
38. Coshall, J., and Potter, R. 1987. "Social psychological variations in the distance cognitions of urban consumers in Britain," *Journal of Social Psychology*, (127:6), pp. 611-625.
39. Courpasson, D. 1999. *L'action contrainte, Organisations libérales et domination*, Puf, Paris.
40. Cousins, K., Robey, D., and Ziguers, I. 2007. "Managing strategic contradictions in hybrid teams," *European Journal of Information Systems*, (16:4), pp. 460-478.
41. Crampton, C. 2001. "The Mutual Knowledge Problem and its Consequences for Dispersed Collaboration," *Organization Science*, (12:3), pp. 346-371.

42. Crisp, C., and Jarvenpaa, S. 2003. "Control enactment in global virtual teams," *Academy of Management Annual Meeting*, Denver, 2003.
43. Crozier, M., and Friedberg, E. 1977. *L'acteur et le système : les contraintes de l'action collective*, Seuil, Paris.
44. Cyert, R.M., and March, J.G. 1963. *A behavioral theory of the firm*, Englewood Cliffs, Prentice Hall.
45. Daassi, M., and Favier, M. 2007. "Le nouveau défi des équipes virtuelles : construire et maintenir une connaissance mutuelle, *Systèmes d'Information et Management*, (12:3), pp.3-32.
46. Daft, R. L., and Lengel, R. H. 1986. "Organizational information requirement, media richness and structural determinants," *Management Science*, (32:5), pp. 554-571.
47. Dambrin, C. 2004. "How does telework influence the manager-employee relationship?," *International Journal of Human Resources Development and Management*, (4:4), pp. 358-375.
48. Dameron, S. 2000. *Génération de la coopération dans l'organisation : le cas d'équipes projet*, Thèse CREPA soutenue le 06/12/2000, Université Paris Dauphine.
49. Dameron, S. 2004. "Opportunisme ou besoin d'appartenance? La dualité coopérative dans le cas d'équipes projet," *M@n@gement*, (7:3), pp. 137-160.
50. Dameron, S., and Joffre, O. 2007. "The good and the bad: the impact of diversity management on co-operative relationships," *International Journal of Human Resource Management*, (18:11), pp. 2037-2056.
51. Das, T., and Teng, B. 1998. "Between trust and control: Developing confidence in partner cooperation in alliances," *Academy of Management Review*, (123:3), pp. 491–512.

52. David, G. 2008. "Les rôles du contrôle et des contrôleurs de gestion financiers dans les grandes entreprises," *Mémoire d'habilitation à diriger les recherches*, Université Paris Dauphine.
53. De La Vega, X. 2005. "Le devenir du rhizome," *Nouveau millénaire. Défis libertaires*, Mai-Juin 2005, disponible à : <http://1libertaire.free.fr/Rhizome01.html>.
54. De Mazenod, X. and Maurin, J-C. 2008. "Encourager la mobilité ou réduire la distance," *Village magazine*, n° 93.
55. Delbridge, R., and Ezzamel, M. 2005. "The Strength of Difference: Contemporary Conceptions of Control," *Organization*, (12:5), pp. 603-618.
56. Deleuze, G. and Guattari, F. 1972. *L'Anti-Oedipe – Capitalisme et schizophrénie*, Les Editions de Minuit.
57. Deleuze, G. and Guattari, F. 1980. *Mille plateaux – Capitalisme et schizophrénie*, Les Editions de Minuit.
58. Deleuze, G. and Guattari, F. 1991. *Qu'est ce que la philosophie?*, Les Editions de Minuit.
59. Deleuze, G. 1996. L'actuel et le Virtuel, *Dialogues*, Flammarion.
60. Deleuze, G. 1968. *Différence et répétition*, PUF.
61. Deleuze, G. 1953. *Empirisme et subjectivité, essai sur la nature humaine selon Hume*, PUF.
62. Deleuze, G. 1990a. "Contrôle et devenir?," *Pourparlers*, pp. 229-239.

63. Deleuze, G. 1990b. "Post-scriptum sur les sociétés de contrôle," *Pourparlers*, pp. 240-247.
64. Deschenaux, F., and Bourdon, S. 2005. "Introduction à l'analyse qualitative informatisée à l'aide du logiciel QSR Nvivo 2," *Les cahiers pédagogiques de l'association pour la recherche qualitative*, p.1-45.
65. Desreumaux, A. 1996. "Nouvelles formes d'organisation et évolution de l'entreprise," *Revue française de gestion*, (107), pp. 86-108.
66. Di Meo G. 1991. *L'Homme, la Société, l'Espace*. Paris, Anthropos Economica.
67. D'Iribarne, P. 1989. *La logique de l'honneur : gestion des entreprises et traditions nationales*, Editions du Seuil.
68. Dixon, K, and Panteli, N. 2010. "From virtual teams to virtuality in teams," *Human Relations*, (63:8), pp.1177-1197.
69. D'Iribarne, P., Henry, A., Segal, J., Chevrier, S., and Globokar, T. 2002. *Cultures et mondialisations, Gérer par-delà les frontières*, Essais, Points, Seuil.
70. Dow, D. 2000. "A note on psychological distance and export market selection," *Journal of International Marketing*, (8:1), pp. 51-64.
71. Drucker, P. 1995. *The practice of Management*, Butterworth-Heinemann.
72. Dubé, L., and Pare, G. 2001. "Global virtual teams," *Communications of the ACM*, (44:12), pp. 71-73.
73. Dubé, L., and Paré, G. 2004. "The multi-faceted nature of virtual teams," in *Virtual teams: Projects, protocols and processes*, D. Pauleen, IGI Global, pp.1-39.

74. Dubrovsky, V. J., Kiesler, S., and Sethna, B. N. 1991. "The equalization phenomenon: Status effects in computer-mediated and face-to-face decision-making groups," *Human Computer Interaction*, (6:2), pp. 119-146.
75. Earley, P., and Gibson, C. *Multinational work teams: A new perspective*. Mahwah, NJ: Lawrence Erlbaum Associates, 2002.
76. Ebert, C., and Neve, P., 2001. "Surviving global software development," *IEEE Software*, (18:2), pp.62-69.
77. Eisenhardt, K. M. 1985. "Control: Organizational and Economic Approaches," *Management Science*, (31:2), pp. 134-149.
78. Eisenhardt, K. M. 1989. "Building theories from case study research," *Academy of Management Review*, (14:4), pp. 532-550.
79. Eisenhardt, K. M. 1991. "Better stories and better constructs: The case for rigor and comparative logic," *Academy of Management Review*, (16:3), pp. 620-627.
80. Eisenhardt, K. M., and Graebner, M. E. 2007. "Theory building from cases: Opportunities and challenges," *Academy of Management Journal*, (50:1), pp. 25-32.
81. Espinosa, J., and Carmel, E. 2003. "The impact of time separation on coordination in global software teams: a conceptual foundation," *Journal of Software Process: Improvement and Practices*, (8:4), pp.249-266.
82. Espinosa, J., Cummings, J., Wilson, J., and Pearce, B. 2003. "Team boundary issues across multiple global firms," *Journal of Management Information Systems*, (19:4), pp. 157-190.
83. Evaristo, J. R., Scudder, R., Desouza, K. C., and Sato, O. 2004. "A dimensional analysis of geographically distributed project teams: A case study," *Journal Engineering and Technology Management*, (21:3), pp. 175-189.

84. Favier, M., and Coat, F. 2002. "L'influence des contextes organisationnels sur les équipes virtuelles," *Revue de gestion des ressources humaines*, (44), pp.44-62.
85. Fayol, H. 1918. *Administration industrielle et générale*, Paris: Dunod.
86. Flamant N. 2002. *Une anthropologie des managers*, PUF.
87. Fischer, J. 1995. "Contingency-based research on management control systems: Categorization by level of complexity," *Journal of Accounting Literature*, (14), pp. 24-53.
88. Fisher, S., Hunter, T., and Macrosson, W. 1997. "Team or group? Managers' perceptions of the differences," *Journal of Managerial Psychology*, (12:4), pp. 232-242.
89. Flamholtz, E., Das, T., and Tsui, A. 1985. "Toward an integrative framework of organizational control," *Accounting, Organizations and Society*, (10:1), pp. 35-50.
90. Follet, M.P. 1937. "The process of Control," in *Papers on the Science of Administration*, L.H. Gulick, and L.F. Urwick, New-York, Institute of Public Administration, Columbia University, pp.161-169.
91. Foucault, M. 1975. *Surveiller et Punir*, Gallimard.
92. Foucault, M. 1994. "La société disciplinaire en crise : Conférence à L'Institut franco-japonais de Kansai, Kyoto," *Dits et Écrits*, Paris: Gallimard.
93. Fournier J-M. 2007. "Géographie sociale et territoires : De la confusion sémantique à l'utilité sociale?," *La lettre ESO N° 26*, pp. 29–35.
94. Fulk, J., and De Sanctis, G. 1995. "Electronic Communication and Changing Organizational Forms," *Organization Science*, (6:4), pp. 337-349.

95. Gallivan, M. 2001. "Striking a Balance between Trust and Control in a Virtual Organization: A Content Analysis of Open Source Software Case Studies," *Information Systems Journal*, (11:4), pp. 277-304.
96. Gallivan, M., and Depledge, G. 2003. "Trust, Control and the Role of Interorganizational Systems in Electronic Partnerships," *Information Systems Journal*, (14:2), pp. 159-190.
97. Garreau, L. 2009. *L'apport du concept de sens à l'étude du fonctionnement des équipes projet*, Thèse CREPA soutenue le 10 Novembre 2009.
98. Garton, L., Haythornthwaite, C., and Wellman, B. 1999. "Studying online social networks," in *Doing internet research*, S. Jones, Thousand Oaks, pp. 75-105.
99. Gibbs, J. 2009. "Dialectics in a global software team: Negotiating tensions across time, space and culture," *Human Relations*, (62:6), pp.905-935.
100. Gibson, C., and Gibbs, J. 2006. "Unpacking the concept of virtuality: The effects of geographic dispersion, electronic dependence, dynamic structure, and national diversity on team innovation," *Administrative Science Quarterly*, (51:3), pp. 451-495.
101. Giddens, A. 1987. *La constitution de la société: éléments de la théorie de la structuration*, Paris: PUF.
102. Glaser, B., and Strauss, A. 1967. *The discovery of grounded theory: Strategies of qualitative research*, London: Wiedenfeld and Nicholson.
103. Glaser, B. 1978. *Theoretical Sensitivity*, The sociology Press.
104. Glaser, B. 1992. *Basics of Grounded Theory Analysis: Emergence vs. Forcing*, Mill Valley, CA: The Sociology Press.

105. Gronn, P. 1983. "Talk as the work: the accomplishment of school administration," *Administrative Science Quarterly*, (28:1), pp. 1-21.
106. Gudykunst, W., and Nishida, T. 2001. "Anxiety, uncertainty, and perceived effectiveness of communication across relationships and cultures," *International Journal of Intercultural Relations*, (25:1), pp. 55—71.
107. Gurung, A., and Prater, E. 2006. "A Research Framework for the Impact of Cultural Differences on IT Outsourcing," *Journal of Global Information Technology Management*, (9:1), pp. 24-43.
108. Habib, L., and Cornford, T. 1996. "The Virtual Office and Family Life," *Proceedings of the 1996 ACM SIGCPR/SIGMIS Conference*.
109. Hackman, J. 1990. *Groups that Work (and Those That Don't)*, Jossey-Bass, San Francisco.
110. Hall, E. 1966. *The Hidden Dimension*, Doubleday.
111. Hall, E. 1977. *Beyond culture*, Anchor Book.
112. Handy, C. 1995. "Trust and the Virtual Organisation," *Harvard Business Review*, (73:3), pp. 40-50.
113. Hardt, M., and Negri, A. 2001. *Empire*, Cambridge, MA: Harvard University Press.
114. Harrison-Hill, T. 2001. "How far is a long way? Contrasting two cultures perspectives of travel distance," *Asia Pacific Journal of Marketing and Logistics*, (13:3), pp. 3–17.

115. Hayes, N., and Walsham, G. 2000. "Competing interpretations of computer-supported cooperative work in organizational contexts," *Organization*, (7:1), pp. 49-67.
116. Henderson, J. C., and Lee, S. 1992. "Managing IS Design Teams: A Control Theories Perspective," *Management Science*, (38:6), pp. 757-777.
117. Herbsleb, J., and Grinter, R. 1999. "Architectures, coordination, and distances: Conway's law and beyond," *IEEE Software*, (16:5), pp.63-70.
118. Herbsleb, J., and Moitra, D. 2001. "Global software development," *IEEE Software*, (18:2), pp.16-20.
119. Hertel, G., Geister, S., and Konradt, U. 2005. "Managing Virtual Teams: A Review of Current Empirical Research," *Human Resource Management Review*, (15:1), pp. 69-95.
120. Heuser, A. E. 2009. *An examination of the use of synchronous computer-mediated communication technology in work teams*, PhD dissertation, Labor and Human Resources, Ohio State University.
121. Hill, E.J., Miller, B.C., Weiner, S.P., and Colihan, J. 1998. "Influences of the virtual office on aspects of work and work/life balance," *Personnel Psychology*, (51:3), pp. 667-683.
122. Hinds, P.J., and Mortensen, M. 2005. "Understanding Conflict in Geographically Distributed Teams: The Moderating Effects of Shared Identity, Shared Context, and Spontaneous Communication," *Organization Science*, (16:3), pp. 290-307.
123. Hlady-Rispal M. 2002. *La méthode des cas. Application à la recherche en gestion*, De Boeck Université.

124. Hofstede, G. 1981. "Culture and organizations," *International studies of management and organization*, (10:4), pp.15-41.
125. Huws, U., and O'Regan, S. 2001. "eWork in Europe: The Emergence 18-Country Employer Survey," *IES Report 380*.
126. Ibert, O. 2010. "Relational distance: sociocultural and time-spatial tensions in innovation practices," *Environment and Planning*, (42:1), pp. 187-204.
127. Janssens, M., and Brett, J. 2006. "Cultural Intelligence in Global Teams: A fusion model of collaboration," *Group Organization Management*, (31:1), pp. 124-150.
128. Jarvenpaa, S., and Leidner, D. 1999. "Communication and trust in global virtual teams," *Organization Science*, (10:6), pp.791-815.
129. Jaworski, B. 1988. "Toward a Theory of Marketing Control: Environmental Context, Control Types, and Consequences," *Journal of Marketing*, (52:3), pp. 23-39.
130. Jensen, M., and Meckling, W. 1976. "Theory of the firm: Managerial behavior, agency costs, and ownership structure," *Journal of Financial Economics*, (3:4), pp. 305-360.
131. Jermier, J. 1998. "Introduction: Critical Perspectives on Organizational Control," *Administrative Science Quarterly*, (43:2), pp. 235-256.
132. Kalika, M. 2002. *Les défis du management, 15 réflexions pour l'action managériale dans un environnement turbulent*, Éditions Liaisons.
133. Kalika, M. 2006. *Management et TIC : 5 ans de e-management dans les entreprises*, Editions Liaisons.
134. Karahanna E., Evaristo R., and Srite M. 2002. "Methodological Issues in MIS

- Cross-Cultural Research,” *Journal of Global Information Management*, (10:1), pp.48-55.
135. Karjalainen, H., and Soparnot, R. 2010. “Gérer des équipes virtuelles internationales: une question de proximité et de technologies,” *Gestion*, (35:2), pp.10-20.
136. Kayworth, T., and Leidner, D. (2002) “Leadership effectiveness in global virtual teams,” *Journal of Management Information Systems*, (18:3), pp.7-40.
137. Kazemak, E., and Albert, B. 1988. “Learning the secret to teamwork,” *Healthcare Financial Management*, (42:9), pp. 108-110.
138. Kiesler, S., and Cummings, J. 2002. “What do we know about proximity and distance in work groups? A legacy of research,” in *Distributed-work*, P. Hinds and S. Kiesler, MIT Press, pp. 57–82.
139. Kirkman, B. L., and Mathieu, J. E. 2005. “The dimensions and antecedents of team virtuality.” *Journal of Management*, (31:5), pp. 700-718.
140. Kirkman, B., Rosen, B., Tesluk, P., and Gibson, C. 2004. “The Impact of Team Empowerment on Virtual Team Performance: The Moderating Role of Face-to-Face Interaction,” *Academy of Management Journal*, (47:2), pp. 175-192.
141. Kirsch, L. 1996. “The Management of Complex Tasks in Organizations: Controlling the Systems Development Process,” *Organization Science*, (7:1), pp. 1-21.
142. Kirsch, L. 1997. “Portfolios of Control Modes and IS Project Management,” *Information Systems Research*, (8:3), pp. 215-239.
143. Kirsch, L. 2004. “Deploying Common Systems Globally: The Dynamics of Control,” *Information Systems Research*, (15:4), pp. 374-395.

144. Klein, J., and Kleinhanns, A. 2003. "Closing the time gap in virtual teams," in *Virtual teams that work: Creating the conditions for virtual team effectiveness*, Gibson, C. B. and Cohen, S. G., San Francisco CA, pp.381-399.
145. Koenig, G. 1993. "Production de la connaissance et constitution des pratiques organisationnelles," *Revue de Gestion des Ressources Humaines*, (9), pp.4-17.
146. Kolb, D. 2007. "Introduction to globally distributed-work: redefining distance (Why the world is not flat and distance can never be 'dead')," *Report of the University librarian for the year 2007*, University of Auckland – New-Zealand.
147. Kozlowski, S.W. J., and Ilgen, D.R. 2006. "Enhancing the Effectiveness of Work Groups and Teams," *Psychological Science in the Public Interest*, (7:3), pp. 77-124.
148. Langevin, P. 2002. "Efficacité et contrôle des équipes virtuelles : une revue," *Comptabilité-Contrôle-Audit*, (8:2), pp. 87-107.
149. Largier, A. 2001. "Le télétravail, trois projets pour un même objet," *Réseaux*, (19:106), pp. 201-229.
150. Lawrence, P., and Lorsch, J. 1967. *Organization and environment*, Harvard University Press.
151. Le Berre, M., and Castagnos, J. 2003. *La Gestion des hommes dans l'entreprise : Défis stratégiques et outils de décision*, Presses universitaires de Grenoble.
152. Le Roy F. 1998. "La stratégie militaire comme métaphore de la rivalité concurrentielle," *Actes de la septième Conférence de l'AIMS*, Ecole des HEC de Montréal, Canada.

153. Leclercq, A. (2008) *Le contrôle organisationnel et les systèmes d'information mobiles : Une approche foucaldienne*, Thèse doctorale CREPA.
154. Lee, K. M. 2004. "Presence explicated," *Communication Theory*, (14:1), pp. 27-50.
155. Leonardi, P., Jackson, M., and Marsh, N. 2004. "The strategic use of distance among virtual team members: A multi-dimensional communication model," in *Virtual and collaborative teams: Process, technologies, and practice*, S. Godar, and S. Ferris, Hersey, PA: Idea Group.
156. Lévy, P. 1995. *Qu'est-ce que le virtuel ?*, La Découverte.
157. Lévy, R. and Talbot, D. 2010. "Le contrôle par la proximité: l'analyse du réseau du pôle de compétitivité Aerospace Valley," *Cahier du GREThA Université Bordeaux IV*, n 2010-08.
158. Lewin, K. 1951. *Field theory in social science*, Harper & Row.
159. Likert, R. 1961. *New patterns of management*, Mcgraw-Hill.
160. Linstead, S., and Thanem, T. 2007. "Multiplicity, Virtuality and Organization: The Contribution of Gilles Deleuze," *Organization Studies*, (28:10), pp. 1483-1503.
161. Loth, D. 2009. "Le fonctionnement des équipes interculturelles," *Management & Avenir*, (28:8), pp. 326-347.
162. Lupton, P., and Haynes, B. 2000. "Teleworking - the perception-reality gap," *Facilities*, (18:7), pp. 323-337.
163. Manz, C. C. 1992. "Self-Leading Work Teams: Moving Beyond Self-Management Myths," *Human Relations*, (45:11), pp. 1119-1140.

164. Manz, C. C., and Sims, H. P. 1987. "Leading workers to lead themselves: The external leadership of self-managing work teams," *Administrative Science Quarterly*, (32:1), pp. 106-128.
165. Mark, G. 2001. "Meeting current challenge for virtually collocated teams: participation, culture and integration," in *Our Virtual World: The Transformation of Work, Play, and Life via Technology*, L. Chidambaram, and I. Zigurs, pp. 74–93.
166. Markus, M. L. 1994. "Electronic mail as the medium of managerial choice," *Organization Science*, (5:4), pp. 502-527.
167. Markus, M. L. 2000. "Toward a theory of IT-integrated risk control," in *Organizational Social Perspectives on Information Technology*, R. Baskerville, J. Stage, and J. DeGross, Amsterdam, pp. 167–178.
168. Martins, L., Gilson, L., and Maynard, M. 2004. "Virtual Teams: What Do We Know and Where Do We Go From Here?," *Journal of Management*, (30:6), pp. 805-836.
169. Mayo, E. 1933. *The Human Problems of an Industrialised Civilisation*, Routledge London.
170. Maznevski, M., and Chudoba, K. 2000. "Bridging space over time: Global virtual team dynamics and effectiveness," *Organization Science*, (11:5), pp.473–492.
171. McGregor, D. 1960. *The human side of enterprise*, New York. McGraw-Hill.
172. Merchant, K. A. 1988. "Progressing toward a theory of marketing control: A comment," *Journal of Marketing*, (52:3), pp. 40-44.
173. Meyerson, D. Weick, K., and Kramer, R. 1996. "Swift trust and temporary groups," in *Trust in organizations: Frontiers of theory and research*, R. Kramer and T. Tyler, Sage, pp. 166-195.

174. Miles, M., and Huberman, A. 1994. *Qualitative Data Analysis*, Sage.
175. Miles, R., and Snow, C. 1986. "Organizations: new concepts for new forms," *California Management Review*, (8:2), 68-73.
176. Mills, P. K. 1983. "Self-management: Its control and relationship to other organizational properties," *Academy of Management Review*, (8:3), pp. 445-453.
177. Millward, L., and Kyriakidou, O. 2004. "Effective virtual teamwork: A socio-cognitive and motivational model," in *Virtual and collaborative teams: Process, technologies and practice*, S. H. Godar, and S. P. Ferris, Hershey, PA: Idea Group Publishing.
178. Mintzberg, H. 1982. *Structure et dynamique des organisations*, Editions d'Organisation.
179. Mintzberg, H. 1986. *Le pouvoir dans les organisations*, Les Éditions d'Organisation.
180. Montoya-Weiss, M. M., Massey, A. P., and Song, M. 2001. "Getting it together: temporal coordination and conflict management in global virtual teams," *Academy of Management Journal*, (44:6), p.1251-1262.
181. Morel-a-Lhuissier, P. 2006. "Du télétravail au travail mobile : un enjeu de modernisation de l'économie française," *Rapport ministériel pour le Premier Ministre*, Paris.
182. Moriset, B. 2004. "Télétravail, travail nomade : le territoire et les territorialités face aux nouvelles flexibilités spatio-temporelles du travail et de la production," *Cybergeo : Revue européenne de géographie*, N° 257.

183. Mortensen, M. 2009. "Fuzzy Teams: Why Do Teams Disagree on Their Membership, and What Does It Mean?," *MIT Sloan Research*, Paper No.4688-0.
184. Mortensen, M., Woolley, A.W., O'Leary, M, 2007. "Conditions for enabling effective multiple team membership," in *Virtuality and virtualization*, K. Crowston, S. Sieber, and E. Wynn, Boston: Springer, pp. 215-228.
185. Myers, M.D. and Tan, F.B. 2002. "Beyond Models of National Culture in IS Research," *Journal of Global Information Management*, (10:1), pp. 24-31.
186. Ngwenyama, O., and Lee, A. 1997. "Communication richness in electronic mail: Critical social theory and the contextuality of meaning," *MIS Quarterly*, (21:2), pp. 145-167.
187. Nidumolu, S. R., and Subramani, M. R. 2003. "The matrix of control: Combining process and structure approaches to managing software development," *Journal of Management Information Systems*, (20:3), pp. 159–196.
188. Nonaka, I., and Konno, N. 1998. "The concept of "Ba": Building foundation for knowledge creation," *California Management Review*, (40:3), pp. 40–54.
189. Nurmi, N., Bosch-Sijtsema, P., Sivunen, A., and Fruchter, R. 2009. "Who shouts louder? Exerting power across distance and culture," *Proceeding of the 2009 international Workshop on intercultural Collaboration - IWIC '09. ACM*, 71-80.
190. O'Leary, M., Orlikowski, W., and Yates, J. 2001. "Distributed-work over the centuries: trust and control in the Hudson's Bay Company (1670–1826)," in *Distributed-work*, P. Hinds, and S. Kiesler, MIT Press, pp. 27-55.
191. Olson, G. and Olson, J. 2000. "Distance matters," *Human-Computer Interaction*, (15:2), pp. 139–178.

192. Olson, J., Teasley, S., Covi, L., and Olson, G. 2002. "The (currently) unique advantages of collocated work," in *Distributed-work*, P. Hinds, and S. Kiesler, MIT Press, pp. 213–233.
193. Orlikowski, W. 1991. "Integrated Information Environment or Matrix of Control – the Contradictory Implications of Information Technology," *Accounting, Management and Information Technology*, (1:1), pp. 9-42.
194. Orlikowski, W. and Baroudi, J. 1991. "Studying Information Technology in Organizations: Research Approaches and Assumptions," *Information Systems Research*, (2:1), pp.1-28.
195. Ouchi, W. 1979. "A Conceptual Framework for the Design of Organizational Control Mechanisms," *Management Science*, (25:9), pp.833-848.
196. Ouchi, W. 1980. "Markets, bureaucracies, and clans," *Administrative Science Quarterly*, (25:1), pp. 129-141.
197. Panteli, N. 2004. "Discursive articulations of presence in virtual organizing," *Information and Organization*, 2004, (14:1), pp. 59–81.
198. Parot, I. 2003. "Vers une typologie des équipes à distance," *8ème Colloque de l'AIM*, 21- 23 mai, Grenoble, France.
199. Parsons, T. 1951. *The social system*, Free Press, Glencoe Illinois.
200. Paul, S., Samarah, I., Seetharaman, P., and Mykytyn, P. 2004. "An empirical investigation of collaborative conflict management style in group support system based global virtual teams," *Journal of Management Information Systems*, (21:3), pp.185-222.
201. Pauleen, D. J. 2003. "Lessons learned crossing boundaries in an ICT-supported distributed team," *Journal of Global Information Management*, (11:4), pp. 1-19.

202. Pauleen, D., and Yoong, P. 2001. "Relationship building and the use of ICT in boundary-crossing virtual teams: a facilitator's perspective," *Journal of Information Technology*, (16:4), pp. 205–220.
203. Persson, J.S., Mathiassen, L., Boeg, J., and Madsen, T. 2009. "Managing Risks in Distributed Software Projects: An Integrative Framework," *IEEE Transactions on Engineering Management*, (56:3), pp. 508-532.
204. Pfeffer, J. 1983. "Organizational demography," in *Research in organizational behavior*, L. Cummings, and B. Staw, Greenwich, JAI Press, pp. 299-357.
205. Piccoli, G., and Ives, B. 2003. "Trust and the Unintended Effects of Behavior Control in Virtual Teams," *MIS Quarterly*, (27:3), pp. 365-395.
206. Piccoli, G., Powell, A., and Ives, B. 2004. "Virtual Teams: Team Control Structure, Work Processes and Team Effectiveness," *Information Technology & People*, (17:4), pp. 359-379.
207. Picherit-Duthler, G., Long, S., and Kohut, G. 2004. "Newcomer Assimilation in Virtual Team Socialization," in *Virtual and collaborative teams: Process, technologies, and practice*, S. Godar, and S. Ferris, Hersey, PA: Idea Group, pp. 156-172.
208. Powell, A., Piccoli, G., and Ives, B. 2004. "Virtual teams: A review of current literature and directions for future research," *Data Base for Advances in Information Systems*, (35: 1), pp. 6–36.
209. Raghuram, S., B. Wiesenfeld, and R. Garud. 2003. "Technology enabled work: The role of self-efficacy in determining telecommuter adjustment and structuring behavior," *Journal of Vocational Behavior*, (63:2), pp.180–198.

210. Rallet, A., and Torre, A. 1999. "Is Geographical Proximity Necessary in the Innovation Networks in the Era of Global Economy?" *GeoJournal*, (49:4), pp. 373-380.
211. Rallet, A., and Torre, A. 2005. "Proximity and Localization," *Regional Studies*, (39:1), pp. 47-59.
212. Reix, R. 1990. "L'impact organisationnel des nouvelles technologies de l'information," *Revue Française de Gestion*, janvier-février, 100-106.
213. Reynaud, J.-D. 1988. "Les régulations dans les organisations : régulation de contrôle et régulation autonome," *Revue française de sociologie*, (29:1), pp. 5-18.
214. Reynaud, J.D. 1989. *Les règles du jeu. Action collective et régulation sociale*, Armand Colin, Paris.
215. Rice, R. E. 1984. *The New Media: Communication, Research and Technology*. Beverly Hills: Sage.
216. Robey D., and Boudreau, M. 1999. "Accounting for the Contradictory Organizational Consequences of Information Technology: Theoretical directions and Methodological Implications," *Information Systems Research*, (10:2), pp. 167-185.
217. Robey, D., and Jin, L. 2004. "Studying virtual work in teams, organizations and communities," in *The Handbook for Information Systems Research*, M.E. Whitman, and A.B. Wozzczyński, Idea Group.
218. Robey, D., Khoo, H., and Powers, C. 2000. "Situating Learning in Cross-functional Virtual Teams," *IEEE Transactions on Professional Communications*, (43:1), pp. 51-66.
219. Rodotà, S. 1999. *La démocratie électronique. De nouveaux concepts et expériences politiques*, Éditions Apogée.

220. Romelaer, P. 2005. "La méthode de cas," in *Management et ressources humaines, Méthodes de recherche en sciences sociales*, F. Wacheux, and P. Roussel, Bruxelles : De Boeck Université.
221. Rosen, M., and Baroudi, J. 1992. "Computer-based Technology and the Emergence of New Forms of Control," in *Skill and Consent*, A. Sturdy, D. Knights, and H. Willmott, London: Routledge, pp. 213-234.
222. Sapir, E. 1968. *Linguistique*, Paris, Minuit.
223. Sarker, S., and Sahay, S. 2004. "Implications of Space and Time for Distributed-work: An interpretive study of Norwegian Systems Development Teams," *European Journal of Information Systems*, (13:1), pp.3-20.
224. Sauvagnargues, A. 2009. *Deleuze. L'empirisme transcendantal*, PUF.
225. Schein, E. H. 1992. *Organizational Culture and Leadership*, San Francisco: Jossey-Bass.
226. Schiller, S., and Mandviwalla, M. 2007. "Virtual team research : An analysis of theory use and a framework for theory appropriation," *Small Group Research*, (38:1), pp. 12-59.
227. Scott, C. 1999. "Communication technology and group communication," in *Handbook of group communication theory and research*, L. Frey, D. Gouran and M. Poole, Sage, pp. 432-474.
228. Scott, R. 1992. *Organizations: Rational, Natural, and Open Systems*, Prentice-Hall, Englewood Cliffs, NJ.
229. Selznick, P. 1957. *Leadership and administration*, Harper & Row.

230. Shamir, B., Salomon, I. 1985. "Work-at-home and the quality of working life: Some theoretical considerations," *Academy of Management Review*, (10:3), pp. 455–463.
231. Short, J.A., Williams, E., and Christie, B. 1976. *The social psychology of telecommunications*. New York: John Wiley & Sons
232. Simon, H., and March, J. 1958. *Organizations*, John Wiley and sons, New York.
233. Simons, R. 1987. "Accounting Control Systems and Business Strategy: an Empirical Analysis," *Accounting, Organizations and Society*, (12:4), pp. 357-374.
234. Simons, R. 1995. "Control in an age of empowerment," *Harvard Business Review*, pp. 80-88.
235. Storey, J. 1985. "The means of management control," *Sociology*, (19:2), pp. 193-211.
236. Strauss, A., and Corbin, J. 2004. *Les fondements de la recherche qualitative: techniques et procédures de développement de la théorie enracinée*, Fribourg : Presses Universitaires De Fribourg.
237. Tannenbaum, A. 1968. *Control in Organizations*, New York, McGraw-Hill.
238. Taylor F. 1911. *Scientific Management*, Harper & Brothers, New York.
239. Thévenot, J. 2011. *Master Systèmes d'Information*, Editios Eska.
240. Thietart, R. 1999. *Méthodes de Recherche en Management*, Dunod.
241. Thietart, R. 2003. *Le management*, Que sais-je, PUF, Paris.

242. Thompson, J. D. 1967. *Organizations in Action. Social Science Bases of Administrative Theory*, New York: McGraw Hill Book Company.
243. Townsend, A., DeMarie, S., and Hendrickson, A. 1998. "Virtual Teams: Technology and Workplace of the Future," *Academy of Management Executive*, (12:3), pp. 17-29.
244. Trompenaars, F., and Hampden-Turner, C. 1998. *Riding the Waves of Culture: Understanding Cultural Diversity in Business*, Nicholas Brealey Publishing.
245. Turner, K. and Makhija, M. 2006. "The Role of Organizational Controls in Managing Knowledge," *Academy of Management Review*, (31:1), pp. 197-217.
246. Vaara, E. 2000. "Constructions of Cultural Differences in Postmerger Change Processes: A Sensemaking Perspective on Finnish-Swedish Cases," *M@n@gement*, (3:3), pp. 81-110.
247. Vaara, E., Tienari, J., Piekkari, R. and Santti, R. 2005. "Language and the circuits of power in a merging multinational corporation," *Journal of Management Studies*, (42:3), pp. 595-623.
248. Van de Ven, A. H., and Huber, G. P. 1990. "Longitudinal Field Research Methods for Studying Processes of Organizational Change," *Organization Science*, (1:3), pp. 213-219.
249. Wacheux, F., 2006. *Méthodes qualitatives et recherche en gestion*, Économica, version.
250. Walsham, G. 2002. "Cross-Cultural Software Production and Use: A Structural Analysis," *MIS Quarterly*, (26:4), pp. 359-380.

251. Wang, J. 2008. "Controlling Telework: An Exploratory Investigation of Portfolios of Control Applied to Remote Knowledge Workers", *PhD Dissertation, Georgia State University*.
252. Watson-Manheim, M., Chudoba K, and Crowston K. 2002. "Discontinuities and continuities: a new way to understand virtual work," *Information, Technology and People*, (15:3), pp. 191–209.
253. Weber, M. 1922. *Economy and Society*, University of California Press, Berkeley, California.
254. Williamson, O. 1975. *Markets and hierarchies, analysis and antitrust implications: A study in the economics of internal organization*, New York: Free Press.
255. Wilson, J., and O'Leary, M. 2008. "Perceived proximity in virtual work: Explaining the paradox of Far-but-Close," *Organization studies*, (29:7), pp. 979-1002.
256. Yin, R. 2004. *Case study research: Design and methods*, Third Edition, Sage Publications, Thousand Oaks, London.
257. Zarifian, P. 2004. "Contrôle des engagements et productivité sociale," *Revue Multitudes*, 17, pp. 57-68.

APPENDIX

APPENDIX INDEX

Appendix 1: Copy of our collaborative agreement with the EADS Company	353
Appendix 2: Interview guide – PhD Dissertation Mathieu CHAUVET	355
Appendix 3: Short extracts from our research journal	357
Appendix 4: Presentation of GoToMeeting Interwise.....	361
Appendix 5: Database of verbatim	363
Appendix 6: Summary.....	380
Appendix 7: Résumé	381
Appendix 8: Résumés des chapitres de la thèse	382

Appendix 1: Copy of our collaborative agreement with the EADS Company

Accord de collaboration entre

- **EADS (37 Bd de Montmorency, 75016 Paris) représentée par Hervé Borensztein, Senior VP en charge du développement des compétences**
- **Et Mathieu CHAUVET, allocataire de recherche-moniteur à l'Université Paris Dauphine (double programme avec Georgia State University).**

Cet accord s'étend de la période Mars 2009 à Décembre 2010.

L'accord porte sur l'étude d'une équipe de projets au sein d'EADS dans le cadre d'une thèse réalisée à l'Université Paris Dauphine. Ce partenariat s'inscrit en marge de la Chaire « Management et Diversité » signée le 21 Janvier 2009. Le dossier final sera remis avant la soutenance du doctorant prévue pour la fin 2010. La première réunion de présentation et de préparation du projet a été réalisée le 23 Février 2009.

Mathieu CHAUVET aura accès à l'équipe « Competency Development » basée à Paris et Munich, et en interaction avec d'autres équipes d'EADS basées dans les principaux sites du Groupe. La disponibilité de M. CHAUVET sur les sites EADS sera au plus de deux jours par semaine. Son travail de recherche inclura notamment le recours à la rédaction de comptes rendus de réunions et d'entretiens effectués par et pour lui, lors de ses observations-participantes. Les frais liés aux tâches réalisées pour EADS, tels que les frais de transport, seront pris en charge par l'entreprise après validation des demandes de déplacement et selon le programme qui aura été convenu entre Mathieu CHAUVET, son directeur de thèse et EADS. Enfin, Mathieu CHAUVET s'engage à ne divulguer aucune information sur le projet en lui-même (et plus globalement, il sera signataire d'un N.D.A. (non disclosure agreement) qui lui sera proposé par EADS France avant le démarrage de son projet); toute communication ou publication sur ses résultats de recherche concernant EADS ne pourra se faire sans l'accord préalable de l'entreprise.

En contrepartie, Mathieu Chauvet peut avoir accès aux sources d'information relatives au fonctionnement des équipes projet, c'est-à-dire :

- Recueillir les témoignages des membres de l'équipe et des personnes-clés du projet,
- Assister aux réunions de l'équipe projet,
- Travailler sur les documents internes tels que les rapports, comptes rendus, mémos, etc...

Mathieu CHAUVET reste sous la responsabilité de l'Université Paris Dauphine et de son maître de thèse. Sa participation à des réunions d'équipes d'EADS en tant qu'observateur ne le place pas sous la subordination d'EADS.

Paris, le 17 Mars 2009

Appendix 2: Interview guide – PhD Dissertation Mathieu CHAUVET

Cette recherche est effectuée dans le cadre du laboratoire du Crepa/DRM de l'Université Paris Dauphine en collaboration avec la « Chaire Management et Diversité ».

La démarche qui est menée, garantit la confidentialité des données recueillies : votre nom ne sera pas cité à moins que vous ne l'autorisiez.

➤ Introduction

Staging question: Would you like walk me through one of the recent projects you did?

➤ Team-Group

If you had to define which team you are part of, what will it be?

Within the department, could you delimitate for me the field of action of your team (relationships with other services)?

More specific questions:

- *How are people working within your team?*
- *How is this entity structured?*
- *Could you describe for me the field of action of your team/structure?*

➤ Virtual and Work-at-distance

How do you perceive the distance between members of the team/or other collaborators within your work?

How do you manage this virtuality?

More specific questions:

- *According to you, what are the main differences between distributed-work and the more traditional face-to-face, office-based setting?*

➤ Management and Control forms

How do you control your co-workers/subordinates?

How are you controlled?

More specific issues regarding the possible forms of controls adopted:

- *Are the tasks clearly divided between people? How are the results evaluated?*
- *Do people pay attention to the way they behave during their work activity?*
- *What are the managerial skills needed for evolving in such environment?*

➤ **Territory-Culture**

For you, intercultural/cross-culture refers to what?

Could you see and express differences between a cross-cultural and a more traditional management?

More specific questions:

- *While specifically considering your own work, are the multicultural characteristics of your group an opportunity or a handicap?*
- *Through your virtual exchange with collaborators, have you ever experienced episodes characteristic of cultural particularities?*

➤ **Other issues**

Do you think of other issues that should be addressed regarding my research interest?

Do you accept your answers to be used with your identity?

Appendix 3: Short extracts from our research journal

During our periods of non-participant observations, we use a research journal in order to note the most significant information related to the management of participants from our research-field. In their entirety, such non-participant observations have been done for a total of 7 non-consecutive days.

Different types of observed interactions were recorded systematically and chronologically in a research journal. More precisely, this journal helped us to report several types of information about these non-participant observations: site notes where we detail what concretely happened in the field, personal notes that recorded our feelings, our awareness about observations, and theoretical and methodological notes regarding possible changes to consider in our research work. Therefore, this work of reconstitution has finally allowed us to establish and maintain rich descriptions of context, or to recount some interesting talk or specific atmospheres.

Since our research journal was manually written and represents a total of several dozens of pages, its full transcript would not be achievable within this research document. Nevertheless, in order to provide the best understanding of our investigation to readers, we propose below short extracts coming from our research journal. These elements are transcript below exactly the way we wrote them of our notebook (*i.e.*, in French), which can explain the familiar language that is sometimes used. By doing so, we hope that these elements will contribute to the better understanding of the management of this particular source of data.

Mardi 26 Juin 2009

Description des différentes équipes situées sur le lieu d'Unterschleissheim,
Allemagne

Trainee & Development Programs :

Les membres de l'équipe s'occupent des profils « Junior » de l'entreprise (recrutement et formation). Certains d'entre eux sont ainsi spécialisés sur les Doctorants (→ comment faire en sorte de retenir ces différents profils lorsqu'ils ont fini leurs recherches au sein de la compagnie ?) → Doctorant en thèse CIFRE.

En charge également du programme « Progress » : jeunes avec une certaine expérience (entre 12 et 18 mois) et bénéficiant d'une formation assez importante et réputée (style « Grandes Ecoles »).

D'autres membres de l'équipe s'occupent enfin du développement et de l'utilisation des outils mis en place pour gérer ces différents programmes.

Remarques : la communication virtuelle est plus restreinte avec Paris étant donné qu'un seul membre ne se trouve là-bas (une Junior → voir avec [*Secrétaire du Département Human Resources/ Competency Development*] pour prendre rendez-vous et faire l'entretien

Peut être intéressant de voir sa vision à elle qui est complètement isolée sur Paris, gestion des relations sociales avec le reste de l'équipe, etc...

Les relations virtuelles sont donc surtout développées avec les divisions du groupe EADS, en dessous (notamment pour la conception des outils et avec tous les services RH spécifiques).

Mardi 18 Mai 2010

Team meeting IM Security Team, London

Videoconference between London and German National Manager, who could not make it to go to London

Contexte: Réunion de service. 5 intervenants en tout [noms des différents intervenants]. Utilisation de DS Live pour la réalisation de la conférence. DS Live ; c'est un jargon entre eux : l'outil s'appelle en fait GoToMeeting Interwise → fais gaffe, on t'as déjà parlé de cet outil dans d'autres entretiens sans les prénommer DS Live.

Dans leur onglet de gestion des rendez-vous dans Outlook, ils y a un lien pour ouvrir une session où les participants sont invités. Ils rentrent leurs identifiants et peuvent y accéder depuis n'importe quel site du groupe. Au début, il y a un manager de session qui gère le PowerPoint. Quand les participants se connectent, il y a deux fenêtres qui s'ouvrent : la présentation PowerPoint, qu'ils partagent tous, ainsi qu'une autre fenêtre où figure l'ensemble des participants. Ils peuvent même s'envoyer des messages entre eux sans que les autres ne puissent le voir → y a un pop-up qui apparait et ils peuvent alors discuter « je comprends pas ce qu'il dit, etc... »

Le manager de la session a la possibilité de donner la main à un des autres participants. Du coup, le gars peut alors accéder à l'ordinateur du manager, et aller chercher un document spécifique. Il peut aussi choisir ce qu'il souhaite que tout le monde voit de son ordi (là [UK National Manager] finit d'écrire un mail sur la session, [German National Manager] le voit pas).

Discussion avec [French National Manager] : « Cet outil est absolument parfait pour nos types de pratiques » (pour les téléconférences)

⇒ Parfaite interaction entre les participants, aucun problème de compréhension pour les personnes à distance : ils arrivent tous à identifier qui est en train de parler sans soucis. Pas de « who said that ?! », etc... Ils peuvent sans problèmes bouger dans la salle, se déplacer vers la projection du slide, sans que la communication soit affectée.

Point abordé dans la réunion: Team Governance ways of working !!

Remarque dans la marge: POINT IMPORTANT!! ⚠ Rapport avec « l'email culture » définie par [Head of the IM Security Team] dans son entretien !!

« Find a better way to filter emails and add value »

Proposition de méthodologie:

Header: From [the domain] Title of the email

Exemple: IMSA [Security Awareness Programs] Defining cost and Resource – FYA

Tout le monde va devoir appliquer cette méthodologie précise dans l'intitulé du mail.

Si on est en action, on sera dans les destinataires. Si on est juste pour informations, on sera dans les CC. Problèmes : la moitié sont pas d'accord ou ne comprennent pas les sigles et l'objectif, l'intérêt de la pratique = « it's basic management foundations »

→ Let's dress a nice guideline like this. Ils vont faire un truc récapitulatif pour informer les membres de faire comme ça et de l'utiliser.

Remarques d'ordre général dans la marge : On voit bien l'intérêt de ce type de virtual meeting avec l'ensemble des membres : chacun présente l'avancée de ses projets, activités → travail indépendant au départ puis on introduit de la collaboration = « on devrait plutôt l'appeler comme ça, » etc...

Appendix 4: Presentation of GotoMeeting Interwise

Presentation of the videoconference tool that is used by EADS collaborators in order to organize their virtual collaboration and meetings. The tool has been particularly adapted to the characteristics of the EADS Company: it is then often mentioned and considered by EADS members as DS Live.

Start your meeting.

Launch GoToMeeting on your computer. Instantly start a meeting by clicking **Meet Now** in your GoToMeeting start window.



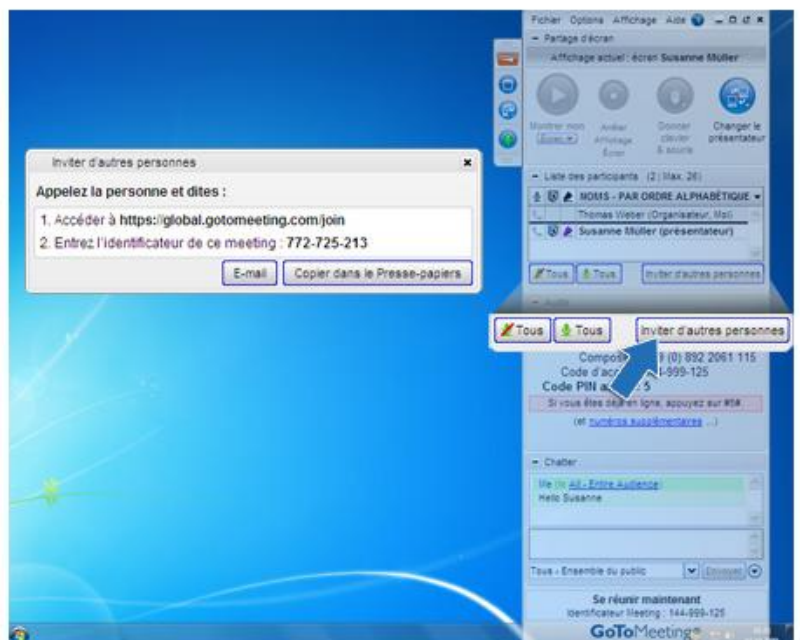
Invite other people.

You can invite others via phone, email or instant message – just click **Invite Others** in the control panel.

Choose your audio preference.

Once your attendees have arrived, each person can choose to use their computer's mic and speakers (VoIP) or call in via phone.

Use: Telephone
 Mic & Speakers



Share your screen.

Click **Show My Screen** to easily start and stop screen sharing.

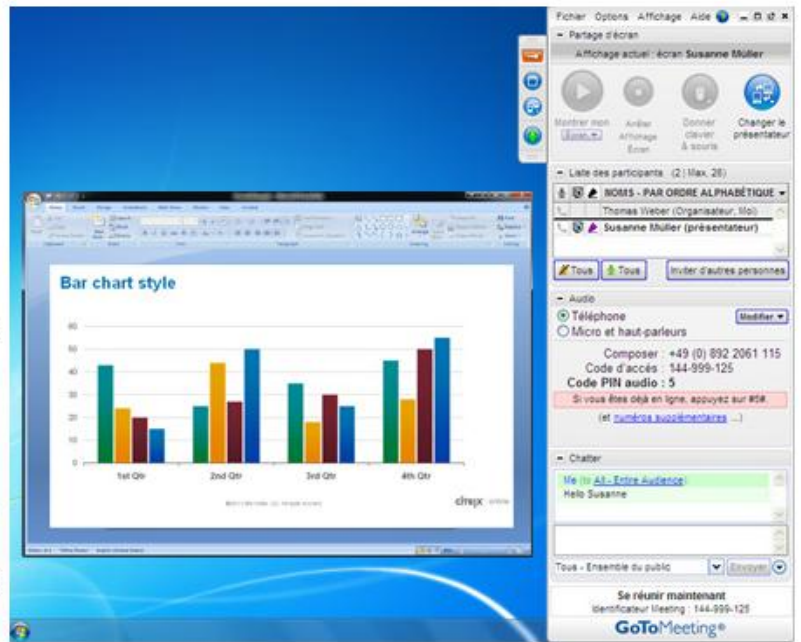


Change presenter or hand over control.

You can instantly pass presenter duties to any attendee in the meeting. Or, if an attendee needs to interact with your screen remotely, you can pass over keyboard and mouse control.

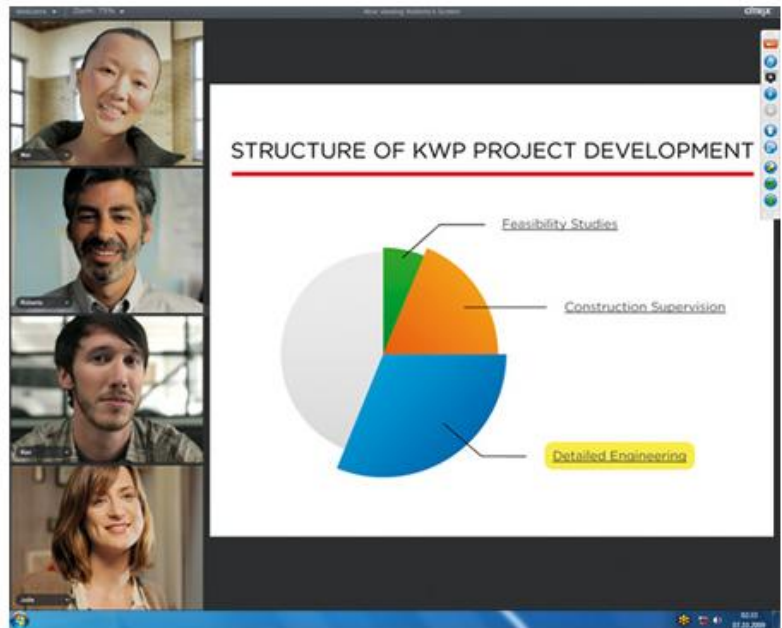
Communicate better. Build trust. Get more done.

It's really that simple. Try **GoToMeeting** for yourself and be amazed at how easily you can collaborate face to face with others even if they're a half a world away.



Turn on your webcam & collaborate face to face.

Tap into communication-enhancing facial expressions and body language with your attendees by using your webcam and built-in HDFaces video conferencing.



Source: <http://www.gotomeeting.fr>

<http://www.gotomeeting.com>

Appendix 5: Database of verbatim

Legitimately, interviews can be considered as the main support and source of data collection in our research document. From the total of 49 unstructured and semi-directive interviews - being explorative, sponsor conducted thanks to our interview guide - that have been made during this PhD dissertation, the great majority of them have been subject to immediate transcriptions, waiting for their analysis.

As mentioned in our “Data analysis process” part (see p.153), the analysis of these data collected through interviews has been analyzed thanks to NVivo8 software. Indeed, NVivo8 benefits from great characteristics that perfectly suited the analysis of our data collection. Nevertheless, one of its main defaults lies in the difficulty or impossibility to run this software on non-recent laptops, which was unfortunately our case at that time.

In order to use NVivo8 then, we used the familial PC computer situated at our parents’ place in South of France (near from Montpellier). This way of work introduces initial difficulties since we could not analyze data collected when we wanted. Instead, we took advantage of both Summer and Christmas’ holidays to coordinate and centralize the entire analysis of these data. As an advantage to realize this analysis in short and concentrated periods of time, we believe this method enabled us to analyze the entirety of this data fairly homogeneously since we kept in memory the way we handled data coming from previous interviews. As such, we would like to take advantage of this description to thank Dr.Lionel GARREAU, who proposed a significant training related to NVivo8 software during the conduction of our PhD dissertation.

Finally, in order to use verbatim on our PhD dissertation –see in particular the Part III of this research-work -, we constituted a database mentioning all the verbatim emerging from each interview. Obviously, we are aware that this method presents several inconvenient: in addition to its complexity, it is difficult to identify verbatim that correspond to two or more specific codes for instance. On the other hand, this database of verbatim finally enabled us to restitute the most significant elements from our research field and contributes, despite the technical issues described above, to the quality of my research work.

Similarly to our previous concern related to the restitution of our research journal, it would have been excessive to propose the entirety of this verbatim database here. Nevertheless, readers would have below the opportunity to examine a representative piece of this verbatim database. Indeed, the following elements represent all the verbatim emerging from the interview of a participant from the EADS Company. Descriptors for each dimension are not added in the following database by the lack of space: we still invite readers to refer to Table15 on p.241 for considering them.

THEMES	SUB-THEMES	DIMENSIONS	CODES	VERBATIM
<i>Context</i>	Organizational characteristics		CTXo	<p>- The last recent project I'm working on is called "diamond". It's changing the whole IT landscape that supports our business processes at Cassidian. And it's also a very strategic project, because we try to drive the harmonization of all the different processes within Cassidian. So a very high-profile project...</p> <p>- My other English colleague is Lee Philips, who is just leaving the team. He's also in Newport. So from the UK, there is only two people and we're all based in Newport. There are other sites within the UK that we deal with directly.</p>
	Individual characteristics		CTXi	
<i>Temporal Distance</i>	Individual role and membership		TEI	<p>- It's collaborative on some things, it is independent on others. At the moment, we are all capturing a lot of information from...within our organization, so we are breaking the organization into areas, and then the individual architecture is gathering information. We also do our own research on interesting topics to guide the technology use and the strategy for IM. So we do individual research. [...] But most of the projects have large areas of overlap. So, one project may have a strong impact on another project: they affect architectures.</p>

			<p>- For me, to go from Newport to Munich takes 7 hours: it takes 7 hours for me leaving my office to being at the hotel or the office in Munich. And it takes 7 hours on the way back, so...It cannot be any different: there's no way of leaving my house in the UK, go to Munich and coming back in the same day. [...] I lose two days because of travel. And also, I have a young family with, you know, two children. So it's difficult...the impact on the family life as well.</p> <p>- And sometimes I might just, you know, I might make [Head of the team] aware that I have to compromise on something. I say "I do not have to come for five weeks in a row to Germany, I can't do it 'cause my children would not recognize me when I come home". So I'm in a remote, and those one or two which are... It means my impact will be reduced and that maybe, they will put a question mark about my participation in the project...But this is the position I have to take, and so I take it, and I try to keep my boss informed about the decision I have taken.</p>
	Structure of the entity	TES	<p>- For me, it is clear for the Architecture Management Team. We have UK, French, German colleagues, and I have a great relationship with those guys. Architecture Management Team is part of Information Management, so I know most of the information management people...in Germany,</p>

		<p>at my level, I know them a lot.</p> <p>- I suppose the other strong thing is that our team is a very new one. The function of the team is new, so everyone has started from a very similar position in the team. No established hierarchy let's say...who is in charge...it was left to everyone to establish themselves in the team from their own skills, their own target...</p> <p>- All my work happens in Germany. I work for a German boss, I work on international projects. Mostly the project is run from Germany, which means that my activities are all the same visible to my UK colleagues. So I have quite good relationships with them, they know that I work on German projects but they have no idea of what I do and they don't know if I do it well. So for the reputation points of view, the carrier point of view in the UK, going back to my point that the administration process is different in the UK than in Germany, it is very difficult for my impact and my benefits in the UK business to be understood. So it's possible that all my work could happen unnoticed because my pay and my career are managed from the UK business, not by the Germans. As much as they think they do, it's not. So yes, there are disadvantages in that my... that I'm almost invisible to the UK business you know, what I do. I probably don't have indirect interaction on my boss. You</p>
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			<p>know, I can't work and talk to him and start a conversation about lots of different topics. I have to collect my topics and discussions, and then arrange a thirty-minute meeting, which I would much rather do face to face than on telephone. Especially for personal discussions</p> <p>- I will only let myself work at home one day a week. 'Cause I think one day a week, if I have a lot of non-interactive work to do, then it's fine, you know, it saves only an hour of travel-time I can, you know, I can perhaps try to collect my children from school or something which I think is important. But I limit it to one day a week 'cause otherwise again, I will become even more invisible 'cause if I'm not physically here at my desk in the UK, people assume I'm in Germany. If I was never in, they will forget that I exist. So it's very important that I'm seen in the office a few days a week so to remember that I still work here. That's a rich and strong concern for me...that all the hard work, all the influence, all the benefits that I bring to Cassidian as a group are not recognized in the UK, and that is where my pay and my career are established. So that is a really strong concern to me.</p>
	Asynchronous relationships	TEA	<p>- I don't see the distance. I only see... I feel very comfortable with the relationship that I have and the way that they're geographically away from me, but it's not like they're in, I don't know...like being in Australia or something</p>

				<p>- I cannot see my colleague's calendars. You know, I can ring up but I can't guaranty they're available. So I don't tend to have informal discussions just like G-chat (google chat). Because I cannot see if my colleagues are available. They might be in an important meeting, it might be a bad time so...I tend to ring for particular subjects with DS live, really for particular subjects. Because in these conversations, we share formal discussions. But there's no inputs, you don't... You don't pick and have colleague and have formal discussions. You raise discussions for a reason and then you share information.</p>
<i>Geographical Distance</i>	Virtuality	Use of technologies	GEU	<p>- We've got a number of tools. Obviously email, that's how we started at first: using the email. We also have a web protocol for storing data, but most people don't find it very intuitive to find information. And then there is a corporate test of shared-point, and we basically list all shared-points test. We have also co-opted the shared-point installation, and we are using that very proactively. Those are the three static technologies we have. We also have the interactive... it's called "DS live" tool so we can talk on the telephone, share documents and elite documents interactively. I use that extensively...very informal. I just contact my colleagues, share documents...we discuss it and change it, agree on the final version, and then release the document.</p>

				<p>- We do not have MSN. I think the email is a slightly formal communication method. There's no intonation in the email, so you're very careful with how you write. We do not have instant messenger. I think instant messenger is...again a much less formal communication method. You just...you tap a quick word. We don't have that... I think it would be very helpful.</p> <p>- Telecommunications enable to participate, in an effective way. And the reason I like that is, first of all, I could not be away from my home, of my children last week. I couldn't spend three days in Germany and... Actually it is four days because I just have to travel on Monday for seven hours, be ready for a meeting at nine o'clock on Tuesday and then, on Tuesday night, I have to travel back and go home at one or two o'clock in the morning. So today I would be exhausted and tired trying to catch up my work. So for me, it was easier...I had, for personal reasons, I had to use the telephone.</p>
		Differences with face-to-face work	GED	<p>- For me, personally, [distance] is not an issue, because I also travel a lot to see my team, my core team the architecture management team. We normally travel once a month to throw a "jour fixe" and we see each other once a month and I see [Head of the team]. So I have the opportunity to do face to face discussions. I also feel it's very easy for me to pick up the</p>

			<p>phone, so I have a very close relationship with [Head of the team], to have discussions.</p> <p>- We have a “jour fixe” once a month which is just for our architecture activities, for our core team. That's one travel. And I also travel for the project that I'm supporting. So at the moment, I have two key projects: one is "diamond" and one is called "EAM setup". I travel for "diamond", I travel for "EAM", I travel for the architecture management “jour fixe”. So I have three travel commitments. So this week is the first week that I've been in the UK, all week for...since September.</p> <p>- I understand that the German business units are also much more physically separated; they have a number of different sites in Germany, with a different culture in each site. And so it's taking me some time to understand kind of the local jokes about Unterschleissheim and all the different sites. That's taking me some times, I think.</p> <p>- A couple of things: one, the geographical distance is not so disturbing because I've got multiple ways of contacting my colleagues, so it's not like twenty years ago when if I wanted to ring someone in Australia...with a very bad line, a big echo on the line. Now, I can pick up the phone, I can email, I can text, I can do a DS Live sharing, I can video conference. I can contact my colleague really quickly and so the</p>
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			<p>distance disappears. That's... For me, that's one aspect: the geographical distance doesn't seem difficult.</p> <p>- We all came at the same time and there's been a very strong, heavy investment in the travel, in the meeting. So we have...Every month, we have face to face, and normally, every week, we have a telephone conversation. So there's a very strong investment in...and commitment. Because we have one “jour fixe” in London, so the UK colleagues would not have to travel so much. And they have a “jour fixe” also in Elancourt, in Paris, so we...again, we try to keep the international flavor.</p> <p>- I think Blackberry is the problem. Because it is very addictive, as you got emails coming in, you just try to respond quickly, you know...you could be watching television on the cell-phone, or you can be reading a book, it is very easy to write a quick email, and just stay in touch. It is quite addictive. For me the greatest impact is the difficulty in traveling so...The technology for remoteness, you know, sometimes I work from the home-office, one day a week...If I do late hours because of workload, I don't need to be at my desk, in the office. I can do late hours in my home, and probably it would be more flexible. So for me, it is not a problem because, again, we have good sharing tools, so I can be quite interactive during a meeting. But my contribution is still</p>
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				not even nearly strong as if I met the person personally. That's my individual feeling. On a teleconference, it's hard to interrupt a discussion...
		Manifestations	GEPm	
	Perceived distance/ proximity	Facilitators	GEPf	- But probably the biggest thing is the cultural difference. I wouldn't feel comfortable picking up the phone to someone I have never met before and having a long discussion. It's nice to once have met the individual, and built a good rapport, a good "complicité" (in French) with my colleagues...And then, I could pick up the phone, I can email, I can ask stupid questions because they're my colleagues and I do not have to worry. And obviously, all my colleagues, like you, have a very good english language skill, so it's very easy. We have a lot of humor in our discussion as well, which, again, break down ... It breaks down the cultural differences, we are very open, we have a very good communication so you could break down the cultural differences. All of these colleagues have a very open view so... they're very open for sharing, very forward looking, and because of that, we have a strong complicity, and I can use all the different technology means to contact them. And all those things reduce the distance. So if I have colleagues who I find difficult to talk to or I find that...I have difficulties to understand their cultural perspectives, then I wouldn't feel comfortable using technologies. I mean,

				<p>technology, it's enabler. It's a strong enabler, but you have to use once you have previously establish a rapport with the individual.</p> <p>- I think we are all within the team very very proactive at sharing information. So I think actually, it's a very subjective position...but I think we are probably the best international virtual team within IM. Because we are really full of people who are good and open, honest, and our relationships are good. That's my personal view but...It's very subjective.</p>
<i>Cultural Distance</i>	Cultural awareness	Cultural dimensions	CUD	<p>- On a personal level I got no problems having bosses within different countries. Also because I do travel a lot.</p> <p>- It's not too much different in a daily working. It's having awareness. So, on the surface, because the language is English, within our country...The core language is English. And all of my colleagues speak that, at very good levels. So it's easy to forget cultural differences. Yeah, so it's... I can work here, I have a conversation in English, you know, it's a really fluent conversation, lot of humor, and the thing is actually there is this kind of... It's not UK, it's not French, and it's not German. It's virtual culture that we have. Probably very American influence, quite informal, good discussion. And you can...think that there is no cultural difference.</p>

				<p>- The other part that was explained was the difference between cultures with more social considerations, such as romantic culture, rather than more patriarchal based cultures which is, you know, slightly more individualistic. These are very general high level things, it's not, you know, not every French colleague operates like that. It's subjective. So that was really interesting to me because as I said, you might think everyone speaks English with a business culture, it is easy to operate. But you have to be aware that there is always the underlying culture and that things are different, and you have to be sensitive to that when you work in that environment.</p> <p>- What is interesting is...I had a conversation last week about it: if all the German colleagues are speaking English, they will use American-British and use the first name. If they switch to German, they will immediately go back to say "Mr. so and so, Mrs. so and so...". That's quite interesting to me. They are actively changing the way that they interact depending on the language. In Germany, you could be a colleague for sixteen years and work respectively and still call someone "Mr., Mrs." unless you establish some kind of really strong personal relationship. And I found that very interesting.</p>
		Systems of beliefs	CUS	- It's easy to think that there are no cultural differences, you know, in our business virtual

			<p>culture, and to forget that everyone comes from a cultural background and actually you have to be actively aware that there are cultural differences. It is easy to forget that there are others who come from different cultural backgrounds, and you have to be aware of it. The most effective people are people who are able to be culturally flexible, you know. [...] So it's very important to be culturally flexible for the work and to be aware one) of your own culture, and two) of all of the other cultures involved.</p> <p>- I think it is not so much the experience, I think it's... having that experience is the same than being open-minded. If you are open-minded as an individual, then you go and work...in Holland, for example, if it's the first time you've worked abroad. So you have a little bit of courage, but more important you're open-minded about doing something. You might have people who are very open minded but haven't had the opportunity to travel.</p> <p>- I used to live in Europe so I feel very comfortable. Europe is just next door to me. It's not culturally or geographically a long, long way from where I sit. So I don't think they're being far away geographically or, indeed, culturally. Like I said, I'm quite comfortable with different cultures.</p> <p>- Well I have a very different...Because I was</p>
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				<p>born in Germany, I've lived in the Middle East, I've lived in Germany, I've lived in Norway, I've lived in Holland, so I've traveled extensively, I've actively lived in lots of different countries, but for me it's not scary, it's really exciting to go and see new places, to see new people. I don't find it at all intimidating. And I think it's the same for my colleagues. Most of the colleagues in my team have worked abroad, outside of their countries at some point. So I find it is interesting that most of the successful people have already had an open and flexible approach.</p>
		<p>Individual interpretations of cultural idiosyncrasies</p>	<p>CUI</p>	<p>- Within groups of individuals, there are some social clusters where the people are open-minded and flexible, it's a really strong advantage. There are some people who don't have to operate with international colleagues. Maybe there are some specific sites or factories...and it's very easy for those colleagues to be kind of an island to themselves. So for those teams who have to do it, I think it's a really strong advantage, because it means now that...you know, if I want to operate in any Spanish speaking, French speaking, English speaking, or German speaking, you know, we have all these skills, we have people that are culturally flexible, adaptable you know. If anyone of our team members want to go working in Indonesia or in the Middle East, already they're aware that they have to be culturally sensitive. It makes</p>

				operating in this global economy I think more easily, because again, no matter what you think, you might think it's easy to go there and speak English and establish business relations. But you still have underlying cultural issues and you have to be very sensitive to them. And you have to adapt yourself; you have to adapt yourself to the culture you are operating in. If you're not able to do that, then you'll fail.
Control	Control issues due to distributed-work		COI	
	Control forms	Behavior Control	COB	
		Outcome Control	COO	
		Social Control	COSo	
		Self-Control	COSe	- But in terms of ... I don't realize...the architecture management team is full of quite strong individuals who don't need daily management. We are all able to overcome our workloads and to work unsupervised I suppose.
	Control enactment	COP	- There are lots of passive-aggressive or external ways, material methodologies you can use to manage a difficult boss. But in the UK, it's much more difficult because there is not that boundary between you and them, so if you have a boss who is very controlling and very dominant, you have a strong boundary, it is very easy to separate yourself emotionally and professionally from them, but your peers, unless you... unless there's some kind of splinter within a team or peers, it's much more	

				difficult to emotionally separate yourself from them. So I would say that this is the other side of your work: the judgment of your peers has a very strong influence.
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Appendix 6: Summary

The management of distances in distributed-work: a Deleuzian approach to control

Distributed-work has introduced challenges for both employees and managers alike. Maintaining a form of supervision and discipline remains then necessary as control is the ultimate means for the hierarchy to bridge the issue of distance. With regard to the unprecedented changes generated by the significant development of Information and Communication Technologies (ICTs) in organizations, we expressed the necessity to analyze how control is reconsidered within the managerial challenges introduced by distributed-work. Our theoretical reasoning finally led us to use the works of French philosopher Gilles Deleuze as a basis for a more relevant conceptual framework. Data coming from 49 interviews and 7 days as non-participant observer enabled us to provide evidences for the disruption of management practices due to the reconsideration of control in distributed-work. Both for managers, evolving from a supervisory to a facilitator status, and distributed-workers themselves, whose activities will mainly be directed by the management of their visibility, responsiveness and modulation. Ultimately, this PhD dissertation provides concrete managerial manifestations for Deleuzian societies of control.

Keywords: control, distributed-work, distance, Deleuze, society of control

Appendix 7: Résumé

Le management des distances dans le travail distribué: une approche Deleuzienne du contrôle

L'émergence du travail à distance a causé l'apparition de nombreux challenges pour les managers et leurs subordonnés. Par conséquent, maintenir une forme de surveillance s'avère plus que jamais nécessaire, notamment car le contrôle représente un moyen significatif pour réduire la problématique de la distance. Au regard du bouleversement conséquent amené par ce développement exponentiel des technologies dans les organisations, il convient de s'interroger sur la façon dont les processus de contrôle ont été remis en question dans le cadre de la rupture managériale introduite par le travail à distance.

Notre réflexion théorique nous a finalement conduit à solliciter les travaux du philosophe Gilles Deleuze comme base conceptuelle. Des données issues d'un total de 49 entretiens et de 7 journées d'observations non-participantes nous permettent de démontrer le bouleversement significatif des pratiques de gestion lié à la reconsidération du contrôle dans le travail à distance. A la fois pour les managers qui voient leur rôle évoluer d'un statut de superviseur à celui de facilitateur, et leurs subordonnés, dont l'activité sera majoritairement guidée par le management de leur visibilité, réactivité et modulation. Cette thèse de doctorat constitue finalement une illustration concrète en Management du concept Deleuzien des sociétés de contrôle.

Mots-clés: contrôle, travail à distance, distance, Deleuze, société de contrôle

Appendix 8: Résumé des chapitres de la thèse

Introduction :

L'objet de notre travail de thèse est lié à l'étude du travail à distance dans sa globalité. Il est donc important pour nous dans cette première partie d'introduction de distinguer les formes constitutives du travail à distance: les équipes virtuelles, le télétravail et le travail nomade. L'ensemble de ces formes de travail à distance est en effet analysé dans le corps de notre travail de recherche.

Par le biais de ce travail introductif, nous soulignons rapidement les difficultés – relevées dans la littérature - à aboutir à un consensus sur une définition universelle et acceptée du travail à distance et de ses principales composantes. Le travail à distance peut en effet prendre la forme d'un certain nombre de configurations ambiguës, dont il est par conséquent difficile de déterminer les effets et impacts en termes de management ou d'interactions sociales notamment. Ceci s'explique par le fait que les organisations ont depuis des décennies été structurées afin de faciliter la proximité physique des collaborateurs ; une proximité nécessaire pour l'organisation du travail, pour la reproduction des processus d'autorité ainsi que pour l'exercice du contrôle. Aujourd'hui, dans un contexte international en pleine expansion, la distance devient néanmoins inévitable.

Fort heureusement, le développement significatif des technologies de l'information et de la communication (TIC) permet désormais de globalement appréhender la problématique de la distance. Les systèmes d'information proposent notamment des moyens de coordination et de contrôle qui permettent de réduire les structures hiérarchiques et de dépasser les besoins de proximité physique et de relations synchrones entre individus. Le principal obstacle pour le développement du travail à distance au sein des organisations reste donc avant tout psychologique, et relatif à la gestion des modalités de contrôle. Car l'exercice du contrôle reste bel et bien au cœur de la rupture managériale introduite par le développement du travail à distance.

En effet, à la lumière de l'ensemble des problématiques émergeant de ces environnements de travail à distance, le maintien d'une forme de surveillance et de discipline à distance demeure primordial. Le contrôle reste le moyen ultime pour la hiérarchie de prendre en compte la problématique de la distance. Alors que nous sommes ainsi désormais confrontés à une époque où les pratiques de gestion sont considérablement remises en

question par une nouvelle appréhension de notre continuum spatio-temporel, il nous semble important de nous attarder, à travers la réalisation des parties constitutives de ce travail de recherche, sur les problématiques relatives aux formes de management et de contrôle au sein des environnements de travail à distance.

Chapitre I: Travail à distance: caractéristiques et conséquences sur le management

De manière générale, le chapitre I nous permet de revenir sur les caractéristiques des univers de travail à distance et l'influence de ces dernières sur le management. Ce travail se divise notamment en deux temps : tout d'abord, nous cherchons à définir les principaux éléments constitutifs de notre objet de recherche (i.e., le travail à distance), puis nous identifions quels sont les changements amenés par le développement de ces différents éléments dans les organisations concernées.

Fondamentalement, il apparaît clairement qu'à la fois les managers et leurs subordonnés travaillant à distance sont au quotidien confrontés à des problématiques managériales ayant pour origine : la distance temporelle, la distance géographique, et la distance culturelle (Karjalainen & Soparnot, 2010 ; Leonardi et al., 2004 ; Nurmi et al., 2009). Ces problématiques sont associées à des difficultés, en termes d'identification et de communication notamment, beaucoup plus exacerbées dans le cadre d'environnements de travail à distance de par la substitution des interactions physiques en face-à-face par l'usage des technologies de l'information et de la communication.

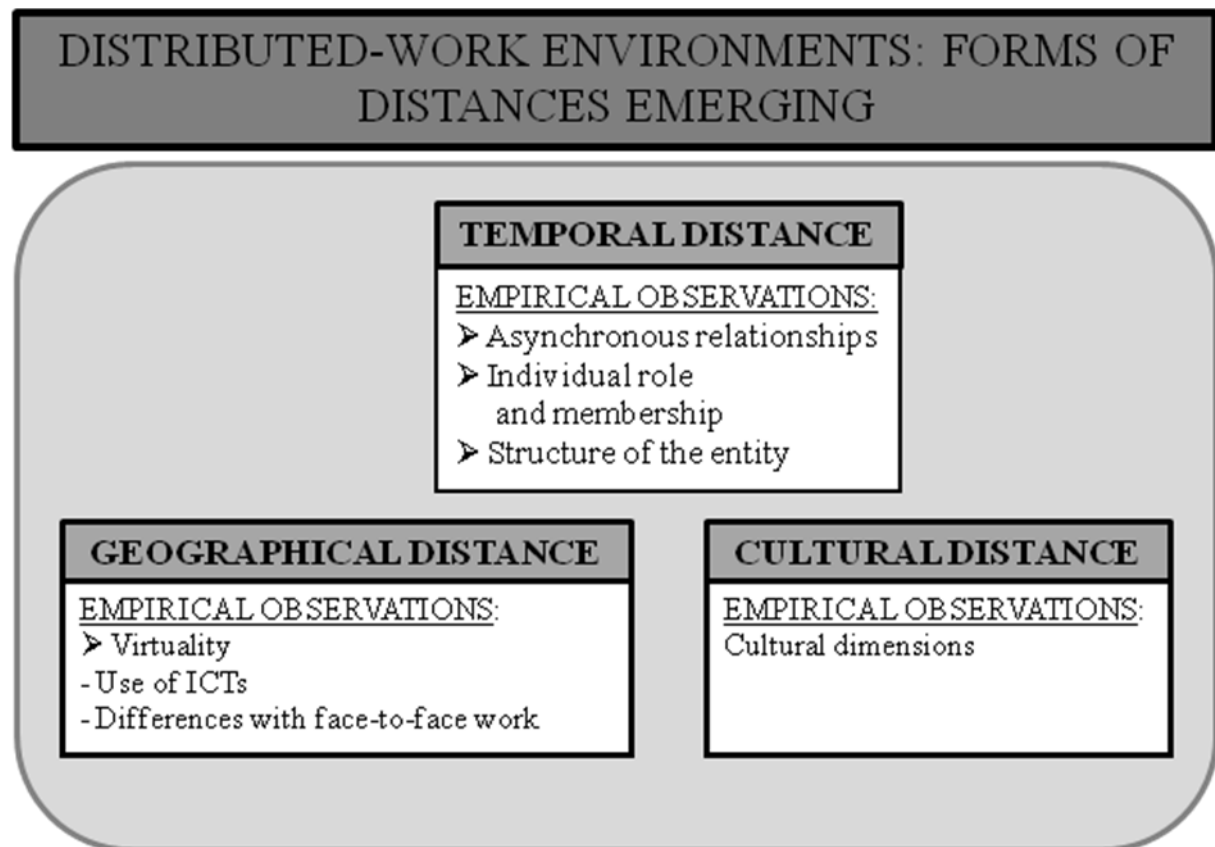


Figure – Les trois formes de distance constitutives des environnements de travail à distance

Malgré le fait que ces outils électroniques supportent de mieux en mieux de nos jours les processus de coopération et de coordination en facilitant les échanges d'information (Thévenot, 2011), la collaboration à distance demeure une activité bien plus complexe qu'une simple substitution technologique de la collaboration traditionnelle en face-à-face. Comme démontré par Rutkowski et al. (2002), la collaboration distante accorde notamment une importance toute particulière aux activités de structuration en supplément des communications électroniques afin de réduire les « gaps » culturels et de stéréotypes (distance culturelle), d'améliorer la répartition des rôles de chacun des participants au sein de l'entité (distance temporelle) et de prévenir et résoudre les conflits inhérents à la dispersion géographique de ces derniers (distance géographique).

C'est donc face à un paradoxe que les entités de travail à distance se retrouvent. D'un côté, celles-ci voient leur synergie de groupe diminuer, les risques de conflits augmenter et leur efficacité réduire, notamment dans la phase initiale de leur collaboration virtuelle. L'utilisation des TIC a en effet une incidence conséquente sur l'accessibilité, l'indexation, l'accessibilité, l'immatérialité et l'interaction des informations orientant les processus managériaux des individus (Kalika, 2002). D'un autre côté, la structure organisationnelle horizontale qui caractérise les entités virtuelles permet d'obtenir une flexibilité certaine dans les rôles et les tâches de chacun des participants grâce à l'utilisation des technologies (Townsend et al., 1998). Les technologies sont en effet à l'origine de modifications sur le degré contrôle vertical, de coordination horizontale, sur la taille des organisations et de leurs unités, sur la synergie entre ces mêmes unités, etc... (Fulk and DeSanctis, 1995)

Parce qu'elles sont à la base du traitement de l'information et de la coordination au sein des organisations, les technologies de l'information et de la communication jouent donc un rôle central dans le processus de contrôle organisationnel. Alors que ces TIC promettent le remplacement des modes de hiérarchies traditionnels par le développement de formes organisationnelles flexibles et modulables, il apparaît que l'étude des modalités de contrôle organisationnel soit inévitable pour mieux appréhender le fonctionnement et le management de ces univers de travail à distance.

Chapitre II: Le concept de contrôle: une analyse par l'angle du management du travail à distance

Au cours des dernières décennies, de nombreuses améliorations ont été apportées dans le développement des technologies de l'information et de la communication. Le développement de ces dernières rend désormais possible l'intégration du travail collaboratif à travers des processus sociotechniques orientant les activités de communication, de partage et de coordination (Thévenot, 2011). Par conséquent, de nos jours, les technologies ne peuvent plus être considérées comme des limites au développement de pratiques de gestion distribuées: ces restrictions viennent avant tout pour la plupart du côté managérial (Hinds et Mortensen, 2005). La gestion de ces organisations distantes est ainsi un processus complexe, notamment en tenant compte du fait que ces organisations opèrent généralement dans des environnements mouvementés, marqués par l'incertitude, un manque de synergie dans les objectifs proposés, des malentendus, une ambiguïté certaine dans les rôles de chacun, etc...(Crisp et Jarvenpaa, 2003). Ces restrictions sont parfois si importantes qu'elles rendent le suivi à distance des individus presque impossible (O'Leary et al., 2001). Par conséquent, il est absolument nécessaire de réduire au maximum leur incidence. Le rôle des processus de contrôle est en partie celui-ci, en étant considérés comme un moyen significatif de régler l'incertitude touchant à la collaboration de partenaires de travail (Das et Teng, 1998).

Malgré le nombre conséquent d'études ayant porté sur l'analyse du management à distance, les interrogations sur le rôle du contrôle dans les pratiques de travail à distance reste toujours d'actualité. Comme le remarquent Nurmi et al. (2009), nous savons encore peu de choses sur la façon dont la distance influe sur le pouvoir du manager distant et sur sa capacité à être efficace dans la gestion d'une équipe distribuée.

La problématique du contrôle reste donc essentielle dans les environnements de travail à distance, notamment du fait qu'en étant lié à des informationnels, le contrôle amène au développement de mesures incitatives et dissuasives orientant les individus à se comporter d'une manière compatible avec les objectifs de l'organisation (Turner & Makhija, 2006). En raison de leurs caractéristiques - compression temporelle, compression spatiale, augmentation exponentielle du volume d'informations qui sont stockées et traitées, souplesse d'utilisation (Reix, 1990) -, les technologies et systèmes d'information s'insèrent et se modifient directement dans les processus de contrôle de l'organisation (Orlikowski, 1991; Leclercq,

2008). De la même façon donc que le travail à distance amène à la remise en question de la gestion des organisations, il entrainera également et avant tout une modification des processus de contrôle.

En tenant compte de cette observation, on comprend aisément pourquoi les approches traditionnelles du contrôle dans les théories des organisations ne pouvaient être considérées comme des réponses pertinentes aux nombreuses contraintes issues de l'émergence des environnements de travail à distance: leur conception du contrôle est en effet bien trop liée à une vision du management basée sur la proximité (plutôt que sur la distance). De plus, ces différentes approches ne fournissent suffisamment d'éléments sur:

- Qui contrôle qui. Il est en effet souvent supposé que le supérieur hiérarchique est celui qui exerce le contrôle, mais est-ce vraiment le cas dans les environnements de travail à distance où les structures et les positions hiérarchiques sont plus difficiles à identifier?

- L'attitude des individus qui font l'objet du contrôle. Aucune indication n'est en effet généralement proposée concernant le fait que les individus soient concrètement sous contraintes ou souffrent des processus de contrôle qu'ils subissent.

Clairement, une approche plus dynamique et plus générale du contrôle doit être proposée afin d'appréhender dans sa globalité le rôle du concept de contrôle dans la rupture managériale introduite par le travail à distance. Cette approche plus dynamique trouvera son origine dans les travaux fondateurs des auteurs poststructuralistes, ces derniers mettant notamment l'accent sur l'importance du contexte dans lequel les processus de contrôle sont déployés (Delbridge et Ezzamel, 2005) – ce qui reste relativement limité dans le cadre des approches du contrôle dans les théories des organisations. Les approches poststructuralistes reconnaissent l'importance du contexte, qu'il soit historique, économique ou socio-politique, en insistant sur la capacité des individus à construire et interpréter ces contextes selon leur propre cognition et intérêt personnels. A l'heure où les organisations travaillant à distance sont de plus en plus présentes, nous proposons donc le développement d'une approche deleuzienne comme réponse aux limites des approches de contrôle dans les théories des organisations.

Le philosophe Gilles Deleuze a mis en avant une argumentation particulièrement intéressante quant à l'évolution de nos sociétés et du rôle du contrôle en leur sein. Sa philosophie répond directement à l'appel pour le développement d'une théorie critique du contrôle dans les organisations (Jermier, 1998). Ses observations décrivent le développement des sociétés de

contrôle (Deleuze, 1990), où le contrôle ne conduit plus à un confinement physique des individus mais plutôt s'opère de façon continue à travers une communication instantanée permise par les nombreux développements des TIC.

Les théories développées par Deleuze se sont de plus fortement focalisées sur l'étude et la remise en cause de notre traditionnel continuum spatio-temporel. Etant donné que cette remise en cause est également caractéristique du développement du travail à distance dans notre société, nous proposons comme base de notre cadre d'analyse l'application des travaux et concepts de Gilles Deleuze à l'étude du rôle du contrôle dans les univers de travail à distance.

Chapitre III: Méthodologie de la recherche

La revue de la littérature faite dans les précédents chapitres de ce document de recherche constitue un cadre théorique facilitant l'interprétation de nos observations empiriques. L'approche deleuzienne que nous préconisons permet une meilleure compréhension de la façon dont les processus de contrôle sont reconsidérés dans les univers de travail à distance. Le but ici est de mieux comprendre comment les caractéristiques spécifiques du travail à distance impactent le management des individus et les amènent à adopter de nouveaux comportements et appréhensions envers les processus de contrôle.

La méthodologie de notre recherche et sa posture épistémologique doivent être sélectionnées de telle façon qu'elles nous permettent d'atteindre ces objectifs. En effet, diverses méthodologies de recherche sont disponibles en sciences de gestion, mais la pertinence de ces dernières sera essentiellement évaluée à la lumière de sa capacité à répondre aux questionnements posés dans le cadre de ce travail de recherche.

Dans un premier temps, nous nous sommes attachés à développer notre posture épistémologique, c'est-à-dire la manière dont nous concevons le monde et la réalité. Celle-ci nous a conduit à réaliser plusieurs études de cas afin de mieux appréhender nos problématiques de recherche. L'intérêt des études de cas consiste dans le fait qu'elles ne sollicitent pas une méthodologie unique, mais plutôt la combinaison de différentes méthodes de collecte des données telles que des entretiens, analyse de documents, ou observations, permettant ainsi le principe de triangulation (Yin, 2004). Les études de cas sont donc basées sur des concepts théoriques généraux guidant la collecte et l'analyse des données. La réalisation d'études de cas est motivée par la compréhension des processus relationnels, des modes de prise de décision, ou même l'examen des faits et perceptions des individus qu'elles proposent. Etant donné que l'étude des conditions contextuelles s'avérait extrêmement importante dans le cadre de notre sujet de recherche, l'utilisation de cet outil méthodologique se justifie pleinement dans notre cas. Dans l'optique de ce travail de thèse, nous avons réalisé un total de quatre études de cas, dont les caractéristiques principales sont décrites ci-dessous.

VARIETY OF CASES	Case #1 : EADS Corporate entity	Case #2 : EADS Cassidian entity	Case #3 : EADS Cassidian entity	Case #4 : KCI Medical
	<i>Exploratory Case</i>	<i>Cases</i>		<i>Confirmatory Case</i>
Organization	EADS - Engineering			KCI MEDICAL - Surgery
Organizational Level	Headquarter	Division		All levels
Working Population	Functional	Functional/Operational	Operational, technically-oriented	Functional
National cultures and locations	French, German	French, German, English		Dispersion on French territory, Europe-Middle East-Africa
Remote-work forms	Virtual Team			Virtual teams, Telecommuting, and Nomadic Work
Years of service of the entity	Created at the date of merge (2000)	7 year-old	1-year-old	Varied

Table – Variété de nos études de cas

A partir de cette base épistémologique et méthodologique, nous avons sollicité un certain nombre d'outils afin de mieux comprendre la réalité à laquelle nous étions confrontés (i.e. l'étude du terrain) et en assurer sa description de manière fiable et valide. Cette méthodologie s'est donc essentiellement basée sur l'utilisation de méthodes qualitatives. Celles-ci reposent sur des procédures spécifiques, qui peuvent comprendre l'observation - une technique souvent considérée comme essentielle à la contextualisation du phénomène» (Hlady-Rispal, 2002), l'utilisation d'entretiens, l'analyse de discours, etc... Par conséquent, nos travaux de recherche se sont fondés sur ces différents éléments.

Notre première source de collecte de données est constituée par l'observation non-participante des individus dans leur activité professionnelle quotidienne. Le principe de l'observation permet de comprendre la logique de la situation qui est liée à une époque et un contexte spécifique, en plus de l'observation de ce qui n'est pas dit tout en développant un point de vue différent que celui obtenu par d'autres moyens tels que les entretiens individuels. Ces observations non-participantes n'ont seulement été possibles que dans le cadre des deux premières études de cas de notre travail de recherche. Elles ont correspondu à un total de 7 journées passées de manière non-consécutives sur place auprès des équipes.

La partie la plus conséquente de notre collecte de données correspond aux entretiens individuels effectués avec des participants respectifs de chaque étude de cas. Ces entretiens sont au nombre de 49 en tout. Dans le détail, nous avons mené 6 premiers entretiens dits sponsors avec les personnes en charge de ces équipes ou organisations, ainsi que 10 entretiens exploratoires réalisés avec des membres issus de notre première étude de cas. Comme leur nom l'indique, ces entretiens exploratoires ont suivi un cadre spécifique, c'est-à-dire sans grille de collecte de données. A la différence des 33 derniers entretiens réalisés tout au long de nos 4 études de cas, qui ont été eux structurés et ont été conduits à l'aide du guide de recherche constitué à l'issue de notre partie théorique. La grille de lecture ainsi utilisée est présentée ci-dessous.

THEMES	Aspects	Example of related questions for interviews
<i>Context</i>	Organizational characteristics	Would you like to walk me through one of the recent projects you did? (activities, collaborators, services,...) How are people working within your organization?
	Individual characteristics	
<i>Temporal Distance</i>	Individual role	If you had to define which team you are part of, what will it be? How is this entity structured? Could you describe for me the field of action of your team/structure?
	Structure of the entity	
	Asynchronous relationships	
<i>Geographical Distance</i>	Virtuality	How do you perceive the distance between members of the team/or other collaborators within your work? How do you manage this virtuality?

<i>Cultural Distance</i>	Cultural awareness	For you, intercultural refers to what? Could you see and express differences between an intercultural management and a more traditional management? Through your virtual exchange with collaborators, have you ever experienced episodes characteristic of cultural specificities? (positive or negative)
<i>Control</i>	Control forms	How do you control your co-workers/subordinates? How are you controlled? How are the results evaluated? What are the managerial skills needed for evolving in such environment?

Table – Grille de lecture pour nos entretiens

Parmi ces 33 entretiens, seulement 3 d'entre eux n'ont pu être enregistrés, mais ont été l'objet d'une prise en notes manuelle immédiate et relativement conséquente. Les 30 autres entretiens ont pour leur part tous été enregistrés et retranscrits par la suite.

En parallèle de ces périodes d'observations non-participants et de ces entretiens individuels réalisés, nous avons également eu l'occasion de rassembler un certain nombre de données secondaires. Ces sources d'informations concrètes prennent majoritairement la forme d'études sectorielles et de rapports d'activités, dont certaines étaient parfois initialement réservées à un usage interne.

Une fois l'ensemble de ces données recueilli, nous avons été en mesure de nous intéresser au traitement de ces dernières par le biais d'une analyse de contenu, et l'utilisation de processus spécifiques de codage. L'analyse du contenu a notamment commencé par l'identification des thèmes principaux. Afin de faciliter la procédure de codage, nous avons notamment sollicité l'utilisation du logiciel d'analyse de données qualitatives NVivo 8.

Chapitre IV: Reconfiguration et design de notre cadre analytique

Le chapitre 4 est consacré à l'élaboration de notre cadre conceptuel issu des travaux du philosophe français Gilles Deleuze et provenant de la réalisation de notre cas exploratoire. A la lumière des éléments théoriques présentés au cours des chapitres 1 et 2 notamment, le recours à un cadre d'analyse inspiré des travaux deleuziens est légitimement apparu comme une solution pertinente afin de mieux appréhender notre problématique de recherche. Un certain nombre de concepts deleuziens significatifs sont donc sollicités et appliqués au Management des univers de travail à distance.

Tout d'abord, la structure en rhizome comme une contribution importante pour la gestion de la distance temporelle. Comme décrit par Deleuze, l'évolution de notre société se fait par le biais de l'adoption d'espaces dits lisses, c'est à dire ouvert, non polarisé et propice à une croissance rhizomatique - sans véritable organisation dans la hiérarchie. La structure en rhizome correspondra ainsi à une formation organique dynamique et chaotique qui, contrairement à la structure hiérarchique de l'arbre, implique des connexions distantes spontanées, imprévisibles entre plusieurs éléments hétérogènes (Linstead & Thanem, 2007). Quelle que soit sa position, chaque élément de la structure peut donc influencer le comportement et la pensée des autres éléments, sans tenir compte de la hiérarchie ou de son positionnement (Deleuze et Guattari, 1972). Au vue de ses caractéristiques, la structure en rhizome, proche d'une structure en réseau, s'avère particulièrement pertinente pour décrire les entités de distance de travail.

Ensuite, l'étude de la dichotomie actuel/virtuel et l'émergence de la distance perçue comme composante significative de la distance géographique. Comme nous avons pu le constater dans la littérature, la notion de virtualité s'avère difficile à caractériser et mesurer dans le sens où il n'existe pas de réel consensus sur une définition universelle ou acceptée du terme. Deleuze propose alors que dans l'optique des environnements virtuels, les termes « réel » et « virtuel » ne soient mis en opposition. Selon l'auteur, le terme virtuel devrait plutôt être considéré comme contraire à quelque chose d'actuel, qui existe concrètement. Un état virtuel serait donc bien réel, mais pas matériel. Ces observations nous amènent à la conclusion suivante : la confrontation entre la méthode traditionnelle en face-à-face de travailler et le travail à distance devrait avant tout être considéré comme une distinction entre l'étude de proximités objectives (actuelles) et perçues (virtuelles) (Wilson et O'Leary, 2008).

Traiter la distance et de la proximité en termes purement physiques ne donne en effet qu'une vision incomplète de la façon dont les gens ressentent leur expérience de travail à distance. Par conséquent, nous suggérons que la notion de proximité perçue – un construit asymétrique décrivant la relation dyadique entre collègues et leur perception de proximité ou distance avec leur partenaire (Wilson & O'Leary, 2008; Brunette, 2009) – soit sollicitée comme concept particulièrement pertinent pour analyser et comprendre les effets de la distance géographique sur des individus travaillant à distance.

Enfin, le phénomène de déterritorialisation pour expliquer les spécificités managériales liées à la distance culturelle. Chez la philosophie originale de Deleuze et Guattari (1972) orientée vers une critique vive du capitalisme, le phénomène de déterritorialisation faisait référence à la déclassification d'un élément matériel quelconque pour le libérer de son usage conventionnel initial, et donc d'une certaine forme de coercition et d'oppression. Appliquée à l'anthropologie, la déterritorialisation se réfèrera davantage à l'exclusion des sujets et objets culturels de leur rattachement spatio-temporel, ce qui s'avère être relativement intéressant et pertinent dans un contexte de travail à distance où certains aspects culturels ont tendance à transcender les limites territoriales. Selon Deleuze, en raison de la déterritorialisation et de l'émancipation organisationnelle aux contraintes territoriales qu'elle entraîne, le développement du travail à distance conduirait au lissage des différences et spécificités culturelles. Par le biais de l'étude de ce phénomène de déterritorialisation, Deleuze, qui se considère lui-même comme un auteur poststructuraliste, se raccorde à l'approche critique de la culture proposée par Vaara (2000, 2005), en ce sens que les différences culturelles des individus n'existeraient qu'à partir du moment où ces mêmes personnes n'en prendraient conscience dans l'exercice de leurs interactions sociales

Au travers de la description de ce cadre d'analyse et des étapes de sa construction, notre objectif dans ce chapitre 4 est de montrer comment les travaux de Deleuze ont influencé notre réflexion analytique. Nous considérons que l'opérationnalisation qui en découle constitue une première contribution de notre travail de recherche. L'utilisation de ce cadre d'analyse basé sur les travaux de Deleuze nous permet d'obtenir des contributions importantes et précieuses concernant la reconsidération du contrôle dans le management général des univers de travail à distance. Comme on peut le voir à travers la figure qui suivra également, les formes de contrôle observées grâce à cadre d'analyse deleuzien sont considérablement différentes de

celles attendues à la lecture des approches classiques de contrôle dans les théories des organisations.

From control modalities expected from traditional control theories...

	Control motivations	Expected control modalities
Temporal distance	Need for control so that employees succeed in better identifying their work/life balance and are not disturbed by personal distractions	Self-control
Geographical distance	Need for control so that managers, who deal with virtuality and the impossibility of implicating direct supervision, can be sure that their employees actually do the job they are expected to do	Formal form of control: outcome control, especially
Cultural distance	Need for control in order to manage cultural differences and their impact on team cooperation, communication and social collaboration	Social control

... To control modalities actually identified in practice thanks to our analytical framework

	Control motivations	Expected control modalities from our analysis based on Deleuze's work
Temporal distance	Need for control so that employees: - succeed in better identifying their work/life balance and are not disturbed by personal distractions - succeed in better perceiving their role within the confusing structure of distributed entities	Self-control, <i>control-enactment mechanisms</i>
Geographical distance	Need for control so that distributed workers collaborate successfully together despite the lack of direct and face-to-face interactions	<i>Social control</i>
Cultural distance	Need for control in order to manage cultural differences and their impact on team cooperation, communication and social collaboration when individuals achieve to be conscious of them in social interaction	<i>Formal form of control: outcome control</i>

Figure - Comparaison et évolution des formes de contrôle entre les approches du contrôle dans les théories des organisations et notre cadre d'analyse basé sur les travaux de Deleuze

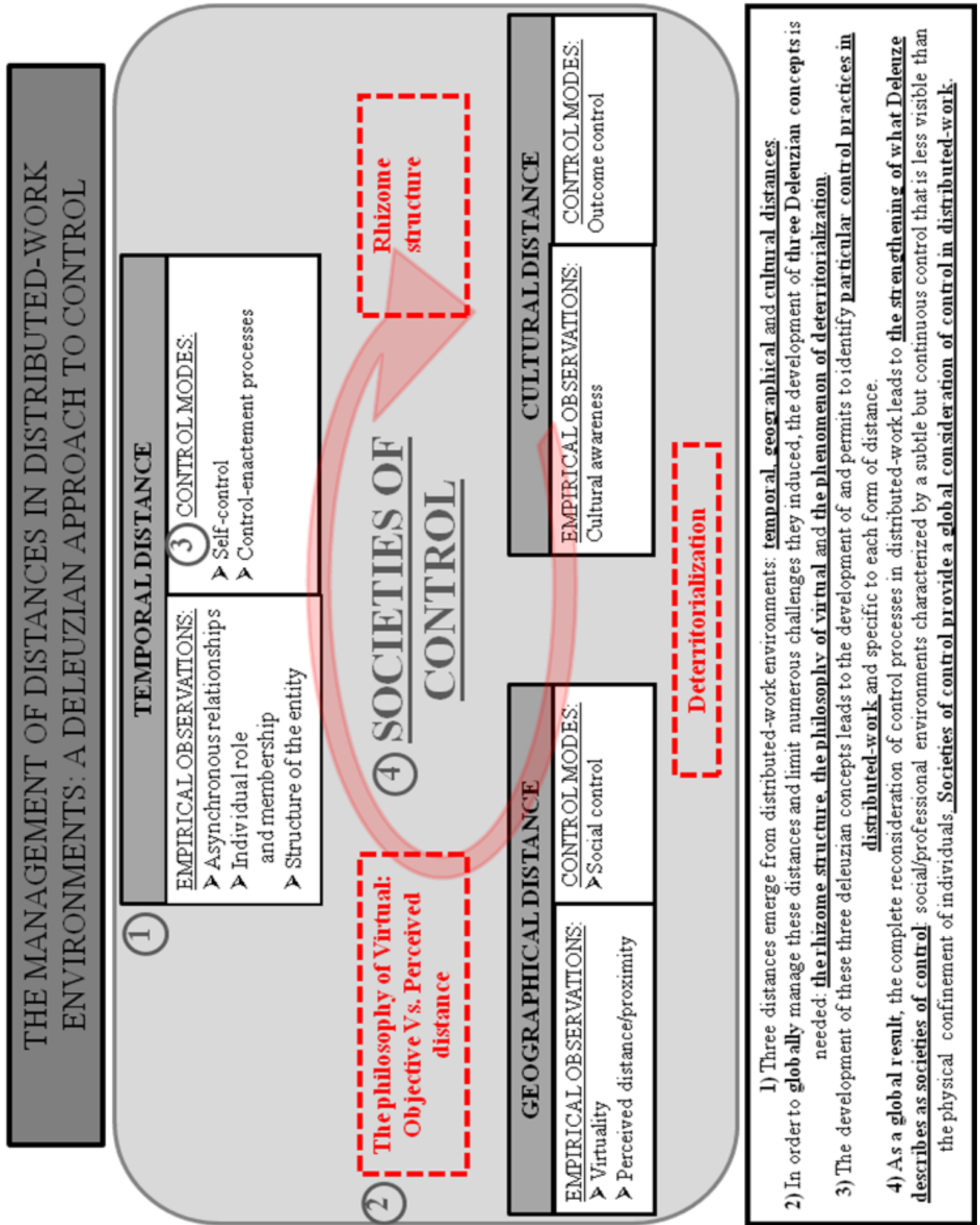
Ces différences d'observations significatives peuvent être expliquées par les limites des approches de contrôle dans les théories des organisations. Ces limitations sont illustrées par exemple par le fait que ces approches n'abordent que rarement l'aspect de la distance temporelle relié aux rôles des individus et à leurs perceptions de la structure dont ils font partie. Ou encore au manque de considération apportée à la question de savoir qui contrôle qui, négligeant ainsi le fait que les individus travaillant à distance pourraient être les initiateurs du processus de contrôle.

Par conséquent, à l'issue de notre analyse exploratoire des univers de travail à distance, nous proposons ci-après la représentation de notre cadre d'analyse. Grace à cet outil original et pertinent, nous avons pour but de répondre à nos trois questions de recherche, notamment sur la façon dont il est possible d'expliquer (question de recherche n°1), prendre en compte (question de recherche n°2), et comprendre les effets (question de recherche n°3) de la reconsidération du contrôle dans les environnements de travail à distance:

- Quels changements managériaux nécessitent le recours à des pratiques de contrôle dans les environnements de travail à distance?
- Quelles sont les formes de contrôle utilisées à cet égard?
- Quelle est l'incidence de cette reconsidération du contrôle sur notre vision globale du management?

Au final, en tant que résultat et autre contribution issus de ce chapitre 4, et en conformité avec notre conception de la recherche marquée par de nombreux allers retours entre la théorie et les données recueillies, des modifications ont été apportées au dictionnaire des thèmes initial - provenant de la littérature et uniquement utilisé pour la conduite de cette étude de cas exploratoire. Le tableau ci-après présentera le nouveau dictionnaire des thèmes utilisé pour l'analyse des données recueillies dans les études de cas n°2, 3 et 4 : celui-ci intègre en effet des éléments essentiels issus de l'analyse de notre cas exploratoire.

Figure - Notre cadre d'analyse utilisé pour l'appréhension des études de cas n°2, 3 et 4



THEMES	SUB-THEMES	DIMENSIONS	CODES	DESCRIPTORS
<i>Context</i>	Organizational characteristics		CTXo	Nature of the activity History of the entity
	Individual characteristics		CTXi	Presence within the company Presence within the observed entity
<i>Temporal Distance</i>	Individual role and membership		TEI	Private/Pro. lives balance Decrease of leadership power Decentralized coordination
	Structure of the entity		TES	Dynamicity in lines of responsibility, seniority, authority Non-sequential and non-hierarchical flow and sharing of information
	Asynchronous relationships		TEA	Delays Absence of response Management of time-zones
<i>Geographical Distance</i>	Virtuality	Use of technologies	GEU	ICTs used ICTs characteristics
		Differences with face-to-face work	GED	Advantages and Inconveniences
	Perceived distance/proximity	Manifestations	GEPm	Affective and Cognitive elements for connection
		Facilitators	GEPf	- Individual factors: openness to experience experience with dispersed work - Socio-organizational factors: network structure structural assurance
<i>Cultural Distance</i>	Cultural awareness	Cultural dimensions	CUD	Cultural specificities regarding: Physical and verbal interactions Relationship between the individual and the group Relationship with hierarchy Relationship to rules Relationship to time Relationship to the environment
		Systems of beliefs	CUS	Open-mindedness and Background
		Individual interpretations of cultural idiosyncrasies	CUI	Likelihood to work in an international environment Understanding of intercultural management
<i>Control</i>	Control issues due to distributed-work		COI	Idiosyncrasies
	Control forms	Behavior Control	COB	Work procedures
		Outcome Control	COO	Goal setting process Focus on deliverable checkpoints
		Social Control	COSo	Values sharing and internalization Trust and relationship building Norms Common goals
		Self-Control	COSe	Techniques of environmental planning Techniques of time management
		Control enactment	COP	Peer supervision Employee-initiated controls

Table – Nouveau dictionnaire des thèmes utilisé pour l'analyse des données issues des études cas n°2, 3 et 4

Chapitre V : Analyse des cas

Notre chapitre 5 représente l'initialisation de l'examen empirique de notre cadre de recherche. Notre objectif est en effet ici de confronter notre cadre de recherche avec des situations concrètes issues de la réalité, de sorte que nous puissions mieux comprendre ces événements particuliers de management à distance. Nous proposons donc dans ce chapitre 5 une analyse en profondeur de deux études de cas menées autour des questions de recherche initiées précédemment et provenant de notre cas exploratoire. L'analyse de ces deux cas a été compilée dans un seul et même chapitre car étant issus de la même société (EADS) et présentant des caractéristiques similaires de niveaux d'organisation de participations observées. Néanmoins, leur réalisation n'a pas été faite de manière irréfléchie, mais correspond plutôt à notre souhait de réaliser d'autres études de cas au sein de la même entreprise, mais dans des entités situées à un autre niveau organisationnel.

Réaliser deux études de cas supplémentaires auprès de l'organisation EADS, mais au sein d'une de ces 4 divisions spécifiques (Cassidian), nous a notamment permis de mettre en avant :

- L'importance de la culture technique au sein de l'organisation. EADS est une entreprise à vocation technique, en particulier en raison des produits conçus et fabriqués par l'entreprise. Cette culture technique est donc fortement marquée par la présence de collaborateurs fortement orientés « ingénieurs ». En conséquence, cette similitude dans les profils des salariés conduit inévitablement à une réplique de la culture scientifique (certains participants utilisent même le terme "hardcore" pour qualifier le profil technique de plusieurs salariés du groupe) qui s'étend de plus en plus avec le temps et finalement efface les particularités personnelles de ces individus.

- L'importance de la culture organisationnelle, dont l'analyse constitue également l'un des intérêts majeurs de cette recherche. La partie Corporate du groupe EADS, située au plus haut niveau de l'organisation, est constituée de membres s'occupant de problématiques générales pour l'ensemble du groupe, et développant ainsi de nombreuses collaborations avec l'ensemble des 4 divisions d'EADS. En bénéficiant d'une vue générale de la société, ces personnes, interrogées dans le cadre de notre étude exploratoire, ont été en mesure de faire part de leurs perceptions à l'égard des différences existant entre les quatre divisions de l'entreprise. Cela du fait qu'ils entretiennent des relations quotidiennes avec chacune de ces

divisions. Il ressort donc que pour la plupart de nos participants interrogés, la culture organisationnelle, et plus précisément la culture de la division, représente l'aspect le plus important pour les membres de l'organisation.

	Managerial role	Used form of distributed-work	Relationships to International	Langage of the interview
IM Security Team	Senior Manager/ Head of Unit	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Senior/National Manager	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Senior/National Manager	Virtual Teams	Daily multicultural collaborations (Europe)	English
	Senior/National Manager	Virtual Teams	Daily multicultural collaborations (Europe)	English
	IT Security Officer	Virtual Teams	Daily multicultural collaborations (Europe)	French
	Analyst	Virtual Teams	Daily multicultural collaborations (Europe)	French

Table – Etude de cas n°2: caractéristiques des participants

	Managerial role	Used form of distributed-work	Relationships to International	Langage of the interview
Architecture Management Team	Senior Manager/ Head of Unit	Virtual Teams	Daily multicultural collaborations (Europe)	English
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	English
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	French
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	French
	IT Architect	Virtual Teams – Nomadic work	Daily multicultural collaborations (Europe)	English

Table – Etude de cas n°3: caractéristiques des participants

En étudiant deux entités fonctionnant à distance au sein d'une des divisions de l'organisation EADS (Cassidian), chacune avec sa propre culture technique (juridique pour l'étude de cas n°2, et très orienté technique pour l'étude de cas n°3), nous avons cherché à cerner les effets des cultures à la fois organisationnelles et techniques dans la validité de nos analyses.

Néanmoins, il est important de noter que la même logique d'analyse a été suivie dans les deux cas à travers le temps, selon les modalités exprimées dans la partie méthodologique de ce travail.

Malgré ces différences au niveau des cultures à la fois technique et divisionnelle, les résultats issus de cette analyse des cas n°2 et n°3 confortent notre première analyse préliminaire, et mettent notamment en avant l'illustration du concept deleuzien de sociétés de contrôle dans son optique managériale.

Chapitre VI: Cas confirmatoire: similitudes et différences

En plus des trois études de cas précédentes (dont une exploratoire) menées au sein du groupe EADS, nous avons cherché à réaliser une quatrième et dernière étude de cas auprès de la société KCI Medical France. De toute évidence, notre collaboration de recherche avec cette entreprise est avant tout une opportunité qui nous a été offerte et que nous ne voulions pas décliner. Néanmoins, de la même manière que nous avons cherché à enquêter sur des entités ayant des caractéristiques dissemblables en termes de population ou de niveaux d'organisation au sein d'EADS, l'étude de la société KCI Medical France reste très légitime dans le sens où les activités de KCI et les formes de travail à distance utilisées en son sein (télétravail et travail nomade en plus d'équipes virtuelles déjà étudiées dans les autres cas) sont complètement différents des caractéristiques observées auprès des entités de travail à distance d'EADS.

	Managerial role	Used form of distributed-work	Relationships to International	Langage of the interview
KCI Medical	French regional manager	Telecommuting	No	French
	Financial Officer	Virtual Teams	Europe-Middle East-Africa	French
	Sales & Order Planning Manager	Telecommuting	Europe-Middle East-Africa	French
	French regional manager	Telecommuting – Nomadic work	No	French
	Sales National Director	Telecommuting – Nomadic work	No	French
	National IT Manager	Virtual Teams	Europe-Middle East-Africa	French

Table – Etude de cas n°4: caractéristique des participants

La conduite de ce cas correspond ainsi à notre souhait de réaliser une analyse d'une entité externe à EADS, dont les caractéristiques spécifiques sont globalement partagées par l'ensemble des membres de l'organisation. Comme souligné par nos participants, nous avons majoritairement traité avec des entités dont l'orientation technique était indéniable, et dont les membres étaient d'ores et déjà utilisateurs ou alors désireux d'utiliser les technologies. L'utilisation et la pratique des TIC ne peuvent donc par conséquent difficilement être

considérées comme un inconvénient pour ce personnel. Au contraire, les technologies les plus récentes y sont souvent sollicitées, même si cet usage est parfois soumis à restriction, en raison de problèmes logistiques (par exemple, le grand nombre de participants potentiels à une conférence téléphonique) ou d'obstacles structurels (serveurs informatiques de haute sécurité interdisant l'utilisation de la visioconférence, en partie en raison de la nature potentiellement sensible des projets aérospatiaux sur lesquels EADS est engagé).

Des caractéristiques relativement distinctes de KCI Medical France par rapport à EADS émergent une compréhension différente de la distance par ses participants, notamment par le biais d'une attention beaucoup plus grande accordée à la distance temporelle par rapport à celle des entités virtuelles d'EADS. Néanmoins, à la fin, l'approche générale du contrôle demeure la même, et nous retrouvons dans ce dernier cas les formes spécifiques de contrôle utilisées pour le management de chaque type de distance, de manière analogue aux études de cas précédentes. Fait intéressant, le concept de sociétés de contrôle y est finalement présenté de manière tout à fait originale, c'est-à-dire du point de vue des managers eux-mêmes, qui en reconnaissent son existence.

Pris dans leur ensemble, ces résultats confirment l'originalité et la contribution de l'approche deleuzienne utilisée pour le développement de notre cadre d'analyse. En raison des différentes caractéristiques de ce cas, notre objectif était également de bénéficier de possibles indications intéressantes pouvant contribuer de manière significative à la contextualisation de notre cadre de recherche. En guise de synthèse, nous proposons ci-dessous la figure représentant les principales similitudes et différences observées dans cette dernière étude de cas confirmatoire par rapport aux cas précédents.

SIMILARITIES	
Management of distances	Observations
Temporal distance	<ul style="list-style-type: none"> - Numerous manifestations of feelings of isolation, especially through telecommuting - Development of control-enactment processes so that individuals earn visibility
Geographical distance	<ul style="list-style-type: none"> - Prevalence of the perceived distance over objective distance - Development of specific ICTs tools in accordance, and organization of informal meetings during and outside working hours - Development of social control
Cultural distance	<ul style="list-style-type: none"> - Individuals' cultural awareness marked by phenomenon of deterritorialization
Issue of control	Observations
General apprehension of management and control	<ul style="list-style-type: none"> - All is connected through multiple and complex interactions - Use of a global set of varied modalities of control allowing a flexible and almost invisible supervision, supporting the development of societies of control by managers themselves
DIFFERENCES	
Observations	Related managerial contributions
Forms of distributed-work observed necessitate: <ul style="list-style-type: none"> - a strong balance between private and professional lives (telecommuting) - a self-management of time-offs (nomadic work) 	<ul style="list-style-type: none"> - Emergence of a self-discipline and autonomy imposed by temporal aspects - Control and modulation of individuals through time
Specific apprehension of cultural awareness and causes of deterritorialization	<ul style="list-style-type: none"> - Cyclical relationship between modalities of outcome control (as being both at origins and consequences) and cultural distance

Table – Synthèse des principales similitudes et différences observées dans le cadre de la comparaison entre notre cas confirmatoire et nos précédentes études de cas

Chapitre VII: La reconsidération du contrôle dans la rupture managériale introduite par le travail à distance

La dernière partie de ce document est consacrée à la discussion générale de notre recherche empirique. L'objectif de cette partie est de prendre une certaine distance par rapport à la présentation de nos résultats empiriques et de tenter de conceptualiser les différents résultats de notre thèse de doctorat par rapport aux différentes questions de recherche. Le chapitre 7 constitue ainsi une discussion générale permettant la recontextualisation de nos résultats.

A travers la conduite de ce travail de recherche, nous avons cherché à nous interroger sur le management des organisations distribuées, notamment en ce qui concerne les processus de contrôle sollicités. Pour ce faire, nous avons basé notre analyse sur une articulation originale basée sur des concepts du philosophe français Gilles Deleuze. Dans le cadre de ce dernier donc, nous proposons de mettre nos apports théoriques en perspective et de discuter les différentes questions de recherche ayant émergé de la première partie de ce document.

- Quels changements managériaux nécessitent le recours à des pratiques de contrôle dans les environnements de travail à distance?

Les problématiques de management dans les environnements de travail à distance sont introduites par l'émergence de trois formes de distance: les distances temporelle, géographique et culturelle. Chacune d'entre elles a ses propres caractéristiques, et leurs particularités doivent être prises en compte afin de réussir à mieux concevoir le management des univers de travail distribué. En tant que tel, notre travail de recherche se concentre sur les composantes significatives de chacune de ces formes de distance dont l'analyse ne doit en aucun cas être occultée:

- Porter une attention particulière à l'incidence croissante des problématiques liées à la perception des membres de leur équipe et de sa structure, dans l'optique des différentes perceptions de temporalités.

- Etre conscient de la prévalence de la proximité perçue plutôt qu'objective dans la compréhension de la distance géographique.

- Accorder une attention particulière à la sensibilisation culturelle des individus (analyses inter-individuelles) plutôt que sur les propres particularités culturelles ou dimensions spécifiques (analyses individuelles) de ces derniers

A la lumière des nombreuses problématiques se dégageant du développement de ces trois formes de distance, le maintien d'une forme de surveillance et de discipline à distance s'avère plus que jamais nécessaire. Dans ces univers spécifiques, le contrôle reste en effet le moyen ultime pour la hiérarchie de combler le problème des distances.

- Quelles sont les formes de contrôle utilisées à cet égard?

L'utilisation des systèmes d'information requis par le développement du travail à distance introduit un paradoxe et une ambiguïté certains. Ces outils sont en effet d'abord présentés de manière flatteuse comme facilitant la communication longue-distance et la coopération des travailleurs par le biais d'une autonomie individuelle accrue, un développement des réseaux de communication, ainsi qu'une décentralisation certaine de la prise de décision. Mais le développement des TIC est également accompagné d'une intensification du travail, d'une auto-discipline continue ainsi qu'une implication émotionnelle lourde. L'objectif des processus de contrôle dans le cadre du travail à distance sera donc en partie de limiter la prise de conscience des individus sur les effets négatifs de l'utilisation des TIC, à travers la création du développement de mécanismes subtils. Les formes plus subtiles du contrôle ne seront en effet pas perçues comme une contrainte rigide et restrictive par les individus soumis à ces dernières.

Parmi ces formes de contrôle souples, l'auto-contrôle est motivé par la nécessité pour les individus de rester connectés, disponibles et réactifs, même en étant à distance, et entraînant ainsi une forme de pression temporelle extrêmement et paradoxalement plus élevée que les autres travailleurs en présentiel. Les processus de « contrôle-enactment » ont eux une importance significative car entraînant la reconceptualisation du concept de contrôle comportemental. En proposant en effet des mécanismes subtils de contrôle, les processus de control-enactment permettent la supervision des travailleurs éloignés de leur hiérarchie. Dans la même perspective, le développement du contrôle social ramène au développement de processus immatériels facilitant la réduction de la distance perçue entre les membres distribués. Enfin, bien qu'étant techniquement un mécanisme formel de contrôle, même le développement du contrôle des résultats est mis en place afin que les membres ressentent une certaine souplesse et une autonomie, avec l'impression d'agir librement et de s'organiser de manière qu'ils le souhaitent à la condition qu'ils atteignent les objectifs et les résultats attendus.

Enfin, le développement croissant de ces modalités subtiles et flexibles du contrôle conduit au développement des sociétés de contrôle, comme illustré dans notre analyse, les individus exprimant une sorte de libération ou une certaine réalisation de soi, bien que souffrant encore de nombreuses modalités réelles de surveillance.

- Quelle est l'incidence de cette reconsidération du contrôle sur notre vision globale du management?

Les sociétés de contrôle sont sans aucun doute une illustration concrète de la reconsidération du contrôle due au développement du travail à distance dans nos sociétés contemporaines. Un tel développement amène forcément à des modifications de notre vision globale du management.

Tout d'abord, nous avons observé l'évolution croissante relative à l'exercice du pouvoir, marquée par des employés qui acquièrent un rôle bien plus actif dans le développement des processus de contrôle. Les employés travaillant à distance deviennent même parfois la première source de contrôle. Dans certains cas, ils sont également initiateurs des contrôles eux-mêmes. En tant que tel, les processus de contrôle modifient considérablement les perspectives de pouvoir. En effet, le contrôle est ici conceptualisé comme étant relationnel plutôt qu'une prérogative de l'autorité souveraine.

Avec ces changements dans l'exercice de l'autorité, le rôle des managers sera également bouleversé, et consistera avant tout à maintenir un climat serein de collaboration. Leur travail reposera essentiellement sur de nombreux échanges au sein de l'équipe plutôt que dans le développement d'une atmosphère où les travailleurs à distance se sentiront constamment examinés et évalués. Plus encore que de surveiller ou contrôler la réalisation des activités de leurs subordonnés, les managers des entités virtuelles joueront davantage le rôle de facilitateurs.

En plus de ces modifications relatives à notre vision du management et du contrôle dans les environnements de travail à distance, notre propre perception de la réussite et de la performance sera également bouleversée. De nos observations émerge en effet le fait que l'étude des performances sera basée sur un triptyque particulier de valeurs fondamentales, qui sont la visibilité, la réactivité et la modulation des individus. Afin donc d'adopter la vision la plus générale possible du management du contrôle et des distances dans les environnements de travail distribué, nous présentons ci-après en guise de conclusion le fruit de notre travail de recherche basé sur un cadre d'analyse deleuzien.

Figure – Le management des distances dans le travail distribué: Une approche deleuzienne du contrôle

