Making sense of digitization: three studies on the digitization concept and its implementation in organizations

Thesis

presented to the Faculty of Economics and Social Sciences

at the University of Fribourg (Switzerland)

by

Bertrand Audrin

From Conthey (VS)

in fulfillment of the requirements for the degree of

Doctor of Economics and Social Sciences

Accepted by the Faculty of Economics and Social Sciences

on February 25, 2019, at the proposal of

Prof. Eric Davoine, University of Fribourg (1st advisor)

Prof. Marino Widmer, University of Fribourg (2nd advisor)

Fribourg (Switzerland), 2019

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« Alles fetzig, alles lässig,

funktioniert prächtig dank Technik »

MC Fitti

Remerciements

Cette thèse est le fruit d'un travail de plusieurs années et les quelques centaines de pages qui constituent ce document peinent à rendre compte de l'ampleur de l'aventure. Je tiens à remercier mon directeur de thèse, le Professeur Eric Davoine pour cette opportunité et pour l'encadrement, les précieux conseils et la confiance qu'il m'a donnés dès 2012. A cette époque, j'étais loin de me douter que mon travail de master allait me mener là où je suis aujourd'hui. Merci pour cette opportunité et merci de m'avoir aidé à faire de ce doctorat une période si enrichissante et si variée. J'ai eu le plaisir et la chance de travailler au sein de la Chaire de Ressources Humaines et Organisation en tant qu'assistant-étudiant en 2013 puis en tant qu'assistant de recherche et assistant doctorant en 2014.

Ces années au sein de la chaire RHO m'ont permis dans un premier temps de me familiariser avec le milieu de la recherche et ensuite de développer une expertise et des recherches dans le domaine de la numérisation des organisations. Je tiens à remercier les institutions qui m'ont soutenu dans ce travail de thèse, particulièrement l'Université de Fribourg et UniDistance. Les recherches menées dans le cadre de cette thèse n'auraient pas été possibles sans le soutien du Centre Romand de Qualification Professionnelle et les sections romandes de HR Swiss. Je tiens particulièrement à remercier Maria Anna Di Marino qui a été d'une aide formidable dans le démarchage des entreprises pour les études de cas sur la numérisation des organisations.

Cette thèse a aussi été l'occasion de récolter du matériel empirique aux quatre coins de la Suisse, au sein d'organisations très différentes et intéressantes. Je remercie les experts qui ont participé à la première étude sur la transformation numérique de la fonction RH. Merci aussi à toutes les personnes avec qui j'ai eu des entretiens dans le cadre des études de cas. Merci au Professeur François Pichault pour ses conseils et son aide dans l'analyse de ces cas.

Ces années au sein de la chaire RHO ont également été marquées par un climat de travail dans lequel je me suis épanoui avec des collègues avec lesquels j'ai partagé de bons moments et qui m'ont aidé et soutenu tout au long de ce travail de thèse. Merci à Dr. Claudio Ravasi et à Dr. Xavier Salamin qui ont partagé avec moi leur sagesse et leur expérience. Merci à Nathalie Mancini-Vonlanthen et à Clelia Rossi. Merci également à Linda Mettler avec qui j'ai eu le plaisir de partager le bureau et d'aller en conférence à Montpellier puis Antananarivo, merci pour les relectures assidues et le soutien moral. Merci aussi aux autres doctorants du département de gestion qui forment un groupe très sympathique et soudé. Je tiens à remercier les étudiants que j'ai côtoyés durant cette thèse, et plus particulièrement toutes celles et ceux

qui ont effectué leur travail de master sur mes sujets de recherche et avec lesquels j'ai collaboré, avec une mention spéciale pour Charline Callewaert.

Je remercie également les professeurs Dominique Bourgeois, François Pichault et Marino Widmer d'avoir accepté de participer à mon jury de thèse.

Merci enfin à mon entourage qui a été présent tout au long de cette thèse. Ce travail n'aurait pas été possible si je n'avais pas bénéficié de vos conseils, de votre aide, de votre soutien. Je tiens à remercier Maike Widmer et Noémie Perrier qui m'ont épaulé avec leurs conseils et leurs traductions. Merci à Naim Abdulla pour l'écoute et le soutien. Merci à Melina Ariza pour les nombreuses relectures et corrections, pour son indéfectible soutien et sa présence. Le plus grand des mercis va à ma famille qui a toujours soutenu ce projet de doctorat. Merci à Michel van Mark pour les riches échanges sur le sujet de la digitalisation. Merci à mes parents pour leurs conseils et leur soutien, qui vont bien au-delà de cette thèse. Merci à Dr. Catherine Audrin pour son aide et son regard académique, merci aussi de m'avoir ouvert la voie et d'avoir su me conseiller tout au long de ce doctorat.

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I. Introductory chapter

This thesis focuses on digitization in organizations and investigates its meanings for the actors involved in this process and how digital change unfolds. The whole concept of digitization remains to this date quite fuzzy and ill-defined, with different types of changes being related to digitization by scholars, practitioners, or the media. Digitization appears to be a global trend in management, as a wide range of technologies is associated to it. While consultants and practitioners have tackled the issue of digitization in reports in the last few years (Deloitte, 2017; Forrester, 2018; Meyer et al., 2018), scholars' interest for digitization of organizations is at its beginning (Brynjolfsson & McAfee, 2011; Fitzgerald, Kruschwitz, Bonnet, & Welch, 2014). Digitization has been studied from various lenses, such as business models (Berman, 2012; Loebbecke & Picot, 2015), workspaces (Messenger & Gschwind, 2016; Pink, Lingard, & Harley, 2017), organizational communication (Cook, 2008; McAfee, 2009), service innovation (M. Barrett, Davidson, Prabhu, & Vargo, 2015; Larivière et al., 2017), and so on.

In order to "make sense" of this concept of digitization, this thesis consists of three articles investigating three different phenomena identified as distinct forms of digitization: the first article focuses on digital communication; the second article focuses on New Ways of Working; the third article focuses on Self-Service Technologies. This thesis provides a deeper understanding of the concept of digitization by investigating multiple facets of the notion and using various conceptual lenses and theoretical frameworks. In order to do so, digitization is studied from two different perspectives. In the first article, digitization is studied as an upcoming phenomenon and its meaning and implications for the HR function are investigated through a forecasting study (Boyer & Scouarnec, 2009; Rowe & Wright, 1999, 2001; Scouarnec, 2008). In the second and third articles, digitization is treated as an organizational change. A sensemaking approach (Gioia & Thomas, 1996; Maitlis & Christianson, 2014; Weick, Sutcliffe, & Obstfeld, 2005) is used to investigate New Ways of Working implementation in order to develop a better understanding of how digital changes unfold and what are the key meanings associated with digitization. A material-discursive practices approach (Hardy & Thomas, 2015; Orlikowski & Scott, 2015) is used to investigate Self-Service Technologies implementation in order to better understand what practices are developed during a change process. The second and third article are meant to be

complementary: they both investigate a specific digitization phenomenon with the aim to better identify the similarities and differences across different types of digitization.

This first chapter provides a general overview of the thesis. First, the concept of digitization and its polysemy is presented. Then, the two lines of research related to digitization from an organization studies perspective are presented, namely digitization from an Information Technology in organizations perspective and digitization as organizational change with a focus on material-discursive practices on and the sensemaking approach. The main research interests related to the study of digitization are also presented for all approaches. Then, the objectives of this thesis and of its constituting papers are presented, as well as the methods used. The last part of this chapter consists in a summary of the articles and in directions for future research.

1. Digitization

Digitization is a new trend of technological and organizational change that can be dated to the beginning of 2010's (Brynjolfsson & McAfee, 2011). The concept of digitization in its basic understanding relates to a way of encoding data. It is the process of transforming an analogical signal (a frequency) into a digital signal (bits). Strictly speaking, digitization means "putting into digits", a simple signal transformation from analogical to digital (de Coulon, 1998). In a broader sense, digitization relates to data management and how physical documents are conserved and archived digitally (Chaumier, 2006; Coyle, 2006). In an even broader sense, the one this work focuses on, digitization is about transforming organizations and bringing them to a more connected world (Brynjolfsson & McAfee, 2014). Digitization is a global concept rather than a specific technology. In that respect, it can be considered as an "organizing vision" (Kaganer, Pawlowski, & Wiley-Patton, 2010; Ramiller & Swanson, 2003), a broad concept to which a whole lot of technologies and managerial trends might be associated (such as web 2.0, web. 30, IoT, Industry 4.0, advanced robotics, etc.).

Literature does not give a proper and complete definition of digitization (other than the one given by Brynjolfsson and McAfee) but scholars link many different kinds of digital changes to digitization, be it automation (Arntz, Gregory, & Zierahn, 2016; Autor, 2015), advanced robotics (Brynjolfsson & McAfee, 2014), augmented reality (Barfield, 2015; Ong & Nee, 2013), Big Data (De Mauro, Greco, & Grimaldi, 2015; John Walker, 2014; McAfee & Brynjolfsson, 2012), Cloud Computing (Armbrust et al., 2010; Qian, Luo, Du, & Guo, 2009), social networks (Brynjolfsson & McAfee, 2011; Cook, 2008; McAfee, 2009).

In other words, digitization appears as a catch-all word built around technological change and extensive use of data. As highlighted earlier, digitization – in the context of organizations – also represents huge changes for companies. Indeed, many organizational concepts are linked to digitization. "Industry 4.0" refers to automation in the industry (Bauer & Horváth, 2015; Drath & Horch, 2014; Hermann, Pentek, & Otto, 2016); "New Ways of Working" emphasizes the greater flexibility of space and time at work due to mobile technologies (Burke & Cooper, 2006; Felstead & Henseke, 2017; Hoeven & Zoonen, 2015; ten Brummelhuis, Bakker, Hetland, & Keulemans, 2012); "Software as a Service" refers to Cloud Computing and to a more flexible use of technologies on multiple devices (Benlian & Hess, 2011); "Service encounter 2.0" (Larivière et al., 2017) refers to self-service technologies; and Big Data has huge implications when it comes to transforming business models (Loebbecke & Picot, 2015).

The aforementioned concepts do not present an exhaustive list of what digitization entails but offer a fair representation of the magnitude of the changes companies are facing, be it in terms of business model, of organizational structure, of employability and jobs transformation (Arntz et al., 2016; Brynjolfsson & McAfee, 2014; Burke & Ng, 2006). While this variety highlights the multi-faceted reality of digitization, two principles are common in the aforementioned technologies: a focus on computerized data and on organizational change. From this starting point, digitization can be defined very broadly as *the summary of the technological and organizational changes that are centered on the creation, exchange, sharing and using of significant volumes of data*. Research in organization studies thus can investigate digitization mainly from two perspectives: as a technological phenomenon or as an organizational change. On one hand, research on Information Technology in organizations conceptualizes digitization as a technological phenomenon. On the other hand, research on organizational change sees digitization as a specific kind of organizational change. The next part will present both perspectives and their specificities, as well as the questions they focus on when investigating digitization.

1.1 Study of Information Technology in organizations

Over the last decades, Information Technology has brought many changes to businesses. However, Orlikowski (2010) notes that technology has largely been unacknowledged in management literature (Orlikowski, 2010, p. 128). She uses the term of "absent presence" to name the fact that despite the crucial role of technology in organizations, there is only a small fringe of literature that has investigated this topic (Orlikowski, 2010, p. 128).

1.1.1 Technology as an exogenous force

The first studies of technology in organizations can be traced back to the 1960s (Perrow, 1967; Woodward, 1958) and focus on the impact of technology on specific types of organizations. Their view on technology is highly contingent as it is presented as an exogenous factor that has a direct impact on organizations (Leonardi & Barley, 2010, p. 4; Orlikowski, 2010, p. 129). This 'technological deterministic' approach tries to understand the impact of technology in an organizational context: technology is the independent variable and individuals, teams, or organizations are the dependent variables (Orlikowski & Scott, 2008, p. 439). Technology therefore appears as the causal determinant of outcomes in organizations, which Klein (2006) coins with the notion of "contingency theory" (Klein, 2006).

Technological change is seen as a mechanical process where the impact of technology implementation can be measured and evaluated. In this approach, studies try to understand how change is developed and how technology is implemented (Alavi & Henderson, 1981; Franz & Robey, 1984; Markus, 1983). Research tries to identify and evaluate the impacts of information technology on organizations at various levels (individuals, teams groups) and functions (production, management, etc.) (Kling, 1978; Kling & Iacono, 1984; Stewart, 1971; Zuboff, 1988). This outlook on technology in organizations tries to formulate universal results and therefore ignores the impact of situational and context factors in shaping technology and organizations (Orlikowski & Baroudi, 1991). This echoes with the tendency of this approach to depict technology as a standard object that will be implemented in the same fashion in different organizations (Orlikowski, 2007). Technology is presented as having a direct and non-moderated impact on organizations. This positivist view tends to neglect human agency over technological implementation as humans are solely depicted as recipients of technology without having any influence on it (Cecez-Kecmanovic, 2016; Orlikowski & Baroudi, 1991). In this view, digitization is studied focusing on its implementation and on its impact as a global phenomenon not only on organizations but also on a specific function or population. Studies specifically investigate which factors (or affordances) can foster the adoption of digital technologies. A widely used model to study success factors in implementation is the technology acceptance model (TAM) (Davis, 1985; Venkatesh & Davis, 2000). Many studies rely on this model to investigate the success or failure of digitization. For example, Bai and Gao focus on factors influencing consumer perception of Internet of Things (Bai & Gao, 2014); Constantinides and colleagues on their side focus on the factors influencing acceptance of Internet of things (Constantinides, Kahlert, & Vries, 2017). Research also investigates more generally the impact of digitization on organizations and their members (Kitchin, 2014; Raguseo, 2018; Verma, Bhattacharyya, & Kumar, 2018).

1.1.2 Technology as socially shaped

In an attempt to challenge this view of technology as an exogenous force, scholars have adopted a context centered approach to study technology in organizations in the 1980s and 1990s (Cecez-Kecmanovic, 2016). This viewpoint highlights the central role of human agency and institutional contexts in shaping the way technology is developed and used (Orlikowski, 2010, p. 131). In this outlook, technology is socially produced and situation-bounded (Orlikowski, 2010, p. 131), in a “social constructivism” ontology (Leonardi & Barley, 2010, p. 5). This approach is based on the idea that reality cannot be measured objectively as it is

subjectively interpreted by actors (Cecez-Kecmanovic, 2016). This viewpoint provides a more dynamic and situational account of technology appropriation (Orlikowski, 2010). Technological change therefore appears as a social process that consists of making sense of the affordances of technology (Leonardi, Nardi, & Kallinikos, 2012) and creating new sets of practices that enact technology. In contrast with the positivist tradition, the interpretive approach does not view technology as 'given' (Orlikowski & Baroudi, 1991, p. 14), but rather as shaped and appropriated by humans (Orlikowski & Baroudi, 1991, p. 14). However, this interpretive approach faces difficulties when it comes to grasping all the components that constitute a context. Indeed, scholars have criticized the lack of consideration for the external context as well as for history (Fay, 1987, p. 92). Moreover, due to their focus on challenging the positivist contingency theory, the tenants of the social constructivist approach have tended to solely focus on the human factor in technology and organizations, undermining the role of technology itself (Orlikowski, 2010, p. 133). In this view, digitization is studied focusing on how employees and/or managers influence the way a specific digital technology is used in a specific organization. Studies investigate the role of structures and organizations (often in line with Adaptive Structuration Theory – AST) (DeSanctis & Poole, 1994; Rains & Bonito, 2017) as well as of individuals (Schmitz, Teng, & Webb, 2016) on how digital technology is shaped and used (Hage & Noseleit, 2015; Leclercq-Vandelannoitte, 2015; Ractham, Kaewkitipong, & Firpo, 2012; Ractham, Zhang, & Firpo, 2010).

1.1.3 Materializing technology

To overcome the lack of focus on technology of the context centered approach, scholars have advocated for a viewpoint on technology in organizations that focuses on how technology and humans interact in practices (Leonardi & Barley, 2010; Orlikowski, 2010). This stream of research studies how human and non-humans (namely technology in that case) construct reality and influence each other in practices (Cecez-Kecmanovic, 2016). This stream of research has been named "sociomateriality" or "materiality" to re-emphasize the role of material components (i.e. technology) in creating the world. For Orlikowski (2007), "sociomateriality" (Orlikowski, 2007) must focus on how social (humans, organizations, institutions) and material components (such as artifacts and devices) are entangled and co-shape the reality in situated practices. The fundamental principle of sociomateriality is that there is no distinction between social and material elements, as they are built in relation to other actors in a set of practices (Cecez-Kecmanovic, Galliers, Henfridsson, Newell, & Vidgen, 2014; Jarzabkowski & Pinch, 2013). Neither human beings nor technology take over

the other because both are mutually created (de Vaujany, Mitev, Lanzara, & Mukherjee, 2015; Feldman & Orlikowski, 2011; Orlikowski & Scott, 2008).

Regarding the entanglement of the material and the social, Leonardi and colleagues advocate for a more moderate stance. They suggest that some properties are indeed material and that they condition the social (Leonardi et al., 2012). They therefore assume that some material characteristics exist on their own – independently of the situation they are embedded in. However, this materiality only gets enacted through interaction with people and their perceptions and expectations toward materiality (Leonardi et al., 2012). Leonardi and colleagues call for more research on how people interact with the materiality of technology, more specifically how this materiality pre-exists the interaction and what role it plays in organizing (Leonardi et al., 2012). While Orlikowski and colleagues wish to abolish the distinction between the social and the material, other authors such as Leonardi rather insist on that differentiation between these two dimensions.

Sociomateriality and other materialistic approaches thus appear as an intent to give a greater importance to the joint efforts of the social and the material in creating reality and influencing each other. Whether the social and material must be distinct, entangled or equated depends on the point of view; nonetheless the importance of studying the relationships between both in practices remains central. In this view, digitization is studied focusing on the way practices are transformed jointly by employees and/or managers and digital technology. Studies investigate the common intervention of human and non-human actants on practices (Mearns, Richardson, & Robson, 2015; Robey & Cousins, 2015; Scott & Orlikowski, 2014; Svahn, Henfridsson, & Yoo, 2009).

1.1.4 Forecasting technology

Another way to study technology in organizations lies in forecasting studies (Martino, 1980; Meade & Islam, 1998). This stream of research evaluates possible evolutions of technology, the way they are adopted and their impact on the economy (for example Geum, Jeon, & Seol, 2013; Jiang, Kleer, & Piller, 2017; Lu & Weng, 2018; Porter, Roper, Mason, Rossini, & Banks, 1991). Some specific journals investigate such topics, as for example Technological Forecasting and Social Change. Most of the studies following a forecasting objective rely on experts' opinion, where experts from various fields are consulted and try to identify the trends and issues related to a new technology. A widely used method for this expert consultation is the Delphi method which was developed in the 1950s (Linstone & Turoff, 2011). Delphi is

particularly useful when experts are geographically dispersed and when disagreements between experts can arise (Rowe & Wright, 2001). It is also useful when the future is difficult to foresee and a group of experts might formulate a better judgment (Abbasi, Tabatabaei, & Labbaf, 2016). Delphi studies are also used to investigate technological change in specific fields. In the field of Human Resource Management (HRM), a few studies have been led in the last decade to develop a forecast of technological implementation. When some studies try to seize general changes that might happen due to technological change (Abbasi et al., 2016), other focus on specific technologies – such as Internet of Things – (Strohmeier, 2018), or on specific HRM missions – such as job design – (Habraken & Bondarouk, 2017). In a similar perspective, there is a French tradition of forecasting (called "méthode prospective métiers"). This approach focuses less on technology and more on HRM (Boyer & Scouarnec, 2009). This prospective method focuses on the future of jobs and how they might evolve over time (Boyer & Scouarnec, 2009), notably due to technological changes. Studies using this method focus on the evolution of HRM in certain contexts (a specific national context - namely Switerland - for Davoine, Emmenegger, & Mimouni, 2011; a specific sectoral context - namely public healthcare - for Noguera & Lartigau, 2009). They also tend to analyze the evolution of a specific profession (Payre & Scouarnec, 2015; Scouarnec, 2005), as well as the impact of technology implementation for HRM (Brillet, Hulin, & Martineau, 2010). The forecasting approach provides another way to study Information Technology in organizations, by building scenarios and envisioning what the future could be. This approach is found very useful in the case of emerging trends in order to develop a better understanding of their characteristics and ties with society. In this view, digitization is studied focusing on questions like: what is the impact of digitization on management? What is the impact of digitization for leadership, and so on. In this view, digitization is studied by focusing on how digital technologies that are in their beginning will have an impact on organizations or on a specific function or population in the future. Studies often rely on Delphi techniques (Hsu & Sandford, 2007; Rowe & Wright, 1999) or similar methods to try to evaluate the future impact of digital technologies on organizations or on specific activities (El-Gazzar, Hustad, & Olsen, 2016; Jakobs, Wagner, & Reimers, 2011; Linke & Zerfass, 2012; Stockinger, 2015; Strohmeier, 2018).

To summarize, digitization from an IT in organizations perspective can be studied from four different points of views: a positivist exogenous force view, a constructivist context-centered view, a sociomaterial / material view, and a prospective view. Depending on the view,

epistemological postures and research questions may vary. Table 1 below offers a summary of the ways to investigate digitization from an IT in organizations perspective.

Perspective	**Research areas**	**Example of studies**
Digital technology as an exogeneous force	What is the impact of digitization on organizations?	Bai & Gao, 2014; Constantinides, Kahlert, & Vries, 2017; Kitchin, 2014; Raguseo, 2018; Verma, Bhattacharyya, & Kumar, 2018
Digital technology as shaped by humans and context dependent	How people influence digital technologies use in organizations?	Hage & Noseleit, 2015; Leclercq-Vandelannoitte, 2015; Ractham, Kaewkitipong, & Firpo, 2012; Ractham, Zhang, & Firpo, 2010
Digital technology as entangled with social components	How are practices transformed jointly by employees and/or managers and digital technology?	Mearns, Richardson, & Robson, 2015; Robey & Cousins, 2015; Scott & Orlikowski, 2014; Svahn, Henfridsson, & Yoo, 2009
Digital technology as a future phenomenon that only is at its beginning	What will be the impact of digital technology on organizations?	El-Gazzar, Hustad, & Olsen, 2016; Jakobs, Wagner, & Reimers, 2011; Linke & Zerfass, 2012; Stockinger, 2015; Strohmeier, 2018

Table I 1: Perspectives on digitization from an IT in organizations perspective and the research interests they raise

1.2 Organizational change management

The starting point of this thesis is that digitization represents huge challenges in terms of organizational transformation. Based on Pettigrew (1987), technological changes can represent strategic changes for organizations (Pettigrew, 1987, p. 657). In this respect, digitization is viewed as the source of major organizational changes. It is as such that this phenomenon will be studied under a change management lens. Organizational change and development has a long tradition in organization studies and in social sciences generally speaking. Most scholars trace back the first steps of organizational change to Lewin (1947,

1951) or Bennis and colleagues (Bennis, 1966; Bennis, Benne, & Chin, 1961). Lewin's classical model of change is structured around three steps that constitute planned change (Lewin, 1947). These three steps are (1) unfreezing, meaning that a given situation has to be 'defrosted' in order to reassemble the necessary conditions for change to happen; (2) moving, meaning that based on the unfreezing, options are considered and actions are taken to change structures, processes and behaviors; and (3) refreezing, meaning that there is an effort to stabilize the organization at this new equilibrium that has been attained (Lewin, 1947). Lewin's model of change is particularly accurate in situations of planned change (Burnes, 2017; Weick & Quinn, 1999) and offers a global vision of the change process. Many other subsequent models of change are based on Lewin's three steps model (Burnes, 2017).

Many scholars have tried to grasp the concept of organizational change and how it is studied. Building on Tsoukas (2005), Van de Ven and Poole (2005) make the distinction between organizations as things or as processes. They further distinguish between process and variance methods to study organizational change (Van de Ven & Poole, 2005). This allows them to develop a typology of studies, based on the way they conceive organizations (as things or as processes) and on the method they use (process or variance) (Poole & Van de Ven, 2004; Van de Ven & Poole, 2005). Armenakis and Bedeian develop four basic themes that studies of organizational change should focus on: content issues, context issues, process issues and criterion issues (Armenakis & Bedeian, 1999). Morgan and Sturdy (2000), for their part, identify three major approaches to organizational change, namely the managerialist approaches, the political approaches and the social approaches (Morgan & Sturdy, 2000). This thesis focuses on this typology to further develop the main approaches and study towards organizational change.

1.2.1. The managerialist approaches

The managerialist approaches advocate for a mechanistic vision of change providing practitioners with steps that must be followed. This viewpoint offers solutions and procedures to follow for managers willing to implement change (Morgan & Sturdy, 2000). This approach is strongly prescriptive and mainly focuses on leadership. Indeed, leaders are depicted as heroic figures who can develop a vision and lead change (Doolin, 2003; Morgan & Sturdy, 2000). Models of change are created, such as the ones developed by Kotter (1996) who identifies eight stages to successful change (Kotter, 1996) or by Kanter and colleagues (1992) who identify ten steps to change (Kanter, Stein, & Jick, 1992). Both models offer guidelines

that leaders should follow in order to conduct change with success. This managerialist approach of change is criticized for its determinism (Ciborra & Lanzara, 1994) that does not take into account the complexity of organizational change and does not answer to the how and why of change (Doolin, 2003; Morgan & Sturdy, 2000). In this view, digitization is studied by focusing on its implementation and the critical steps allowing a successful implementation. Scholars notably develop models that should help digitization (Berghaus & Back, 2016; Bücker, Hermann, Pentek, & Otto, 2016; Parviainen, Tihinen, Kääriäinen, & Teppola, 2017) and discuss managerial roles associated to digitization (Haffke, Kalgovas, & Benlian, 2016; Horlacher & Hess, 2016).

1.2.2. The political approaches

Morgan and Sturdy (2000) use the term of political approaches to refer to approaches that view change as a competition between groups with differing interests (Morgan & Sturdy, 2000). These studies acknowledge the complexity of the change process and its uncertainty (Clark, McLoughlin, Rose, & King, 1988; Pettigrew, 1985). They focus on the temporal dimension of change and on the crucial role of the context (Morgan & Sturdy, 2000), be it internal or external (Pettigrew, 1987). Pettigrew further emphasizes the crucial roles of content, context and process which are key in understanding in what consists change, why it is led and how it unfolds (Pettigrew, 1987). Generally speaking, these approaches go deeper than the managerialist ones, as they try to develop an understanding of change of the implicated groups (Morgan & Sturdy, 2000) rather than providing recommendations on how to lead change. However, these approaches are criticized for their lack of critical sight regarding management (Doolin, 2003). In this view, digitization is studied by focusing on contextual aspects involved in the implementation process. Studies investigate how digital technologies diffuse across companies, focusing on contextual factors (Morgand, 2016; Shibeika & Harty, 2015).

1.2.3. The social approaches

Morgan and Sturdy (2000) coin the term of social approaches to refer to approaches that focus on how language and discursive practices help enact and make sense of change (Morgan & Sturdy, 2000). They emphasize the influence of discourse as a way of expression and influence. Through this social process, actors shape their views, create and enact change. Studying organizational change through a social / discursive lens means focusing on knowledge and practices and how actors use them – through discourses and narratives – to

achieve change (Morgan & Sturdy, 2000). Broadly defined, narratives are stories with a beginning, a middle and an end (Czarniawska, 1997; Elliott, 2005). Narratives provide a summary of events by organizing them into a sequence (Labov & Waletzky, 1997) around a plot (Polkinghorne, 1995, p. 5). The plot serves four functions: defining the temporal borders of the story; identifying the selection criteria of events featured in the narrative; organizing events so that the climax is the conclusion; showing the way events have a role to play in the story (Polkinghorne, 1995, p. 5). Narratives thus have a temporal dimension (Elliott, 2005), a causal dimension (Boje, 2001; Buchanan & Dawson, 2007), and an emotional dimension (Ricoeur, 2004). Narratives also have moral implications that can be explicit or implied (Morris & Browning, 2012, p. 32). Narratives are presented as an organized whole tied by causality (Elliott, 2005).

Organizational narratives help stabilize organizational processes (Arnaud & Mills, 2012), formulate strategy (Barry & Elmes, 1997; Buchanan & Dawson, 2007), and foster change (Doolin, 2003; Sonenshein, 2010). For Polkinghorne, narratives are the most important way to create meaning around human experience (Polkinghorne, 1988, p. 1). Narratives are used by actors to order events for greater clarity (Bruner, 1990). For Barry and Elmes (1997), organizational strategies are to some extent similar to classical narratives structures (Barry & Elmes, 1997). In their view, strategists are very similar to fiction writers: both have to develop a plausible and motivating narrative to which employees/readers will want to take part (Barry & Elmes, 1997). Boje (2001) – following Aristotle's typology – identifies four plot structures to which organizational narratives can be related : romance, satire, comedy and tragedy (Boje, 2001).

1.2.3.1. Materializing the social

In the last few years, scholars have announced a "material turn" in organization studies (Jarzabkowski & Pinch, 2013). Emerging from the Information Technology literature, this material turn offers a reenvisioning of organizational practices, focusing on materiality. De Vaujany and Mitev (2015) notably insist on the need to "re-materialize" organizations and collective action. Barad's seminal article on the relation between matter and discourse (Barad, 2003) is widely identified as one of the building blocks of the focus on materiality among organization studies. Barad defines materiality through a performative lens that depicts matter as "an active participant in the world's becoming" (Barad, 2003, p. 803). Barad develops the idea of intra-action, in which elements do not have a prior existence; they are instead

emerging through these intra-actions (Barad, 2003). Barad thus speaks of “entanglement” between material and discursive practices and emphasizes the inseparability of human from non-human actors (Barad, 2003). Some views on this material turn have been shared earlier in this introductory chapter focusing on its role for the study of information technology within organizations. Other perspectives on this material turn are now presented, mainly coming from the field of organizational communication.

Scholars coming from an organizational communication tradition have taken stock of this material turn and started to integrate the concept in their approaches. David Boje advocates for “quantum storytelling” (Boje, 2012). In this respect, he integrates some elements from Barad (Barad, 2003, 2007), notably the notion of intra-action to highlight the equal roles of materiality and human actors. This has consequences for his antenarrative approach that is – among other things – based on the idea that actants (human and non-human) are always in a storytelling conversation with others (Boje, 2012). Organizational change management is therefore constituted by multiple storytellings that are co-constituting change through their network of relations.

Hardy and Thomas on their hand advocate for a more discursive approach of materiality, insisting on the performative nature of discourse (Hardy & Thomas, 2015). They argue that material artifacts and discourses are co-constituted, and that discourse gives sense to the material world (Hardy & Thomas, 2015). They call for empirical research on the material impacts of discourse and on the discursive impact of materiality (Hardy & Thomas, 2015).

Scholars from the Montreal School of organizational communication draw on the idea that organizations materialize themselves through communication, be it text or conversation, be it human or non-human (Ashcraft, Kuhn, & Cooren, 2009). In their conception, communication is defined as “the establishment of a link, connection or relationship through something” (Cooren, 2000, p. 367). Therefore, communication is not limited to human beings. The Montreal School posits that objects are not mute and uses the expression “things do things with words” (Cooren & Bencherki, 2010). Bencherki summarizes three different ways “things can do things with words” (Bencherki, 2016): the first consists in textual agency (meaning that texts can have a performative power – laws or written texts can “do things” such as constrain someone’s liberty); the second consists in considering communication as the circulation of action (meaning that it is through communication that actions are managed – an e-mail or an oral order can be the source of an action); the third consists in the way non-

linguistic communication of things can be translated into words – as seen in the translation theory (Callon, 1986) (this suggests that communication is not limited to words but that other kinds of signals can be sent by non-human actors such as animals or objects – for example, buildings communicate through their architecture). Cooren (2015) advocates for a conception of communication which involves human as well as nun-human agents. This conception identifies the importance of relations between things (whether they are social or material). For Cooren, communication thus embodies relations between social and material elements (Cooren, 2018). Cooren uses the metaphor of ventriloquism to explain the fact that humans make objects "speak" (Cooren, 2012): beings act as "passers" (Cooren, 2015), spokespeople of other beings. This view confers the role of actors and passers to any being (Cooren, 2015). Cooren advocates for a broader conception of communication that goes beyond solely human communication (Cooren, 2018). In this perspective, communication is depicted as "the materialization of relations through something or someone" (Cooren, Bencherki, Chaput, & Vásquez, 2015). Cooren further emphasizes the specificities of materiality in two respects. Materiality is not only what can be touched, but more generally what can be felt (Cooren, 2018). Tracing back to the Latin etymology of materiality, Cooren and colleagues link it to substance (what it is made of) and to mater (the source, the origin) (Cooren, Fairhurst, & Huët, 2012). Cooren advocates for a relational ontology between materiality (what matters) and sociality (the relations that things and beings holds with other things and beings) (Cooren, 2018). In fact, he highlights that our relations define us, because they sustain (from substance) our existence (Cooren, 2018). In that view, materiality and sociality are not distinct, as they serve the same objective.

Studying material-discursive practices therefore means paying a greater attention to the enactment of practices through both material component and discourses. Notably, following Boje (2012) and scholars from the Montreal School of Communication (Bencherki, 2016; Cooren & Bencherki, 2010) adopting this perspective makes it possible to consider that material components produce discourses – even if it is not always through words. When studying digitization, it allows for a better understanding of the actants involved in the change process.

1.2.3.2. Sensemaking

The emphasis of the social approaches on social influence in change management echoes the sensemaking – sensegiving approach (Gioia & Chittipeddi, 1991; Gioia & Thomas, 1996; Hope, 2010; Maitlis & Lawrence, 2007). The sensemaking – sensegiving approach also focuses on the process of creating images and sharing them – mainly through discourse – to others. The following part focuses on this sensemaking – sensegiving approach and more specifically on its implications regarding study of organizational change management. In this view, digitization is studied by focusing on the processes of sensemaking – sensegiving that surround technological implementation. Research has often used a sensemaking lens to study technological changes, be it about implementing an internet browser (Faraj, Kwon, & Watts, 2004), virtual worlds (Berente, Hansen, Pike, & Bateman, 2011), instant messaging (Hsu, Huang, & Galliers, 2014), enterprise resource planning (Rose & Kræmmergaard, 2003), or Web 2.0 services (Reynolds, 2015). Technological changes represent key sensemaking events as they initiate random and abstract events that require a structuration and sensemaking process (Weick, 1990). This process can be influenced by the representations that users have of technology (Pinch & Bijker, 1984) and by the way they formalize digitization (Pesch, Endres, & Bouncken, 2018). Technological changes also often imply organizational changes (Volkoff, Strong, & Elmes, 2007). Discourses and narratives are often used to give legitimacy to new ideas related to information technology (Nielsen, Mathiassen, & Newell, 2014). They also are used as a mean to inscribe technological changes in a specific organizational context (Alvarez & Urla, 2002). Actors start a sensemaking process as soon as they have to deal with the new technological artifact and their sensemaking will, to a certain extent, determine their actions towards the aforementioned technology (Orlikowski & Gash, 1994, p. 175). At interorganizational level, literature also investigates how sense is made of technological changes (Kaganer et al., 2010; Miozzo & Ramirez, 2003; Newell, Swan, & Galliers, 2000). Swanson and Ramiller (1997) develop the concept of *organizing visions* that are shared through organizations (Swanson & Ramiller, 1997) and based on discourses (Ramiller & Swanson, 2003, p. 16). These shared visions allow for the diffusion of technologies at interorganizational level by providing common interpretation, legitimation and mobilization (Swanson & Ramiller, 1997, p. 460) and play a central role in sensemaking / sensegiving as they help carry meanings.

Sensemaking is broadly defined as the continuous and retrospective creation of plausible images to rationalize human action (Weick et al., 2005). Sensemaking aims at creating stability by framing and classifying to facilitate organizational development (Chia, 2000, p. 517). Maitlis and Christianson (2014) identify four characteristics of sensemaking: (1) it is a dynamic process, (2) in which signals play a fundamental role, (3) it is a social process as it includes individuals in a specific environment, (4) it enacts the targeted situation (Maitlis & Christianson, 2014). This process occurs when the normal functioning of things is disrupted and the situation requires rationalization (Weick et al., 2005). Sensebreaking events (such as technological change, organizational change, mergers or acquisitions) trigger a sensemaking process. Sensemaking implies to take a step back and look for explanations (Berglund, Strannegaard, & Tillberg, 2004). It is embedded in a specific situation and influenced by many factors such as context, language, identity, cognitive frameworks, emotions, politics and technology (Sandberg & Tsoukas, 2014). Sensemaking thus does not pretend to create objectivity. Instead, the purpose of sensemaking is a continuous and permanent construction of a story (Sandberg & Tsoukas, 2014) in an intersubjective world (Balogun & Johnson, 2004). Sensemaking occurs in a social world where interpretation of the environment is made through interactions with said environment (Maitlis, 2005). Sensemaking enacts the situation and therefore participates to the construction of situations (Maitlis & Christianson, 2014; Weick, 2012).

Gioia and Chittipeddi (1991) link sensemaking to sensegiving, which is defined as the "process of attempting to influence the sensemaking and meaning construction of others toward a preferred redefinition of organizational reality" (Gioia & Chittipeddi, 1991, p. 442). Their study focuses on the sensegiving efforts of managers to influence the sensemaking of their stakeholders. They present this sensemaking / sensegiving process as occurring through four phases: 1) sensemaking at managerial level ('envisioning'); 2) sensegiving effort by the manager towards the stakeholders ('signaling'); 3) sensemaking effort by stakeholders ('re-visioning'); 4) and finally sensegiving effort by stakeholders, which can be considered as a feedback to managers('energizing') (Gioia & Chittipeddi, 1991, p. 443). This sensemaking / sensegiving process is mostly led through communication (Sandberg & Tsoukas, 2014), expression and discourse, as suggested by Weick: "how can I know what I think until I see what I say?" (Weick, 1995, p. 18). The sensemaking – sensegiving process is strongly related to narratives and metaphors (Phillips, Lawrence, & Hardy, 2004), as they represent preferred way of influencing others' sensemaking. Maitlis and Lawrence (2007) highlight the role of

organizational components (such as routines, practices, structures) in a sensegiving process, which can make sensegiving either easier or tougher (Maitlis & Lawrence, 2007). Studies on sensegiving have focused on the sensegiver role of senior managers (Bartunek, Krim, Necochea, & Humphries, 1999; Dunford & Jones, 2000; Gioia & Chittipeddi, 1991; Maitlis & Lawrence, 2007; Maitlis & Sonenshein, 2010) and of middle managers (Hope, 2010; Rouleau, 2005; Rouleau & Balogun, 2011), emphasizing the need for a discursive competence to share sense and meanings.

Narratives and discourses are crucial in sensemaking (Balogun & Johnson, 2004; Brown, 2000; Maitlis & Christianson, 2014; Vaara, Sonenshein, & Boje, 2016). Discourse organize actions and thoughts (Taylor & Van Every, 2000), and holds a strong performative power (in the sense of Austin, 1962) for sensemaking / sensegiving (Balogun, Jacobs, Jarzabkowski, Mantere, & Vaara, 2014). For Weick and colleagues (2005), situations, organizations, and environments are to some extent built in discourses (Weick et al., 2005). Discourse allows to materialize ideas and actions (Balogun et al., 2014). Sensemaking thus is an interpretation of reality co-created by actors through discourse (Sonenshein, 2010). Narratives help to create sense at a personal level – in a sensemaking process – (Gioia & Thomas, 1996), and to share it with others – in a sensegiving process – (Gioia & Chittipeddi, 1991; Maitlis, 2005; Maitlis & Lawrence, 2007). Narratives help to build new frames (Reissner, 2011) and to organize events in a globally consistent whole (Boudes & Laroche, 2009, p. 337).

Many studies have focused on the role of organizational narratives for sensemaking (Currie & Brown, 2003; Dunford & Jones, 2000; Patriotta, 2003; Reissner, 2011; Sonenshein, 2010). Vaara, Sonenshein and Boje (2016) develop a list of six key characteristics of organizational narratives: 1) they are temporal and discursive constructions that allow for sensemaking and sensemaking; 2) compared to classical narratives, they are most of the time fragmented rather than complete; 3) it is necessary to focus on the way they are produced and used; 4) they are part of a multi-faceted structure – inscribed in a macro context (societal narratives) and micro context (discourse and rhetoric components); 5) they are not only linked to written text or speech but can also be constituted by audio and video components; 6) they play a crucial role in stability and change (Vaara et al., 2016, pp. 498–499).

Most of organizational change narratives start with a description of the need for change, followed by the events that have occurred and concluded by an evaluation of the result of the aforementioned organizational change (Buchanan & Dawson, 2007). Narratives is widely

acknowledged as a valid way to understand organizational change in a sensemaking approach (Reissner, 2011; Vaara et al., 2016). Many studies have used a narrative sensemaking lens to study organizational change (F. J. Barrett, Thomas, & Hocevar, 1995; Brown & Humphreys, 2003; Reissner, 2011; Sköldberg, 1994; Sonenshein, 2010), following various objectives: identify the kind of narrative mode change corresponds to – tragedy, comedy, romance, satire – (Sköldberg, 1994), the type of narratives that are told (Reissner, 2011), the type of discourses (Vaara, 2002), how they are evaluated (Sonenshein, 2010) and how employee might reshape narratives (Sonenshein, 2009). Research also emphasizes the dynamics of organizational change narratives (Boje, 2001) and how narratives can be a form of dialogic (Carlsen, 2006) and polyphonic construction (Belova, King, & Sliwa, 2008; Boje, 1991; Buchanan & Dawson, 2007; Sonenshein, 2010). In that view, organizational change narratives are the fruit of a collective and polyphonic meaning construction (Balogun et al., 2014; Barry & Elmes, 1997; Belova et al., 2008; Vaara et al., 2016). In that sense, organizational narratives can differ and compete to influence the main narrative, with power issues (Boje, 2001; Buchanan & Dawson, 2007). Sonenshein highlights the necessity to focus on narratives told by various groups in order to understand how change unfolds through competing and complementing stories (Sonenshein, 2010, p. 478). The sensemaking process thus consists in organizing these sometimes competing narratives and negotiate a collective account (Maitlis & Christianson, 2014). For Buchanan and Dawson (2007), narratives are not only a way to make sense of past events, they also allow for a definition of what the future might be (Buchanan & Dawson, 2007). Narrative analysis is therefore widely used in a sensemaking approach, because it helps identify actors and how these actors create meanings and prepare their actions throughout the sensemaking process (Maitlis & Christianson, 2014).

Research on sensemaking bears a strong interest on organizational change (Brown, Colville, & Pye, 2015). Indeed, organizational change questions routines and habits and implies a movement from the organization (Sonenshein, 2010), with a strong emotional part as well as a great share of uncertainty (Berglund et al., 2004). Times of change represent key periods of sensemaking, as they are the opportunity to create a new reality for the organization and its members (Dunford & Jones, 2000), built on existing meanings and ways of thinking within the organization (Balogun & Johnson, 2004). Organizational changes require an interpretation of events and of their implications for the members of the organization (Dunford & Jones, 2000), in a sensegiving – sensemaking dynamic (Gioia & Chittipeddi, 1991, p. 442). Maitlis defines sensemaking of organizational change as a recursive and continuous process of

interpretation and action in which actors have to develop explanations and stories to make sense of change and to redefine their environment (Maitlis, 2005, p. 21).

1.2.3.3. Materializing sensemaking

As previously highlighted, materiality plays an important role in organization studies, providing a new way to study organizational practices and the entanglement of material and social components. In this thesis, it is suggested that this "material turn" is also consistent with studies focusing on sensemaking. Research has already started to investigate the importance of material-discursive practices for sensemaking (Hultin & Mähring, 2016; Stigliani & Ravasi, 2012). De Vaujany and Mitev have highlighted the contribution of materiality to sensemaking, notably by insisting on the key roles of artifacts, space, and matter in the meaning making process (de Vaujany & Mitev, 2015). Balogun and colleagues call for more research on the topic of materiality and sensemaking (Balogun et al., 2014). Following Bakke and Bean (2006), this thesis posits that taking materiality into account means focusing on how material components have an influence on how situations are perceived and created (Bakke & Bean, 2006). Taking a "material sensemaking" lens towards organizational change means bearing greater interest on how artifacts and practices create sense. It suggests to take into account and to focus more precisely on the role of materiality in fostering sensemaking. In this view, studying digitization means taking into account the role played by human and non-human actants in the sensemaking process surrounding digitization.

To summarize, digitization from an organizational change perspective can be studied from three different streams: managerialist approaches, political approaches, social approaches. Within the social ones, the sensemaking approach highlights the key role of meanings bulding and meanings sharing through sensemaking and sensegiving in an implementation process, whereas the material-discursive practices approach focuses on discourses, narratives and material constructions that occur in a change process. Depending on the approach, epistemological postures and research questions may vary. Table 2 below offers a summary of the ways to investigate digitization from an organizational change perspective.

Perspective on organizational change	**Research areas**	**Example of studies**
Managerialist approaches	What is the process of implementing digital technologies?	Berghaus & Back, 2016; Bücker, Hermann, Pentek, & Otto, 2016; Parviainen, Tihinen, Kääriäinen, & Teppola, 2017; Haffke, Kalgovas, & Benlian, 2016; Horlacher & Hess, 2016
Political approaches	How does the context influence the implementation of digital technologies?	Morgand, 2016; Shibeika & Harty, 2015
Social approaches	How do employees/managers make sense of digital change? What are the discourses and material artifacts associated to change?	Berente, Hansen, Pike, & Bateman, 2011; Hsu, Huang, & Galliers, 2014; Reynolds, 2015

Table I 2: Perspectives on digitization from an organizational change perspective and the research interests they raise

2. Research objectives and methods

The first part of this introductory chapter has highlighted the two main ways to study digitization as an organizational phenomenon (from an IT in organizations perspective or from an organizational change perspective). As shown earlier, each perspective tackles different issues and aims at different objectives. In this thesis, digitization is investigated from both perspectives, depending on the study. Adopting an IT in organizations perspective, the first article investigates digitization as an emerging phenomenon and its implications for organizations are evaluated with a forecasting approach. This study was led between 2013 and 2014, when the whole concept of digitization was even fuzzier and ill-defined than nowadays. At this step of the thesis, leading a forecasting study provided a richer understanding of the phenomenon. Building on this research, the second and third articles study digitization from an organizational change perspective. Digitization is identified as a major organizational change and technology implementation is investigated through a sensemaking lens in the second article and through a material-discursive practices approach in the third article. Studying the phenomenon from different points of view helped develop a more comprehensive understanding of what digitization means and how it is implemented in organizations. In the following part of this chapter, the research objectives of this thesis are first discussed globally and are then developed for each project, with a specific focus on the perspective they adopt, the reason of this choice and the implications this has on the research. In a second part, the methods used to attain these objectives are presented.

2.1 Research objectives

This thesis focuses on the concept of digitization and aims at understanding its meaning in various contexts. More precisely, it investigates the influence of digitization for organizations and how digital change unfolds. As presented earlier, digitization appears as one of the key organizational trends from the last decade, and research has only started to look into this concept. In this respect, this thesis first focuses on understanding what digitization means in the context of Human Resources in a prospective vision (article one). As article one reveals the importance of digitization as an important change, the purpose of this work is to identify more precisely the meaning given to digitization in different organizational contexts and how digital change takes place in said contexts (article two and three).

With this objective of understanding what digitization means for organizations (and more precisely for Human Resources), the first article adopts an IT in organization perspective, in the form of a forecasting research. It consists of a prospective study focusing on the major issues associated with digitization. **By studying the specific case of web 2.0 technologies, the aim of this paper was to identify how key HR actors perceive digitization and its influence on their organizations. Another aim of this paper was to develop a precise understanding of the main challenges associated with digitization from a HR perspective.**

This first article offers an interesting contribution to research by identifying the key issues that digitization represents for the HR function. Moreover, these key issues provide a useful categorization grid of research in the field of e-HRM. By offering a detailed and structured presentation of the role of digitization in Human Resources, this research identifies digitization as a key organizational issue at an interorganizational level. This study thus asserts the importance of digitization in organizations and opens the way for more studies on this topic. More specifically, one of the main results of this study was the identification of managing digital change as a key issue for organizations. This is this specific issue of managing digital change that is addressed in the second and the third article.

The second and third articles thus focus on the question of managing digital change adopting an organizational change perspective, with a focus on sensemaking for the second article and on material-discursive practices for the third article. Both articles investigate digital change and use these lenses to better understand how it unfolds. Since digitization is a quite recent concept, it is still ill-defined and understudied. The first challenge was to select cases that were representative of digitization. The case selection was based on the definition of Brynjolfsson & McAfee (2014) who defined digitization as a way of transforming organizations and bringing them to a more connected world. The concept of ‘organizing visions’ (Ramiller & Swanson, 2003; Swanson & Ramiller, 1997) was also mobilized in order to grasp the idea that digitization is a broad concept carrying many different meanings depending on the industry, the considered technology, or the people who deal with it. Studies two and three both focus on digital change management but do so in different contexts. Study two investigates New Ways of Working (NWW) implementation as a digital change. Study three investigates Self-Service Technologies (SST) implementation as a digital change.

The second article investigates New Ways of Working (NWW) as a type of digital change. NWW is a major topic of contemporary literature about organizational digitization. The concept of NWW posits that information technology helps companies develop new kinds of office culture (Duffy, 2000), using mobile computing, flexible work designs, and telecommuting (ten Brummelhuis et al., 2012). Flexible work designs and hot-desking are central in NWW (Bosch-Sijtsema, Ruohomäki, & Vartiainen, 2010; Felstead, Jewson, & Walters, 2005; Hirst, 2011), as well as remote working (Messenger & Gschwind, 2016). When studies mainly focus on employee well-being, productivity and isolation (Cooper & Kurland, 2002; Felstead & Henseke, 2017; Hardill & Green, 2003; Robertson & Vink, 2012; Taskin & Edwards, 2007), the goal of the second article was to study NWW implementation as a key period of change to investigate how digital change unfolds and how meanings are created and shared. **The aim of this paper was to identify how digital change unfolds and more specifically, using a sensemaking lens, how actors make and give sense to digital change in the case of New Ways of Working implementation. The article is based on five case studies among large Swiss companies that have implemented NWW.**

The third article investigates 'self-service technologies' (SST) implementation as a type of digital change. SST allow clients to perform tasks previously carried out by employees (Anitsal & Paige, 2006; Meuter, Bitner, Ostrom, & Brown, 2005; Meuter, Ostrom, Roundtree, & Bitner, 2000). With SST, clients become "partial employees" (Hilton, Hughes, Little, & Marandi, 2013; McWilliams, Anitsal, & Anitsal, 2016). When studies often focus on understanding consumer attitude towards and experience with SST and how to foster adoption (Curran & Meuter, 2005; Demoulin & Djelassi, 2016; Hilton et al., 2013; Kallweit, Spreer, & Toporowski, 2014), this article's goal was to study SST implementation as a key period of change to investigate the material-discursive practices used in digital change. **This article aims to answer the following questions: how is digital change unfolding and what are the key messages and actants of digital change in the specific case of Self-Service Technology implementation? The article is based on a double case study among two leading retailers in a Western European country that have implemented SST.**

2.2 Methods

Various kinds of methods have been used in this thesis. The first article uses a classical forecasting Delphi like method, which is accurate for a prospective study (Rowe & Wright, 2001). The second and third articles are qualitative case studies, which are particularly useful in order to get a better understanding of a phenomenon in a specific context (Yin, 2017).

In the first article, the objective was to identify how key HR actors perceive digitization and its influence on their organizations, as well as the main challenges associated with digitization from a Human Resources perspective. In line with other forecasting studies that have been led to identify key issues for the HR function (see Davoine et al., 2011 for a review), the first article consists of a prospective study following a Delphi like method. When these studies have identified the central role of technology for the HR function, they do not really focus on this topic as the chosen experts often are HR professionals that have no specific expertise on technology. This article therefore aims at giving a more precise view on the influence of digitization on Human Resources by gathering experts from the HR field as well as from the technological field.

The Delphi method is based on repeated consultation of experts using structured data collection, namely surveys (Hsu & Sandford, 2007). The basic proposition of Delphi is to create consensus and is centered on four key criteria: anonymity, iteration, controlled feedback and statistical aggregation of responses (Rowe & Wright, 1999). The use of questionnaires allows to guarantee anonymity (Nowack, Endrikat, & Guenther, 2011) and therefore to reduce the risk of influence on other experts' opinion. The process is based on multiple iterations and on recursive feedback which allows experts to reconsider their opinion in light of the opinions shared by other experts (Hsu & Sandford, 2007). The statistical aggregation shows when stability (and thus consensus) is found; the iterations should be pursued until stability is found (Rowe & Wright, 2001).

The process of this prospective method is in many regards similar to the Delphi method. The detailed process is the following. In a first phase, experts are interviewed individually. The interviews are based on an interview guide focusing on external, internal changes and the impact of these changes on their profession. After this first round of data collection, the data is analyzed to extract the most important elements. These elements serve as a basis for the second round of data collection: in this phase, the same experts have to express the opinion regarding the statements extracted from the interviews. This is done through a survey. The

results of the survey allow identifying the presence or absence of consensus over the statements. In a third phase, participants are sent the results of the survey and the elements of consensus or of disagreement serve as a basis to the focus groups. During these focus groups, experts discuss these consensus or disagreement elements to identify the main issues and challenges. In a fourth phase, the identified results can be validated by professionals (not only experts) to assert their validity in the field (Boyer & Scouarnec, 2009). This method is also iterative with repeated consultation. This prospective method is to some extent comparable to the Delphi method, since it also requires experts' participation (Boyer & Scouarnec, 2009). However, when the whole point of Delphi is to create consensus over iteration and remotely (by solely relying on surveys), the prospective method tries to create consensus by focus groups that gather experts to talk about the insights they gave in the first phases.

The results of a prospective study depend of the quality of the experts (Hsu & Sandford, 2007, p. 3; Rowe & Wright, 2001). Experts must be selected based on their competencies in the domain of inquiry (Boyer & Scouarnec, 2009; Rowe & Wright, 2001, p. 127; Scouarnec, 2008). In the case of this research, the group of selected experts had to gather HR specialists as well as technology specialists. The HR specialists had already been identified in the frame of a previous prospective study about HR trends in Switzerland (Davoine et al., 2011). The so-called 'technological experts' were selected based on their reputation and their legitimacy in the area of the study. Altogether, the group of experts consisted of eleven people (four 'technological experts' and seven HR experts), which is in line with literature's recommendations about the number of experts to gather for a forecasting study (Maleki, 2009; Rowe & Wright, 2001, p. 127). Data collection took place in four phases. First, semi-structured interviews were led with the experts, focusing on the impacts of digitization on work practices and on the challenges that might arise for the HR function. Interviews were then transcribed and analyzed in order to identify the main themes and extract the most significant verbatim which consisted of 71 key quotes. Based on them, the second part of data collection took place in the form of a follow-up online survey that was sent to the experts for evaluation. The survey's results were then sent to the experts, highlighting consensus and diverging opinions based on individual evaluation, mean and standard deviation. This survey acts as a "pre-formalizing" step (Boyer & Scouarnec, 2009), in an attempt to progressively reach consensus by continuously questioning experts (Hsu & Sandford, 2007; Maleki, 2009). Third, two focus groups were led with the same experts to identify the main impacts of web 2.0 on work practices and the key challenges for HRM regarding digitization. Both focus

groups were led in the same fashion: first, the results of the survey were discussed – giving an overview of all the identified topics; second, participants would exchange opinions in order to identify the most important issues. Fourth, a global survey was developed based on the pressing issues identified in the focus groups. This survey focused on the HR issues related to digitization and was intended solely for HR professionals. Out of a sample of 500 HR managers from French speaking Switzerland, the response rate was of about 20% with 99 valid questionnaires fully filled. The goal of this fourth step is to offer a quantitative validation of the issues identified by the experts (Boyer & Scouarnec, 2009). At the same time, it offers a global synthesis of the whole research project.

Leading a prospective study requires to pay strong attention to the method. Three challenges mainly arise in the case of a forecasting Delphi like study. First, the expertise of the participants selected for the study must be assured. The fact that the HR experts had already taken part to a similar prospective study lends credibility to their expertise. When it comes to technological experts, their online reputation played an important role in the selection process, as Web 2.0 was the topic of investigation. Being visible online and acknowledged as an expert by the community is what was used as a way to ensure experts' legitimacy. Second, prospective studies require great involvement from the experts and it might be difficult to keep the experts' group complete through the whole consultation process. The experts' participation was ensured by conducting the data collection over a rather short period of six months, so that they would feel more involved in the project. Third, the risk of influence between experts can create a bias in the data. When the Delphi method creates consensus over iteration and remotely (by solely relying on surveys), the prospective method used uses focus groups that gather experts to talk about the insights they gave in the first phases. This might involve the risk that rhetorical skills or shyness would prevent an expert from sharing their opinion. This risk was limited by making sure that every expert was able to share their view at each step of the focus group. Overall, the prospective method adopted for this research is totally consistent with rules and recommendations provided by scholars (Boyer & Scouarnec, 2009; Scouarnec, 2008).

The second and third articles use a qualitative case study approach to understand how technological implementation takes place within various organizations. In both articles, multiple case studies were led focusing on changes that are assimilated to digitization. To that end, an extensive media monitoring was led since September 2017 to gather information about digitization initiatives in Switzerland. New media publications concerning digitization

were gathered with online alerts on the terms “digitalization”, “numérisation”, “industrie 4.0”, “transformation numérique”, “transformation digitale”, “self-scanning”. This media monitoring made the identification of interesting and willing to participate companies possible. Case study method selection was made following Yin (2017) who suggests that case studies are the best method to understand a contemporary phenomenon in a real-life context (Yin, 2017). Most of the data was collected through semi-structured interviews (39 for the second article, 20 for the third article) among multiple companies (5 for the second article, 2 for the third article). The complete interview guide can be found in the appendix. The remaining data was collected through documents’ collection and participant observation.

In the second article, five large Swiss companies that have implemented New Ways of Working were studied. Four of these companies are part of a national network that campaigns for flexible work (Work Smart, 2015). In each company, official documentation was collected and individual semi-structured interviews that lasted between sixty and ninety minutes were conducted. The interviewees were members of the organizations at various levels and in diverse functions. For each case, one IT manager, one HR manager, two managers, two employees (at least) were interviewed. In some cases, interviews of more employees and managers could be conducted. By interviewing multiple members at different levels of the organization, this study gathered different narratives about organizational change coming from multiple viewpoints. This allowed for a more comprehensive view on how change unfolds through the whole organization. The interview guide was based on Sonenshein’s guide (2010, pp. 507-508) and translated into respondents language (French or German). As advised by Sonenshein, different interview guides were used for managers and coworkers (Sonenshein, 2010). The interview guide also included questions built on Pettigrew’s analysis of strategic change (1987). Interviews were recorded and transcribed. The entire corpus represents 39 interviews. The authors also took part to presentations given by the companies on their NWW implementation and had further discussions with two consultants and one researcher who have worked on two of our cases. Table V 1 in appendix summarizes data collection for this project and gives more information regarding the companies studied.

The third article studied two leading retailers in a Western European country that have implemented Self-Service Technologies. In both companies, official internal documentation was collected and individual semi-structured interviews that lasted between sixty and ninety minutes were conducted. The interviewees were members of the organizations at various levels and in diverse functions. For each case, one IT manager, one HR manager, two managers, two employees (at least) were interviewed. In one of the company, data could be collected within three stores instead of only one, resulting in a total of fourteen interviews. In the other company, a day of participant observation at a store could be led. The interview guide was built on Sonenshein (2010, p. 507-508) and translated in French. As advised by Sonenshein, different interview guides were used for managers and coworkers. The interview guide also included questions built on Pettigrew's analysis of strategic change (1987). Interviews were recorded and transcribed. The entire corpus represents 20 interviews. Table V 2 in appendix summarizes the sample composition for the third article.

For both articles, we based our analysis on Greimas' actantial model (1966). This model has been widely used in organization studies, notably to study sensemaking processes (Bencherki & Cooren, 2011; Demers, Giroux, & Chreim, 2003; Gertsen & Søderberg, 2000, 2011; Søderberg, 2006; Vaara, 2002). Greimas model proposes to analyze the major actors of narratives through predefined roles (Greimas, 1966). These are as follows: the subject follows a quest toward an object. The sender legitimizes and motivates the subject. The receiver judges the subject's actions. The helper supports the subject in their quest while opponents try to prevent them from succeeding. Using this model provides structure to narratives and helps to identify who are the actors in the change process and how their relations are characterized. Greimas' actantial model clearly defines the relationships between the actors (see Figure 1). The model notably highlights three axes: 1) the axis of desire, search or aim, which is the relationship between subject and object (the subject pursues a goal); 2) the axis of transport or communication, which is the relationship between sender and receiver (the sender directs the subject towards a specific outcome, for a specific receiver), and 3) the axis of auxiliary support or power, which is the relationship between helper and opponent (it is basically a competition between helper and opponent in order to influence the subject) (Gertsen & Søderberg, 2000). This model is consistent with a material-discursive approach as it considers actors in a broader sense (Bencherki, 2017): actors can be human beings, material artifacts or abstractions.

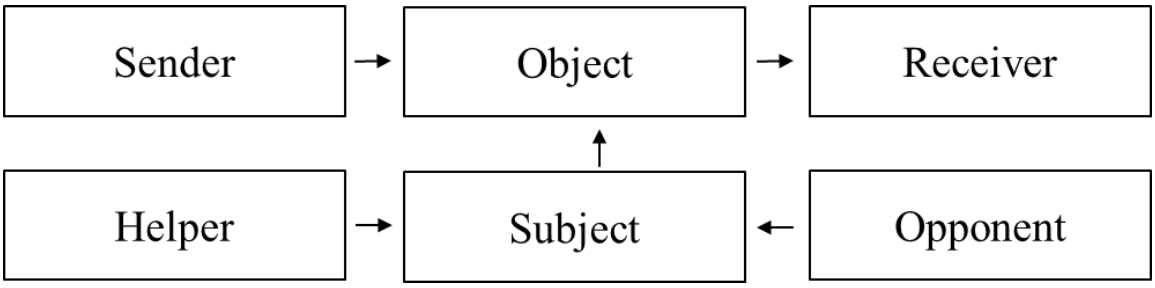

Figure I 1: The actantial model (Greimas, 1966)

Greimas actantial model (1966) was proven to be very useful in both articles since it provides a structured way to look at organizational change narratives. Indeed, it offered a way to draw comparisons between the cases, be it in the case of the second or the third article. Nonetheless, the model suffers some limitations, as it entails the risk of 'overstructuring' narratives. As the six main roles and the three axes are fixed, there is a risk to imprison actors in roles in which they do not exactly fit. We tried to limit this by building our actantial models on several narrative interviews (Søderberg, 2006) in order to have a more precise grasp at the roles and relations that are built in the narratives.

For the second article, Greimas' actantial models were developed for each company at every step of the change process by following a thematic analysis. The analysis grid was built on two axes: one axis focused on the change process and the other one focused on the actants. The first axis made the distinction between three steps of change, based on Buchanan and Dawson (2007): (1) explanation of the need for change, (2) events that constitute the change process, (3) and the evaluation of the change process (Buchanan & Dawson, 2007). These three steps echo Pettigrew's dimensions of change with the three components of context, content and process (Pettigrew, 1987). At each step of the process, the grid integrated the different categories of actants, according to Greimas' actantial model (1966). The second axis identified different actants and made it possible to see their roles evolve through the change process. The analysis grid of the second article is available in the appendix.

For the third article, Greimas' actantial models were developed for each company at every step of the change process by following a thematic analysis. The analysis grid was built on two axes: one axis focused on the change process and the other one focused on the actants. The first axis used Buchanan and Dawson's (2007) division of the change process to distinguish three steps of the process and integrated the different categories of actants as identified by Greimas (1966). The second axis consisted of the actants involved in the change

process. The analysis grid of the third article is available in the methods section of said article. In both cases, a template analysis was led on the transcripts of the interviews and on the internal documentation (training documentation, FAQs).

Overall, this thesis uses multiple methods to investigate digitization, the challenges that are linked to it and its implementation in organizations. The first study is based on a forecasting method which is useful when the future is difficult to foresee and a group of experts might formulate a better judgment. The second study uses a qualitative case study to analyze how change unfolds in a NWW implementation context and how actors make sense of it. The third study uses a qualitative case study to analyze the material-discursive practices developed during a change process. This diversity of methods has proven to be very useful in order to answer to the objectives of each study. Moreover, it is important to note that these studies have been led in chronological order. When the first study was led (approximatively 2013), digitization of organizations and Web 2.0 were at their very beginning, merely as an abstract concept that no one could make sense of. Four years later, when the second and the third study were led, digitization was already acknowledged as a strong organizational trend, with many actions in multiple organizations. Bearing this in mind, the choice of methods can also be explained by the chronology of events: the first study investigates digitization and its understanding for a specific function; building on this, the second and third studies dig deeper in specific cases of organizational digitization to better understand how actors make and give sense to technological change and how it unfolds.

3. Summary of articles of the thesis

In this section, the three articles of this thesis are summarized. The main results and contributions for each project are shared. In the case of projects that have been led with co-authors (first and second articles), my contribution is clarified.

3.1 First article: A prospective study of the impact of digitization for the Human Resources function

The first article is co-authored with Eric Davoine and focuses on Web 2.0 as a form of digitization and on what it means for organizations and more specifically for the HR function. The article is published in *Management & Avenir* and we also had the opportunity to share the results of this project at a HR conference, in two professional journals and on a Web TV. The article consists of a prospective study following a Delphi like process by consulting a group of experts on multiple occasions. The research questions are the following: *how do HR actors envision digitization, its practices and impacts within their organization? What are the consequences of digital communication tools on the HR function?* To answer those questions, we conducted a prospective study based on experts' opinion and collected data through a) semi-structured interviews, b) follow-up questionnaires, c) focus groups, and d) a confirmation survey. This project has been conducted with the support of the Centre Romand de Qualification Professionnelle (CRQP). The CRQP also gave us access to their members' list, which was of great help for the last step of data collection.

This study identifies five major HR issues related to digitization and digital communication. These issues are employer branding, talent management, 2.0 competences management, regulation and diagnosis of digitization's impacts. Depending on the specificities of the issue, each theme was then placed on a chart following Ulrich's (1996) conceptualization of HR roles through two axes: process / people and strategic / operational. Employer branding is a people related and strategic issue. Talent management is a process-related and strategic issue. 2.0 competencies management is a people related and operational issue. Regulation is a process related and operational issue. Finally, the diagnosis of digitization's impacts is at crossroads between people and process and between strategic and operational. Using Ulrich's (1996) conceptualization of HR helps to highlight the variety of the issues related to digitization, as it impacts the four squares of Ulrich's scheme (1996).

Our study contributes to literature by highlighting the diversity of issues that are related to technological innovation. The five key issues cover very different themes and imply a multiplicity of competences and action from the HR function. By shedding light on these issues, our study offers a clear managerial implication as it gives an overview of what HR executives have to be aware of. Our study also offers a way of categorizing literature on digitization and HR management. As the literature review of the article shows, the literature on digitization and HRM is very varied and only little structured. Using the five identified issues as categories allows for a greater structuration of the field of research.

This article has been developed in collaboration with Eric Davoine, who is the second co-author. Eric Davoine was at the start of this research since it builds on another research project he had led a few years before (Davoine et al., 2011). He participated to the elaboration of the follow-up questionnaire, took part to both focus groups and helped to develop the confirmation survey. I led all semi-structured interviews, took part to both focus groups and analyzed the data at each step of the process. I also mainly dealt with the reviewing process.

3.2 Second article: Studying digital change: the case of New Ways of Working implementation

The second article is co-authored with Eric Davoine and François Pichault and investigates New Ways of Working implementation as a key phase of organizational sensemaking. The article has been submitted to Journal of Organizational Change Management and consists of a qualitative study of multiple cases of NWW implementation. The research question of the paper is the following: *how do organizations and their members make and give sense to change in the context of digitization?* To answer this, we led five case studies among large Swiss companies that have implemented NWW over the last few years. This study was held with the financial support of UniDistance and with the financial and logistical support of the HR Swiss association. We had the opportunity to present the results of this project at a regional conference of the association. This paper was also presented at the Workshop Organization, Artifacts and Practices held in Amsterdam from the 20th to 22nd of June 2018 and at the EGOS conference held in Tallinn from the 3rd to the 5th of July 2018. The cases are mostly based on interviews but we have also collected internal documentation. Eric Davoine and I have attended conferences and presentations given by the companies we were studying where they presented their respective cases. In each case, we have led at least six interviews with: a) two managers b) two employees c) one HR manager d) one IT manager. In some cases, we also had the opportunity to interview more employees and managers. We led a

material-discursive analysis using Greimas' actantial model (1966) in order to compare our cases. Using this model allowed us to identify how narratives are built and how sense emerges through narratives and material artifacts.

Our results identify two main types of NWW implementation changes: a) changes where NWW implementation is an end in itself and b) changes where NWW implementation only appears as a mean to an end. Depending on the pursued objective, the network of actants varies: when NWW implementation is an end in itself, HR and employees play a more important role in the narratives; on the contrary, when NWW implementation is a mean to an and, other actors such as the executive committee and external stakeholders (clients, stockholders) are given a greater role in organizational narratives. Our results show the importance of discourses about technology and the role of digitization as a fad to make and give sense to organizational change. Moreover, our results show that material artifacts and practices play a central role in materializing change and in giving sense to it.

This study contributes to the stream of research on NWW by identifying NWW as a polysemic concept that can be defined in many different ways. This makes sense considering the numerous and various features of NWW. NWW has not been defined homogeneously yet, neither in academic literature (De Leede & Kraijenbrink, 2014) nor in corporate practices. Our study contributes to research on sensemaking by advocating for a material-discursive approach of sensemaking. Material artifacts and practices embody change and materialize it, which helps to give sense to it. At the same time, discourses about digitization also help making sense of what is happening in the organization. This article therefore identifies a sense that is made by both material and discursive practices. Our study also contributes to research on organizational change management by using Greimas' actantial model in a renewed way. Our study shows evidence that Greimas' model is particularly useful to take into account materiality in change process, in line with the material turn in organization studies.

This article has been developed with Eric Davoine and François Pichault and with the logistical and financial support of the HR Swiss association and UniDistance. The association helped us gain access to the companies we studied. My personal role was to contact companies and have pre-study meetings with them to explain the goals of our study. I also led all the field work with Eric Davoine being present for some interviews. When it came to analyzing the cases, I suggested the use of Greimas' actantial model and developed models for every cases. Based on this, I also strongly contributed to the writing of the study. My co-

authors contributed in validating the creation of Greimas' actantial model, and in the redaction of the paper.

3.3 Third article: Studying digital change: the case of Self-Service Technologies implementation

The third article investigates Self-Service Technologies implementation as a key phase of organizational change. The article has been submitted to International Journal or Retail & Distribution Management and consists of a qualitative study of two cases of Self-Service Technologies (SST) implementation. The research question of the paper is the following: *how organizations and their members develop discourses and build on material components to foster organizational change in the context of SST implementation?* To answer this, we have led two case studies among two leading retailers that have implemented self-service technologies over the last few years. This study was held with the financial support of UniDistance and with the financial and logistical support of the HR Swiss association. We had the opportunity to present the results of this project at a regional conference of the association. A first version of this paper was also presented at the 7th international conference on Organizational Development and Change jointly organized by ISEOR and AOM in Lyon the 7th and 8th of June 2018. The cases are mostly based on interviews but I have also collected internal documentation and led a participant observation during a day working at the self-checkout cashiers space of a large store. In each case, I have conducted at least six interviews with: a) one store manager b) one cashier manager c) two cashiers d) one HR manager e) one IT manager. In one of the cases, I could interview more cashiers and managers. I led a material-discursive analysis using Greimas' actantial model (1966) in order to compare the cases. Using this model allowed me to identify discourses' and material components' roles in the change process.

The results show the central role of two categories of actants, namely technology and companies. Technology appears in the change process as a discourse at first – a global discourse about digitization. In a second time, technology is embodied through material artifacts. This multiple reality of technology helps highlighting the importance of material and discursive aspects in the practice of organizational change. Companies also play a crucial role in the change process through their high level of personification. They appear as a 'mighty king' in their own narrative and as an 'unspeakable villain' in their competitor's narrative. The results highlight the importance of competition to facilitate organizational change by caricaturing its competitor as an opponent. This study notably benefits of the specific country

of study which offers an almost experimental set-up with a retail market quite close to a duopoly.

This study contributes to the stream of research on Self-Service Technologies (SST) and retail management by focusing on change implementation, thus answering Di Pietro and colleagues' (2014) call for more research investigating employees opinion regarding SST (Di Pietro, Pantano, & Di Virgilio, 2014). This study also answers Hardy and Thomas (2015) and Orlikowski and Scott (2015) call for more empirical research on material-discursive practices. This research also highlights the interest of Greimas actantial model (1966) to study material-discursive practices.

4. Future research

When the first article of this thesis had opened the way for the second and third article by highlighting the need to focus on how digital change was led, the second and third article emphasize the interest of studying digital changes in a structured manner. As we have shown earlier, digitization remains an ill-defined concept including numerous technologies considered as 'digital' to some extent. Research should address this issue by giving a proper definition of the term and structuring the field of digitization. In that respect, it would be interesting to study other cases of digitization to verify if the results of the second and the third article can be generalized. For example, studying cases of Industry 4.0 or cases of NWW implementation in other organizational contexts would develop our understanding of digital change. Having a larger set of cases would give a better understanding of the phenomenon and its specificities.

The results of the second and the third article suggest that technology plays a central role in the change process. Bearing that in mind, it would be interesting to study interactions with technology in another setup than a change process. With a technology as practice lens, it would be worth further investigating interactions between humans and non-humans actors. In line with previous literature, this thesis suggests that practices are reconfigured and that technology as well human actors shape practices. Using a material-discursive approach, research could investigate specific work practices to better understand how material and social components create and shape these practices over time. By focusing on digital practices rather than on digitization as a change process, research could have more complete understanding of digitization. How technology is dealt with after a change process appears as the next logical step for research.

The method of the second and third article also provides insights for future research. Indeed, the use of Greimas' actantial model has proven to be very useful for taking into account both material and discursive practices in change processes. In line with the material turn, Greimas' actantial model can help to structure studies of material-discursive practices. More specifically, the model can help compare cases (in multiple case studies) and voices (in polyphonic accounts). The reenvisioning of the model through a material-discursive lens makes it possible to study organizational change and practices with a renewed perspective.

In the case of the third article on Self-Service Technologies, our results highlight the multiplicity of actors in the change process (technology, organizations, employees, customers) and their roles. Our results notably emphasize the key role of customers, in line with literature that considers them as “partial employees” (Bowen, 1986; Larivière et al., 2017). Focusing on these partial employees, further studies could investigate how these partial employees develop narratives and discourses on SST implementation and their new role as partial employees. By focusing on customers as partial employees, future research should challenge the classical frontiers of organizations and offer a renewed perspective on organizational practices.

Moreover, it would be interesting to study if their link to retailers evolves when their status changes to partial employees. Using psychological contract (De Cuyper, Rigotti, De Witte, & Mohr, 2008; Robinson, Kraatz, & Rousseau, 1994; Rousseau, 1995) as a theoretical frame, future research could investigate the new relationship of customers to the organization – as a new form of contractual relationship that differs from customer loyalty.

More specifically, studying checkout practices and how technology, employees and partial employees interact would provide rich insights. Practically speaking, this could be done by combining critical incident technique (Anderson & Wilson, 1997; Byrne, 2001; Flanagan, 1954) and a sociomaterial lens (Cecez-Kecmanovic et al., 2014; Jarzabkowski & Pinch, 2013; Orlikowski, 2007; Orlikowski & Scott, 2008). Using such a focus, future research could develop a better understanding of how practices are reconfigured with the emerging of non-human actors in the organizational setup.

The next sections include the three articles of this thesis. The first article consists of the prospective study that investigates what digitization means for organizations (and more precisely for Human Resources) and the major issues that are associated to it. The second and third articles then focus on digital change, how it unfolds and how sense is made and given to it. The second article focuses on the specific case of New Ways of Working implementation as a type of digitization. The third article studies Self-Service Technologies implementation.

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II. La fonction RH face à la numérisation des organisations : le cas des outils de communication numérique

Résumé

La numérisation est un facteur de mutation important pour l'organisation et son environnement avec des impacts multiples sur ceux-ci. Notre étude prospective vise à identifier les dossiers de la fonction RH associés à la diffusion des outils de communication numérique au sein de l'organisation. Une première contribution de l'étude est de montrer que les cinq dossiers identifiés (image d'employeur, gestion des talents, des compétences 2.0, règlementation et diagnostic des impacts de la numérisation) ont des enjeux très différents pour la fonction RH. Deuxième contribution, ils permettent également de structurer efficacement le champ des recherches en management liées à la numérisation de l'organisation.

Mots-clés : numérisation – fonction RH – prospective – tendances – NTIC

The HR function facing digitization: the case of Information and Communication Technologies.

Abstract

Digitization represents a strong change driver for the organization and its environment and has multiple impacts on both. Our prospective study aims at identifying the major HR issues associated with this digitization. This study provides two main contributions. Firstly, this study illustrates that the five identified major HR issues (employer branding, talent management, 2.0 competencies management, regulation and diagnostic of the impacts of this digitization) represent very differing challenges for the HR function. Secondly, these issues offer a meaningful way to structure the field of research in management associated with digitization.

Keywords: digitization – HR function – foresight – trends - ICT

La numérisation des organisations : une thématique actuelle et aux multiples visages

De nombreuses études s'interrogent sur la numérisation des organisations et sur son impact sur l'organisation (Burke et Ng, 2006 ; Brynjolfsson et McAfee, 2012, 2014 ; Spath et al., 2013 ; Autor, 2015), avec des centres de préoccupation très variables, qu'il s'agisse d'Industrie 4.0 (Drath et Horch, 2014), de « monde du travail 4.0 » (Dengler et Matthes, 2015), de disruption des modèles d'affaire (Bürmeister et al., 2016), de renouvellement de l'activité managériale et du leadership (Payre et Scouarnec, 2015), etc. En ce qui concerne la fonction Ressources Humaines (RH), les études prospectives nationales et internationales portant sur l'avenir de celle-ci considèrent l'évolution des technologies de l'information et de la communication (TIC) comme un facteur majeur des futures mutations des pratiques de travail (Boyer et Scouarnec, 2006 ; DGFP, 2011 ; Davoine et al., 2011 ; Enlart et Charbonnier, 2013 ; Hay, 2013 ; Barabel et al., 2014 ; Deloitte, 2014 ; BCG, 2015). L'impact du numérique est devenu un enjeu clé pour la fonction RH (Silva, 2014 ; Stone et al., 2015).

Avant l'émergence de cette thématique de numérisation des organisations, de nombreuses études avaient été menées sur l'impact de l'informatique sur la fonction RH (sous l'étiquette Human Resources Information System HRIS – voir Wirtky et al. 2011 pour une revue) puis sur l'impact d'internet sur celle-ci (e-HRM – voir Sareen et Subramanian 2012 pour une revue). Ces études développent des regards intéressants sur l'impact de la technologie dans les organisations et offrent une vision de l'évolution de la fonction RH parallèlement aux évolutions des technologies de l'information et de la communication.

Si l'on prend la question de la transformation numérique de la fonction RH, on trouve un éventail thématique très large : il s'agit tantôt de recrutement (Nikolaou, 2014), d'image ou de marque d'employeur (Sivertzen et al., 2013) ou encore de l'émergence de nouveaux métiers (Girard, Fallery et Rodhain, 2011). La grande diversité des champs concernés et des cadres conceptuels mobilisés rend difficile l'appréhension exhaustive du concept de la numérisation des organisations par les acteurs de la fonction RH.

Pour cette raison, il nous semblait pertinent d'approcher la thématique en s'intéressant à la manière dont les acteurs de la fonction RH conçoivent la transformation numérique, ses pratiques et ses impacts au sein de leurs organisations. Plus précisément, notre étude porte sur les conséquences concrètes de la diffusion des outils de l'entreprise numérique pour la

fonction RH, c'est-à-dire pour les dossiers, actions et projets RH associés aux évolutions technologiques.

Nous avons mené une étude en Suisse en suivant une démarche prospective en plusieurs phases avec un groupe d'experts, complétée par une enquête de validation par questionnaires auprès de 99 responsables RH. Nous présentons dans la section suivante une revue de la littérature sur l'étude de l'informatique au sein de la fonction RH, suivie de la méthode de l'étude ainsi que ses principaux choix méthodologiques. Puis nous présentons les principaux dossiers RH identifiés par les responsables RH et validés par notre enquête. Enfin, sur la base de ces dossiers, nous proposons une catégorisation des études récentes sur les impacts RH des technologies numériques de type web 2.0.

L'étude des technologies informatiques au sein de la fonction RH

L'impact de la technologie informatique sur les organisations est un sujet d'étude très important à la croisée des systèmes d'information et de la gestion et fait l'objet de nombreuses publications. Celles-ci portent sur des thématiques très diverses comme l'automatisation, le marketing, l'activité managériale ou encore la fonction RH. La littérature sur le thème de l'informatique au sein de la fonction RH utilise deux termes principaux pour nommer son sujet d'étude, ceux de *human resources information systems* (HRIS) (DeSanctis, 1986 ; Ball, 2001 ; Maier et al., 2013) et de *electronic human resources management* (e-HRM) (Ruël et al., 2004 ; Strohmeier, 2007 ; Parry, 2011). Les deux termes correspondent au même champ (l'informatique et la fonction RH) mais le terme e-HRM peut être considéré comme plus récent et plus clairement associé à Internet (Marler et Fischer, 2013, p. 21). Bondarouk et Rüel (2009) définissent ainsi l'e-HRM : « an umbrella term covering all possible intergration mechanisms and contents between HRM and Information Technologies (IT), aiming at creating value within and across organizations for targeted employees and management » (p. 507). Cette définition présente l'e-HRM comme un champ d'étude très vaste. Van Geffen, Ruël et Bondarouk (2013) se penchent sur l'e-HRM dans un contexte de multinationales. Bondarouk, Parry et Furtmueller (2016) structurent la littérature en fonction des facteurs d'adoption et des conséquences de l'e-HRM, tandis que Marler et Parry (2016) s'intéressent à la relation de cause et de conséquence entre e-HRM et stratégie RH. Johnson, Lukaszewski et Stone (2016) identifient quatre phases dans l'évolution des systèmes d'information au sein de la fonction RH, la dernière ayant débuté en 2010 avec l'émergence des applications cloud (Johnson et al., 2016, p. 541).

C’est précisément cette dernière phase – encore en cours – qui nous intéresse, car elle coincide avec l’émergence des nouvelles technologies de l’information et de la communication labellisées sous l’appellation web 2.0 et associées à l’entreprise numérique, dite « entreprise 4.0 » (le 4.0 correspondant à une 4eme révolution industrielle liée à de nouvelles technologies, dont celle du web 2.0)(Barlatier, 2016 ; Berman, 2012 ; Brynjolfsson et McAfee, 2012 ; Collin et Colin, 2013 ; Fitzgerald et al., 2014 ; Lafrance, 2013 ; Westerman et al., 2012). Depuis 2010, plusieurs études se sont intéressées à ce phénomène, en se penchant sur des éléments distincts. Des recherches ont visé à comprendre l’impact du web 2.0 sur le recrutement et la sélection (Davison et al., 2012 ; Dineen et Allen, 2013 ; Nikolaou, 2014, etc.) avec pour certaines un accent légal (Willey et al., 2012 ; Thomas, et al., 2015). D’autres se sont focalisées sur la relation entre web 2.0 et image d’employeur (Brecht et al, 2011 ; Sivertzen et al., 2013 ; Bondarouk et al., 2014). Des études portent également sur l’apprentissage dans les organisations et les nouvelles modalités de *e-learning* liées aux médias sociaux et au web 2.0 (Hamburg et Hall, 2009 ; Rosen, 2009 ; Boateng et al., 2010 ; London et Hall, 2011 ; Cook et Pachler 2012 ; Karakas et Manisaligil 2012). Le lien entre utilisation du web 2.0 et la performance au travail a aussi fait l’objet d’études (Moqbel et al., 2013 ; Charoensukmongkol, 2014 ; Leftheriotis et Giannakos 2014). Comme ces éléments le montrent, le champ de recherche est fragmenté en un large faisceau de thématiques variées. Peu d’auteurs cherchent à identifier l’avenir de la fonction et de la recherche en RH à l’aune des changements technologiques (Stone et al., 2015 ; Bondarouk et Brewster, 2016).

Méthodologie

Notre étude s’inscrit dans la continuité d’études prospectives portant sur les tendances générales RH dans différents contextes nationaux (voir synthèse dans Davoine et al., 2011). Ces études avaient pour objectif d’identifier les principaux facteurs de mutations internes et externes ainsi que les dossiers prioritaires de la fonction RH dans les environnements nationaux respectifs. Elles étaient toutes construites autour d’un processus de récolte de données de type Delphi avec un groupe d’experts contribuant en plusieurs phases distinctes (avec des entretiens individuels, des questionnaires, des focus groups). Ces études soulignent toutes l’importance de l’évolution des technologies d’information et de communication pour les pratiques de travail. Elles restent souvent peu précises sur les impacts de ces évolutions, les experts RH de ces panels reconnaissant les limites de leur expertise sur les questions technologiques. Notre étude a donc comme vocation d’approfondir cette thématique en

choisissant un panel d'experts plus compétents sur les questions technologiques pour identifier les dossiers RH associés aux évolutions TIC.

La réussite d'une étude prospective de type Delphi dépend de manière cruciale du choix d'un bon panel d'experts (Maleki, 2009, p. 24 ; Hsu et Sandford, 2007 ; p. 3), lesquels doivent être sélectionnés pour leur compétence dans le domaine de la problématique observée (Rowe et Wright, 2001, p. 127 ; Scouarnec, 2008 ; Boyer et Scouarnec, 2009). Les experts mobilisés pour notre étude ont été identifiés et sélectionnés par un comité de pilotage mixte de chercheurs et de praticiens. Le groupe d'experts devait réunir d'une part des spécialistes des ressources humaines et d'autre part des spécialistes des technologies de l'information et de la communication. Les quatre experts TIC ont été sélectionnés sur la base de leur visibilité en ligne et dans la communauté RH locale (revues, formations, salon RH). Ils ont suivi un cursus en systèmes d'information, en informatique de gestion ou encore en communication. Ils occupent des postes de responsable de communication digitale, de consultant indépendants et formateurs et de développeur de solutions informatiques. Les sept experts RH avaient pris part à la précédente étude d'identification de tendances en Suisse romande (Davoine et al., 2011). Ils occupent des postes de RRH, DRH ou sont formateurs spécialisés dans le domaine, avec pour la plupart des diplômes en gestion d'entreprise. Avec un groupe de onze experts mobilisés (quatre experts TIC, sept RH), plus trois membres de comité de pilotage, nous étions au-dessus du nombre minimal de participants estimés entre huit et dix pour Maleki (2009) et cinq et vingt pour Rowe et Wright (2001, p. 127). Les échantillons d'experts dans les études prospectives RH généralistes sont souvent entre 25 et 40 (voir synthèse dans Davoine et al., 2011), on compte aussi 34 experts dans l'étude Delphi de Girard, Fallery et Rodhain (2014) sur l'intégration des médias sociaux dans le recrutement. La collecte d'information s'est faite en plusieurs phases sur l'année 2012. Dans un premier temps, des entretiens individuels ont été menés autour de deux thèmes centraux : les impacts du web 2.0 sur les pratiques de travail et l'importance de ces changements pour la fonction RH. Les questions étaient construites à partir d'une analyse documentaire approfondie des revues professionnelles et des revues scientifiques (Wunderer et Dick, 2002 ; Boyer et Scouarnec, 2006 ; DGFP, 2011). Nous avons donc été particulièrement attentifs, lors des entretiens, à demander des illustrations concrètes tirées de leur expérience pour éviter l'utilisation d'éléments de langage empruntés aux médias.

Les entretiens ont été retranscrits et l'analyse des retranscriptions a été menée de manière individuelle par trois personnes, puis les résultats des analyses ont été croisés, pour en

dégager les thématiques principales et identifier les phrases-témoins les plus significatives. Cette démarche a permis d'extraire 71 citations-clés, qui ont été légèrement reformulées dans un questionnaire en ligne renvoyé à tous les experts. Un rapport de synthèse a été établi sur la base des onze questionnaires, en mettant en avant les situations d'accord et de désaccord sur la base des scores individuels, des scores moyens et des écarts-types. Ce questionnaire de validation fait partie du processus itératif de consultation d'experts propre aux méthodes de type Delphi, et plus particulièrement à la méthode Prospective Métier qui l'intègre dans son étape de « pré-formalisation » (Boyer et Scouarnec, 2009). Le questionnement successif des experts a pour but de dégager un consensus progressivement (Maleki, 2009). Ensuite, deux séances de focus group ont été organisées pour identifier les principaux impacts du web 2.0 sur les pratiques de travail, puis pour identifier les principaux dossiers prioritaires de la fonction RH concernant le web 2.0. Les discussions partaient des rapports de synthèse avec un premier tour de discussion visant à l'exhaustivité des thématiques, puis un second tour de discussion pour trouver un consensus sur les thématiques les plus importantes. C'est ce processus qui a mené à l'identification et à la définition des cinq dossiers que nous présentons dans les résultats. Les choix de méthode présentent plusieurs limites que nous avons essayé de minimiser. Premièrement, dans le choix des experts, malgré les efforts déployés, il est toujours difficile d'être certain d'avoir sélectionné les expertises les plus pointues et les plus complémentaires. De plus, on ne peut garantir une implication totale et parfaite de la part des experts. Enfin, lors des séances de focus group, nous avons essayé d'animer les débats de manière à laisser chaque expert s'exprimer et reformuler chaque proposition afin d'éviter que le statut ou les compétences rhétoriques permettent à certains experts de prendre l'ascendant sur les autres.

Finalement, une enquête en extension par questionnaires a été menée en 2013 auprès d'une population de professionnels des ressources humaines, portant uniquement sur les dossiers de la fonction RH. Cette enquête a été diffusée auprès de 500 responsables RH de Suisse romande (inscrits sur une base de données d'experts de l'association professionnelle partenaire de l'étude) sous la forme d'un questionnaire en ligne. Les 99 questionnaires de retour représentent un taux de réponse d'environ 20 pour cent, avec un échantillon relativement représentatif pour les caractéristiques socio-démographiques et les caractéristiques organisationnelles. L'objectif d'une telle enquête en extension est double (Boyer et Scouarnec, 2009): il permet d'une part d'obtenir une synthèse générale quantifiée, et également de bénéficier d'une validation à plus grande échelle dans la

population pertinente. N'ayant pas de critère externe pour évaluer l'expertise technologique des répondants, nous avons intégré une question d'auto-évaluation de leur expertise, évaluée de 1 à 4. Nous avons estimé systématiquement (avec un test t de Student) pour toutes les réponses la significativité des différences de réponses entre les groupes avec une expertise supérieure et inférieure. La différence de réponse n'était significative que dans un seul cas (voir dossier « gestion des compétences 2.0 »). Dans la partie suivante, nous ne présentons que les principaux dossiers de la fonction RH liés aux outils de communication informatisée de l'entreprise numérique. Nous reprenons ainsi les principales conclusions de l'étude prospective ainsi que les réponses à l'enquête de validation.

Les principaux dossiers de la fonction ressources humaines

Cinq dossiers associés aux outils de communication de l'entreprise numérique ont été identifiés par nos experts et ont été par la suite validés par questionnaires par des responsables RH de Suisse romande. Ces dossiers sont l'image d'employeur, les processus de gestion des talents, la règlementation, le diagnostic des impacts et la gestion des compétences 2.0. Ces dossiers, que nous présentons dans les paragraphes suivants, sont représentés sur la figure 1 par rapport à deux axes processus-personnes et opérationnel-stratégique. Ces deux axes ont été utilisés par Ulrich (1996) pour classer les rôles associés à la fonction RH. Le positionnement sur ces axes découle de la réflexion des experts de notre étude.

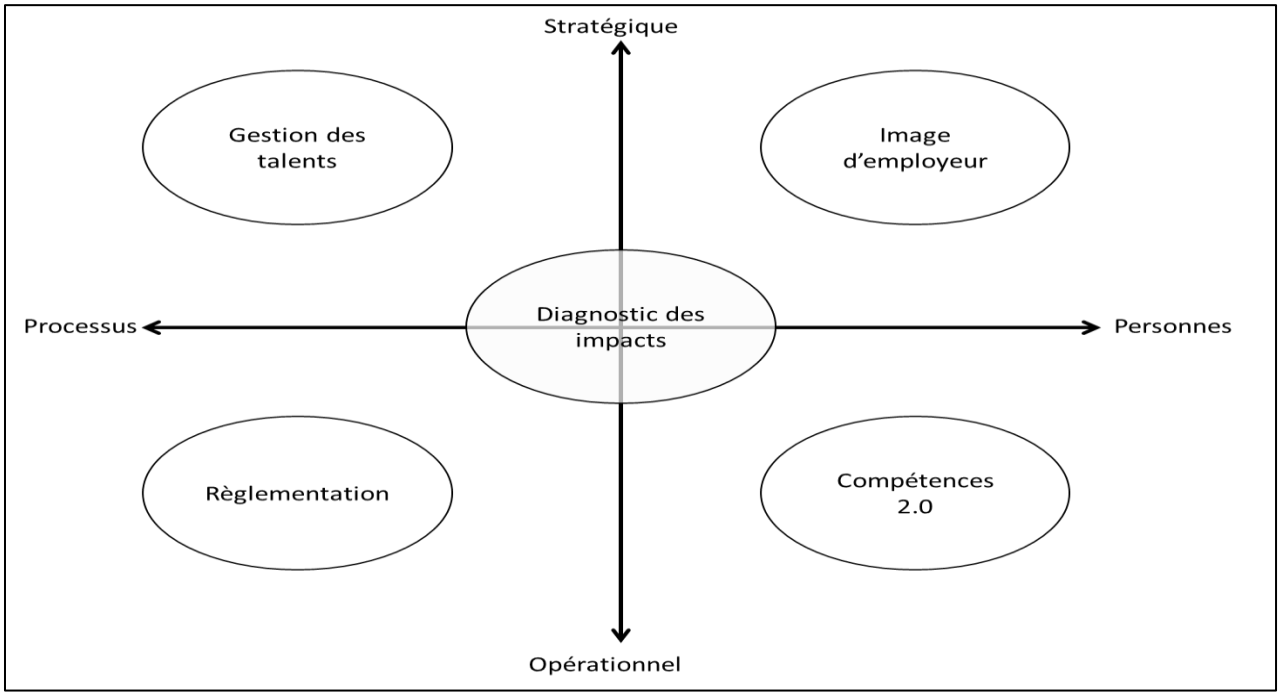

Figure II 1 : Les cinq dossiers RH associés au web 2.0

Image d'employeur			
« J'ai mis employer-branding, c'est-à-dire tout ce qui concerne la marque d'employeur, lié aux réseaux. A mon avis c'est un dossier RH. » *« … marketing RH, parce qu'il y a là un dossier, il y a là une acquisition de compétences de communication par le RH. Que le RH devienne communicant. Le RH 2.0 doit devenir un communicant. Puisque comme on l'a dit avant, tout devient communication, d'une manière ou d'une autre. »*			
Résultats de l'enquête en extension	**Pourcentage d'accord**	**Moyenne**	**Ecart-type**
le web 2.0 et ses outils vont permettre à leur entreprise de travailler leur image d'employeur de manière plus fine	93%	4,68	0,99
les outils web 2.0, vont amener leurs employés à devenir des ambassadeurs RH de l'entreprise, notamment vis-à-vis de potentiels candidats	87%	4,58	1,02

Table II 1 : Dossier image d'employeur

Le premier dossier est celui de l'**image d'employeur**. Il est le plus clairement identifié par les experts comme par les répondants du questionnaire de validation, c'est un dossier qui a fait l'objet de nombreuses publications dans des revues scientifiques et professionnelles (Brecht et al, 2011 ; Sivertzen et al., 2013 ; Bondarouk et al., 2014 ; Deloitte, 2014 ; BCG, 2015). Les experts affirment clairement que les outils du web 2.0, réseaux sociaux et réseaux sociaux professionnels particulièrement, offrent la possibilité aux organisations de créer un lien plus direct avec leurs publics cibles, et que la marque commerciale des produits de l'entreprise sera de plus en plus souvent associée à une marque employeur, ce qui en fait un enjeu clairement stratégique. Cela nécessite une cohérence de messages et une coordination forte entre les fonctions marketing, communication et RH. Cela nécessitera aussi de développer des compétences et une approche marketing chez les collaborateurs de la fonction RH. Pour nos experts, le développement de ces compétences s'avère être un enjeu stratégique.

Pour nos experts, ce dossier concerne avant tout les hommes et les femmes de l'entreprise et se place donc du côté « personnes » de l'axe X du schéma d'Ulrich. Les réseaux sociaux

professionnels permettent par exemple aux entreprises de partager leurs offres d'emploi ainsi que des chiffres de performance, ou encore des témoignages de membres de l'entreprise sur leur carrière au sein de celle-ci. Le rôle des collaborateurs peut ainsi devenir plus important dans la communication de l'image d'entreprise. Les experts insistent aussi sur le fait d'inciter les collaborateurs à communiquer et à diffuser des messages positifs sur les réseaux, sans nécessairement que ces messages soient intégrés à la communication institutionnelle.

La gestion des talents			
« Parce que un des gros dossiers des RH, c'est le recrutement, et là ça va se faire à travers les outils du web 2.0. Pragmatiquement c'est la première porte d'entrée, ça reste un élément clé. » *« … le web 2.0 fait qu'on a des candidats, des collaborateurs qui peuvent être beaucoup plus volatiles (…), ils sont tous sollicitables. »* *« Il y a une chose qu'on doit faire maintenant avec ce 2.0, c'est la gestion des alumni. Et ça c'est utile parce qu'ils sont quand même des vecteurs de l'entreprise même après, et ils sont aussi des recrues potentiels … »* *« … que ce soit la fidélisation à l'interne de l'entreprise pour valoriser les gens dans l'entreprise ou qu'on soit ensuite dans une logique de la gestion des anciens. »* *« C'est un outil qui va avoir un impact merveilleux pour être utilisé pour la gestion des compétences, pour toute la gestion des carrières, des personnes, des promotions. »*			
Résultats de l'enquête en extension	**Pourcentage d'accord**	**Moyenne**	**Ecart-type**
les réseaux sociaux professionnels vont m'obliger à transformer mes méthodes de recherche de candidats	90%	4,67	1,19
la capacité des employés à être visible dans les réseaux sociaux sera de plus en plus importante pour la gestion des carrières	82%	4,43	1,18
les réseaux professionnels vont permettre de garder le contact avec les alumni de l'entreprise et de leur transmettre de l'information	82%	4,44	1,25

Table II 2 : Dossier gestion des talents

Le deuxième dossier identifié est celui des **processus nouveaux associés à la gestion des talents**. L'importance de ce dossier lui confère une portée stratégique, car, pour nos experts, il porte sur l'ensemble de la carrière des collaborateurs. Selon eux, ce dossier concerne donc le recrutement, mais aussi la gestion de carrière au sein de l'organisation avec un suivi via les réseaux sociaux d'entreprise, et enfin la gestion des alumni de l'organisation. Les experts réseaux sociaux professionnels amènent donc les responsables RH à intégrer ces nouveaux

outils dans leurs méthodes de recherche de candidats et de gestion des talents internes et externes à l'entreprise et à réévaluer et à adapter leurs processus de sourcing, plaçant ce dossier du côté processus de l'axe X du schéma d'Ulrich.

Les experts insistent sur la dynamique relationnelle que ces outils offrent, ainsi que sur la rapidité de la prise de contact. Ils soulignent également que ces outils permettent de suivre de manière régulière et continue les candidats ou les pools de talents intéressants extérieurs à l'entreprise, par exemple les anciens employés de l'entreprise. Certaines entreprises utilisent pour leur recrutement en ligne des plateformes comme LinkedIn. Les collaborateurs peuvent eux aussi tirer parti des réseaux sociaux pour augmenter leur visibilité, par les relations qu'ils tissent et par leur activité sur ces plateformes. Ils peuvent travailler leur image de candidat de manière plus précise en présentant un CV toujours actualisé et en bénéficiant d'une visibilité renforcée par leur réseau. Les experts relèvent toutefois que cette utilisation du web 2.0 représente un long travail en amont de développement de réseau.

La règlementation			
« Alors nous on a un règlement d'informatique, pour ce qu'ils ne doivent pas faire de façon générale. Et on a un guide de bonnes pratiques des médias sociaux, qu'on a diffusé pour les collaborateurs, avec des conseils. Le cadre réglementaire. » *« Moi j'aime pas le mot règlement d'entreprise, c'est pour ça que je dis charte ou lignes directrices d'utilisation des médias sociaux. Parce que là aussi on a un biais, c'est-à-dire que les entreprises abordent la question sous l'angle légaliste de la chose. »* *« La première chose qu'on devrait faire dans une entreprise, à mon sens, c'est de sensibiliser et d'éduquer les gens à l'utilisation des outils. »*			
Résultats de l'enquête en extension	**Pourcentage d'accord**	**Moyenne**	**Ecart-type**
Mon entreprise va devoir mettre en place un règlement ou une charte spécifique à l'utilisation des médias sociaux	82%	4,54	1,41
Les outils du web 2.0 vont amener l'entreprise à adapter son règlement	80%	4,32	1,24

Table II 3 : Dossier règlementation

Le dossier classé en troisième position par les experts est celui de la **règlementation et des chartes de sécurité**. Pour les experts, il s'agit d'encadrer et de réguler l'utilisation du web 2.0 au sein de l'organisation (d'où un placement du côté processus de l'axe X du schéma d'Ulrich). Il s'agit d'établir des chartes d'utilisation des outils du web 2.0, en veillant à ce que ces lignes directrices soient cohérentes avec la stratégie de l'organisation et avec ses valeurs.

Certains experts insistent sur la conception de chartes qui aient une double approche de contrôle et d'incitation. La liaison avec des règlements déjà existants rend ce dossier plutôt opérationnel. De nombreuses organisations, conscientes du rôle de porte-parole que leurs employés jouent pour leur entreprise, ont établi des chartes de conduite sur les médias sociaux et dispensent des formations à leurs employés afin que le contenu qu'ils partagent sur les plateformes en ligne soit approprié. Ces formations répondent au double objectif de susciter l'engagement (voir dossier 1) et de cadrer les pratiques.

La gestion des compétences 2.0			
« … il y a une époque, dans des CV de secrétaire, on voyait Word exigé, et Word untel parce que c'était la version qu'on avait nous. Aujourd'hui on n'a pas cette exigence-là. Et pourtant, quand on est confronté à ça, on devrait l'avoir. » *« J'ai recruté un responsable des apprentis, et ça faisait partie du profil, la maîtrise des réseaux sociaux. »* *« On va avoir besoin de former les gens et deux ans après, on doit recommencer. »* *« Il y a une obsolescence des compétences, c'est-à-dire qu'on va avoir besoin de former les gens et deux ans après, on doit recommencer. On va devoir former les gens de manière récurrente avec une accélération. »* *« Comme entreprise on est presque obligé de former les gens, de leur apprendre les enjeux qu'il y a avec l'utilisation des médias sociaux, avant de pouvoir leur dire « voilà maintenant dans notre entreprise on va les utiliser comme ça. »*			
Résultats de l'enquête en extension	**Pourcentage d'accord**	**Moyenne**	**Ecart-type**
Le web 2.0 va nécessiter de nouvelles places de travail impliquées dans la gestion de communauté ou la veille stratégique	67%	3,66	1,44
La fonction RH va prendre en charge la formation et le développement des compétences 2.0 (sig. 0.05)	58 %	3,51	1,41

Table II 4 : Dossier gestion des compétences 2.0

Les experts ont également souligné l'importance de la **gestion des compétences 2.0**. Ce quatrième dossier concerne d'une part les besoins des divers métiers de l'entreprise en matière de web 2.0, et d'autre part, les moyens à mettre en œuvre pour arriver à développer ces compétences. Il s'agit d'un dossier plus opérationnel (et donc positionné comme tel sur l'axe Y du schéma d'Ulrich) concernant l'identification et le développement de compétences humaines (lié aux personnes sur l'axe des X du schéma d'Ulrich) et la reconfiguration de certaines fonctions dans l'organisation.

Nos experts appellent compétences 2.0 la maîtrise des médias sociaux, une bonne connaissance de l'environnement du web 2.0 et une capacité d'adaptation aux fréquentes

actualisations des outils du web 2.0. Une caractéristique fondamentale des outils 2.0 est en effet leur évolutivité, les applications liées au web 2.0 proposent de nouvelles fonctionnalités en permanence. Cela implique, pour les utilisateurs, de devoir se maintenir à niveau et de s'adapter de manière continue aux nouvelles fonctionnalités des produits qu'ils seront amenés à utiliser. Dans cette dynamique, le besoin de formation est constant. Nos experts ont également relevé la création de nouveaux métiers liés à ces technologies, actifs dans la veille stratégique ainsi que dans la gestion de communautés (community manager). Les experts rappellent que les réseaux sociaux et les wikis facilitent les pratiques collaboratives, la co-construction ainsi que l'actualisation permanente des connaissances dans des communautés comprenant des acteurs internes et externes à l'entreprise. Les acteurs de l'entreprise seront plus souvent habilités à partager de l'information, avec comme conséquence un foisonnement d'informations, une accélération de la production d'informations et des volumes de données toujours plus conséquents, issus de canaux variés et nombreux. Savoir traiter ces volumes d'informations et juger de leur validité deviendra donc un enjeu majeur pour les membres de l'entreprise. La prise en charge de la formation et le développement des compétences 2.0 divise les répondants à notre enquête par questionnaire. En effet, la moyenne des responsables RH disposant d'une expertise technique supérieure (auto-évaluée bonne et excellente) est significativement supérieure ($p < 0,05$, test t de Student) à celle des responsables RH disposant d'une expertise technique plus faible (auto-évaluée moyenne et faible).

Le diagnostic des impacts organisationnels			
« … c'est l'organisation du travail, virtualité, gestion de l'information, outils, digital workplace, tout ce que vous pouvez imaginer, et ça ce sont des chantiers… » *«… on a parlé du gap qu'il va y avoir entre les cultures qui utilisent le web 2.0 et celles qui par la force des choses doivent mettre les mains dedans et sont moins à l'aise. »* *« On a de plus en plus de burn-outs aujourd'hui. Est-ce que c'est lié aux outils qu'on a aujourd'hui qui font qu'on décroche jamais, ou est-ce c'est lié à l'air du temps ? »* *« Est-ce que la fonction RH va renforcer son rôle au niveau de la préservation de la santé des collaborateurs, burn-out, stress, ce genre de choses… »* *« Mon rôle en tant que partenaire RH, c'est de l'accompagner dans l'appréhension des médias sociaux, de répondre à ses questions, de l'aider à voir comment est-ce qu'il peut en faire un outil stratégique dans la gestion de son business. »*			
Résultats de l'enquête en extension	**Pourcentage d'accord**	**Moyenne**	**Ecart-type**
Il y aura dans mon entreprise de plus en plus un écart entre les adeptes et les réfractaires aux outils web 2.0	79 %	4,35	1,22
La fonction RH va prendre en charge la formation du développement des compétences 2.0	71 %	3,94	1,20
la fonction RH aura à développer de nouvelles compétences d'expert en communication web 2.0	66%	3,88	1,23
la fonction RH aura le leadership sur les projets web 2.0 dans l'entreprise	46 %	3,25	1,23

Table II 5 : Dossier diagnostic des impacts organisationnels

Le **diagnostic des impacts de la numérisation de l'organisation** est le cinquième dossier de la fonction RH selon nos experts. Pour les experts, la fonction RH devra identifier les changements que la numérisation peut occasionner sur l'organisation. Il s'agit d'un dossier dont les contours sont plus flous, car lié à l'ensemble des mutations organisationnelles potentielles : l'organisation de l'information, les pratiques collaboratives, et l'organisation des horaires et des postes de travail... Ces enjeux peuvent être tour à tour opérationnels ou stratégiques, processuels ou humains. Les experts ont par exemple souligné que les outils de

communication digitale contribuent à rendre plus floue la frontière entre vie privée et vie professionnelle, que ce soit par la mise en ligne d'informations personnelles (loisirs, etc.) sur un réseau social d'entreprise, ou encore l'utilisation d'un compte privé sur un réseau social professionnel à des fins de recrutement. Autre exemple, la diversité des expertises d'usager obligera l'entreprise à faire cohabiter et collaborer des populations avec des cultures de travail différentes.

Le cinquième dossier RH consiste à faire l'analyse des impacts des mutations internes et externes dans la mesure où ils concernent les processus organisationnels et les personnes travaillant pour l'organisation. Pour étudier ces impacts, la fonction RH pourra être amenée à travailler avec d'autres fonctions, plus particulièrement avec la fonction IT pour l'organisation des flux informationnels, avec la fonction juridique pour les aspects de risques juridiques, mais avant tout avec la direction générale. Le rôle d'analyste des impacts ne signifie pas pour autant que la fonction RH doit être porteuse du « projet numérisation » mais, comme l'illustre le verbatim ci-dessus, elle doit s'interroger sur son rôle dans la gestion de celui-ci. Les responsables RH de l'enquête de validation sont eux aussi partagés quant au rôle de la fonction RH dans le projet de numérisation, comme le montrent les chiffres de l'enquête par extension.

Discussion

Une première contribution de notre étude est de montrer comment, pour la fonction RH, l'intégration d'une innovation technologique se traduit par plusieurs projets en mettant en évidence la grande diversité de registres et d'enjeux de ces projets. Le tableau de synthèse des enjeux des outils de communication de l'entreprise numérique pour la fonction RH (tableau 1) permet de mettre en évidence la diversité de ces cinq dossiers. Ainsi, un premier type de projet, par exemple 'Gestion des talents 2.0' concerne l'appropriation d'un nouvel outil technologique dans le cadre des activités de la fonction. Le changement d'infrastructure technologique peut modifier des processus RH classiques, comme le recrutement ou la gestion des talents, en mettant différemment les acteurs en relation ou en amenant une transparence nouvelle de l'information (Brown et Vaughn, 2011 ; Allden et Harris, 2013) Ce changement peut avoir des impacts stratégiques (dans la mesure où la gestion des talents est stratégique) pour l'organisation mais elle ne remet pas en question la fonction RH dans ses fondamentaux. Il en va différemment du dossier 'Image d'employeur' qui implique de nouvelles missions pour la fonction, de nouvelles compétences pour les acteurs RH, et une coordination avec la

fonction marketing, chargée traditionnellement de gérer la ‘marque entreprise’ (Brecht et al., 2011). Les dossiers ‘Gestion des compétences 2.0’ et ‘Réglementation’ ont des enjeux plus opérationnels dans le cadre des activités classiques de la fonction RH : le premier concerne le suivi des métiers et des compétences de l’organisation, le second concerne la régulation des comportements au travail (et, nouveauté partielle, des comportements hors travail). Plus opérationnels, ces deux dossiers font l’objet de moins de débats scientifiques, mais nécessitent une évolution de l’expertise professionnelle des acteurs RH ainsi qu’une concertation avec experts IT et juristes. Le dernier dossier ‘diagnostic impacts organisationnels’, moins clairement perçu, contient potentiellement les 4 autres dossiers. Il concerne la capacité des responsables RH à estimer et à accompagner les impacts organisationnels d’un changement d’environnement technologique. Il représente a priori un enjeu important pour la fonction RH dans son rôle de partenaire stratégique de la direction générale.

Dossiers RH liés au Web 2.0	Image d'employeur	Gestion 2.0 des talents	Gestion des compétences 2.0	Règlementation	Diagnostic impacts organisationnels
Type d'innovation à gérer	Intégrer une nouvelle mission de la fonction RH et développer de nouvelles compétences pour assumer cette mission (communication/marketing)	Intégrer une innovation technologique pour reconfigurer les processus RH classiques	Intégrer de nouvelles compétences et expertises techniques dans les fonctions, métiers et profils de l'organisation.	Adapter les règles aux nouveaux comportements potentiels	Estimer les impacts d'une innovation potentiellement holistique à différents niveaux (structures, cultures et comportements ; processus et personnes)
Enjeux du changement pour la fonction RH	Enjeux stratégiques et nécessitant un repositionnement de la fonction	Enjeux stratégiques pour l'organisation mais traditionnellement RH (nouvelle technologie)	Enjeux opérationnels et traditionnellement RH (nouveaux métiers, nouveaux processus de travail)	Enjeux opérationnels et traditionnellement RH (nouvel environnement social et technologique)	Enjeux variés mais potentiellement stratégiques en fonction du positionnement et des compétences des acteurs de la fonction RH
Perception de l'intensité du changement pour la fonction RH	Très forte	Très forte	Forte	Moyenne	Faible/diffus
Coopération avec d'autres fonctions	Principalement fonctions marketing et communication	Principalement IT (comme fonction support) pour le développement d'outils spécifiques à l'entreprise (réseaux internes)	Principalement IT (comme fonction étudiée) et autres fonctions potentiellement transformées	Principalement fonctions juridiques et IT (comme fonction conseil)	Potentiellement toutes les fonctions de l'organisation et la direction générale

Table II 6: Enjeux des différents dossiers identifiés pour la fonction RH

Ces cinq dossiers nous paraissent également représenter cinq catégories thématiques utiles pour structurer le champ de recherche sur le web 2.0. Comme nous le constations dans l'introduction, le champ de recherches sur la technologie 2.0 est très varié, avec des ancrages dans différentes disciplines, des problématiques et des perspectives différentes. Les cinq catégories thématiques permettent de classer l'ensemble des travaux de recherche du champ en tenant compte de cette diversité de perspectives.

Pour la gestion des compétences 2.0, il s'agira plutôt de travaux de prospective métier visant à définir l'évolution des compétences dans certaines familles de métier, voire l'émergence de nouveaux métiers comme les community managers ou les responsables de marque employeur (par exemple Alexandre-Bourhis et al., 2013 ; Stenger, 2013).

La catégorie thématique de gestion 2.0 des talents, regroupera les recherches sur le recrutement et la gestion des carrières à l'aide de technologies 2.0. Peu de travaux portent actuellement sur la gestion des carrières intra- et extraorganisationnelle (Duparc, 2013). La grande majorité des recherches porte surtout sur les pratiques de recrutement via les médias sociaux (e-recruitment), sur les modes de relation employeurs-candidats ainsi que sur leurs interactions (par exemple Van Iddekinge et al., 2013 ; Girard et al., 2014).

La catégorie d'image d'employeur a un ancrage dans la recherche en communication (Backhaus et Tikoo, 2004). Dans cette catégorie, on peut regrouper les travaux qui étudient les liens entre l'utilisation des médias sociaux, la réputation ou l'attractivité employeur (Sivertzen et al., 2013).

Dans la catégorie thématique de réglementation, nous trouvons d'abord les travaux sur les questions légales, concernant d'une part les comportements des employés mais aussi sur les comportements des recruteurs. Nous trouvons aussi dans cette catégorie les travaux qui visent à définir des règles ou des chartes éthiques dans l'utilisation du web 2.0. Les cadres conceptuels sont plutôt d'ordre juridique ou éthique (par exemple Slovensky et Ross, 2012 ; Jacobson et Tufts, 2013).

Enfin, la cinquième catégorie, celle des impacts organisationnels, est celle qui regroupe le plus de travaux avec une grande diversité de cadres conceptuels. Dans cette catégorie, on trouvera les études prospectives visant à évaluer des tendances (par exemple DGFP, 2011), les études sur la mise en œuvre de ces technologies et de leurs impacts (par exemple Tran, 2013). Un grand nombre d'études montrent les modes nouveaux d'apprentissage et d'innovation,

ainsi que le changement de culture de travail lié à de nouvelles pratiques, dites collaboratives. D’autres études mettent en évidence des phénomènes de résistance ou des effets pervers inattendus (Hauptmann et Steger, 2013).

Catégories	Image d'employeur	Gestion 2.0 des talents	Gestion des compétences 2.0	Règlementation	Diagnostic impacts organisationnels
Cadres conceptuels mobilisés	Branding theory, Corporate reputation, Employer attractiveness	Social network theories, Actor network theory, Social contract, signaling theory	Social capital, Career success	Selection decisions, Legal and ethical issues (fairness, justice, privacy), Employees' voice	Motivations, Employees' voice, personal control, Technology acceptance
Exemples de questions de recherche	Pourquoi et comment les compagnies utilisent-elles les réseaux sociaux dans un but de marque employeur ? Quel est l'impact des médias sociaux sur le futur de la marque employeur ?	Quel est l'impact des réseaux sociaux sur l'efficacité du recrutement en ligne ? Quelle est l'utilisation des données en ligne dans une optique de recrutement ? Comment les réseaux internes et externes sociaux sont-ils utilisés pour gérer les talents ?	Quels sont les nouveaux métiers liés aux NTIC ? Quelle est la transférabilité des apprentissages privés dans un contexte professionnel ?	Quelle est la structure et le contenu des chartes de médias sociaux ? Comment les politiques de médias sociaux s'intègrent au droit des employés ? Quels enjeux managériaux et légaux pour la fonction RH des réseaux sociaux dans le recrutement ?	Quel est l'impact des NTIC sur l'organisation ? Quel impact les formes de l'organisation ont-elles sur l'implantation des NTIC ?
Exemples de travaux caractéristiques	Bondarouk et al. (2014) Brecht et al. (2011) Charest et Doucet (2014) Girard et al. (2011) Girard et al. (2014) Kissel et Büttgen (2015) Sivertzen et al. (2013)	Allden et Harris (2013) Berkelaar et Buzzanell (2015) Charrière et al. (2014) Davison et al. (2012) Dineen et Allen (2013) Duparc (2013) Girard et al. (2014) Madia (2011) Nikolaou (2014) Roulin et Bangerter (2013) Slovensky et Ross (2012) Van Iddekinge et al. (2013)	Alexandre-Bourhis et al. (2013) Benson et al. (2014) Boboc et Metzger (2009) Stenger et Coutant (2011) Stenger (2013)	El Ouirdi et al. (2015) Jacobson et Tufts (2013) Krüger et al. (2013) Mainiero et Jones (2013) Sanchez Abril et al. (2012) Slovensky et Ross (2012) Taylor et al. (2015) Thomas et al. (2015) Willey et al. (2012)	Alfaro et Watson-Manheim (2015) Comtet (2012) Charoensukmongkol (2014) Chauvel (2014) Leftheriotis et Giannakos (2014) Martin et al. (2015) Moqbel et al. (2013) Tran (2013) Tran (2014) Ologeanu-Taddei et al. (2014) Silva et Ben Ali (2010) Silva (2014)

Table II 7 : Domaines de recherche sur la technologie web 2.0 liés à la fonction RH

La grande diversité des cadres conceptuels et des questionnements RH autour des outils de communication de l'entreprise numérique rend nécessaire une catégorisation. La catégorisation proposée, construite de manière inductive avec des praticiens, permet une première structuration du champ mais nécessiterait une validation plus différenciée dans le cadre d'une revue systématique des recherches et des cadres conceptuels. Si on la confronte à des études récentes proposant des catégorisations des champs de recherche en e-HRM (Stone et a., 2015 ; Bondarouk et Brewster, 2016), on retrouve des catégories similaires. Un premier champ de recherche est celui du changement et de son contenu, c'est-à-dire celui de l'évolution des pratiques RH (Stone et a., 2015), par exemple dans notre tableau les pratiques de gestion des talents et celle de l'image d'employeur, ainsi que le changement de règles organisationnelles (codes de conduite). Dans leur approche conceptuelle du champ de recherche de l'e-HRM, Bondarouk et Brewster (2016) soulignent aussi l'importance de la recherche sur les acteurs concernés par le changement (voir dans notre tableau, notre catégorie des nouveaux besoins en compétences 2.0) ainsi que celle sur les conséquences organisationnelles du changement (dans notre tableau, la catégorie du diagnostic des impacts).

Conclusion

Notre étude présente plusieurs limites spécifiques aux difficultés rencontrées dans les études prospectives : la taille, les expériences et les expertises spécifiques du groupe d'experts, la taille de l'échantillon de l'enquête de validation, les spécificités du contexte national… mais c'est surtout le temps qui passe qui est le principal ennemi des études prospectives. L'entreprise 2.0 et le web 2.0 sont des thématiques qui sont médiatisées depuis plusieurs années déjà. Cela poserait problème si notre contribution visait exclusivement à prédire l'avenir et à illustrer les conséquences organisationnelles des grandes mutations technologiques. La contribution de notre étude prospective est plutôt de faire émerger une catégorisation des pratiques et des champs de recherche liés au Web 2.0 et pertinents pour la fonction RH. Considérant que le Web 2.0 est une facette technologique essentielle de l'entreprise numérique dite « entreprise 4.0 » (de la quatrième révolution industrielle) (Barlatier, 2016 ; Berman, 2012 ; Brynjolfsson et McAfee, 2012 ; Collin et Colin, 2013 ; Fitzgerald et al., 2014 ; Lafrance, 2013 ; Westerman et al., 2012), la contribution de notre article réside dans un travail de traduction et de catégorisation, réalisé avec des experts RH en plusieurs phases. Il s'agit d'abord d'un travail de traduction, qui permet de donner sens et de nommer de manière différenciée les enjeux d'un phénomène intra- et extra-organisationnel majeur pour la fonction RH. Nous avons vu que ces enjeux peuvent être stratégiques ou

opérationnels, instrumentaux ou humains. La seconde contribution de notre étude est celle d'un travail de catégorisation qui permet de classer la 'nébuleuse' des études et recherches du champ « outils de communication de l'entreprise numérique » selon des catégories qui font sens dans une perspective RH. Ces catégories devront être validées et discutées dans des travaux futurs.

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III. Implementing new ways of working: a Greimassian analysis

Abstract

Purpose – The purpose of this paper is to identify the main actors and to understand their roles in the narratives of New Ways of Working implementation.

Design/methodology/approach – The paper is based on five case studies including the analysis of 39 interviews and internal documents. A material-discursive sensemaking approach and Greimas actancial model is used to analyze actors' roles in the organizational change process.

Findings – Results reveal that NWW can have various meanings and goals in different organizations and in different phases of the implementation process. Depending on the goals, different configurations and roles of actors are involved in the change process. This study also highlights the multiplicity of roles played by technology in the change process and how technological artifacts and practices embody change.

Practical implications – The research highlights the multiplicity of narratives associated with NWW. Moreover, this study advances awareness of the complementarity between material and discursive components in the sensemaking process and emphasizes the necessity to develop narratives that are consistent with material components.

Originality/value – The study contributes to the organizational change literature by applying Greimas' actantial model to study organizational change and provide a structured rendering of how change unfolds with a focus on roles and relations. The study also contributes to a better understanding of NWW narratives and of NWW change projects and of the role of technology in these projects.

Keywords Sensemaking, Greimas, Actantial Model, New Ways of Working, Material-discursive practices

Paper type Research paper

Introduction

Studies have revealed the importance of discourse and narratives in the change process and their key role in implementation processes (Maitlis and Christianson, 2014; Sonenshein, 2010). Research on Information Technology in organizations (sociomateriality, material-discursive practices and actor-network theory) has highlighted the role of “technological actors” within organizations (Leonardi et al., 2012; Orlikowski, 2007). "New World Of Work" or “New Ways of Working” (NWW) is an interesting field for studying organizational change. It is an opportunity to study the relational view between communication and materiality (following Cooren, 2015), as it is strongly tied to discourses about digitization, where material components such as technology and buildings are supposed to play an important role. NWW is a major topic of contemporary literature regarding organizational digitization, which first appeared in 2000 (Duffy, 2000). The concept of NWW posits that information technology helps companies develop new kinds of office culture (Duffy, 2000), by making use of mobile computing, flexible work designs, and telecommuting (ten Brummelhuis et al., 2012). Remote working is central in NWW (Messenger and Gschwind, 2016), as well as flexible work designs and “hot-desking” (Bosch-Sijtsema et al., 2010; Hirst, 2011). Studies mainly focus on corporate culture (Chen and Nath, 2005) employee well-being, productivity and isolation (Felstead and Henseke, 2017; Hoeven and Zoonen, 2015; Robertson and Vink, 2012; Taskin and Edwards, 2007). However, scholars note that the concept is still vaguely defined and that there is no consensus yet (De Leede and Kraijenbrink, 2014). Nonetheless, many organizations have implemented NWW over the last few years, resulting in far-reaching changes.

In our study, we focus on the narratives of the implementation process of NWW. Our goal is to understand how organizations and their members make and give sense to change (Gioia and Chittipeddi, 1991) in this context of digitization. Our study is based on the analysis of five case studies from large Swiss companies. In line with the tenants of the material turn in organization studies, we use Greimas’ actantial model (1966) to analyze the stories of NWW implementation. This model is useful in showing the structure of the relationship between material and discursive actants of the narratives, and has often been used to analyze actors and change processes in mergers and acquisitions (Demers et al., 2003; Gertsen and Søderberg, 2011; Vaara, 2002). The paper is structured as follows: the theoretical framework will be presented in the two first sections, focusing on sensemaking and narratives, as well as presenting the use of Greimas’ actancial model (Greimas, 1966). The material turn in

organization studies and its implications when it comes to studying organizational sensemaking is also discussed. Study results are presented and the managerial implications as well as the contributions of our study are discussed.

Sensemaking and narratives in organizational change management

Sensemaking is usually defined as the continuous and retrospective development of plausible images to rationalize human action (Weick et al., 2005). It aims to create stability by building categories and classifications in order to facilitate organizational deployment (Chia, 2000). Maitlis and Christianson (2014) identify four characteristics of sensemaking: (1) it is a dynamic process, (2) in which signals play a fundamental role, (3) it is a social process as it includes individuals in a specific environment, and (4) it enacts the targeted situation (Maitlis and Christianson, 2014). This process occurs when the normal functioning of things is disrupted and the situation requires rationalization (Weick et al., 2005), as a result of technological changes (Alvarez and Urla, 2002; Berente et al., 2011; Montargot and Ben Lahouel, 2018). The purpose of sensemaking is a continuous and permanent construction of a story in an intersubjective world (Balogun and Johnson, 2004). In this sensemaking perspective, discourse has a strong performative power (Balogun et al., 2014).

The sensemaking process is strongly related to narratives and metaphors (Phillips et al., 2004). Narratives help to stabilize organizational processes (Arnaud and Mills, 2012), to elaborate strategies (Barry and Elmes, 1997; Buchanan and Dawson, 2007) and to facilitate change (Doolin, 2003; Sonenshein, 2010). Numerous studies have focused on change narratives and on the way these narratives help make sense of change (Brown and Humphreys, 2003; Näsänen and Vanharanta, 2017; Reissner, 2011; Sköldberg, 1994; Sonenshein, 2010). Some studies have identified the narrative tone - tragedy, comedy, romance, satire - to which the change corresponds to (Sköldberg, 1994), the types of narratives or discourses used (Reissner, 2011; Vaara, 2002), as well as the evaluation of narratives (Sonenshein, 2010). Some highlight the reframing process carried out by the employees (Sonenshein, 2009), presenting their dialogical (Carlsen, 2006) and sometimes polyphonic dimension (Boje, 1991; Buchanan and Dawson, 2007; Sonenshein, 2010). The sensemaking process consists, therefore, of ordering these competing and sometimes inconsistent narratives to create a collectively negotiated narrative (Maitlis & Christianson, 2014).

Greimas' actancial model in organizational change management research

Greimas actancial model (1966) has been used extensively in organization studies over the past 15 years, most notably to study sensemaking processes (Bencherki and Cooren, 2011; Cardel Gertsen and Søderberg, 2000; Demers et al., 2003; Gertsen and Søderberg, 2011; Søderberg, 2006; Vaara, 2002). Greimas model has been developed in the field of structural semantics and proposes to analyze the major actors or actants in narratives (Greimas, 1966) with the actors or actants in the model being the subject, object, sender, receiver, helper, and opponent. The roles are defined as follows: the subject follows a quest toward an object. The sender legitimizes and motivates the subject. The receiver judges the subject's actions. The helper supports the subject in their quest while opponents try to prevent them from succeeding. This model facilitates structuring the narratives of change practices and helps identify the main actants and their relationships with respect to the change process. It also offers an understanding of how managers and employees make sense of change in the context of organizational change.

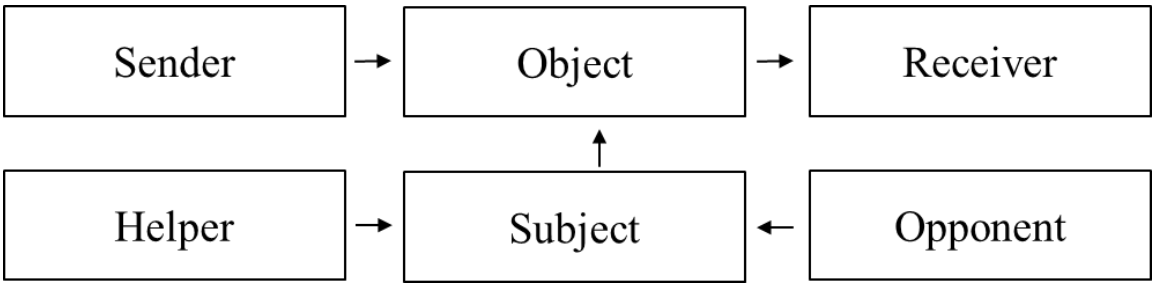

Figure III 1: The actantial model (Greimas, 1966)

Moreover, Greimas' actantial model offers a way of making visible the relationships between the different kinds of actants: the relationship between subject and object, which can be defined as the axis of desire, search or aim; the relationship between sender and receiver as the axis of transport or communication; and the relationship between helper and opponent as the axis of auxiliary support or power (Cardel Gertsen and Søderberg, 2000). The actancial model can also be used to understand the material turn in organization studies (Jarzabkowski and Pinch, 2013; Mitev et al., 2018), as it emphasizes the role of relationships between actants and defines actants in a broader sense (Bencherki, 2017): actants can be human beings, material artifacts or abstractions. Adopting a combined material and discursive lens, our focus will be on the role of material actants in leveraging sensemaking.

The discursive and narrative component of digitization plays a major role in the diffusion of NWW as a management 'best practice' or as a management fad. Digitization and NWW are very popular topics among organizations, resulting in consultants' reports (e.g. (Deloitte, 2017), networks of companies (e.g. (Work Smart, 2015) and manifestos (e.g. (digitalswitzerland, 2017). The focus on offices, working spaces and technology is strong within NWW (Bosch-Sijtsema et al., 2010; Hirst, 2011; Messenger and Gschwind, 2016), thus emphasizing the importance of materiality. We believe that focusing on the relationships between actants in the change narratives will provide a useful perspective on NWW implementation processes.

Methodology

Our study was performed in five large Swiss companies that implemented a NWW concept. Following Maitlis and Christianson's (2014) recommendation, we selected five heterogeneous case studies. Four of these five companies are part of a national community of enterprises campaigning for flexible work. We collected official documentation regarding each company's digital transformation and conducted individual semi-structured interviews that lasted between 60 and 90 minutes.

Type of company	NWW's characteristics	Interviews
Multinational company in the food and beverages sector	Scope: Pilot project on some Strategic Business Units. Status: Ongoing change targeting some other units of the organization	13 (eight managers, two employees, two HR managers, one IT manager)
Regional electricity, water, and gas distribution company	Scope: Pilot project affecting half of the company. Status: Pending approval for a company-wide deployment	8 (three managers, three employees, one HR manager, one IT manager)
Public national media company (radio and television)	Scope: Half of the company Status: Moving into the new building will take place in the next few years.	6 (two managers, two employees, one HR manager, one IT manager)
Telecom company	Scope: Some units in specific domains (marketing, client acquisition, HR) are concerned. Status: Ongoing process, as other units are on-boarded gradually.	6 (two managers, two employees, one HR manager, one IT manager)
Insurance company	Scope: Some specific units within the company (HR, IT) Status: Ongoing process, as other units are on-boarded gradually.	6 (two managers, two employees, one HR manager, one IT manager)

Table III 1: Composition and specificities of study sample

In leading narrative interviews (Søderberg, 2006), our data collection method aimed to gather different points of view and narratives in order to grasp a comprehensive view on change. The interview guide was based on Sonenshein's guide (2010, pp. 507-508) and translated into the interviewees language (French or German). Following Sonenshein (2010), we used two distinct interview guides for managers and employees. The interview guide also included questions built on contextualist analysis of strategic change structured around content, context and process issues (Pettigrew, 1987). Questions were asked in an open manner, leading to lengthy responses from respondents. The follow-up questions allowed respondents to

complete their stories. Interviews were recorded and transcribed. The entire body of work represents 39 interviews and 338 357 words. We also participated in presentations given by the companies on their NWW implementation and had further discussions with two consultants and one researcher who were involved on two of our cases.

Greimas' actantial models were developed for every company. In every case, we used the main narrative told by the project manager(s) as the backbone of the story. We then further developed and enriched the narrative by adding complementary information and polyphonic echoes collected in other interviews. By developing actantial models for each of our NWW implementation cases, we were able to identify similarities as well as differences among our cases. Our results are presented in two sections: we first develop the object of change and the relationships with other actants and we then focus more specifically on one of our cases to illustrate more precisely the role of technology in NWW implementation.

The object of change: the quest of digitization associated to NWW

The main narrative of NWW implementation follows a similar schema: the company (sender) (through project leaders or a steering committee) wants a pilot unit (subject) to implement NWW to improve work-life balance, space optimization, company image or employer branding for all employees (receiver). In this quest, the pilot unit is supported by consultants, a network of enterprises that pursue similar goals and narrative elements about digitization (helpers) but have to face resistance coming from some employees and managers as well as legal constraints (opponents). Among the five case studies, two main types of cases were identified: those in which NWW implementation is an end in itself and those in which NWW implementation is a means to an end. Depending on the objective, the axis of communication (sender – object – receiver) varies.

When NWW implementation is an end in itself

In cases where NWW implementation is an end in itself, change only targets the company as an employer and its employees (receivers), following goals such as improving work-life balance (object). Activity-based offices and teleworking are at the center of the procedure with work-life balance and corporate branding as integrated objectives. The project is sponsored or endorsed by HR (sender).

The case of the insurance company

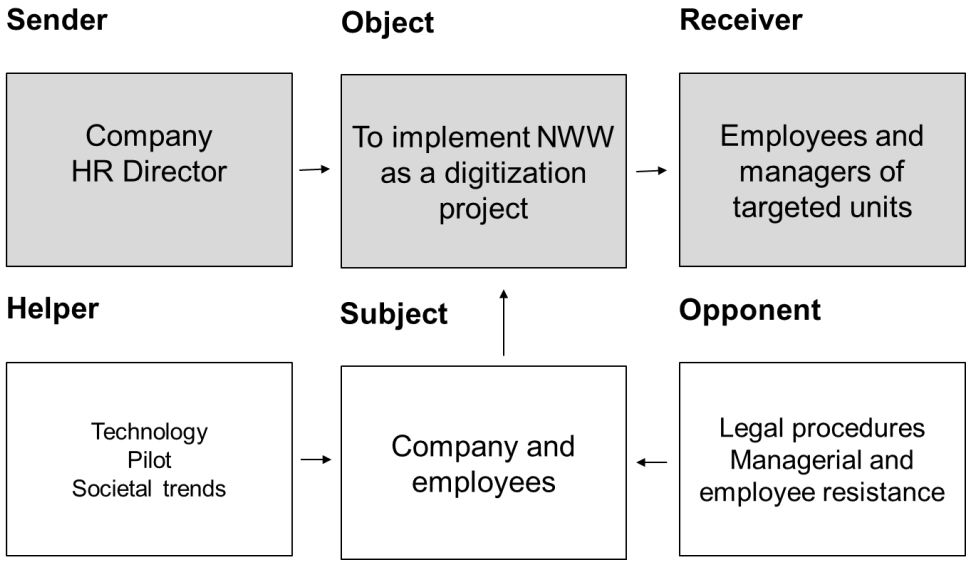

Figure III 2: The case of the insurance company

In the insurance company, the HR manager presents the company as *"an old lady"* and every interviewee enumerates the number of procedures and legal constraints the company is dealing with. Digitization appears as a way to rejuvenate the old lady and to make the employees feel better: "*We want to improve the quality of life of our employees. We want to transport them to a more modern world, and also to give a less conservative and more modern image to the outside*" (HR project manager, insurance company). The company seems to have a clear goal in sight: an ideal of digital modernization. The project is driven by HR and is consisting of implementing NWW in three operational headquarters at a national level. The receivers are all employees and managers of these operational headquarters.

When NWW implementation is a means to an end

In cases where NWW implementation is a means to an end, change targets bigger goals. These can be implementing decentralized teams, moving into new buildings, developing new products or appearing as a company at the cutting edge of technology. In such cases, the project's sponsor is the executive committee or a steering committee that consists of members from various departments of the organization. In these cases, the whole company is identified as a receiver of change, as NWW implementation must contribute to corporate performance.

The case of the media company

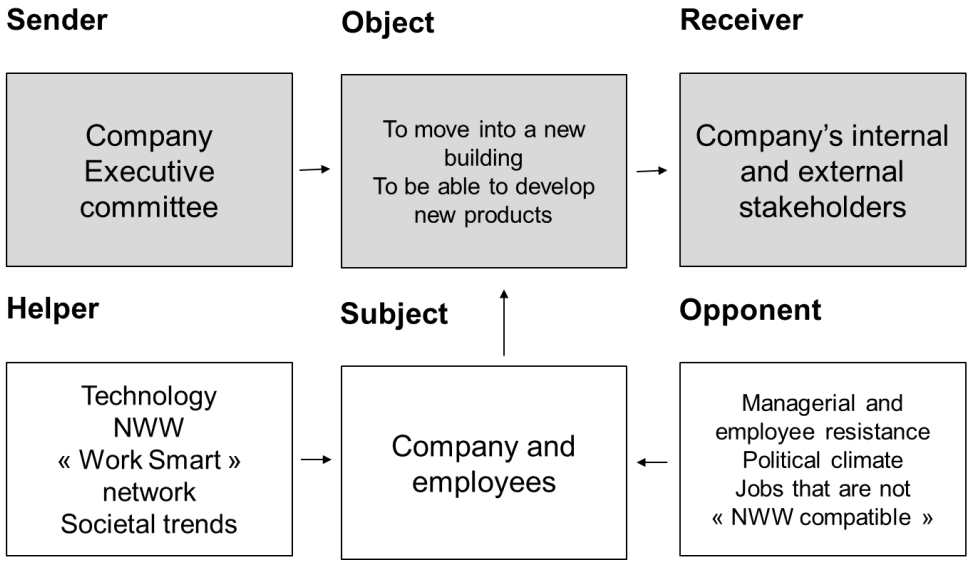

Figure III 3: The case of the media company

In the media company, everything started with a real estate problem: one of the two buildings of the company needed to be renovated and renovation work would interrupt media production for a long while. As a result, the executive committee took the decision to build a new building instead of renovating the old one. This brought many questions about the old building to the surface: the location, the work spaces, the functioning of the recording studios... Everything was taken into account with a single goal in sight: improving media production: *"(...): if it (the project) cannot be associated with professional performance objectives, the change won't take place. We do not make buildings to make buildings."* (Project manager, media company). The goal in this case is business-driven and NWW implementation appears as a secondary objective that will only help produce better output.

By focusing on the axis of communication (sender – object – receiver), our cases show that object and receiver may vary according to the sender in question. In the two cases where HR drives NWW implementation, the project mainly focusses on HR objectives (work-life balance, employer branding) and mainly addresses the company employees. In the three cases where a broader steering committee drives the change process, the project is more business-driven and also targets general company performance goals. Nevertheless, employees (and managers) remain the main receivers throughout all of our cases.

The roles of technology: from quest object to actant in a narrative

Technology plays a central role in our cases. Most of the companies associate NWW with digitization. In some cases, digitization plays the role of first object (of first quest) in the change process narratives. In the second phase, the objective of change is narrowed and NWW implementation is more precisely identified as the goal of change. In this second phase, technology becomes a helper: it is thanks to technology that NWW can be implemented. In the third phase, technology embodies NWW and the company: devices and software materialize the change process and their link to the company, to a certain extent. The case of the energy company, focusing on the role of technology throughout the change narrative, is presented.

The case of the energy company

The dominant narrative is the narrative as told by two project managers (Senders) when addressing employees and the company's management. The object of change is defined in rather vague terms, based mainly on the idea of optimizing work spaces and on a general move towards digitization. In this phase, the role of technology is depicted as crucial: *"This is what immediately led us to emphasize the role of technology in order to move the company forward, even in terms of culture and work organization."* (project manager, energy company).

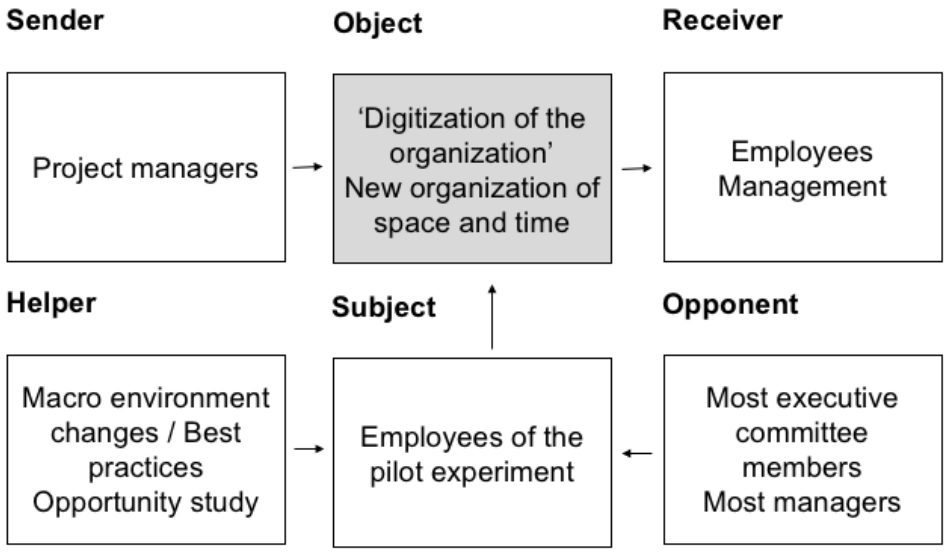

Figure III 4: The case of the energy company (beginning)

In this first phase, the frame of the NWW concept is vaguely defined: "*We proposed to conduct a pilot experiment to implement what was called 'distributed work'. For us, 'distributed work' is a workflow organization in which, ideally and within a defined framework, the employee can choose the best place and time for the execution of his task.*" (project manager, energy company). The subjects were the employees of the units in the pilot project (approximately 120 employees). At this stage of the project, the pilot phase aimed to define the outlines of the project in a more precise way. The management welcomed the project with skepticism but agreed to launch a pilot project.

After the first year of implementation, the modalities of the project were described more precisely. While digitization was depicted as the main trend in the first phase, technology is in the second phase only a part of a wider change, which includes space and time reconfiguration as well as hints of a cultural change. Technology represents one of the pillars on which cultural change is built: *"There are three pillars. On the one hand, there is what we call the space pillar. In other words, we reorganize the space so that the employee can evolve in shared, mutualized spaces. Then, the second pillar is the HR one. The employee can shift his hours and can decide to work at home. This implies that we move from a 'clocking in' schedule to a 'trust' schedule. The third pillar is the technological one. In the technological pillar, there is also the possibility to access the company network to all the company's computer resources from home or from third places."* (project manager, energy company). At the end of the change process, technology becomes more than a helper or a part of the change. When employees switch to NWW, they receive a technological package which makes the change tangible: this package becomes a materialization of the object of change, an embodiment of the NWW concept: *"there was a first phase, a technological one, moving from fixed computing to mobile computing. So I abandoned my fixed phone for a mobile phone and so, I switched from a desktop to a laptop"* (legal employee, energy company).

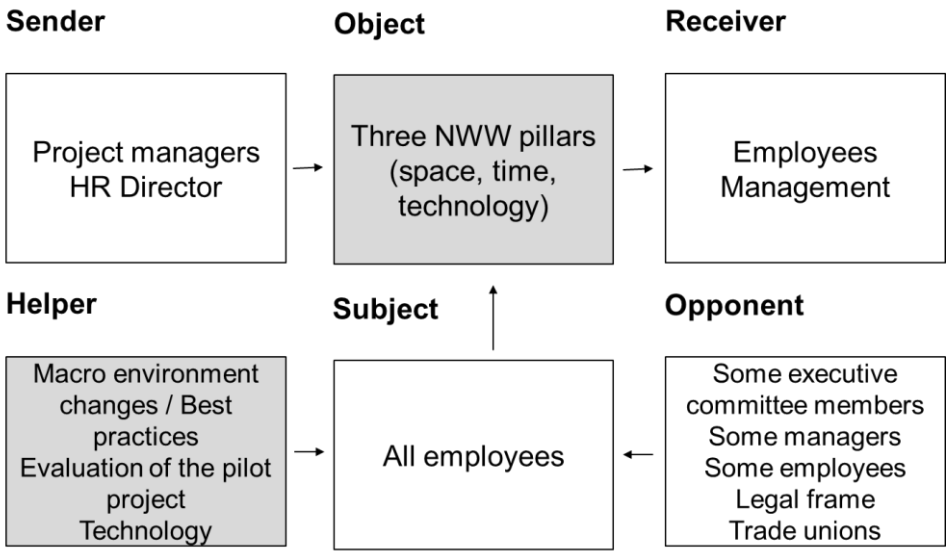

Figure III 5: The case of the energy company (end)

The case of the energy company illustrates a narrative about technology evolving over time and illustrates the multiplicity of roles played by technology. While technology is merely framed as a vague concept associated with digitization trend narratives in the first phase of the change process, the concept gets more defined frameworks and roles during the implementation phase, through the (socio)materiality of devices and daily practices. During and after the implementation phase, technological artifacts can play the role of helper in the sense that they progressively make the representation of change object possible.

This case highlights the multiple roles and facets of technology. In all cases, there is a global discourse about digitization that is widely adopted in the organizations in the first phase and one which is used as leverage for making employees accept the change. In most of our cases, the project managers refer to the societal trend of digitization in their project narrative as a 'helper' to legitimize their NWW project. We also observe in other cases the materialization of technological change through artifacts and practices. Technology, in these cases, is embodied in devices such as laptops and smartphones, but also in computer programs and apps. In many of our interviews, interviewees have their laptops and smartphones with them and show them to illustrate change. At the same time, they explain the role of new apps and programs in their work practices to emphasize the shift from the "old ways of working" to the NWW. In the case of the food and beverages company, there is an emphasis on the role of Skype that replaces traditional phones. The new practice and devices (for example a headset instead of a fixed phone) are a tangible result of change and are used to make sense of it.

Discussion

In this study, we focused on change narratives. Namely, on how organizations and their members make and give sense to change in the context of digitization. By studying five cases of NWW implementation narratives, we identify a coordinated framework of actants involved in the change process. By using the actantial model of Greimas (1966), our study sheds light on the structured relationships between actants and on how the roles played by the actants might evolve over time.

Our study provides interesting insights about the implementation process of "New Ways of Working". Our results show that NWW is a polysemic concept that can be developed in many different ways. This echoes the lack of consensus identified in the literature whereby authors emphasize various features of the NWW (De Leede and Kraijenbrink, 2014). NWW has not yet been homogeneously defined, neither in academic literature nor in corporate practices. Depending on the actants implicated in the change process, the definition of NWW might vary a lot. It also depends on the change process phases and dynamics. While NWW is often a relatively vague concept at the beginning of the change process, the notion gets more precise – even if it may include multiple objectives or pillars - in the later stages of the implementation process. This is particularly interesting with respect to the role played by technology. When NWW is assimilated to the general trend of digitization at first, technology takes a less important place in the next steps to becoming one of the (many) components of a global change project, which includes wider considerations than only technology. Our case studies show that technological artifacts and practices may embody the change and make it tangible – a key factor in leveraging sensemaking. This is consistent with studies investigating material sensemaking (Bakke and Bean, 2006) that highlight the capacity of some artifacts to "give sense" to organizational change (Hultin and Mähring, 2017; Stigliani and Ravasi, 2012). In line with the tenants of the material turn, our study highlights the entanglement (Barad, 2003) of material and discursive practices: both play a crucial role in creating the organization. Focusing on material-discursive practices, we join Orlikowiski and Scott (2015) in pointing out that both materiality and discourse enact the world. In our case, both the narratives (societal trends of digitized organizations and societies) and artefacts (smartphones, apps or software) help give sense to the change process and make change effective.

Our second contribution lies in highlighting the usefulness of Greimas' actantial model for studying organizational change narratives in another context than mergers and acquisitions

(Boudes and Laroche, 2009; Demers et al., 2003; Gertsen and Søderberg, 2011; Søderberg, 2006). Greimas' actantial model is valid to develop a comparison between cases. For example, two different kinds of NWW implementation situations were identified, depending on targeted outcomes (NWW in itself or as a means to an end). Roles and relations defined by the model help structure narratives of change and identify similarities and differences among multiple cases. While this characteristic of Greimas' model has mainly been used to give a polyphonic rendition of narratives (Demers et al., 2003; Gertsen and Søderberg, 2011; Søderberg, 2006), we posit that it can also provide very useful method to compare different cases in the same structured manner. The axes of Greimas' model also contribute in describing the finality of the relationships between actants (desire, communication, power), which are particularly useful in a sensemaking approach. In a longitudinal perspective, the model also allows for a more accurate representation of role evolution of specific actants. Greimas' model also helps identify the central roles of non-human actants (such as technology) in the process, a key part in developing a material-discursive approach of sensemaking.

Our study has several limitations, mainly methodological in nature. Our research might suffer from a discursive bias, as we have mostly collected data through interviews and not direct observations. Moreover, we have built the company main narratives on the basis of narrative interviews (Søderberg, 2006). Narrative interviews entail the risk of manipulation by interviewees who select and filter narrative elements. Another risk is that the interviewees might shape the narrative through the lens by which they view the reality (Søderberg, 2006). We limited both of these risks by interviewing multiple people in order to develop a more complete and global view of the whole narrative in every company. Another limitation lies in the fact that the companies we studied are advertising their NWW implementation. Indeed, we participated in numerous presentations given by key actors (HR directors, change leaders) who were sharing the story of their company to other enterprises. As four of our five cases are about companies from the same NWW network, there is a risk that the influence of the community norms and narratives might interfere and shape members discourses.

Conclusion

This study investigated New Ways of Working implementation within five large Swiss companies. Our results highlight the variety of meanings and realities associated to NWW and the implications on change management and more particularly on sensemaking. By

unraveling the multiplicity of actants involved in a change process and the material-discursive practices used to foster sensemaking, our study emphasizes the complexity of change and the need to take into account numerous factors. The use of Greimas' actantial model played a key role in structuring our cases and in identifying human as well as non-human actants, their roles and relationships. More specifically, our study showed that technology was widely used as a rhetorical progressive discourse, but was also materialized in artifacts and practices. This advocates for a material-discursive approach on how sense is made for technology in organizational change processes. Further research could use Greimas' actantial model to investigate more deeply into how materiality and discourse are entangled and how they co-develop work practices.

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IV. Implementing self-service technologies: not without competition!

Abstract

Purpose – Self-Service Technologies represent an important transformation for retailers. Adopting an organizational change management perspective, the aim of this research is to provide an understanding of the mechanisms supporting SST implementation by focusing on change narratives. As such, this study aims at identifying the main actors of change, the discourses they are employing and the role technology plays in SST implementation.

Design/methodology/approach – The paper is based on two extensive case studies of SST adoption by leading retailers in a Western European country. The analysis is based on a material-discursive approach using Greimas actantial model to identify actors' roles in the implementation process.

Findings – Results highlight the key role of technology and organizational identity as legitimizers of the change process. The findings also emphasize the role of competition in justifying change.

Research limitations/implications – Due to the specific situation of the market in the country of study (both retailers share 70% of the grocery market), this research offers a textbook example of the role of competition in technological change. This helps to understand the role of competition in technological change.

Originality/value – This study explores the implementation of Self-Service Technologies in two competitors and unravels the process of change in two related setups, offering a comparison as well as an association of cases.

Keywords Retailing, Self-Service Technologies, Greimas, Actantial Model, Material-discursive practices

Paper type Research paper

Introduction

Over the past few years, many new technologies have emerged in organizations, media, and scientific literature referring to digitization. Retailing has also been affected by these major changes and has undergone numerous transformations over the last few years (Hagberg et al., 2016), including areas such as mobile shopping (Gross, 2015; Kourouthanassis and Giaglis, 2012), mobile payment technologies (Bailey et al., 2017; Chen, 2008; Schierz et al., 2010) or new forms of checkout (self-scanning and self-checkout) (Demoulin and Djelassi, 2016; Lee, 2015; Meuter et al., 2000).

Self-scanning and self-checkouts are Self-Service Technologies (SST) that allow clients to perform tasks previously carried out by employees (Anitsal and Paige, 2006; Meuter et al., 2000, 2005). SST provide new services for clients and help reduce personal costs (Meuter et al., 2003), as clients become "partial employees" (Hilton et al., 2013; McWilliams et al., 2016). Having said that, ease of use and utility of SST is crucial for their adoption by clients / partial employees (Curran and Meuter, 2005). Studies focus on identifying the impact of SST on inventory (Beck, 2011), on evaluating SST service quality (Anitsal and Paige, 2006; Lee, 2015; Orel and Kara, 2014), or on understanding consumer attitudes towards SST, their experiences with SST as well as how to foster consumer adoption (Curran and Meuter, 2005; Demoulin and Djelassi, 2016; Hilton et al., 2013; Kallweit et al., 2014). However, Di Pietro and colleagues (2014) insist on the importance of considering employees' opinion in further studies. Indeed, SST implementation (as a service innovation) represents major challenges for retailers in terms of organizational change (Den Hertog et al., 2010).

Organizational change in retail has been studied from various viewpoints. There has been a stream of research led on innovation (Hristov and Reynolds, 2015; Randhawa and Scerri, 2015). In addition, some scholars have also adopted an organizational change lens, focusing on changes in technology (Reynolds, 2015), in culture (Sonenshein, 2010), in management methods (Jaca et al., 2012) or in services (Tax and Stuart, 1997). Research on organizational change often focuses on evaluating the outcome and on detailing the steps and components of a change process (Kanter et al., 1992; Kotter, 1996). However, scholars suggest studying the context of change as well as the discourses in a change process, by emphasizing the importance of narratives during change (Doolin, 2003; Dunford and Jones, 2000; Morgan and Sturdy, 2000; Vaara et al., 2016). The interest of studying discourses and narratives in the context of retail has been pointed out in the literature (Gilliam and Rockwell, 2018;

Messeghem and Fourquet-Courbet, 2013; Sonenshein, 2010). New trends in organization studies invite research to not only focus on discourses but also to evaluate material components in organizational setups, in particular when it comes to studying technology in organizations (Cecez-Kecmanovic et al., 2014; Cooren, 2015; Kallinikos et al., 2012; Leonardi and Barley, 2010). This stream of research posits that technological artifacts are not inanimate objects but rather that they play an active role in the construction of situations. As such, scholars are advocating for a material-discursive view of organizational practice (Hardy and Thomas, 2015; Hultin and Mähring, 2016; Orlikowski and Scott, 2015).

Given the fundamental role of digitization in modern economies and more specifically in the retail sector (Hagberg et al., 2016), this study focuses on self-scanning and self-checkouts as a specific case of digitization. More precisely, this research investigates the material-discursive practices of managing organizational change. The aim of this research is to provide an understanding of the mechanisms supporting SST implementation by focusing on change narratives. The analysis uses Greimas actantial model (1966) in order to structure the roles and relationships between actors in the change process. This helps to identify the main actors of change, the discourses they are employing and the role technology plays in said change process. This study consists of a double case study among two leading retailers (and competitors) in a Western European country. This research aims to answer the following questions: How is digital change unfolding and what are the key messages and actors of digital change? This study is based on a narrative analysis (Elliott, 2005; Riessman, 1993) using Greimas' actantial model (1966) and integrating materiality (Leonardi and Barley, 2008, 2010; Orlikowski, 2007; Orlikowski and Scott, 2008) in order to study material-discursive practices (Hardy and Thomas, 2015; Orlikowski and Scott, 2015) in change management. Using Greimas' actantial model to analyze organizational change makes it possible to evaluate technology and other "non-human" actors as active participants in the change process.

In the following, we will first present our theoretical framework, focusing on organizational change and narratives. We will then develop the material-discursive approach, and Greimas' actantial model as a tool for analysis. We will present our study and its results and discuss its managerial implications as well as its contributions.

Theoretical framework

Organizational change is a fundamental theme in organization studies (Pettigrew et al., 2001; Van de Ven and Poole, 1995). Research usually traces back the first management thought about organizational change to Lewin (1947) or Bennis and colleagues (Bennis et al., 1961). Over the years, many studies have been led using different perspectives. Scholars have studied organizational change by focusing on narratives, arguing that change is constructed by actors through discourse (Buchanan and Dawson, 2007; Doolin, 2003; Heracleous and Barrett, 2001; Morgan and Sturdy, 2000). In this view, organizations and their members develop discourses and narratives around change that allow for information exchange as well as a construction of reality (Heracleous and Barrett, 2001).

Narratives offer a summary of events by organizing them in a sequenced manner (Labov and Waletzky, 1997), such that they follow a plot (Polkinghorne, 1995, p. 5). Narratives entail temporal (Elliott, 2005), causal (Boje, 2001; Buchanan and Dawson, 2007), emotional (Ricoeur, 2004), and moral – explicitly or implied – (Morris and Browning, 2012, p. 32) dimensions. As such, narratives organize events in an integral story, using causality to add consistency to said story (Elliott, 2005) .

Vaara, Sonenshein and Boje (2016) list six key characteristics of organizational narratives: (1) narratives are temporal and discursive constructs that allow one to make and give sense to events (Vaara et al., 2016, p. 498),(2) they are occasionally fully formed stories – in comparison to classic narratives – (Vaara et al., 2016, p. 498), (3) it is necessary to study the way these narratives are produced and consumed (Vaara et al., 2016, p. 498), (4) they are inscribed in a complex structure consisting of a macro-context (societal narratives) and micro-context (discourses and rhetorical components) (Vaara et al., 2016, p. 498-499), (5) they are not only linked to oral language and written text but can also consist of other media (audio and video) (Vaara et al., 2016, p. 499), (6) and they play a fundamental role in managing stability and change within organizations (Vaara et al., 2016, p. 499).

Multiple studies have focused on change narratives (Brown and Humphreys, 2003; Reissner, 2011; Sköldberg, 1994; Sonenshein, 2010), pursuing various goals: identifying the type of story (Reissner, 2011; Sköldberg, 1994), the evaluation that is being made (Sonenshein, 2010), and the reframing by employees (Sonenshein, 2009). Studies have also identified the dialogical and polyphonical construction of narratives (Belova et al., 2008; Boje, 1991; Buchanan and Dawson, 2007; Carlsen, 2006; Sonenshein, 2010). Technological changes can

cause uncertainty and may imply organizational change (Volkoff et al., 2007). As such, discourse and narratives help legitimizing new ideas regarding technology (Nielsen et al., 2014) and inscribing them into an organizational context (Alvarez and Urla, 2002).

Scholars have recently advocated for a greater focus on material components in organization studies (Cooren, 2015; Kallinikos et al., 2012). This material turn finds its roots in Barad's seminal article on the relationship between matter and discourse (Barad, 2003). Barad defines matter as "an active participant in the world's becoming" (Barad, 2003, p. 803), further developing the idea that components and their reality emerge through action and that discourses and matter are thus "entangled" (Barad, 2003). Hardy and Thomas (2015) and Orlikowski and Scott (2015) build on this entanglement and suggest that discourse and materiality are related (Hardy and Thomas, 2015; Orlikowski and Scott, 2015). Hardy and Thomas (2014) for example study this entanglement by examining practices that are both discursive and material (Hardy and Thomas, 2014). Orlikowski and Scott (2015) further investigate these material-discursive practices and posit that they "configure reality" (Orlikowski and Scott, 2015, p. 700) and are thus performative. From an organizational change management perspective, studying material-discursive practices therefore means focusing on how these practices embody and foster change through discourses and material components.

A useful tool to investigate material-discursive practices is Greimas' actantial model (1966). This model has been widely used to study organizational narratives (Demers et al., 2003; Gertsen and Søderberg, 2000, 2011; Søderberg, 2006). It offers a structure to analyze narratives by defining six fundamental roles: subject, object, sender, receiver, helper, and opponent (Greimas, 1966). The model also defines the relationships between actors: the subject is on a quest toward the object (axis of desire); the sender legitimizes this quest and the receiver judges it (axis of transport or communication); the helper provides support to the subject and the opponent tries to prevent the subject from following their quest (axis of auxiliary support or power) (Gertsen and Søderberg, 2000).

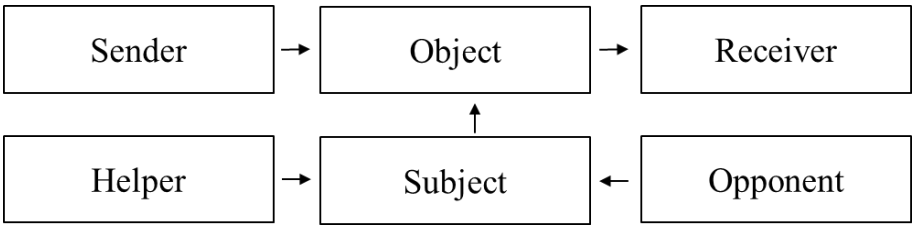

Figure IV 1: The actantial model (Greimas, 1966)

Greimas' actantial model is also consistent with the material turn in organization studies, as it defines actors in a very broad sense (Bencherki, 2017). Following Greimas (1966), actors can be human beings, but also objects, or ideas – in line with (Callon, 1986). Using Greimas' actantial model in a material-discursive approach implies taking into account a wider range of discourses and actors (not only human beings) to analyze how change unfolds. In this view, the organizational change narrative is co-authored by human and non-human beings alike, such that each plays various roles in the change process.

Methodology

This research focuses on the implementation of Self-Service Technologies as an important organizational change. The purpose of this study is to understand how organizational change unfolds in the context of digitization, with a focus on the key actors and discourses throughout the process. This research consists of a double case study among two leading retailers in a Western European country (which shall be referred to as Retailer A and Retailer B in the following). It is important to note that there is a strong competition taking place between the two retailers in the country of study, as Retailer A and Retailer B share about 70 percent of the grocery market. Both present the same hierarchical structure with headquarters, regional headquarters and finally stores. Headquarters provide strategy, resources, and support. Regional headquarters benefit from a certain degree of independence when it comes to applying corporate strategy – most notably whether to implement self-checkouts or not. These two specific companies were selected due to their leading position in the national market. This made it easier to compare Retailer A and Retailer B as the context is the same. SST implementation was chosen as the object of study due to of its affiliation to the trend of digitization. This study is based on 20 interviews with: training (2) and IT managers (2), store managers (4), cashier managers (4) and cashiers (8). For both retailers, the interviews were conducted in regional distributions centers (2 for Retailer A and 2 for Retailer B) and in stores (12 in three supermarkets for Retailer A, 4 in one supermarket for Retailer B). Training and IT managers were met at the regional distribution center. Store managers, cashier managers,

and cashiers were interviewed in their stores. Interviews were recorded and transcribed. Internal training documentation as well as FAQs and guidelines for implementation were also gathered for both organizations. This sampling allowed the researchers to reconstruct collectively negotiated narratives (Buchanan and Dawson, 2007; Sonenshein, 2010).

The interview guide was built on Sonenshein's study (2010, p. 507-508) and translated into French. As advised by Sonenshein (2010), different interview guides were used for managers and coworkers. The interview guide also included questions about the content, context, and process of change based on Pettigrew (1987) for managers and coworkers. With this in mind, this research aims to answer the following questions: how is digital change unfolding; what are the key messages and actors of digital change? Greimas' actantial models were developed for each organization at each step of the change process (Buchanan and Dawson, 2007), based on a thematic analysis of the interview transcripts and of the internal documentation. The analysis grid consists of two axes: one axis displays the roles of Greimas' model for each phase and the other axis, the main actors (Table 1).

		Technology	HR	IT Service	Company	Employees	Customers	Competition	Partners / Consultants
First phase	Sender								
	Object								
	Receiver								
	Helper								
	Subject								
	Receiver								
Second phase	Sender								
	Object								
	Receiver								
	Helper								
	Subject								
	Receiver								
Third phase	Sender								
	Object								
	Receiver								
	Helper								
	Subject								
	Receiver								

Table IV 1: Analysis grid

This structured way of analyzing organizational narratives helped identify similarities and differences between both cases. The results are presented in two parts. The first part summarizes both cases using actantial models and interview excerpts. Both cases are presented in two steps, the first one being the situation before implementation and the second one being the evaluation at the end of the change process. The second part of the results builds on the actantial schemes previously developed and focuses on technology and organizations, two actors that play a central role in the change process. Building on the first part of the results, it examines more deeply what their specificities are and how they are related.

Implementing self-service technologies at Retailer A

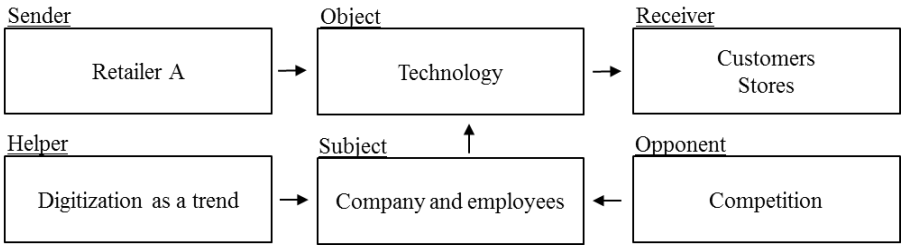

Figure IV 2: Beginning of the change process, Retailer A

The narrative first legitimizes the need for change. The external context is getting more complex, with stronger competition (mostly with the arrival of hard discounters in the country). The internal context also justifies the need for change: there are waiting lines at the cashiers which result in unhappy customers. Retailer A (sender) thus needs to find a solution to solve these two issues of facing competition *"There's more and more competition. You can't have cashiers sitting all day long while there's work in the shelves"* (Store manager) and satisfying customers *"As a leader in the market, Retailer A wants to be the best everywhere, offering the best service to customers"* (IT manager). To solve these problems, the company and its employees (subject) must implement self-service technologies (object) as technology will reduce waiting lines and rationalize the workforce. At the same time, interviewees make it clear that the company is not pursuing a cost-cutting strategy: *"The goal isn't to fire people; it's to offer a better service to customers. That's the first thing."* (Store manager). Thus, customers are identified as the main receivers in the narrative: it is to satisfy customers that SSTs are implemented: to provide them with a better service. The stores are also said to benefit from SST implementation, as it will optimize the workforce. The narrative relies on societal trends (helper) to further legitimize change. The whole concept of

digitization is often invoked, and metaphors such as "not missing the train" or "sound of the future" lend to legitimizing the need for change: *"You've got to hop onto the train when it's coming. Retailer B already has its self-checkout. Here, at Retailer A, we were a bit late. So yeah, either you're in, or you're out…"* (Store manager). At the same time, competition is depicted as opponents in the narrative: Retailer B has already implemented SST; other retailers (mainly hard discounters) are battling against technology by offering lower prices than Retailer A.

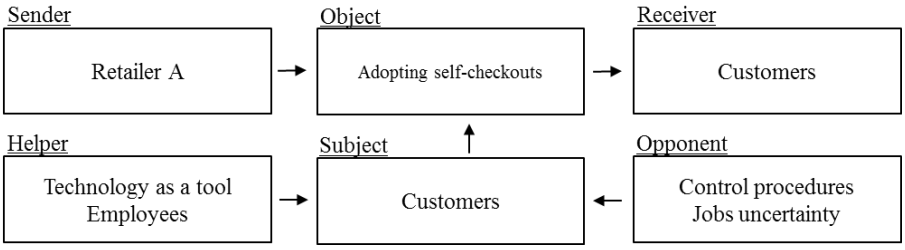

Figure IV 3: Evaluation of the change process, Retailer A

At the end of the change process, the emphasis is put on customers (subject) and on their adoption of self-checkouts (object). As highlighted in the narrative, customers' adoption is crucial to the success of self-checkouts implementation: *"The self-checkout system represents a huge change for customers; the first thing is to convince them that the system works"* (IT manager). Customers are now in charge of the quest of reducing their own waiting time and of improving service quality and as such also play the role of receivers. Retailer A still plays the role of sender, as it puts its trust in customers: *"There's a thing that customers might not see. It's that Retailer A puts a lot of trust in its customers when it provides customers with such a system. The basic assumption is that Retailer A's customers are honest people"* (HR manager). Employees are helpers in this phase: *"We're here to help customers when it's the first time they use self-checkouts or when something doesn't work"* (Cashier 1). Technology as well plays the role of helper, embodied in the self-scanning and self-checkout devices: *"It's well-explained on the device; we don't have to give a lot of advice"* (Store manager). However, in this scenario, control procedures and job uncertainty arise as the opponents. The system generates random control procedures at self-checkouts, which moderates the trust that Retailer A puts in its customers and is depicted as an opponent. Moreover, it undermines customers' interest in using self-checkouts because controls are very time-consuming. As such, these controls are depicted as a limit in the adoption process. Another limit is the uncertainty regarding cashiers' jobs. Although Retailer A assured that SST implementation would not lead to employment reduction, interviewees say that some customers remain

suspicious and will not use self-checkouts for fear that it might lead to unemployment / job uncertainty.

Implementing self-service technologies at Retailer B

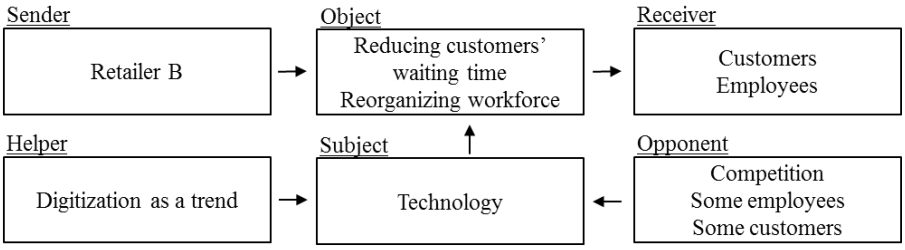

Figure IV 4: Beginning of the change process, Retailer B

As in Retailer A's case, Retailer B (sender) faces the problem of waiting time at the checkouts. Technology is depicted as the subject that will solve this problem by reducing waiting time: *"To summarize, I would like to say this: let's leave technology to do the tasks that we don't like"* (Training manager). In the narrative, two receivers are identified: customers and employees. Customers will benefit from waiting time reduction: *"For us, it allows to smooth the customer flow during the day and to better absorb peak effects"* (Training manager). Employees will be impacted by workforce reorganization. It is important to note that the company has offered guarantees regarding job security, ensuring that all cashiers' jobs are safe. Nevertheless, employees will have to develop new skills in order to adapt to this new technology. Digitization and the company itself are helpers in the narrative. Digitization appears as a global technological trend that impacts every company and every human being: *"That's something new, and we have to deal with technology. We don't have much choice…"* (Cashier 1). The trend is global, as other companies have already implemented self-checkouts. Customers are thus supposed to be familiar with these systems and are expected to have some expectations regarding the development of these tools. Doubts and fears from employees and customers are identified as the main opponents. Some customers as well as some employees fear that cashiers will be replaced by self-checkouts and therefore do not want to use them or to teach customers how to use them: *"When the system was arriving, some cashiers were saying: 'But we're going to lose our jobs', the same discourse echoed by the clients"* (Administrative manager). Another opponent is competition and more precisely Retailer A that is also hopping on the race of technology implementation: *"I mean, we install self-scanning technologies, it's a bit of a race with Retailer A, we're both doing the same thing..."* (Cashier 2).

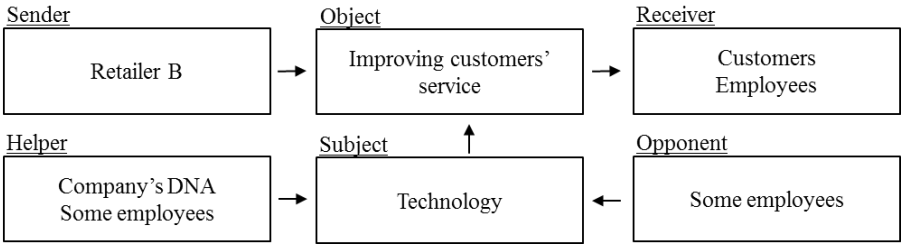

Figure IV 5: Evaluation of the change process, Retailer B

At the end of the change process, technology plays the role of subject: the self-checkouts are now performing the tasks quite autonomously, with a little help from the former cashiers: *"The new cash register works on its own, but yeah it's clear that we have to help it from time to time"* (IT manager). Technology performs the tasks and improves customers' service (object): *"To attract customers, we have to make them comfortable. Today it's true customer service, because wait times are much better managed"* (Store manager). Retailer B is the sender throughout the whole narrative. In this part of the story, the emphasis is put on the innovation that has been brought on by the company. Customers and employees are both receivers of the quest, as customers benefit of the improved service. Yet, employees have to also adapt to this new service and learn how to handle new tasks, highlighting their role of helper too. In addition, employees have to work with technology to make it efficient and useful. Their role is crucial and their behavior is led by the company's DNA, which makes them act toward customer satisfaction: *"My job remains the same; I'm here for the customer, same thing as at the cash register"* (Cashier 2). In the narrative however, some employees are depicted as opponents. The emphasis here is not on resistance but on the lack of fit with the skills needed for the job: *"There's a specific profile: all cashiers can't go working at self-checkouts"* (HR manager).

The roles of technology and organizations

The first part of the results presented the narratives associated with SST implementation in both cases by showing the network of actors involved in the change process and their roles. The second part of the results will focus on technology and organizations, more specifically what the multiple roles of technology are. As for organizations, this part identifies the roles of Retailer A and Retailer B as institutions in their own narrative and in their competitor's narrative. This second part of the results also highlights the relationships between technology and institutions in the change process.

Technology plays a central role in the change process. Depending on the stage (beginning or end of the process) and on the case (Retailer A or Retailer B), the roles might differ. In Retailer A's case, technology shifts from the role of object to the role of helper. The first goal is to implement technology, yet by the end of the process, technology is just here to help customers perform the service. In Retailer B's case, technology remains the subject throughout the whole case: it is depicted as a problem solver in the beginning of the change process and becomes the sole service producer by the end of the change process.

Interestingly enough, what is referred to as "technology" varies between the beginning and the end of the process. At the beginning of the change process, technology is merely understood as a global concept linked to digitization in an idea of progress. Discourse over technology is used to anchor change in reality by giving examples of other digital transformations that have already occurred. At the end of the change process, technology is more specifically perceived as material artifacts (self-checkouts and self-scanners). These material artifacts only appear later in the narrative – once they have been set up in the stores. As such, technology is embodied in tangible artifacts that actually carry out tasks or help customers carry these tasks. This presents the evolution from an abstract and global discourse on technology to a material embodiment of technology. Thus, technology evolves in its roles over the change process and in its reality from sole discourse to material artifact, further highlighting the multi-faceted reality of technology and its evolution from anchoring discourse to producing/assisting artifact.

Retailer A and Retailer B play both the roles of sender (in their own narrative) and of opponent (in their competitor's narrative) and as such, are highly anthropomorphized in the change process. Retailer A "knows what she is doing" and is almost a parental figure: most of the cashiers have worked at this company for a very long time, ranging from 5 to 35 years, and unanimously say they are very thankful to Retailer A. Moreover, the founder and his ideological values are often recalled. Retailer B is also anthropomorphized through its headquarters and regional headquarters. Considering that both retailers have guaranteed they would not cut jobs due to SST implementation, both companies are therefore presented as "mighty kings" in their own narrative: as caring and trustworthy institutions. Their legitimacy as national leaders and as trustful companies plays a crucial role in convincing employees that SST implementation is necessary and unavoidable.

Retailer A and Retailer B also appear in each other's narrative. Both retailers are the undisputed leaders of the national grocery market, sharing altogether about 70% of the grocery market and both companies have also implemented SST at around the same time. Both cases acknowledge the role of the main competitor in the decision to implement SST and build on the figure of their main competitor to legitimize the need to change. Competition between both retailers is quite fierce and both retailers compare each other at each stage of the change process. Whether it is to compare the feature of their self-scanning and self-checkout systems or their prices, both companies are always creating their image in comparison to their competitor. The competition is used to reinforce the identity of both retailers in their own case as "the good one". Retailer A and Retailer B are depicted as well-meaning and well-thinking people in their own narratives. They will choose what is best for the company and its customers and will also take into account what is best for its employees.

However, this anthropomorphization of companies is not limited to a "mighty king" role but is also developed through an "unspeakable villain" role in the competitor's narrative. Indeed, when Retailer B is mentioned in Retailer's A narrative (and the other way around), interviewees depict their main competitor as "the bad guy" even trying their best to avoid using the name of the competitor in the interviews. They refer to it as "our direct competitor" or use other strategies to avoid saying the other company's name, emphasizing this "unspeakable villain" role.

This reciprocity of roles (between sender and opponent) in both cases highlights the importance of competition in the change process. Moreover, this specific situation where the competition is very clearly designed allows for an emphasized anthropomorphization of actors, be it the company or its competitor.

Technology and companies play a central role in change and the way they are legitimized in the narrative is crucial in the implementation process. Self-service technologies are given legitimacy because of their association to the trend of digitization. For both retailers, their legitimacy is built on their leadership position and on their embodiment of caring. There is also a reciprocal mechanism of legitimization. On one hand, the fact that both companies are considered as "digitized" comforts them as leading and forward-thinking companies. On the other hand, their leadership position and their reputation provide guarantees of good decision-making and investment capabilities, especially when it comes to investing in digital technologies.

Discussion

This research consists of two case studies within the field of retailing to answer two main questions: How is digital change unfolding and what are the key messages and actors of digital change? This study focuses on change within the trend of digitization and highlights the role of technology and of institutions as the main actors in the change process. By analyzing parallel SST implementation, this research offers a renewed perspective on organizational change, focusing on material-discursive practices.

This study's first contribution is that it evaluates the parallel evolution of competitors' narratives on a similar topic and reveals how change unfolds in two similar setups. This parallel setting of two similar cases makes it possible to identify similarities and differences in the material-discursive practices and the reciprocal role of certain actors in the narrative. The particularity of this study is that it focuses on two leaders active in the same market, whereby previous studies have either focused on the narratives of one single organization (Messeghem and Fourquet-Courbet, 2013; Sonenshein, 2010) or on two competitors' implementation in a less schematic market (Aoyama, 2007; Colla and Dupuis, 2002). Investigating competitors' narratives in an almost duopolistic market allows for a better understanding of the role of competition in the change process and of the mutual depiction of the competition as an opponent to facilitate organizational change.

This study provides an empirical analysis of material-discursive practices, thus responding to the call of Hardy and Thomas (2015) and Orlikowski and Scott (2015) for more empirical research on this topic. Moreover, this study provides evidence of the usefulness of Greimas' actantial model to study material-discursive practices by examining discourses' and material components' roles in the change process. The analysis more specifically identifies two crucial actors in both narratives and their duality: technology and companies. The anthropomorphization of companies (as a "mighty king" in their own narrative and as an "unspeakable villain" in their competitor's narrative) and the duality of technology (between a global discourse over digitization and material artifacts), highlight the importance of both aspects of materiality and discourses involved in the change process. This emphasis on material-discursive practices allows for a better understanding of the multiplicity of actors and strategies used in a change process.

From a managerial perspective, this study highlights the need to focus on anthropomorphization of the organizational identity and to relate it to technological change in

order to legitimize the change process. More precisely, three specific practices emerged from our study. First, organizational identity can be built through anthropomorphization and by insisting on “mighty king” roles in discourses. Second, organizational identity can benefit from competition. Using the competition to emphasize its own specificities proved to be a successful strategy in developing a stronger corporate identity and to emphasize the need for change. Third, organizational identity can be used to legitimize change through the company’s DNA: SST implementation is justified by bringing back to mind corporate values (for example “customer is king”) and prior organizational changes and more specifically, prior technological innovation. Our study suggests then that building on identity to foster organizational change can be reached by the organization portraying itself as a hero and the competition as a villain, through the development of change as opposed to what the competition does, and by an emphasis on the technological innovation as part of the company’s DNA. Moreover, this study highlights the need to acknowledge the multiple realities of technology when undergoing technological change. Discourses based on societal and technological trends can be useful to legitimize change in a first step. However, in the second step, there is a need to materialize change through artifacts and integrating these in practice. This material-discursive flow of technological change is crucial in order to foster change and to guarantee continuity throughout the change process.

Two concerns may be drawn from this research. The first concern can be called a “country effect”: indeed, the situation of grocery retailing in the studied country with two leaders that share about 70% of the market is highly specific. In other countries or in other areas of retailing, the competition might be a lot more fragmented and competition would not be identified as precisely as in this case. This case however offers a textbook example of the aforementioned phenomenon as it helps to model the situation of simultaneous technological change within two leading retailers and how competition is used to facilitate change. Other types of organizational changes could be studied in the same setup to verify the role of competition.

Another concern within our study lies in the authors of the narratives. Indeed, we elaborated the collectively negotiated narrative based on interviews that we led with numerous employees within the organizations. However, our results identify customers as important actors in the change narrative. Studies on SST even consider customers as “partial employees”. Unfortunately, we could not interview “partial employees” during this study. Therefore, further studies should also consider this particular group of actors and their role in

the narrative. Moreover, further studies could focus on “partial employee” integration and their interaction with regular employees and technology.

Conclusion

This study focused on two cases of self-checkouts implementation, with an emphasis on the process of organizational change but more precisely on how change needs to be led by discourses and material components. The results identify the main actors of the change process and the roles they play. Using Greimas’ actantial model offers a structured way of understanding how change unfolds and helps highlight the mutual reinforcing mechanism of technology and companies as well as the legitimization process they jointly participate in. The importance of building on competition and in contrast to competition to foster technological change is also emphasized.

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V. Conclusion

When I first started studying digitization a few years ago, I was astonished by the lack of global knowledge on this phenomenon. As a matter of fact, everyone knew a few buzzwords or could share an example of digitization in a very broad definition, never questioning the meaning behind this and how it could affect people's lives, jobs and organizations. The aim of this dissertation was therefore to understand a) the meaning of digitization, b) how it influences organizations, and c) how digital change unfolds.

Before formulating a valid definition of digitization, I had to understand that digitization was – to some extent – a catch-all term. Indeed, a lot of different phenomena were related in some way or another to digitization. That is something that has already been stressed in the introduction but that has played a prominent role in the way this dissertation has been conceived and conceptualized over the last few years. The choice has been to focus on specific phenomena that are part of digitization: digital communication, New Ways of Working, and Service Encounter 2.0 to get a more global and detailed understanding of digitization and the way it unfolds in organizations. The underpinning idea was to triangulate information and knowledge on digitization from three different phenomena in order to provide a more accurate definition and analysis of the digital transformation process.

This dissertation makes three main academic contributions to the HR and change management literature about digitization. First, it offers a categorization of literature on digitization and HR management. Second, it contributes to literature on change management by providing empirical research on material-discursive sensemaking and on material-discursive practices. It also offers an analysis tool for studying digital change. Third, it contributes to literature on NWW and on SST by studying implementation processes. After detailing the contributions of this doctoral work, I will give a comment on this doctoral work by going back to the research questions that I have had on my mind for the last few years.

1. Contributions

1.1 First contribution: mapping the literature on digitization and HR management

The dissertation contributes to literature on digital HR management by offering a way of categorizing literature on said topic. As the literature review of the first article shows, the literature on digital HR management is very diverse, with roots in different disciplines and focusing on different issues along with various perspectives. The first article identifies five categories (employer branding, talent management 2.0, competences management 2.0, regulation, and diagnosis of digitization's impacts) that help to structure research on digital HR management.

Research on employer branding finds its roots in communication and focuses mostly on social media, e-reputation or employer attractiveness (Brecht and Eckhardt, 2012; Charest and Doucet, 2014; Kissel and Büttgen, 2015; Sivertzen et al., 2013). Research on talent management 2.0 focuses on the role of digital communication tools (such as social media or enterprise social networks) in recruitment and talent management (Allden and Harris, 2013; Berkelaar and Buzzanell, 2015; Charrière et al., 2014; Girard et al., 2014; Nikolaou, 2014; Ross and Slovensky, 2012; Roulin and Bangerter, 2013). Research on competences management 2.0 mostly includes prospective studies on the future of work by challenging specific jobs and envisioning new ones (Alexandre-Bourhis et al., 2013; Benson et al., 2014; Boboc and Metzger, 2009; Stenger and Coutant, 2011). Research on regulation focuses on legal questions and on employees and recruiters' behaviors (Jacobson and Tufts, 2013; Mainiero and Jones, 2013). It also includes research on internal regulations and policies framing the use of digital communication tools (Krüger et al., 2013). Research on diagnosis of digitization's impacts focuses on trends and technology use and their implication on work environment (Alfaro and Watson-Manheim, 2015; Charoensukmongkol, 2014; Leftheriotis and Giannakos, 2014; Moqbel et al., 2013; Silva and Ali, 2010).

1.2 Second contribution: providing empirical studies of digital change and offering a structured analysis tool

The second and third articles focus on digital change, with a focus on material-discursive sensemaking for the second article and on material-discursive practices for the third article. Both articles provide empirical studies of digital change using these theoretical lenses to better understand how it unfolds. Material-discursive sensemaking and material-discursive

practices can both be related to the material turn in organization studies which has mostly been developed on a conceptual level. This dissertation offers an operationalization of these theoretical lenses. Balogun and colleagues (2014) advocate for more empirical research on material sensemaking (Balogun et al., 2014). The second article offers an empirical investigation using this lens, highlighting the entanglement of social and material components in the sensemaking process. Hardy and Thomas (2015) and Orlikowski and Scott (2015) stress the need for research on material-discursive and sociomaterial practices (Hardy and Thomas, 2015; Orlikowski and Scott, 2015). The third article thus offers an empirical study on these material-discursive practices by focusing on the change process.

The third article contributes to the stream of research on Self-Service Technologies (SST) by focusing on employees in the digital transformation process, thus answering Di Pietro and colleagues' (2014) call for more research investigating employees' opinion regarding SST (Di Pietro et al., 2014). Many studies on SST focus on customers, how they adopt SST and how they feel about it. Studies on organizational change often stress the key role of middle-managers in the change process (Autissier and Derumez, 2007; Balogun and Johnson, 2004; Currie and Procter, 2002; Rouleau, 2005; Rouleau and Balogun, 2011). In both cases, employees tend to be a neglected population. This study therefore sheds light on the key role of employees in the digital transformation process.

Both articles contribute to research on the very rich stream of research on change management (see Pichault, 2009) by suggesting to use Greimas' actantial model (1966) to study digital transformation (Greimas, 1966) in order to better seize the complexity of change (Savall and Zardet, 2004). Greimas' actantial model is widely used in literature on mergers and acquisitions (Boudes and Laroche, 2009; Demers et al., 2003; Gertsen and Søderberg, 2011; Søderberg, 2006). This dissertation suggests, in line with the material turn, that Greimas' actantial model (1966) is also very useful to study digital transformation. More specifically, it allows taking into account non-human actors (Bencherki, 2017), which are key in a material / sociomaterial perspective. In that way, our dissertation suggests that this model facilitates the analysis of the plot as well as of the actors (human and non-human) involved in the change process and the links they have with each other. The only risk with this model is that it can "over structure" the narratives by imprisoning actors in a role they do not really fit in. The fact that the model only offers six cases is a strong limitation because narratives are rarely this schematic. However, this risk can be mitigated by offering a longitudinal analysis of the narratives (as in article 3), in which the dynamic of actors over the course of the digital

transformation varies. The actantial model offers a very powerful tool to compare narratives most notably in three situations: in a global perspective (to compare different cases); in a longitudinal perspective (to compare the evolution of a story over time); and in a polyphonic rendition of events (to compare different narratives told by different actors).

Article 2 provides an example of how Greimas' actantial model (1966) can be used to compare different cases of digital transformation. In this article, we have opted for an analysis based on the collectively negotiated accounts (Maitlis and Christianson, 2014). Building these collectively negotiated accounts with the help of Greimas' actantial model helps to compare actors and objectives among multiple cases. It offers a very structured analytical tool to compare cases of digital transformation.

To illustrate the longitudinal perspective and the polyphonic rendition of events, I provide hereafter two examples from our cases: the evolution of the story in the case of the regional electricity, water, and gas distribution company in **1.2.1** and the polyphonic narratives in the case of the telecom company in **1.2.2**.

1.2.1 a longitudinal analysis of digital change

Greimas' actantial model (1966) makes it possible to identify the variety of actors involved in the change process, but also to evaluate their roles and the evolution of said roles as the story unfolds. I present here the case of the regional electricity, water, and gas distribution company. Following Buchanan and Dawson (2007, p. 673), the change process is divided into three phases: the beginning (corresponding to the explanation of the need for change), the middle (corresponding to the succession of events), and the end (corresponding to the evaluation of the outcome) (Buchanan and Dawson, 2007).

Beginning

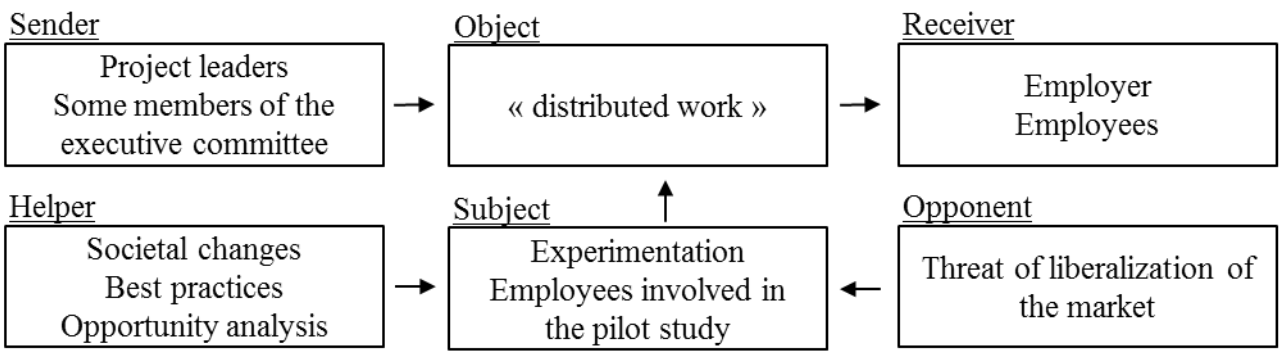

Figure V-1 : A longitudinal analysis of digital change – the beginning

At the beginning of the digital transformation process, the objective of change is defined in rather vague terms. The need for change is built mainly on external elements: societal changes that will help the company justify its need for change (helper) and external threats (particularly a threat of liberalization in one of the company's main markets). The project leaders (senders) are trying to create a momentum over this digital transformation project and manage to convince some members of the management committee. They mostly rely on an opportunity study they have carried out, which stresses the need for change. Leading companies (such as Google or Amazon) are also invoked to justify change. In the first step, they carry out a pilot study on a hundred and twenty employees (120 to be exact). These 120 employees of the pilot phase are the subjects of the change: they are the ones who will start this “distributed work” project. The employees involved in the pilot are also the receivers; “distributed work” is supposed to improve their work-life balance. The company is also supposed to benefit from this project, especially in terms of employer branding.

Middle

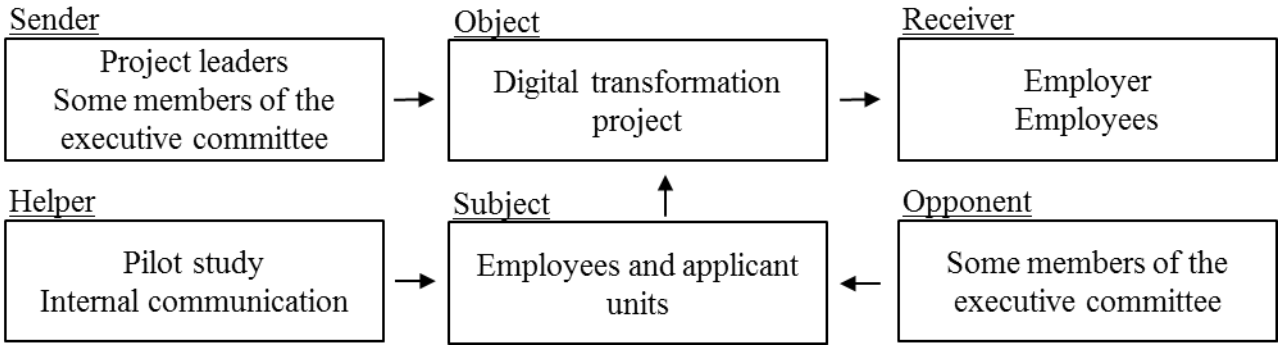

Figure V-2: A longitudinal analysis of digital change – the middle

In the second phase of the change process, the objective is being clarified. The "distributed work" becomes a digital transformation project, and some applicant units are brought into the project. The pilot study and its success help the project leaders in legitimizing the need to continue said implementation. To emphasize this legitimacy, the project leaders held a strong communication system within the organization to highlight the positive points of the project. Having said that, two reasons prevent the company from implementing the project throughout the organization: first, not all jobs are compatible with the digital transformation project and second, in part due to the executive committee, which has set limits to the implementation of the project, despite the success of the pilot study. The executive committee has indeed limited

the scope of the change to units within the company that have applied to the project. In this phase, around a third of the company is brought into the project. This phase is much more structured than the previous as training is provided.

End

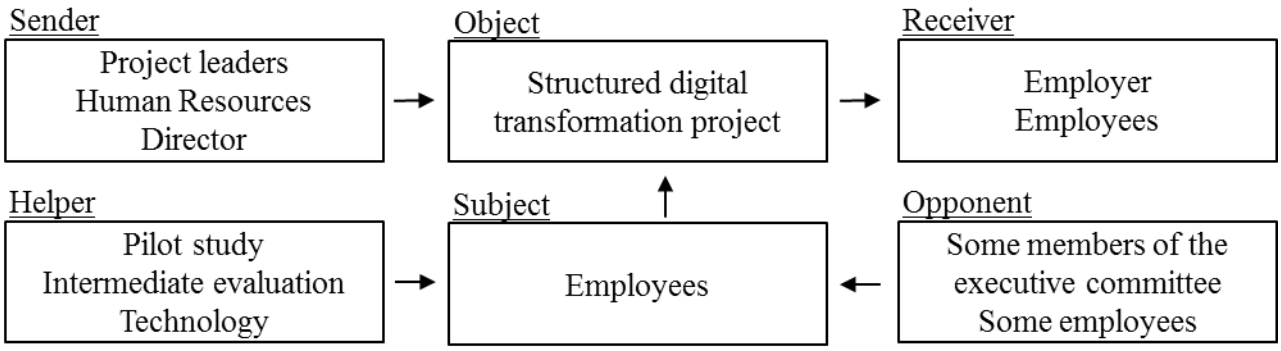

Figure V-3: A longitudinal analysis of digital change – the end

The end of the narrative – as in most of organizational narratives – is an intermediate assessment. Half of the company has been brought into the digital transformation project, while the other half has not. A decision to extend the project to the entire company is still pending. The objective digital transformation is more structured at this stage of the process, with three pillars of change being identified: the spatial pillar with flexible workspaces, the HR pillar with an emphasis on remote working and a new collective labour agreement as well as the technological pillar with a new laptops and smartphones. Over the course of the project, the two project leaders have been joined by the Human Resources Director. They refer to the digital transformation project as a change of corporate culture, with an emphasis on trust, autonomy and responsibility. In this phase, the pilot and the intermediate evaluation of the project help to legitimize the change process. At this step of the change process, technology also plays the role of helper: it is thanks to technology that remote working and flexible working are possible. Nevertheless, the project does not yet convince the entire company as there still remain some doubts about it amongst employees and management.

This case provides an example of a longitudinal analysis of a change process with Greimas' actantial model (1966). The model makes it clear how actors and roles evolve over time. Moreover, the evolution of the objective is also made clear.

1.2.2 a polyphonic analysis of digital change

In management literature, Greimas' actantial model is often used to give a polyphonic rendition of organizational narratives (Demers et al., 2003; Gertsen and Søderberg, 2011; Søderberg, 2006), in order to study how organizational accounts may be similar or different. I provide hereafter an example of how Greimas' actantial model (1966) is helpful to understand the polyphony surrounding digital transformation by presenting three different models and narratives from the perspective of three interviewees from the case of the telecom company: the perspective of the HR manager and project leader, the perspective of a team manager and the perspective of a call-center employee.

HR manager and project leader

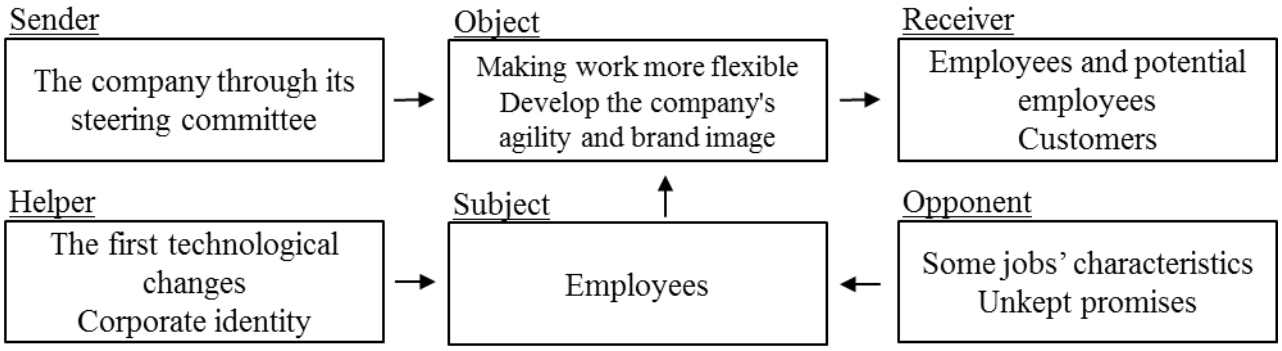

Figure V-4: A polyphonic analysis of digital change – the HR manager and project leader

For the HR manager and project leader, the company – through the steering committee of the project – (sender) wants to make work more flexible, develop agility and have a technological and dynamic corporate image in order to sell products and advice to their customers. This change is therefore aimed at three audiences simultaneously (receivers): employees who can benefit from more flexibility, the company that benefits from productivity and image gains (particularly in terms of employer image) and customers who receive better service from the company. In this HR manager's perspective, this change builds on a technological change from about ten years ago, which consisted in the implementation of a new computerized communication system. Following this first change, other changes were made to gradually transform the "corporate philosophy". The corporate identity of the company (notably its sector of activity and its culture) contributes to the legitimacy of the change by inscribing the digital transformation process into corporate values. Nevertheless, the HR manager clearly identifies the resistance and limitations of the implementation of the project in his company, and more particularly, when it comes to the lack of fit of some jobs with the transformation

project: some technical or support activities take time and attendance constraints, which make it impossible to implement the project. He sees the risk of a split in the organization between those who will be able to benefit from the project and therefore whose work-life balance will be improved and those who will not.

Team manager

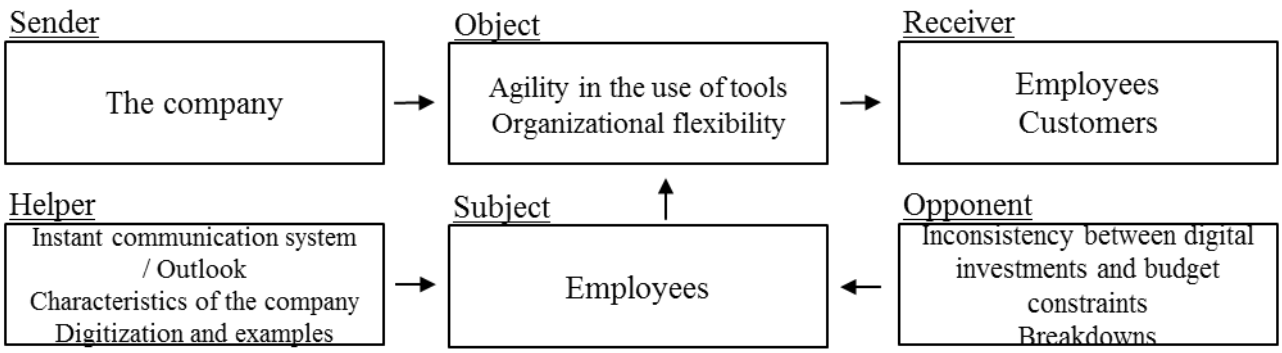

Figure V-5: A polyphonic analysis of digital change – the team manager

For the manager of a team that supervises network installations, the company launched the project to improve organizational flexibility and agility in regards to the use of tools. This rather broad definition translates to his team as implementing remote working. The change therefore aims at a gain in productivity (measured with customer satisfaction) while improving the work-life balance of employees. This manager traces back the origin of the change project to when the company started using Outlook. He argues that this was the first step toward reachability. He also emphasizes the role of corporate identity (at the cutting edge of technology) as consistent with this change. He mentions the company's presence in Silicon Valley to highlight the consistency of the digital transformation project. He also relies on famous examples (such as Google) based in Silicon Valley and presents them as a model for the company. However, he remains quite critical of the change. He points out the difficulty of transferring the flexibility that is advertised to more technical professions. He presents the example of remote working implementation within his team and the difficulty of insuring presence on site. He opposes very costly renovations that are made in some sites to budget constraints in other parts of the company. He also notes that breakdowns might totally prevent the company from achieving this flexibility and that it could also have a strong negative impact on corporate image.

Call-center employee

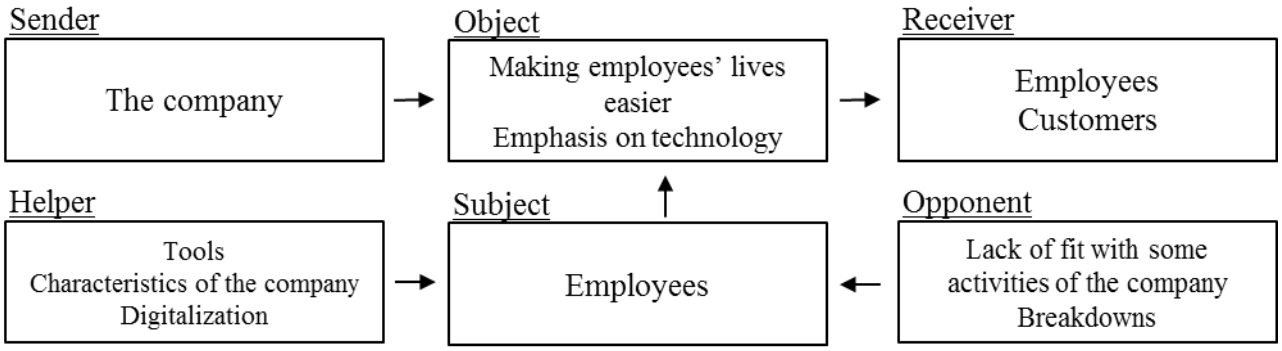

Figure V-6: A polyphonic analysis of digital change – the call center employee

For the call-center employee, the purpose of the digital transformation project is to make employees' lives easier and, by extension, to increase productivity. In his activity, he translates the implementation of digitization to more flexibility in his schedule and the opportunity of working from home from time to time. He identifies the new intranet as an example of this change, as it displays news and offers the possibility for employees to interact by leaving comments or "like" mentions. He also insists on the technological tools he has been given to work remotely. He presents the transformation project as a technological change that ended up impacting the way people work. Corporate culture plays a key role in fostering change, as the company is famous for taking care of its employees. However, he undermines the value of this digital transformation project. For him, this is "not the first priority". He justifies it by using his technical sector of activity as an example, as he notes is not very receptive and compatible with flexibility. He imagines that digital transformation might have a different scope in other business units.

This case provides an example of a polyphonical analysis of a change process with Greimas' actantial model (1966). The model makes it clear how the same change process can result in very different narratives.

1.3 Third contribution: contributing to literature on NWW and SST

The second article contributes to the stream of research on NWW by identifying NWW as a polysemic concept. Our results show that NWW can be defined in different ways, depending on the goal pursued by the company implementing it. This echoes the lack of consensus identified in the literature whereby authors emphasize various features of the NWW (De Leede and Kraijenbrink, 2014). This article contributes to the research on NWW by

identifying differences in the definition of NWW not only within cases but also between cases. This article also emphasizes the evolution of the definition over the course of the implementation when NWW is often a relatively vague concept at the beginning of the change process.

The third article contributes to the stream of research on Self-Service Technologies (SST) by emphasizing the anthropomorphization of companies in SST implementation. Whereas previous studies on change in retail have either focused on the narratives of one single organization (Messeghem and Fourquet-Courbet, 2013; Sonenshein, 2010) or on two competitors' implementation in a less schematic market (Aoyama, 2007; Colla and Dupuis, 2002), this study focuses and takes place in a duopolistic market. By evaluating the parallel evolution of competitors' digital change narratives, this study shed lights on the way non-human actors such as companies are given human emotions and capabilities during change. Our study contributes on the literature on SST implementation by offering a schematic representation of actors in the change process and by highlighting the role of anthropomorphization in SST adoption.

1.4 *Overview of the thesis' main contributions*

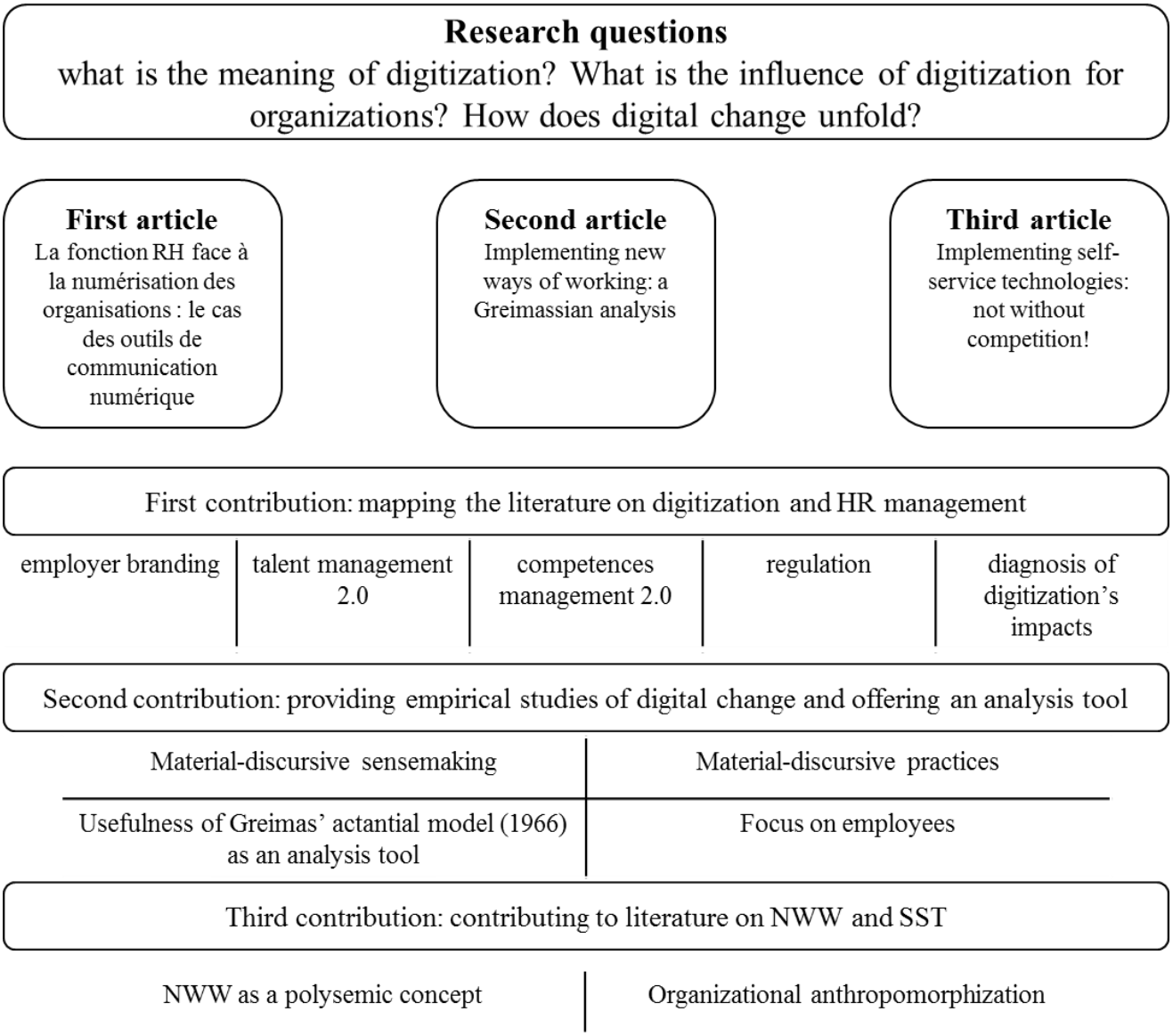

Figure V-7: Overview of the thesis' main contributions

2. Concluding remarks

As I was about to print the last version of this dissertation, I decided to add a quote of a little-known German rapper as an epigraph. I chose this quote specifically because I got to know the song a bit before starting my doctoral project and because it reflected my opinion at the time. Generally speaking, I would say I was blindly optimistic about technological progress generally speaking, and more specifically about digitization. I was also very receptive to the global discourses and buzzwords surrounding digitization. In my mind at the time, technology could only help organizations achieve their goals in a more efficient way and implementation was not even a concern.

As soon as I started my doctoral project, I was forced to confront my thoughts and beliefs with literature and practice. Be it in the literature on Information Technology in organizations or on organizational change, my very straightforward way of thinking about digitization was challenged. Moreover, as I was attending public events about organizational digitization, I was shocked to find myself confronted with vague speeches that I considered full of empty words more than with testimonials backed by real initiatives or actions.

I remember hitting the lowest point of my thesis about two years ago, wondering if digitization was even a thing and not just a well-marketed fad. But then, something happened: I was given access to new fields, I could study other cases, and, more than anything, digitization had been given time in the collective mind and in organizations. More than buzzwords and empty words, I was finally able to study actual digital transformations of organizations, and the concept of digitization got a whole new meaning. The field has taught me the reality of organizational and technological change, with competing forces and a huge variety of actors at different motivational levels and interests.

Towards the end of this doctoral journey, I have developed a more nuanced and mature view on organizational and/or technological change. Long gone are the days when I thought that the road to digitization was as simple as ABC. This doctoral project has helped me to understand that there is more to digitization than only technology, and that surfing on a trend is not enough to make change happen. Using a sociomaterial / material perspective has also helped me to shed light on the active role of non-human actors such as technology. In my opinion, studying technology in organizations with this mindset can be very fruitful for organization studies.

Over the course of this doctoral project, I was thrilled to meet and exchange with a lot of people. This has helped me to realize the multi-faced reality of digitization between organizations and more so, within them. I think that research on digitization has a lot to learn from the appropriation mechanisms that are carried out to foster and make sense of digital change. I had the opportunity to lead interviews with a great variety of people, be it IT managers, HR managers, managers, and employees among very different companies. I would like to thank all of them because they have played an active role in helping me “make sense of digitization”.

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VI. Appendix

A. Study 1: Expert follow-up questionnaire

The full questionnaire used to prepare the experts' focus groups of the first study is presented below.

Madame, Monsieur,

Un grand merci d'avoir accepté de faire partie du groupe d'experts de cette étude prospective sur l'e-RH à l'heure du web 2.0 en Suisse romande.

Nous vous demandons maintenant de prendre une heure pour répondre à ce questionnaire. Les phrases ont été extraites des entretiens d'experts. Certains thèmes ont été soulignés plusieurs fois, sous des formes voisines. Efforcez-vous de répondre spontanément à toutes les questions, sans chercher une cohérence systématique dans l'ensemble de vos réponses. Vous pouvez exprimer votre degré d'accord en cochant une des quatre réponses possibles.

1 -- = pas du tout d'accord

2 - = pas d'accord

3 + = d'accord

4 ++ = tout à fait d'accord

Vous pouvez ajouter si vous le souhaitez un commentaire pour chaque question.

La durée de réponse au questionnaire est d'environ une demi-heure.

Si vous remplissez ce questionnaire via le document word, prière de le renvoyer à bertrand.audrin@unifr.ch. Dans le cas où vous le rempliriez par écrit, je vous serai gré de le renvoyer à cette adresse :

Bertrand Audrin
Chemin de Portaz 14
1807 Blonay

Merci d'indiquer votre nom et prénom :

1. L'individu a accès à de plus en plus d'applications gratuites dans le cadre privé. Il va y avoir un très fort décalage au niveau de l'équipement; la personne recrutée va être souvent mieux équipée à la maison que ce que l'entreprise pourra lui proposer. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

2. Les gens vont avoir besoin d'être connectés en permanence. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

3. Les risques de panne et de hacking vont augmenter car les gens ont trop confiance. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

4. Le fait que ce soit les participants du réseau qui façonnent l'image de l'entreprise sur les plateformes 2.0 va représenter une menace pour les entreprises. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

5. Les gens étant connectés en permanence, on attendra d'eux une réactivité de plus en plus élevée. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

6. Le télétravail permettra aux entreprises de réaliser d'importantes économies en matière d'immobilier. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

7. Avec les outils du web 2.0, il va de plus en plus être possible de travailler de manière asynchrone. Cela permettra aux managers d'être plus flexibles sur la présence de leurs employés. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

8. La création de la valeur ajoutée au sein d'une entreprise découlera de plus en plus du partage de l'information sur les plateformes 2.0. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

9. L'accès généralisé à l'information grâce aux outils du web 2.0 tendra à bouleverser la culture hiérarchique basée sur la maîtrise de l'information. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

10. Avec les outils du web 2.0, l'information sera délivrée de manière plus structurée et son appréhension en sera donc facilitée. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

11. L'accès à l'information inhérent au web 2.0 changera la manière de fonctionner au sein de l'entreprise, avec un accent sur l'interaction. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

12. Le partage de connaissance via les réseaux va permettre de réunir plus facilement des compétences ○ 1 ○ 2 ○ 3 ○ 4

diverses pour travailler sur des projets complexes.
Commentaires :

13. La distance critique par rapport à l'information disponible sur le web et sa fiabilité va devenir un élément capital dans la gestion du savoir. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

14. Les réseaux sociaux professionnels vont mettre en relation les recruteurs et les prospects de manière beaucoup plus rapide, voire immédiate. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

15. Les réseaux sociaux professionnels permettront, via les relations, d'entrer en contact avec des experts susceptibles d'être recrutés par l'entreprise. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

16. Les métiers techniques vont particulièrement être impactés par l'accès à l'information facilité. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

17. La gestion du savoir va être optimisée par les outils du web 2.0. Les wikis notamment permettront de mieux gérer les savoir au sein d'une entreprise en cas de départ des employés. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

18. Le fait que les wikis n'aient pas de dimension conversationnelle va représenter un handicap quant à leur utilisation en entreprise. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

19. L'entreprise va de plus en plus devoir intégrer des données externes et internes pour construire de l'information pertinente. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

20. Les outils du web 2.0 vont favoriser la virtualisation de l'organisation, en créant de la proximité virtuelle malgré un éloignement physique. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

21. Les plateformes qui s'imposeront en entreprise le feront seulement si elles ont un but bien défini. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

22. L'implémentation d'outils du web 2.0 en entreprise dépendra fondamentalement de la volonté du CEO. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

23. Les outils qui se diffuseront à l'avenir :

a. Les wikis prendront une place importante dans la formulation et la mise à disposition des connaissances spécifiques à l'entreprise. ○ 1 ○ 2 ○ 3 ○ 4

b. Les réseaux sociaux d'entreprise vont de plus en plus se développer et permettront de rendre visible les liens et les informations pertinents sur les membres du réseau. ○ 1 ○ 2 ○ 3 ○ 4

c. Les réseaux sociaux d'entreprise vont de plus en plus se développer et permettront un plus grand partage d'information. ○ 1 ○ 2 ○ 3 ○ 4

d. Les blogs d'experts tendront à se développer tant à l'interne qu'à l'externe pour échanger ou pour gérer l'image de marque/d'employeur. ○ 1 ○ 2 ○ 3 ○ 4

e. Les outils de veille vont être de plus en plus utilisés, pour emmagasiner de l'information technique (flux RSS) mais également pour surveiller son image (veille médiatique). ○ 1 ○ 2 ○ 3 ○ 4

f. Les podcasts sont un vecteur d'information qui est amené à se développer de plus en plus. ○ 1 ○ 2 ○ 3 ○ 4

g. Le stockage des données dans le cloud va transformer l'administration des données RH. ○ 1 ○ 2 ○ 3 ○ 4

h. Les outils de gestion collective de documents (de type dropbox, drive ou skydrive) vont changer les pratiques de mutualisation des connaissances et de collaboration. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

24. Les start-ups seront amenées à s'inscrire plus rapidement dans un mode de fonctionnement 2.0 que les entreprises classiques. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

25. Les générations plus jeunes auront tendance à adopter plus facilement un mode de fonctionnement 2.0 basé sur le partage de connaissance, le transfert de feedback. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

26. Il va y avoir une confrontation entre les jeunes qui vont arriver sur le marché du travail et le mode de fonctionnement classique des entreprises. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

27. L'utilisation des outils du web 2.0 va dépendre du profil de l'entreprise, de son secteur ainsi que de son rapport à l'innovation et à la mobilité. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

28. L'intégration des outils du web 2.0 va engendrer des coûts importants pour une entreprise, se chiffrant en millions. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

29. Au vu des risques de pertes financières, les entreprises hésitent à se lancer dans l'implantation des technologies 2.0. Ces dernières verront donc leur diffusion ralentie. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

30. Le succès ou non de l'intégration d'outils web 2.0 va être hautement dépendant de la phase d'implémentation, ce qui rend l'accompagnement crucial. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

31. Les entreprises n'envisageront l'implémentation d'outils 2.0 qu'après avoir mûrement pesé les enjeux juridiques inhérents à ces technologies. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

32. Les réseaux sociaux d'entreprise vont permettre de passer d'une logique de document à une logique de conversation, avec une dimension plus émotionnelle. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

33. Les réseaux sociaux professionnels seront de plus en plus utilisés dans le recrutement et le marketing d'entreprise. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

34. Les entreprises vont devoir développer des politiques différenciées sur les réseaux sociaux en fonction des publics cibles. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

35. Les réseaux sociaux professionnels permettront aux recruteurs d'avoir un meilleur suivi du parcours des prospects. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

36. Les outils du web 2.0 vont permettre aux entreprises de travailler leur image d'employeur de manière plus fine. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

37. Les réseaux sociaux professionnels vont de plus en plus permettre à l'employé de travailler son image de candidat et d'obtenir une visibilité via le réseau. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

38. Le web 2.0 va proposer de nouveaux modes de recrutement, par exemple des forums virtuels. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

39. Les réseaux sociaux professionnels vont permettre à l'e-RH de s'inscrire dans une logique plus relationnelle au niveau du recrutement. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

40. La mise en place d'une stratégie de recrutement sur les réseaux sociaux nécessite une démarche proactive de la part de l'entreprise. Les recruteurs vont devoir agir par anticipation, en se créant leur réseau avant même de penser à recruter via celui-ci. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

41. Avec les réseaux sociaux professionnels, les recruteurs vont devoir remettre en question leur logique de fonctionnement traditionnelle et adopter de nouvelles manières de penser le réseau professionnel. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

42. La mise en place d'un réseau social d'entreprise va révolutionner la communication interne de l'entreprise. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

43. Avec les nouvelles technologies, les nouvelles thématiques d'intérêt général (par ex concernant la santé au travail, la rémunération, une méthode de management) vont connaître une diffusion beaucoup plus rapide à l'interne. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

44. Il va y avoir le risque que les réseaux sociaux d'entreprises se transforment en outil de fronde. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

45. Proposer les outils ne suffit pas ; il faut que les employés les adoptent. Les RH auront un rôle déterminant dans l'adoption des outils du web 2.0 par les employés. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

46. Les entreprises vont utiliser les outils du web 2.0 pour que leurs employés deviennent des ambassadeurs de l'entreprise, notamment vis-à-vis des potentiels candidats. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

47. Les réseaux sociaux professionnels vont permettre aux entreprises de garder le contact avec leurs alumni et de leur transmettre des informations, dans une optique de branding. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

48. Les réseaux sociaux d'entreprise permettront de suivre de façon beaucoup plus fine et régulière l'évolution des employés. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

49. Les outils du web 2.0 permettront une meilleure évaluation de la performance, de manière facilitée et simplifiée. Les bilans de compétences notamment vont connaître de nouvelles mises en œuvre. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

50. La visibilité dans les réseaux sociaux d'entreprise et professionnels contribuera à la prise en main individuelle de leur carrière par les employés. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

51. Le lien entre l'employeur et le salarié a évolué : les employés s'inscrivent de plus en plus dans une logique contractuelle et individuelle vis-à-vis de l'entreprise. Dès lors, il va être plus facile pour l'entreprise de garder contact avec un ex-employé si celui-ci quitte l'entreprise. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

52. Les outils du web 2.0 vont permettre aux employés de mieux concilier vie privée et vie professionnelle. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

53. Avec le web 2.0, les employés peuvent être sollicités à tout moment. Ils devront donc être de plus en plus en mesure de s'imposer une discipline par rapport à l'utilisation de ces outils. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

54. Le télétravail et la perte du contrôle physique de l'employé vont occasionner de nouveaux modes de ○ 1 ○ 2 ○ 3 ○ 4

contrôle plus strictement liés au cahier des charges.
Commentaires :

55. Les nouvelles technologies vont entraîner de nouveaux problèmes de santé au travail, liés à la disparition de frontière entre la vie privée et la vie professionnelle. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

56. Malgré les avancées technologiques, des tuteurs resteront nécessaires pour accompagner le processus de transfert de connaissances. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

57. Les outils du web 2.0 permettent de nouveaux modes de formations. Celles-ci passeront de plus en plus par des jeux virtuels ou des méthodes hybrides (training en salle et training virtuel). ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

58. Le web 2.0 va s'imposer comme un outil de formation de premier plan. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

59. Lors de l'implémentation d'outils 2.0 par l'entreprise, il va être capital pour elle de remettre certains collaborateurs à niveau. ○ 1 ○ 2 ○ 3 ○ 4
Commentaires :

60. Le web 2.0 en tant qu'outil de formation va notamment permettre de faire des micro-formations. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

61. Les outils du web 2.0 vont permettre de mettre à disposition un éventail plus large de formations. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

62. Le modèle social va avoir besoin d'évoluer pour s'adapter à cette connexion permanente. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

63. Les outils du web 2.0 vont permettre aux ressources humaines de prendre une véritable dimension stratégique dans l'organisation. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

64. Le télétravail va diminuer le lien tangible entre l'employé et l'entreprise. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

65. La fonction RH va devenir de plus en plus traductrice et ambassadrice de la culture d'entreprise. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

66. Le web 2.0 va mobiliser de nouveaux métiers impliqués dans la gestion de communauté ainsi que dans la veille stratégique. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

67. La fonction RH va devoir exercer un nouveau rôle d'expert en communication et assumer des tâches médiatiques. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

68. La protection des données va devenir un enjeu juridique majeur associé à l'utilisation des outils du web 2.0. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

69. Les règlements des entreprises vont évoluer pour être adaptés aux changements occasionnés par les outils du web 2.0 ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

70. Les technologies du web 2.0 vont faire exploser le concept de sphère privée. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

71. Les entreprises vont être de plus en plus sensibles au lieu de stockage de leurs données, pour des questions de confidentialité et de sécurité. ○ 1 ○ 2 ○ 3 ○ 4

Commentaires :

B. Study 1: Practitioners questionnaire

The full questionnaire used to validate the statements of the experts in the first study is presented below.

Introduction

Madame, Monsieur,

Un grand merci d'avoir accepté de prendre part à cette étude prospective sur l'e-RH à l'heure du web 2.0 en Suisse romande.

Nous vous demandons de prendre quelques minutes (entre 5 et 10 minutes) pour répondre à ce questionnaire. Nous savons que vous avez peu de temps et nous avons volontairement cherché à faire court. Efforcez-vous de répondre spontanément à toutes les questions, sans chercher une cohérence systématique dans l'ensemble de vos réponses. Vous pouvez exprimer votre degré d'accord sur une échelle de 1 à 6.

Il est très important que vous répondiez aux questions en vous projetant dans la situation professionnelle dans laquelle vous évoluez. Nous vous prions donc d'évaluer votre accord avec les affirmations proposées **pour votre entreprise** et **pour les trois années à venir**.

1 - - -	=	pas du tout d'accord
2 - -	=	pas d'accord
3 -	=	désaccord partiel
4 +	=	accord partiel
5 ++	=	d'accord
6 +++	=	tout à fait d'accord

Si vous le souhaitez, vous pouvez ajouter un commentaire pour chaque question.

Afin de s'assurer d'une vision partagée du sujet, nous allons brièvement rappeler ce qu'est le web 2.0 ainsi que définir ce que nous entendons par l'utilisation de certains termes.

Web 2.0

Le web 2.0 modifie le mode d'échange d'information sur internet : on passe d'une logique « one to many » (un utilisateur en informe un grand nombre) à une logique « many to many » où la voix est donnée à tous les utilisateurs.
Les principes essentiels du web 2.0 sont le partage et l'interaction.
Le web 2.0 est également à l'origine de nombreux outils, notamment les wikis, les flux RSS, les podcasts, les blogs et les réseaux sociaux.

Termes utilisés

Lorsque nous parlons de *réseaux sociaux professionnels*, nous considérons les réseaux sociaux publics (c'est-à-dire externes à l'entreprise), tels que LinkedIn, Viadeo ou encore Xing.

Lorsque nous utilisons le terme de *réseau social d'entreprise*, nous parlons d'un outil interne, propre à l'entreprise.

Dans les autres situations, si la portée interne ou externe n'est pas précisée, veuillez considérer le web 2.0 dans son ensemble, à la fois à l'interne et à l'externe.

Merci encore pour votre participation à ce questionnaire.

Questionnaire

1. Dans mon entreprise, le web 2.0 va nécessiter de nouvelles places de travail impliquées dans la gestion de communauté ou dans la veille stratégique.
2. La fonction RH va prendre en charge la formation et le développement des compétences 2.0 au sein de mon entreprise.
3. Pour nos recrutements, les réseaux sociaux professionnels vont nous obliger à transformer nos méthodes de recherche de candidats.
4. Pour la gestion des carrières de mon entreprise, la visibilité dans les réseaux sociaux d'entreprise et professionnels sera de plus en plus importante.
5. Les plateformes 2.0 vont de plus en plus représenter une menace pour l'image de mon entreprise.
6. Les outils du web 2.0 vont nous permettre de travailler notre image d'employeur de manière plus fine.
7. Les outils du web 2.0 vont amener nos employés à devenir des ambassadeurs RH de l'entreprise, notamment vis-à-vis des potentiels candidats.
8. Les réseaux sociaux professionnels vont nous permettre de plus en plus de garder le contact avec nos alumni et de leur transmettre des informations.
9. Dans mon entreprise, il va y avoir de plus en plus d'écart entre les adeptes du web 2.0 et les réfractaires.
10. Les technologies du web 2.0 vont entraîner de nouveaux problèmes de santé et de work-life balance, liés à la disparition de frontière entre la vie privée et la vie professionnelle.
11. La fonction RH de mon entreprise va devoir prendre en charge un nouveau rôle d'expert en communication web 2.0.
12. Nous allons, dans mon entreprise, commencer par identifier les enjeux juridiques des outils du web 2.0 avant d'envisager de les implanter.
13. Les outils du web 2.0 vont nous amener à adapter le règlement de mon entreprise.
14. Mon entreprise va devoir mettre en place un règlement d'utilisation et une charte des médias sociaux.
15. La fonction RH aura le leadership sur les projets du web 2.0 dans l'entreprise.

Commentaires :

Y a-t-il d'autres conséquences que le Web 2.0 peut amener dans votre entreprise ?

Questions générales

16. A combien évaluez-vous votre degré d'expertise sur le web 2.0 ?

    1- faible 2- moyen 3- bon 4- excellent

17. Combien d'employé plein-temps dans votre entreprise ?
18. Quel est l'intitulé de votre poste ?
19. Quel est votre sexe ?
20. Quel est votre âge ?
21. Quelle est votre formation ?
22. Dans quel secteur votre entreprise est-elle active ?

C. Study 2: study design, information on data collection and data analysis

This study was led from summer 2016 to spring 2018. The objective of this research was to investigate the sensemaking processes used in digital changes. The first step was to specify the concept of digitization by trying to develop an understanding that goes beyond generic buzzwords and popular beliefs. To this end, a literature review was carried out. In this phase, the typology of Lisein (2009) played a key role in helping to better organize the different types of digitization and to classify the many disparate cases.

In parallel with this definition quest, I had to identify cases of digitization worth analyzing. To this end, I set up a strategic monitoring of news to collect information on company initiatives working towards digitization. More specifically, said monitoring was organized around the keywords "digitalisation", "numérisation", "transformation numérique", "transformation digitale", "industrie 4.0" and "open-space". I started this monitoring on September 5, 2016 and followed it on a daily basis until the end of the project and beyond, with more than 800 alerts processed.

Based on this strategic monitoring and our knowledge of the Swiss digital business landscape – most notably through the Work Smart initiative - several interesting companies were identified. With the assistance of the organizing tea of the HR Swiss congress in French-speaking Switzerland, we were able to contact said companies. The contact procedure was as follows: first, we would send the company a proposal form (found in the appendices below) detailing the reasons why we contacted them, the objective of our study and its method; second, and in cases where this proposal form had received a positive response, we would travel to meet with a representative of the company to discuss the study more precisely and - given their acceptance - define a timetable for data collection.

Most of the interviews were conducted on-site, following an interview guide built on Pettigrew (1987) and Sonenshein (2010) (found in the appendices below). The interviews were recorded and transcribed. Data collection began on February 8, 2017 and extended over eight months to October 27, 2017. A summary table of the sample and a detailed description of the cases is presented below.

The analysis phase took place between the summer of 2017 and the beginning of 2018. First, a content analysis was conducted for each case using the analysis grid presented below. For reasons of confidentiality, a complete analysis grid cannot be presented in these appendices.

Nevertheless, the rest of this document presents an example of this grid in a transversal way using examples from several cases.

The rest of this annex group presents 1) an anonymized standard contact letter 2) the interview guide in French and German 3) the detailed sample of the study 4) a detailed and anonymized description of the cases and 5) an analysis grid with examples from the various cases.

1. Anonymized standard contact letter

Sens au travail et transformation numérique des organisations : le rôle du RH comme agent de changement

Etude parrainée HR Section Romande

Contexte et but de l'étude

Le terme de « *transformation numérique* » fait régulièrement les gros titres dans les médias. Ce terme englobe divers types de changements liés aux technologies de l'information et de la communication que connaissent les organisations (automatisation, flexibilisation, mobilité, nouveaux espaces de travail, etc.). Les entreprises sont profondément touchées par cette digitalisation, notamment en termes de pratiques de travail, de sens au travail ou encore de culture organisationnelle.

Quels sont les impacts de cette transformation sur l'organisation du travail, sur le contenu du travail, les interactions au travail et les rôles ? Comment ces transformations sont-elles présentées aux employés et aux managers ? Comment les perçoivent-ils ? Qu'est-ce que ces transformations changent dans les représentations du travail et donc dans le sens au travail ? Quel peut être le rôle de l'encadrement intermédiaire et de la fonction RH dans l'accompagnement du changement ?

Méthode

Nous souhaitons mener une quinzaine d'études de cas en Suisse romande en sélectionnant des entreprises et organisations qui ont vécu une expérience de transformation numérique spécifique. Dans chaque entreprise, nous souhaitons conduire six entretiens en moyenne (un responsable ressources humaines, un responsable de projet technologique – initiateur et porteur du projet de mise en œuvre –, deux managers et deux employés).
Les thématiques abordées lors des entretiens seraient les suivantes :

- Quel est l'impact du changement technologique sur les pratiques de travail et le rapport au travail ?
- Comment le processus de changement s'est-il déroulé / se déroule-t-il, quelles ont été / sont les étapes et les acteurs clé ?
- Quel a été / est le rôle de l'encadrement intermédiaire et de la fonction RH dans l'accompagnement du changement ?

Pourquoi XXX ?

Votre organisation s'est engagée dans l'initiative Work Smart qui vise à la numérisation des organisations, en reconfigurant certains de leurs espaces de travail et en mettant l'accent sur la flexibilisation. L'engagement de votre organisation dans l'initiative Work Smart – et le déménagement – rendent le cas de votre organisation particulièrement actuel et intéressant.

Engagement vis-à-vis de votre organisation

Nous nous engageons aussi à présenter aux entreprises participantes les résultats de l'étude de manière individualisée. De plus, les organisations participantes recevront un rapport détaillé des résultats de l'étude d'une cinquantaine de pages environ.

Bibliographie sélective

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BRYNJOLFSSON, Erik et MCAFEE, Andrew. *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company, 2014.

PICHAULT, François. *Gestion du changement. Perspectives théoriques et pratiques*, De Boeck, Bruxelles, 2009.

ROULEAU, Linda et BALOGUN, Julia. Middle managers, strategic sensemaking, and discursive competence. *Journal of Management Studies*, 2011, vol. 48, no 5, p. 953-983.

2. Interview guide

The interview guides used in the second are presented. These interview guides differed whether the interviews were conducted with managers or coworkers and if the digital transformation had already happened on the site interviewees were working in. The interview guides are presented in French and in German.

Guide d'entretien – Sens au travail et transformation numérique des organisations

Présentation de la recherche

La numérisation des organisations est une thématique d'actualité dans le quotidien des organisations avec des changements liés à une évolution technologique. **Un changement doit « faire sens » pour les collaborateurs ; on s'interroge sur les manières dont l'organisation peut faire passer le sens. Notre étude vise à comprendre comment le changement est implémenté et perçu par les acteurs (représentants RH, managers intermédiaires, porteurs de projet, collaborateurs).** Pour ce faire, une dizaine d'études de cas sera effectuée au sein d'organisations de Suisse romande ayant connu des transformations technologiques importantes au cours des dernières années. Cette étude est parrainée par HR Section Romande, dans l'optique d'une présentation au congrès des sections romandes de HR Swiss en septembre 2017, congrès pour les professionnels de la fonction RH en Suisse romande et réunissant environ 500 personnes. L'entretien est enregistré et transcrit pour des raisons d'analyse. Les participants bénéficient d'un droit de regard sur la transcription. L'anonymat des participants et de leurs organisations est garanti.

Informations générales de contexte

Pouvez-vous m'expliquer quel est votre travail ?

Depuis combien de temps travaillez-vous dans cette position ? Qu'est-ce que vous faisiez avant de prendre ce travail ?

Pouvez-vous me parler des autres changements organisationnels que vous avez vécus?

Questions concernant le projet de transformation numérique

Pour les collaborateurs

Si le projet a été implanté sur le site

Pouvez-vous me parler de l'initiative XXX ? Qu'est-ce que c'est ? Comment est-ce que vous avez été mis au courant de cette initiative ? Si vous deviez expliquer ce projet, comment est-ce que vous le feriez ?

Qu'est-ce que c'est, l'initiative XXX ? (Contenu : technologie, main d'œuvre, produit, emplacement géographique, culture d'entreprise)
Pourquoi est-ce que l'entreprise change ? (Contexte externe : environnement social, économique, politique, concurrentiel ; Contexte interne : structure, culture d'entreprise, politique interne)

Comment est-ce que l'entreprise met en œuvre le changement ? (Processus)

Pourriez-vous décrire les étapes et le calendrier du projet ? Pourriez-vous également décrire le rôle des principaux acteurs (managers, porteur de projet, RH, collaborateurs) ?

Quel rôle avez-vous joué dans l'implantation du projet ? Avez-vous partagé les documents d'information avec vos collaborateurs/collègues ? / Votre supérieur hiérarchique a-t-il partagé les documents d'information avec vous ?

Est-ce que vous avez eu à faire part du projet à des clients ? Si oui, comment est-ce que vous l'avez fait (et expliqué) ? Comment avez-vous expliqué le projet à vos collaborateurs/collègues ?

Comment cette initiative a-t-elle modifié votre travail et l'entreprise ?

Est-ce que vous considérez la mise en place de cette initiative comme un succès ? Pourquoi ?

Quelles préoccupations / inquiétudes avez-vous concernant le projet ?

Qu'est-ce que vous considérez comme une communication efficace ? L'entreprise a-t-elle bien communiqué sur le projet ?

Si le projet n'a pas été implanté sur le site

Avez-vous entendu parler de l'initiative XXX ? Qu'est-ce que c'est ? Si vous deviez expliquer ce projet, comment est-ce que vous le feriez ?

Qu'est-ce que c'est, l'initiative XXX ? (Contenu : technologie, main d'œuvre, produit, emplacement géographique, culture d'entreprise)

Pourquoi est-ce que l'entreprise change ? (Contexte externe : environnement social, économique, politique, concurrentiel ; Contexte interne : structure, culture d'entreprise, politique interne)

Comment est-ce que l'entreprise met en œuvre le changement ? (Processus)

Comment est-ce que vous avez été mis au courant de cette initiative ?

Quelles mesures (s'il y en a) allez-vous prendre pour mettre en place l'initiative XXX ?

Avez-vous reçu des informations du siège au sujet de l'initiative XXX ? Que disaient-elles ?

A votre avis, quel va être l'impact de l'initiative XXX sur votre travail et pour l'entreprise ?

Avez-vous eu des questions sur l'initiative XXX de la part de clients ou de collaborateurs ? Comment y avez-vous répondu ?

Quelles préoccupations / inquiétudes avez-vous concernant le projet ?

Qu'est-ce que vous considérez comme une communication efficace ? L'entreprise a-t-elle bien communiqué sur le projet ?

Pour les managers

Pouvez-vous me parler de votre rôle dans l'initiative XXX ? Quand et comment avez-vous été impliqué initialement ?

Qu'est-ce que c'est que l'initiative XXX ? (Contenu : technologie, main d'œuvre, produit, emplacement géographique, culture d'entreprise)

Pourquoi est-ce que l'entreprise change ? (Contexte externe : environnement social, économique, politique, concurrentiel ; Contexte interne : structure, culture d'entreprise, politique interne)

Comment est-ce que l'entreprise met en œuvre le changement ? (Processus)

Pourriez-vous décrire les étapes et le calendrier du projet ? Pourriez-vous également décrire le rôle des principaux acteurs (managers, porteur de projet, RH, collaborateurs) ?

Pourquoi l'entreprise a-t-elle lancé le projet XXX ? Quelle était l'origine de celui-ci ? Quelles ont été les différentes raisons ? Le projet a-t-il été lancé dans un contexte favorable ? Comment le projet a-t-il évolué au fil du temps ?

Comment est-ce que vous voyez les collaborateurs qui mettent en place le projet XXX ? Quel rôle les managers intermédiaires ont-ils ? Qu'est-ce qui fonctionne et qu'est-ce qui ne fonctionne pas ?

Pouvez-vous me parler des processus de communication entre le siège et les succursales ? Comment cela se passe-t-il ?

Quels sont les plus grandes difficultés dans la mise en place du projet XXX ? Qui a montré le plus de résistances ?

Comment est-ce que vous décririez le projet XXX à un nouvel employé ?

Quelles sont les différences entre un collaborateur qui travaille déjà dans une succursale / une unité où a été mise en place le projet XXX et un collaborateur qui travaille dans une succursale / une unité où cela n'a pas été le cas ?

Qu’est-ce que vous considérez comme une communication efficace ? L’entreprise a-t-elle bien communiqué sur le projet ?

Comment feriez-vous aujourd’hui ? Autrement/mieux ?

Gesprächsleitfaden – Sinn der Arbeit und digitaler Wandel

Vorstellung der Studie

Da die technologische Entwicklung verschiedene Wandlungen bewirkt, ist die digitale Transformation der Unternehmen ein aktuelles Thema. **Eine Änderung muss für die Mitarbeiter „Sinn machen". Wie kann die Organisation Sinn vermitteln steht im Mittelpunkt. Unsere Studie zielt darauf ab zu verstehen, wie die Änderung von den Akteuren (HR Leiter, Managers, Projektleiter, Mitarbeiter) implementiert und wahrgenommen wird**. In diesem Zusammenhang führen wir eine Sammlung von ungefähr zehn bis zwölf Fallstudien bei schweizerischer Unternehmen durch, die technologische Änderungen gemacht haben. Diese Studie wurde von HR Section Romande unterstützt, mit Blick einer Präsentation im September 2017, bei der Kongress. Das Interview wird aus analytischen Gründen aufgezeichnet und transkribiert. Die Anonymität der Teilnehmer (und der Organisationen) ist garantiert.

Grundlagen

Können Sie mir erklären, was Ihre Arbeit ist?

Seit wann bekleiden Sie diese Stellung? Was war Ihre vorherige Arbeit?

Können Sie mir von anderen Organisationsänderungen (die Sie persönlich erlebt haben) erzählen?

Fragen zum Projekt digitaler Wandel

An den Mitarbeitern

Wenn das Projekt auf dem Standort implementiert wurde

Können Sie mir etwas zur Initiative XXX sagen? Was ist das genau? Wie haben Sie von dem Projekt erfahren? Wenn Sie das Projekt erklären sollten, wie würden Sie es machen?

Was ist eigentlich Initiative XXX? (Was ist der Inhalt des Projekts? Technologie, Arbeitskraft, Produkt, geographischer Standort, Unternehmenskultur)

Warum ändert sich die Firma? (Was ist das äussere Umfeld? soziales, ökonomisches, politisches, kompetitives; was ist das innere Umfeld? Struktur, Unternehmenskultur, Innenpolitik)

Wie setzt das Unternehmen die Änderung um? (Was ist der Prozess?)

Können Sie die Schritte und den Zeitplan des Projekts beschreiben? Können Sie auch die Rolle der wichtigsten Akteure (Managers, Projektleiter, Human Resources, Mitarbeiter) skizzieren?

Welche Rolle haben Sie bei der Implementierung gespielt? Haben Sie Dokumente (Infoblatt, usw.) mit BerufskollegInnen ausgetauscht? Hat Ihre(r) Chef/Chefin mit Ihnen Dokumente ausgetauscht?

Haben Sie mit Kunden über dem Projekt gesprochen? Wie seid ihr vorgegangen (Prozess, Erklärungen)? Wie haben Sie das Projekt anderen KollegInnen erklärt?

Welche Auswirkungen hat diese Initiative auf Ihrer Arbeit und dem Unternehmen?

Finden Sie, dass diese Implementierung ein Erfolg ist? Warum?

Was sind Ihre Sorgen / Besorgnisse betreffend das Projekt?

Was ist für Sie eine erfolgreiche Kommunikation? Wie war – ihrer Meinung nach – die Kommunikation Ihrer Unternehmen über das Projekt?

Wenn das Projekt auf dem Standort nicht implementiert wurde

Können Sie mir etwas zur Initiative XXX sagen? Was ist das genau? Wie haben Sie von dem Projekt erfahren? Wenn Sie das Projekt erklären sollten, wie würden Sie es machen?

Was ist eigentlich Initiative XXX?

(Was ist der Inhalt des Projekts? Technologie, Arbeitskraft, Produkt, geographischer Standort, Unternehmenskultur)

Warum ändert sich die Firma?

(Was ist das äussere Umfeld? soziales, ökonomisches, politisches, kompetitives; was ist das innere Umfeld? Struktur, Unternehmenskultur, Innenpolitik)

Wie setzt das Unternehmen die Änderung um?

(Was ist der Prozess?)

Wie würden Sie erstmals über dem Projekt informiert?

Welche Massnahmen werden getroffen, um das Projekt aufzubauen?

Haben Sie Informationen von dem Hauptsitz bekommen? Was war der Inhalt?

Ihrer Meinung nach, was wird die Auswirkung des Projekts XXX auf Ihre Arbeit und auf Ihr Unternehmen sein?

Haben Sie Fragen zum Thema „Projekt XXX“ von Kunden oder Berufskollegen bekommen? Welche Antworten haben Sie gegeben?

Was sind Ihre Sorgen / Besorgnisse betreffend das Projekt?

Was ist für Sie eine erfolgreiche Kommunikation? Wie war die Kommunikation über das Projekt?

An den Managern

Können Sie mir etwas zur Initiative XXX sagen? Was ist das genau? Wie haben Sie von dem Projekt erfahren? Wenn Sie das Projekt erklären sollten, wie würden Sie es machen?

Was ist eigentlich Initiative XXX? (Was ist der Inhalt des Projekts? Technologie, Arbeitskraft, Produkt, geographischer Standort, Unternehmenskultur)

Warum ändert sich die Firma? (Was ist das äussere Umfeld? soziales, ökonomisches, politisches, kompetitives; was ist das innere Umfeld? Struktur, Unternehmenskultur, Innenpolitik)

Wie setzt das Unternehmen die Änderung um? (Was ist der Prozess?)

Können Sie die Schritte und den Zeitplan des Projekts beschreiben? Können Sie auch die Rolle der wichtigsten Akteure (Managers, Projektleiter, Human Resources, Mitarbeiter) skizzieren?

Warum wurde Projekt XXX durchgeführt? Was war der Beginn des Projektes? Was waren die verschiedenen Gründen? In welchem Umfeld wurde das Projekt durchgeführt? Wie hat das Projekt evolviert?

Welche Rolle spielen die (Mittleren)managers in dem Projekt? Was funktioniert und was funktioniert nicht?

Können Sie mir über den Kommunikationsprozessen erzählen? Wie funktioniert das?

Was sind die wesentlichen Schwierigkeiten in der Einführung des Projekts XXX? Wer hat den höchsten Widerstand gezeigt?

Wie würden Sie das Projekt XXX einem neuen Mitarbeiter/einer neuen Mitarbeiterin erklären?

Wo liegen die Unterschiede zwischen Mitarbeitern, die schon mit Initiative XXX arbeiten, und Mitarbeitern, die noch ohne Initiative XXX arbeiten?

Was ist für Sie eine erfolgreiche Kommunikation? Wie war – ihrer Meinung nach – die Kommunikation Ihrer Unternehmen über das Projekt?

Wie würden Sie es heutzutage machen? Anders / besser ?

3. Detailed sample of the study

Type of company		Interviews	Word count
Multinational company in the food and beverages sector	Goal: To develop global teams and flexible work Emphasis: Activity-based working spaces and virtual workgroups Scope: Pilot project on some Strategic Business Units. Status: Ongoing change targeting some other units of the organization	13 (eight managers, two employees, two HR managers, one IT manager)	92’196
Regional electricity, water, and gas distribution company	Goal: To implement NWW; To improve work-life balance; to develop the company’s social responsibility Emphasis: Activity-based working spaces and teleworking Scope: Pilot project affecting half of the company. Status: Pending approbation for a company-wide deployment	8 (three managers, three employees, one HR manager, one IT manager)	74’382
Public national media company (radio and television)	Goal: To anticipate new trends regarding media consumption; to improve the working climate Emphasis: Activity-based working spaces and strengthened contact with local population Scope: Half of the company Status: Moving in the new building will take place in the next few years	6 (two managers, two employees, one HR manager, one IT manager)	59’417
Telecom company	Goal: To be in the early adopters when it comes to the “digital” trends; to improve	6 (two managers, two employees, one HR	51’876

	the working climate Emphasis: Activity-based working spaces and teleworking Scope: Some units in specific domains (marketing, client acquisition, HR) are concerned. Status: Ongoing process, as other units are boarded in gradually.	manager, one IT manager)	
Insurance company	Goal: To implement NWW and agility Emphasis: Activity-based working spaces and participative management Scope: Some specific units within the company (HR, IT) Status: Ongoing process, as other units are boarded in gradually.	6 (two managers, two employees, one HR manager, one IT manager)	60’486
Total		**39**	**338’357**

Table VI 1 : Composition and specificities of study sample (second article)

4. Detailed and anonymized description of the cases

a. Multinational company in the food and beverages sector

For the Food and Beverages MNC case, the objective is to improve both company's performance and results. The company plays both the roles of sender and subject. On one hand, the company wishes to go in this specific direction (sender) and on the other hand, it has to follow the path (subject). Some triggers are identified in the narrative: the tendency of some company's units towards globalization and the ongoing construction and renovation of corporate buildings. These triggers act as helpers in the narrative. Technology and NWW are depicted as helpers towards this goal: they both help the company to succeed in its quest. NWW and more specifically, "hot desking" (or activity-based offices) are crucial for space optimization. Technology is narrated as a necessary condition for hot desking as well as for work within globally dispatched teams. The opponents towards this quest are the "old ways of working", for example some privileges that still take place within the company. Some symbolic components such as a personal office and a vertical conception of information transmission are identified as opponents in the narrative. Moreover, technological limitations of employees are often invoked as to what could limit the success of the change initiative.

b. Regional electricity, water, and gas distribution company

Within the Regional electricity, water, and gas distribution company case, the objective is to implement NWW. In this case, NWW are depicted as the goal that the company is pursuing. The technological part of the NWW is emphasized as NWW are directly related to digitization. Here again, the company plays both the roles of sender and subject. More specifically, the senders are impersonated by two project leaders as well as the executive committee that voted in favor of a pilot project. The employees are presented as the receivers because they are the ones who will most be impacted by the NWW. Implementing NWW is done by the company to provide its employees with attractive working spaces and conditions. Many helpers are identified in the narrative: one of them is a Belgian administration presenting some similarities with the company. This administration was a pioneer in the NWW and its example is often used in the narrative. Another helper is the "Work Smart" network that unites companies interested in NWW. Technology itself is also identified as a helper: NWW are made possible precisely because of technological artifacts. Laptops and smartphones are necessary for the company if it wants to implement remote work and "hot desking". The narrative identifies two main opponents to the change: labor laws as well as old habits and managerial resistance. The implementation of NWW implies that working time is not measured for employees who participate, which is against the law. Labor laws and more precisely, the labor monitoring agency, are depicted as an opponent to the change. The other opponent comes in the form of the routines and habits within the company. The question of personal office remains very important for some employees who are therefore averse to change. A key point that arises is the question of managerial control, with managers not willing to adopt NWW because of their fear of losing control over their employees.

It is important to point out that technology plays two major roles in the change: the role of object (the company tends to get "digitized") and the role of helper (technology can help the company to succeed in its digitization process).

About the object

The object mostly lies in implementing NWW to develop flexibility and work-life balance. The company wishes to develop its employer branding, following the example of the Belgium Social Security. The object also lies in corporate social responsibility. However, some voices highlight that this whole argumentation was lacking at the beginning of the process and that it only got put together later on.

c. Public national media company (radio and television)

The Public national media company case is at its very beginning, and thus difficult to analyze the narrative as a retrospective reconstruction of events. As such, the grand narrative based on the interviews presents more of a forecast of what the change might be. The goal of the change has already been identified: being able to develop new products (mostly radio and TV shows, but also investigating other channels) to provide information and entertainment to the company's audience. This goal follows the company's mission and is written in the law on radio and television. These actors - the company and the law on radio and television -are depicted as the senders. The receivers are the employees that will be impacted by the change process, and, most importantly, the audience. The company and its employees appear as the subject of the narrative: the ability to develop new products depends in part, on their willingness to change. In fulfilling this quest, many aids come to play. First, moving in a new building acts as a trigger for change. It is narrated as the opportunity to reconsider office space. The narrative presents the existing building as not specifically designed for the company's activity and therefore inadequate. NWW and technology are also identified as very important in the change process. In the narrative, the characteristics of the journalistic profession are also mentioned: journalists are well-known for their flexibility and for their tendency to work from places other than an office. This characteristic is therefore identified as a helper because this tendency of the NWW has been in the company's DNA for decades. The main opponent in the narrative is the political climate. The company is going through difficult times as its main funding source is being challenged. This has a strong impact on the company itself but also on the change process. In the narrative, it is clear that the change process will be subject to surveillance, and that each cent that is spent will be questioned. This depicts "political climate" as a non-corporeal actant that adds a lot of pressure as an opponent in the narrative.

About the object

It is difficult to isolate only one quest in this change: we can identify many different layers of objects that are pursued by this change. The goals that appear in the narrative are to: improve the quality of produced media; improve the working climate (by implementing Work Smart); gain productivity; move in another building. One could argue that moving into a new building is the root of all these other goals. Moving is seen as an opportunity to reconsider the ways of working, and with that, a lot of other things within the company.

d. Telecom company

The Telecom company case is among the most advanced in our panel. The company started implementing NWW components many years ago (more specifically remote working). The main objective is for the company to be seen as a trendsetter within Switzerland and to promote its products. The NWW change is highly marketing-driven, with books being edited and multiple conferences being given on this topic. As such, the main receiver are clients who might benefit from such changes. Employees are also depicted as important receivers in the narrative. As in the other cases, the company itself plays both the roles of sender and subject. Many helpers appear in the narrative. The "Work Smart" network is an important actor. As it turns out, the Telecom company is one of the founders of this network. The company uses this network to promote its services but also to benefit from other examples that can be used internally. Technology and NWW are also identified as helpers. Laptops and smartphones are depicted as facilitators. NWW are very important as they are part of the outcome of the change. One of the buildings of the company is very famous for its innovative offices and is often mentioned in the narrative. These components, technology and office spaces, are presented as tangible results of the change process. Another important helper identified in the narrative is the company's DNA. The company presents itself as a tech company and therefore has to be familiar with leading-edge technology. The opponents of the change are the mindsets of some managers who are afraid of losing control over their employees with teleworking. The historic business of the company is also depicted in the narrative as an opponent on two grounds. The Telecom company traditionally provides phone lines such that switching to IP-technology is seen as treason by some of the employees. Added to this is the fact that many jobs involve maintenance and wiring and are therefore ill-adapted to NWW.

About the object

One can argue that the change is about product/service (in line with Pettigrew, 1987). It is about innovation on the outside: developing new products for the clients, testing them; as much as it is about working culture on the inside: improving work-life balance and collaboration. The marketing speech about Work Smart at the Telecom company is very structured and developed around these two points. In this respect, transformation of workspaces appears as a proof of change.

e. Insurance company

The case of the Insurance company is very particular. This society holds its national headquarters in Bern and has started renovating its office space there. We led our case study in one of the regional headquarters where the building was being renovated and people were working in a temporary building. The goal pursued by the company is to become a more flexible organization. In the narrative, the path to follow appears to be the one of digitization, with digitization being defined very broadly. It includes the digitization of documents (such as contracts, insurance policies, etc.), the development of new office spaces (activity-based offices), the renewing of IT equipment (laptops and smartphones), and new management models (such as halocracy and agility). In the narrative, all these components are mixed into a catch-all concept. Thus, digitization appears to be both an outcome of the change process (the object) and a facilitator in the change process (a helper). As in the other cases, the company itself plays both the roles of sender and subject. Many helpers appear in the narrative. The "Work Smart" network is an important actor. As it turns out, the insurance company is also one of the founders of this network. The insurance company uses the network mostly to gain insights on the best practices to digitize. In the narrative, examples of other companies are often used to give weight to the need for change. Another helper identified in the narrative is the company's ownership structure. The insurance company is not publicly listed and belongs to its member-policyholders and as such, gives the company more room to pursue a long-term strategy. Some opponents are identified in the narrative, referring mainly to legal procedures and old habits. As an insurance company, the insurance company has to keep a written record of all the policies and contracts. This severely limits the digitization of documents and slows down the change process. In the narrative, old habits and gregarious instinct are also depicted as change inhibitors. The interviewees show very limited faith in the success of the activity-based offices. In the narrative, some examples of gregarious instinct are brought up to emphasize the risk of failure on that matter.

About the object

NWW and Agility are identified as the two major changes the company is implementing. Somehow, these two are put together in a broader change of culture. The goal is to be more flexible and to increase the pace of production. At the same time, NWW implementation is meant to improve employees' work-life balance.

5. Analysis grid

First step	Context of change		Enterprise Coworkers Managers Consultants HR Service IT service Customers / External people Technology Others
	External context	Social	Nous ce qu'on dit c'est que justement, le monde change, la digitalisation va avoir de plus en plus d'impacts sur nos processus de travail, on sera de plus en plus industrialisé, on a une nouvelle génération qui va arriver dans le monde du travail, peut-être qu'ils veulent plus travailler sur un thème particulier et puis être plus flexible par rapport à leur vie aussi, et puis tous ces changements sociétaux auront un impact sur notre manière de travailler et on s'adapte aujourd'hui pour ça. Et en plus de ça, on épargne un peu de l'argent parce qu'on met plus de gens mais c'est pas le fond de la décision, largement pas. (E1, I1) Ce qui s'annonce ici, c'est un modèle de société… alors c'est l'expression d'un certain modèle de société, celui que l'on voit dans lequel la relation du collaborateur avec l'entreprise change. Le collaborateur devient plus autonome en quelque sorte dans l'exercice de sa tâche, et on peut ou non souscrire à ce modèle. Et, je pense que, dans certains cas, il y a une également une position intellectuelle vis-à-vis du projet que je trouve aussi hautement respectable. Je n'ai pas de problèmes avec ça et que je peux comprendre. Voilà, la société évolue. L'expression de cette évolution, c'est ça. On peut ne pas souscrire à ces évolutions sociétales à titre personnel et puis donc pas souscrire à l'option par l'entreprise d'un modèle qui les préfigure, qui les annoncent et dans une certaine façon les accompagnent. (E4, I2)
		Economical	On a de plus en plus une pression de nos clients en fait pour accélérer des créations d'un nouveau produit ou des choses comme ça. On ne peut plus se permettre d'attendre une année et donc on doit être prêt à réagir rapidement. (E1, I2) Il y a de nombreuses entreprises privées qui font ça et pas des moindres. Vous avez Microsoft. On est allé à Amsterdam. Ils font très exactement ça. Vous avez des entreprises… j'ai découvert… il y a des entreprises américaines à Minneapolis qui utilisent une méthode qui est vraiment très très très proche. (E4, I3)
		Political	Ouais ouais bon et puis là, il y a d'une part cette initiative qui va être votée, qui du coup met peut-être un point d'attention au niveau de l'actualité de l'entreprise quoi, en tout cas des échéances à très court terme. (E2, I1) Il y a plusieurs éléments. Il y avait l'ouverture du marché de l'électricité. Donc l'électricité, c'est le 50% du revenu de l'entreprise. Donc l'ouverture, la perspective d'une ouverture totale du marché de l'électricité jusqu'aux individus, jusqu'aux privés, était beaucoup plus forte quelques années en arrière que ce qu'elle est aujourd'hui. (E4, I3)
		Competitive	Et puis l'évolution en Suisse aussi. Disons, l'évolution générale du marché des assurances et puis le fait qu'il y

		ait cette technologie qui prenne de plus en plus de place, ça ouvre la porte pour faire d'autres choses encore au niveau assurance qu'on fait pas aujourd'hui. (E1, I1) Le dernier point qui est important, je crois que c'est plutôt sur le business en tant que tel. Vous avez une situation particulièrement, j'allais dire intéressante pour le moins qu'on puisse dire ces dernières années. C'est en fait tout le changement, j'allais dire la réduction du prix de l'électricité du fait ben de différents éléments qui viennent d'Europe, notamment d'Allemagne avec une mise sur le marché de l'électron très très bon marché. Transition énergétique je l'ai mentionné mais aussi par rapport à ça qui fausse tout le marché. Et qui nous mettent dans des situations qui sont pas évidentes notamment par rapport aux marges qui diminuent. (E4, I1)
Internal context	Structure	Alors moi je, si vous me demandez quel est l'objectif, je pense que principalement c'est, y'a de la compétitivité dans tout ça. Si on améliore en règle générale les conditions, quel que soit l'unité, quel que soit le type de collaborateur, que ce soit dans la vente, que ce soit dans le management ou peu importe, et bien la conséquence c'est qu'on va mieux se développer, on va mieux fonctionner, on aura peut-être de meilleures idées et on aura peut-être un meilleur résultat. Je pense qu'à la fin de tout, tout ça c'est pour qu'on ait un bon résultat, qu'on ait le succès. Le succès financier, le succès de l'image, de développement. Donc je pense qu'à la fin de tout, le but il est d'avoir un succès global, général. (E4, I2) On a notre propre actionnariat en fait. Donc du coup on peut se permettre d'avoir une stratégie sur le plus long terme sans avoir la pression d'avoir un chiffre précis chaque année même si on a ces objectifs-là. Mais on a un directeur qui est là depuis plusieurs années. Souvent dans les entreprises avec des actionnaires, on a le directeur qui change souvent tous les 2 ans. (E1, I4)
	Culture	Ça dépend, ça dépend de l'approche, de la culture de l'entreprise, de l'ouverture d'esprit des gens. Moi j'ai eu… peut-être j'ai eu la chance… j'étais clair sur les règles mais il y avait des gens qui détestaient mais globalement les gens ont appris clairement en faisant les choses. Si tu devais étudier les règles d'abord et après les appliquer, tu ne comprendrais plus rien. C'est comme pour XXX, c'est ce que nous sommes en train de faire, c'est : ok n'apprenez rien, on commence à jouer et petit à petit on vient. (E2, I3) Alors, ben comme on l'a dit en préambule, XXX c'est une grosse société avec beaucoup de diverses activités. On est dans un domaine de la télécommunication qui s'est, si vous voulez, à un moment donné, rapproché et maintenant complétement fondu avec l'IT et donc on doit être dans l'innovation si on veut survivre. Et pour moi c'est important qu'une société comme XXX soit dans l'innovation. Elle l'est, on a des antennes dans le SiliconValley, on a des antennes dans des grandes écoles : EPFL ou autres et donc on est assez proche de ce développement de nouvelles technologies. (E3, I3)
	Internal politics	Alors le décrire… c'est en 2 volets. Il y a le volet institutionnel et il y a le volet individuel, je pense, la part du collaborateur. Au niveau institutionnel, je pense que c'est une... C'était une prise de risque, un réel enjeu pour

		une entreprise comme XXX de se lancer là-dedans. (E4, I2) Ben c'est plutôt bien, le contexte est favorable justement parce qu'on a l'opportunité de créer un espace sur la base des choix qui vont se faire sur ces questions qui doivent se poser, après à mon avis, toutes les entreprises doivent se poser ces questions-là, aujourd'hui est-ce que le fonctionnement est encore adéquat ? est-ce qu'il sera encore adéquat dans 10 ans vu à la vitesse à laquelle les choses évoluent et vu les attentes des collaborateurs, vu de quelle manière ça avance. Et puis après il y a plein de choses qui viennent impacter les métiers aussi quel que soit son domaine, son business je dirais pour les entreprises et puis ça, ça change quand même en profondeur les choses. (E2, I3)
Actants	Sender	Il y a beaucoup d'initiatives au niveau du groupe qui soutiennent la digitalisation et puis justement donner sens là-derrière. Je pense qu'aujourd'hui, c'est un gros brouhaha (E1, I2) Oui oui il y a une volonté de XXX d'être vraiment… disons assez présent dans l'entreprise avec le projet d'informer assez précisément et puis une demande très formelle de la part de la direction de dire au fond pour tous ceux qui sont impliqués dans le projet XXX d'avoir une communication vraiment très forte descendante et montante sur le projet XXX, ses objectifs, ses nouveaux modes organisationnels, etc. (E2, I1)
	Object	C'est un projet de développement durable. Et une des clés du succès, je pense, du projet c'est qu'il apporte de la valeur à la fois pour l'entreprise sur l'axe économique et…vous direz « comment »…euh… il apporte de la valeur au collaborateur parce qu'il procure un meilleur équilibre « vie privée-vie professionnelle ». Il a la possibilité de travailler chez lui. Il a la possibilité de décaler ses horaires. Il a la possibilité d'éviter des heures d'encombrement sur les routes et c'est un plus… il y a des enjeux environnementaux parce que, ben, l'empreinte physique de l'entreprise diminue… (E4, I2) Also, was ich wirklich sagen muss, es ist eben, es ist eine Arbeitskultur die wir verankern möchten, für XXX, und dazu nutzen wir Tools, die das möglich machen. Aber es ist eigentlich eine neue Art und Weise wie wir zusammenarbeiten. (E3, I4)
	Receiver	Du point de vue collaborateur, j'ai envie de dire qu'un collaborateur qui a vécu tout ça il s'intégrera facilement ailleurs si un jour il souhaite avancer dans sa carrière. C'est un cadeau un peu caché que l'on fait quand même à nos collaborateurs. (E1, I1) Aujourd'hui les gens sont motivés, engagés s'il y a une certaine flexibilité par rapport au temps de travail quand ils peuvent s'organiser eux-mêmes mais aussi par rapport à l'endroit. Il y a de plus en plus de gens qui aimerait travailler à la maison ou qui aimerait travailler en train ou n'importe où. Je pense que c'est du côté de l'innovation… si on veut des gens qui soient innovants, qui ont des idées, qui sont créatifs, il faut leur donner aussi une certaine flexibilité pour optimiser leur travail et pour promouvoir la motivation et l'engagement. (E2,

	I3)
Helper	Auparavant, dans le domaine tertiaire, la machine, c'était la machine à écrire, c'était l'ordinateur de table qui était installé dans des endroits spécifiés et qui appelait en quelque sorte à l'endroit où ces machines se trouvait le collaborateur. Donc aujourd'hui, internet est mobile, l'appareil de production est le collaborateur lui-même avec les qualifications dont il est muni. (E4, I3) Well of course, the communication tools make this life easier, this role or this activity much easier. Because you can find in a faster way and more accurate information that you need to make the decision. (E5, I1)
Subject	C'est le rôle moteur et chez nous, il n'y a rien qui se justifie, il n'y a pas une intention éditoriale. S'il n'y a pas une intention de produit, on ne fait rien. On ne fait pas des bâtiments pour faire des bâtiments. (E2, I1) Il y a peut-être plus de tensions parce qu'il y a peut-être plus de gens qui ont peur pour leur travail ou pour leur poste. Plus de tensions parce que certains ont déjà un certain âge et ils ont pas la technologie. (E1, I5)
Opponent	Oui mais après il y a des freins je pense technique c'est-à-dire que les gens ne savent pas très bien, il y'a des freins psychologiques individuels et il y a des freins culturels. (E5, I2) Parce qu'il y a d'autres processus qui sont en train de se mettre en place dans l'entreprise qui sont quand même une tendance générale de toutes les entreprises de renforcer le contrôle interne et tous ces éléments-là. Donc c'est contradictoire. Donc là on a pas forcément fait des liens entre ce que ça signifie vraiment sur les modes de travail et les forces qui sont derrière tout ça. Enfin les lames de fond qui viennent, que ça soit restructuré, les contrôles beaucoup plus forts, une mainmise du régulateur plus forte, etc. Donc c'est un peu contradictoire. (E4, I2)

Table VI 2: Second paper analysis grid – first phase

			Enterprise Coworkers Managers Consultants HR Service IT service Customers / External people Technology Others
Second step	**Process of change**	Pilot	Le fait de faire un pilote et le fait que les gens du pilote servent d'ambassadeurs oui, c'est quand même un gros changement pour beaucoup de gens. Pour moi, il faut dire que j'ai beaucoup bougé dans ma carrière, je ne suis pas quelqu'un qui a badgé depuis 30 ans. Moi, j'ai beaucoup bougé dans ma carrière, un peu plus un peu moins, c'était une continuité quelque part. Par rapport à des gens qui n'ont pas beaucoup bougé, qui badgent depuis 30 ans, qui ont un bureau fermé avec tous leurs classeurs, passer à XXX, c'est un gros changement. Et le fait de pouvoir aller visiter des plateaux pilotes, de pouvoir discuter avec des gens qui sont déjà en XXX, je pense que c'est important dans la conduite du changement en fait. (E4, I3) Vraiment, je dirais à XXX ça marche toujours comme ça si... hein... tout le monde s'appelle Saint-Thomas ici donc ils croient ce qu'ils voient donc, on montre que c'est bien et tout et voilà pour finir c'est pas si nul… (E1, I3)
		Information	C'est un beau projet qui a été bien présenté par le futur directeur de XXX. Il a donné une bonne vision d'ensemble de ce qu'était le projet et des raisons pour lesquelles l'organisation le faisait. XXX est un esthète donc il a particulièrement soigné la présentation. (E2, I5) Je pense que y'a un gros rôle des ressources humaines oui, qui accompagne pas mal. Ils organisent aussi régulièrement des rencontres, voilà pour prôner le temps partiel, pour prôner les modes flexibles de travail en fait. On parle même plus tellement de home office parce que c'est même plus le débat, c'est le WorkAnywhere. Anytime en fait. C'est pas parce que… C'est pas du home office. Quand je suis à la maison je suis en congé en théorie. Le concept même c'est de pouvoir travailler dans la situation où je suis, dans le train, entre deux rendez-vous, dans une ville voilà. Ben là on a eu des figures internes qui étaient un peu les parrains de cette évolution, mais ils ont eu, on va dire, plus de liberté encore une fois, parce que la hiérarchie à un moment donné a donné le feu vert. Elle a dit : oui, on va y aller. Au lieu de continuer à réprimer ces personnes créatives, on les a encouragées. (E3, I4)
		Training	Un jeu, le « Workplace game » … et c'est à travers ce jeu qu'on a pu mener une conduite du changement intéressante et ludique pour une meilleure appropriation et de compréhension de la manière par laquelle on partage des différents types d'espaces entre… dans les groupes qui partagent les mêmes types d'espaces, quoi. Et, c'est un jeu intéressant. (E4, I2)

		Moi je suis, pour avoir été cheffe de la formation, je suis toujours assez dubitative sur le rôle de la formation. On va former à des outils, le terme formation. Après moi je mettrais bien en place davantage des choses alors des ateliers ou des jeux de rôles ou d'inventer autre chose. On a une population où quand on la met dans une salle de formation, ils s'endorment avant même que ça ait commencé et je pense qu'il faut être un peu plus malin dans la manière de les embarquer alors est-ce que c'est un MOOC, moi je verrai assez un truc comme ça… (E2, I2)
	Implementation	La direction générale quand elle a autorisé le déploiement, elle a par ailleurs prescrit la façon dont il allait se faire. Et comment ça se fait. On a fait appel à candidature. (E4, I1) Évidemment parce que ça nous concerne directement et à mon avis le XXX il doit pas venir d'en-haut, si je peux me permettre mais plutôt de nous qui sommes dans la production et qui en avons besoin. Et puis on peut nous, avec des workshops justement, peut-être, ça prendra du temps, ça doit être accepté ou pas, après tout dépend de la personne mais on passe à notre responsable qui lui passera à son responsable régional… J'ai participé y'a très peu de temps, en remplacement de ma team leader à, on appelle ça un board, donc la séance des responsables régionaux. Et pis là on a un petit moment de la séance qui nous permet de… Et on en parle. On parle pas du terme XXX mais on parle globalement d'une amélioration, d'un changement dans notre quotidien. (E3, I2)
Actants	Sender	Je pense que y'a un gros rôle des ressources humaines oui, qui accompagne pas mal. Ils organisent aussi régulièrement des rencontres, voilà pour prôner le temps partiel, pour prôner les modes flexibles de travail en fait. On parle même plus tellement de home office parce que c'est même plus le débat, c'est le WorkAnywhere. Anytime en fait. C'est pas parce que… C'est pas du home office. Quand je suis à la maison je suis en congé en théorie. Le concept même c'est de pouvoir travailler dans la situation où je suis, dans le train, entre deux rendez-vous, dans une ville voilà. Ben là on a eu des figures internes qui étaient un peu les parrains de cette évolution, mais ils ont eu, on va dire, plus de liberté encore une fois, parce que la hiérarchie à un moment donné a donné le feu vert. Elle a dit : oui, on va y aller. Au lieu de continuer à réprimer ces personnes créatives, on les a encouragées. (E3, I4) On les a associés bien sûr à l'opération pilote dont on a parlé tout à l'heure. Il y a un projet d'entreprise qui est né. On a un project office. On a un bureau des projets. Il y a donc un chef des projets qui a été désigné, il y a un comité de pilotage qui a été constitué. Dans ce comité de pilotage, on va retrouver les 3 fonctions qui étaient concernées par les trois piliers que j'ai cités. La Direction RH d'une part, les systèmes d'information d'autre part et l'immobilier. Et puis, on a associé également dans le comité de pilotage du projet nos clients internes, si je puis dire, c'est-à-dire les structures qui pouvaient être concernées par cette évolution, les structures de ligne qui pouvaient être concernées par cette évolution. Et puis un représentant du personnel… non excusez-moi, 2 représentants du personnel, 2 représentants des syndicats afin de rassurer l'entreprise sur les intentions qui étaient les nôtres auxquels obéissaient le lancement de ce projet. (E4, I2)

Object	Le sens profond en fait c'est la recherche d'efficience. C'est-à-dire qu'aujourd'hui on a, les ressources sont contraintes, un nombre de FTE limité, à peu près à 35. Euh le trend n'est pas à la hausse. Et donc les challenges qui s'offrent à nous sont quand même relativement élevés et puis donc je m'inscris dans une recherche d'efficience de façon à obtenir les meilleurs résultats possibles avec les ressources qui me sont données. C'est un peu une logique de chef de projet. (E1, I5) En fait pour moi le Work Smart c'est le bon outil au bon moment. C'est le fait que je puisse choisir, moi en tant qu'employé, quel est le bon moment et quel est le bon outil. Quand j'entends outil, ouais c'est l'outil de communication. Est-ce que c'est le téléphone, l'e-mail, un chat… (E3, I2)
Receiver	Because I think XXX traditionally has been a company that is very self-sufficient, we like to cook what we eat here. But I think now XXX has realized how important it is that the employees and the managers have external connections to bring different perspectives on our jobs and on our roles. (E5, I1) Je dirais que cette méthode de travail permet aux gens de donner leur opinion. Que ce soit eux qui décident, c'est toujours mieux accepté quand les changements viennent d'eux plutôt que ça soit imposé par la hiérarchie même si c'est finalement nous qui les aiguillons dans la direction qu'on veut aller. C'est tout l'art de convaincre les gens à leur faire croire que c'est leur idée (rire) et au fait on les a amené, nous, là où on voulait qu'ils soient. (E1, I2)
Helper	Deuxième chose, il reçoit un pack technologique qui consiste en des ordinateurs portables extra-légers. Initialement, les « ultra légers » c'étaient les Mac Book air à l'époque. Je vous parle de 2011, euh, 2012 quand on a commencé les expériences pilotes. Dans le monde PC… on n'avait pas des ordinateurs portables que l'on souhaitait donc on avait que ça, soit des Mac Book sur lesquels on a installé Windows. D'ailleurs, ça marchait extrêmement bien. Et un smartphone. Donc, il n'a plus de place de travail attribuée et donc plus de téléphone fixe. Par définition, il n'a plus d'ordinateur de table. (E4, I2) Il y a eu quelques séances avec ce coach externe qui nous a expliqué l'agilité avec des exemples. Donc ça restait très très théorique. Bon on a fait quelques exercices. Il y aussi eu donc un coach externe et un coach de XXX aussi mais de Berne qui lui aussi est venu faire un workshop. (E1, I4)
Subject	Dans notre domaine, on a des contraintes horaires qui sont imposées puisqu'on a une ligne téléphonique 0800 quelque chose et de 7h30 à 17h non-stop, etc… Donc il nous faut toute une organisation pour que ces téléphones soient pris dans ces périodes-là, avec des slacks etc… Donc on doit répondre à 80% des téléphones, 85% en-dessous de 20 secondes. Ça c'est une partie de l'équipe qui fait ce travail et y'a maintenant deux ou trois ans en arrière par exemple, on a essayé, maintenant on a réussi de mettre en place du home office, ça veut dire un jour par semaine on travaille à la maison, également pour les gens qui répondent au téléphone. Donc avec les outils informatiques qu'on a à disposition aujourd'hui, le XXX par exemple, pour pas le nommer, plus notre outil XXX qui est la gestion des appels, on a pu mettre en place un home office aussi pour les personnes en réponse

	téléphonique. (E3, I5) En fait, on nous a demandé si on était intéressé par rejoindre l'espace EquiLibre, vous pouviez accepter ou refuser à l'époque puisque c'était un projet pilote. Moi ça m'intéressait par rapport au télétravail, pour moi c'était pas important d'avoir un bureau dédié. Quand on nous a présentés le projet EquiLibre, c'était EquiLibre avec Equité Libre. Je ne sais pas si vous connaissez les deux notions au sein des XXX, on peut être EquiLibre car on peut travailler dans des espaces dédiés EquiLibre, sans avoir la possibilité de faire du télétravail. Et nous, quand on nous a proposé EquiLibre, c'était avec le télétravail. Moi, j'habite assez loin d'ici, en terme de transport donc le télétravail pour moi ça a un sens inespéré. Et la promiscuité que l'on peut avoir en EquiLibre avec des collègues, règler des problèmes sans avoir à faire une réunion. Dans un couloir on les voit, on est assis à côté deux et on règle des problèmes, sinon il faut organiser des séances. (E4, I7)
Opponent	Mmh (réflexion) je dirais que c'est les profils qui travaillent majoritairement encore avec du papier, sans citer de nom. Je pense que le fait de passer au monde numérique, c'est aussi un changement assez important pour les gens, et la méthodologie agile, sans numérique, ne fonctionne pas. (E1, I2) Par défaut y'a toujours des gens qui sont réfractaires parce que y'aura dans leur idée une invasion de leur esprit. L'entreprise va trop loin pour eux, ils préféreraient avoir une certaine distance. Alors c'est clair que je peux dire qu'autour de moi, certains collaborateurs quand on leur parle de home office ils me disent immédiatement : Ha non, non, le travail il reste au travail, je veux pas travailler à la maison. À la maison c'est le privé et je veux pas travailler à la maison. Donc je l'entends, je la comprends. Après ça dépend de chaque esprit, chaque manière de voir les choses. (E3, I4)

Table VI 3: Second paper analysis grid – second phase

Third step	Content of change	Enterprise Coworkers Managers Consultants HR Service IT service Customers / External people Technology Others
	Type of change Technology	Après, dans le XXX, il y aurait aussi, le XXX pardon (RIRES), il y aurait aussi, alors ça reste quand même dans les outils, mais par exemple, quand je remplace ma team leader, il arrive qu'on ait des telco comme on appelle, des communications où là les collaborateurs n'ont pas forcément besoin de se déplacer, avec lesquels on discute, alors y'a rien de nouveau mais je veux dire c'est quand même quelque chose qui favorise, qui se développe un petit peu parce qu'on a du matériel. On a ici, dans ce bâtiment, une salle au premier étage avec tout un équipement caméra, écrans… (E3, I3) Il y a beaucoup d'initiatives au niveau du groupe qui soutiennent la digitalisation et puis justement donner sens là-derrière. Je pense qu'aujourd'hui, c'est un gros brouhaha et puis en plus d'avoir parlé avec des informaticiens, ça aide pas. Parce qu'eux l'agilité, ils le comprennent comme une méthode de travail. Aussi parce qu'ils ont des scrum, des agiles, ITIL, je ne sais pas quoi comme système. Pour eux c'est ça, l'agilité. Et eux, ils pensent ça. (E1, I1)
	Manpower	Non mais il y a quelque chose de cette ordre-là qui du coup nécessite qu'on ait une vision et que justement on puisse décrire la manière dont on s'imagine travailler en 2025 à XXX, la manière dont on s'imagine encadrer les collaborateurs à cette horizon-là, etc. comme vous l'avez très bien dit qui donne une image de ce vers quoi on doit aller et puis après XXX à la fois c'est quelque chose qui doit représenter ça et puis aider à y aller. (E2, I4) Donc c'est un modèle où y a, on parle plus de, c'est plus des équipes, en fait on a une tri, en fait j'ai 2 tribus, la tribu Prépriv et la tribu Préprof. Dans chaque tribu y a 2 squads. Dans chacun de ces squads on va avoir un productowner un scrum master, des collaborateurs du squad et en mode horizontal plutôt, les squads c'est une représentation un peu verticale. C'est des gens qui sont liés par un objectif de livrer. Et puis sur un plan plus horizontal vous allez trouver des chapitres ou des guilds, c'est des gens qui ont un intérêt commun, des spécialistes de tel ou tel sujet, des choses comme ça. Et puis ça, ça a été mis en place au premier janvier 2016, pis ça marche bien en fait. (E1, I4)
	Products	Ben le but c'est qu'on les teste petit à petit. Pas qu'on se retrouve au bout de 6 mois et que le client dise : « ça ne va pas du tout ». C'est qu'il puisse déjà dire plutôt. Mais effectivement ça reste dans un environnement de test pendant 6 mois et ça va en production. Le but c'est d'accélérer le rythme de livraison. (E1, I1) Ouais alors je l'ai peut-être déjà un petit peu dit. Je pense que ben c'est pour augmenter la, ouais, l'agilité hein, de façon principale. Ouais, agilité, productivité, satisfaction, employer branding, je crois que c'est les mots clé dans ce… Et puis tester ce produit, cette technologie, pour pouvoir la vendre ou la recommander à nos clients. (E3, I3)

		Geographical positioning	Oui je pense aussi que là, il y a cet aspect de l'innovation qui est très très important et ce n'était pas juste une loterie de pourquoi on a choisi cet endroit juste à côté de XXX. Oui, on doit changer les manières de travailler pour pouvoir développer des nouvelles idées en collaboration avec des privés, en collaboration avec les hautes écoles. (E2, I5) Et on a le projet XXX. Qui nous arrive donc l'année prochaine. À partir du mois de mars, on va retourner dans nos anciens locaux qui vont être transformés. (E1, I3)
		Corporate culture	Ouais alors je l'ai peut-être déjà un petit peu dit. Je pense que ben c'est pour augmenter la, ouais, l'agilité hein, de façon principale. Ouais, agilité, productivité, satisfaction, employer branding, je crois que c'est les mots clé dans ce… Et puis tester ce produit, cette technologie, pour pouvoir la vendre ou la recommander à nos clients. (E3, I3) L'histoire, ils la connaissent, ils savent qu'en gros quand ils la résument, ils disent : « L'environnement change, on sait qu'on va demander de nous d'être différents dans le futur, d'être plus flexible, d'être plus agile, enfin tous les mots comme ça. Et XXX nous permet de soutenir ça même si on ne sait pas encore comment ça va vraiment se développer dans le futur mais on doit faire quelque chose ». C'est un peu construit comme ça, et ça soutient la digitalisation. (E1, I2)
Impact on the jobs	Importance of change	High	Maintenant… je dirais que c'est quand même un processus important, un changement important pardon. C'est donc normal que ça ait pris du temps. On aimerait pouvoir que ça prenne encore moins de temps. Trouver peut-être les justes mots dès le début. Ouais, comment les convaincre mieux plus facilement et plus rapidement. Ce n'est pas que je veux forcément me taper sur l'épaule mais, pour l'instant, ce qu'on a fait ça a marché. On s'est pas forcément donné un délai extraordinaire mais on continue à faire d'autres changements donc c'est pas fini et il y aura toujours des changements à mon avis. (E1, I3) Alors déjà au niveau des lieux de travail, un changement radical c'était de pas amener des choses personnelles. Il y a beaucoup beaucoup de personnes à XXX qui étaient là de longue date. On est beaucoup d'employés à rester longtemps XXX, à rester fidèle. Il y a eu des gens qui étaient un peu dans leur zone de confort si j'ose le dire, avec des plantes, des tableaux, des affaires personnelles qui ont dû être évacuées. Déjà ça c'était peut-être pour certains un choc de détruire ces classeurs, ces affaires personnelles, etc. Ici, on n'est pas censé avoir donc comme on fait clean desk le soir, on n'est pas censé avoir des choses personnelles. (E1, I2)
		Low	Alors moi, en rien honnêtement. Moi je n'ai pas vu de différence. C'est plus au niveau de l'organisation. Le matin, peut-être planifier sa journée, en se disant : est-ce que là j'ai bah voilà, j'ai pas mal de gens à relancer, donc je vais plutôt me mettre dans une zone qui va être allouée à ça. Après honnêtement, moi ça,

		ouais si typiquement le matin j'arrive et je sais que je dois travailler sur un projet, je ne vais pas me mettre dans la zone bruyante, parce que je sais que je ne vais pas y arriver. (E4, I8) C'est un peu, je m'excuse, c'est un petit peu nous on a le plat principal comme ça, pis tout autour ben y'a une décoration. Et pis pour moi c'est des petites facilités qui permettent un tout petit peu de ne pas être dans des barrières fermées, un petit peu de s'évaporer dans les côtés. On a quelques options, mais globalement, sur un gros pourcentage de notre activité et bien elle ne va pas changer l'activité en elle-même. Mais ça c'est dans mon unité. (E3, I3)
Evaluation of change	Improvement	Du coup les collaborateurs, moi j'ai trouvé qui … après bien sûr, une petite phase d'inertie, résistance au changement assez humaine, les changements ne sont jamais naturels. Et une fois qu'ils ont compris que finalement c'était plus simple pour tout le monde, ça donnait de la transparence, ça permettait d'amener, d'élever le niveau de connaissance de chacun, probablement aussi de sortir de sa zone de confort, ce qui n'est pas désagréable, une fois qu'a compris qu'on est dans un monde bienveillant. Et euh donc en fait, aujourd'hui les retours que j'en ai sont assez positifs. (E1, I2) Car je trouve qu'actuellement, peu d'entreprises font cela le fait de pouvoir permettre le télétravail, c'est quand même un projet basé sur la confiance des employés et ça je trouve que c'est super respectueux de l'employé. Et moi j'adore ce côté-là, ce côté je fais confiance. (E4, I5)
	Degradation	Et puis l'agilité vous voyez beaucoup de choses positives, mais elle apporte aussi des choses, plus de risques, peut-être moins de qualité, peut-être plus de frictions. Parce que vous devez travailler à plusieurs parce que justement les positions sont pas forcément toujours les mêmes. Parce que demain vous allez peut-être faire autre chose (E1, I5) Alors techniquement quand on voit toutes les options qu'on a aujourd'hui, par exemple pour voir nos horaires, pour voir nos, intranet, on peut aller même à l'étranger. Le tool que je disais tout à l'heure pour donner des idées on l'a sur le portable. C'est une application qui nous permet, n'importe où, en vacances même d'aller mettre une idée parce qu'elle nous vient maintenant. Peut-être un petit peu exagéré mais voilà. Donc peut-être qu'on facilite tellement qu'au bout d'un moment on est un petit peu envahi par tout ça pis on arrive plus à s'en sortir. J'exagère peut-être. (E3, I4)
	No evaluation	On essaie d'être atteignable sans arrêt ouais. Mais ça permet aussi tout à coup de se dire : bon maintenant je coupe. Je travaille différemment, je prends du temps pour moi. Donc c'est ce grand défi permanent aussi d'équilibrer le professionnel et… ouais c'est même plus la vie privée puisqu'elle est plus privée du tout, mais c'est la maison et le travail voilà… (E3, I2) Et puis, globalement, c'est une satisfaction des collaborateurs. Alors, évidemment… il est clair que pour

	certains c’est difficile comme transition, pour d’autres ça se fait très naturellement parce que c’est une sorte de prolongement des écoles, des universités, des écoles techniques. Pour d’autres c’est peut-être un peu plus difficile. Je ne dis pas que c’est plus facile pour les universitaires que pour les autres. Mais je veux dire que pour certains, par exemple pour moi, c’était vraiment le prolongement de ce que j’avais vécu comme étudiant par le passé. C’était vraiment très très sympathique mais c’est vrai que cette liberté est un peu vertigineuse pour certains, et certains ne s’y intéressent pas nécessairement. Certains préfèrent véritablement de marquer une séparation entre vie privée et vie professionnelle. Eh bien, on ne leur impose XXX. Ce qui est intéressant c'est que le collaborateur peut à titre personnel choisir de rester dans un système badgé s’il le souhaite. Par contre, si son secteur va dans XXX, eh bien, il n’aura plus de place de travail attribuée. (E4, I1)
Actants Sender	Alors je dirais que là c’est pas s’adapter. En tant que XXX on a un rôle de leader, on doit montrer l’exemple. (E3, I1) Non mais le truc c’est que c’est passé en comité de direction à Berne où la nouvelle responsable RH pour le groupe avait été engagée en tout cas pour ça au début pour mettre en place un truc. C’est donc une volonté du CEO, je veux dire les autres membres du comité de direction n’étaient pas forcément pour. (E1, I2)
Object	À 5 ans on fixe des objectifs qui sont à ce point changeant dans des vues vraiment à très court terme… favoriser l’évolution des médias, radio visuels, etc, les réseaux sociaux et donc c’est en termes de processus et d’organisation : accompagner l’entreprise vers de nouveaux modèles d’organisation et de fonctionnement. (E3, I1) Quand je croise des amis qui me disent : ah qu’est-ce que tu fais ? J’ai du plaisir à parler de ce mode de fonctionnement, avec les trois volets, les outils technologiques, les espaces, qui est pas de l'open space, des zones quand même de travail différentes. Donc ça j’en parle. Pis après, je sais pas, comme j’ai un métier, quand on dit système de management, c'est un truc super nébuleux. C’est peut-être plus facile pour moi de parler d’espaces de travail, que du métier en tant que tel. C’est abstrait alors on se rabat sur du concret. (E4, I6)
Receiver	On a fait une étude l’année passée, on a fait un assez gros sondage sur justement, l’utilisation, enfin qu’est-ce que les gens comprennent par XXX et puis comment c’est implémenté, comment c’est vécu ? Est-ce que c’est utile ? Est-ce que justement, est-ce que ça sert la productivité parce que sur le papier c’est joli mais… Et là on a constaté que y’avait quand même, c’était vécu très différemment suivant le contexte dans lequel on se trouve. (E3, I1) Alors nous on a plutôt un problème d’équité entre les métiers c’est-à-dire que je pense qu’il y a certains métiers qui pourraient avoir aucune obligation de présence. Un concepteur web, il va venir voir ses potes en

	équipes parce qu'il bosse avec son Scrum Master le matin mais il pourrait très bien faire ça par Skype mais quelque part ce sont un peu des autistes qui travaillent sous casque dans leur coin ou quelque part, un frigo à bière et une bonne connexion et une prise électrique leur suffit. Par contre, évidemment que tous nos collaborateurs impliqués dans la production que ce soit les journalistes, les animateurs mais aussi tous le personnel technique, il y a une nécessité d'être sur place. (E3, I2)
Helper	Moi je dirais que ce qui fait accepter le changement… parce quand on a fait l'enquête de satisfaction finale à l'issue de l'opération pilote, 80 % des collaborateurs qui étaient installés dans l'expérience pilote se sont dits extrêmement satisfaits et 20 % extrêmement insatisfaits. 80, 20. Et ça polarisait véritablement. Mais c'était intéressant, 100 % des collaborateurs disaient que l'entreprise devait poursuivre le projet parce que les collaborateurs percevaient les enjeux qui se cachaient derrière cette nouvelle modalité du travail. (E4, I1) On a donc cet esprit d'autonomie au sein de notre entreprise qui n'est pas forcément le même dans d'autres assurances où les agences ont moins de liberté de traitement. Eux, ils traitent de manière autonome pas mal de cas. Et donc l'idée est d'aussi appliquer ça ici au siège, de faire évoluer l'autonomie des collaborateurs. (E1, I2)
Subject	Ils ont mis finalement en pratique et ils ont vu les avantages que ça peut leur apporter. Je pense que les discours c'est très bien, convaincre les gens, les formations c'est toujours très bien mais à un moment donné il faut qu'ils pratiquent. C'est là qu'ils se rendent compte d'eux-mêmes, de ce qu'il y a de mieux. (E1, I4) Vous savez il y a des collaborateurs, et je les respecte beaucoup, qui ont besoin d'un cadre extrêmement précis qui d'une certaine façon leur fournit un contexte rassurant. Je dis ça alors… parce qu'ils sont peut-être… parce que par ailleurs dans le cadre de leurs loisirs ils font des choses qui sont très ébouriffantes. Et je ne dis pas que ce sont des personnes qui ont besoin de se rassurer. Mais je dis qu'ils ont… ils aiment un cadre dans le domaine… un cadre professionnel extrêmement précis en termes physiques et en termes horaires. Donc ces collaborateurs-là qui ne vont pas bénéficier des libertés qui sont offertes, ils ont la possibilité de rester dans les modalités normales, qu'est-ce qu'ils voient ? Ils voient que les choses… ils ne voient que ce qu'ils perdent et qu'est-ce qu'ils perdent ? La place de travail attribuée. C'est le bureau individuel peut-être pour le cadre intermédiaire. Et puis, ce qu'il y a d'intéressant c'est que, moi je pense… quand on perd sa place de travail fixe, on a moins la possibilité de la personnaliser et cette personnalisation de la place de travail est pour certains hautement importante. (E4, I1)
Opponent	But I think the solution is very good. And I know a lot of people who love it and I know a lot of other people who don't use it at all. They simply say "not another platform, I just hardly have time". (E5, I5) Par défaut y'a toujours des gens qui sont réfractaires parce que y'aura dans leur idée une invasion de leur esprit. L'entreprise va trop loin pour eux, ils préféreraient avoir une certaine distance. Alors c'est clair que

	je peux dire qu'autour de moi, certains collaborateurs quand on leur parle de home office ils me disent immédiatement : Ha non, non, le travail il reste au travail, je veux pas travailler à la maison. À la maison c'est le privé et je veux pas travailler à la maison. Donc je l'entends, je la comprends. Après ça dépend de chaque esprit, chaque manière de voir les choses. (E3, I1)

Table VI 4: Second paper analysis grid – third phase

D. Study 3: study design, information on data collection and data analysis

This study was led from summer 2016 to spring 2018. The objective of this research was to investigate the sensemaking processes used in digital change. The first step was to specify the concept of digitization by trying to develop an understanding that goes beyond generic buzzwords and popular beliefs. To this end, a literature review was carried out. In this phase, the typology of Lisein (2009) played a key role in helping to better organize the different types of digitization and to classify the many disparate cases. The role of self-service technologies seemed of great interest on the topic of digitization and I chose to analyze this topic more precisely in this study.

To this end, we identified companies that had implemented self-service technologies such as in the retail sector and in the fast food industry. With the assistance of the organizing tea of the HR Swiss congress in French-speaking Switzerland, we were able to contact said companies. The contact procedure was as follows: first, we would send the company a proposal form (found in the appendices below) detailing the reasons why we contacted them, the objective of our study and its method; second, and in cases where this proposal form had received a positive response, we would travel to meet with a representative of the company to discuss the study more precisely and - given their acceptance - define a timetable for data collection. We were only able to get access to two retailers and as such, decided to focus our data collection on this specific sector.

All interviews were conducted on company sites, following an interview guide built on Pettigrew (1987) and Sonenshein (2010) (below in the appendices). The interviews were recorded and transcribed. Data collection began on March 10, 2017 and extended over three months to June 7, 2017. A summary table of the sample and a detailed description of the cases is presented below.

The analysis phase took place between the summer of 2017 and the beginning of 2018. First, a content analysis was conducted for each case with the analysis grid presented below. An analysis grid with examples from the various cases is presented in these appendices.

The rest of this annex group presents 1) an anonymized standard contact letter 2) the interview guide in French and German 3) the detailed sample of the study 4) a detailed and anonymized description of the cases and 5) an analysis grid with examples from the various cases.

1. Anonymized standard contact letter

Sens au travail et transformation numérique des organisations : le rôle du RH comme agent de changement

Etude parrainée par HR Section Romande

Contexte et but de l'étude

Le terme de *« transformation numérique »* fait régulièrement les gros titres dans les médias. Ce terme englobe divers types de changements liés aux technologies de l'information et de la communication que connaissent les organisations (automatisation, flexibilisation, mobilité, nouveaux espaces de travail, etc.). Les entreprises sont profondément touchées par cette digitalisation, notamment en termes de pratiques de travail, de sens au travail ou encore de culture organisationnelle.

Quels sont les impacts de cette transformation sur l'organisation du travail, sur le contenu du travail, les interactions au travail et les rôles ? Comment ces transformations sont-elles présentées aux employés et aux managers ? Comment les perçoivent-ils ? Qu'est-ce que ces transformations changent dans les représentations du travail et donc dans le sens au travail ? Quel peut être le rôle de l'encadrement intermédiaire et de la fonction RH dans l'accompagnement du changement ?

Méthode

Nous souhaitons mener une quinzaine d'études de cas en Suisse romande en sélectionnant des entreprises et organisations qui ont vécu une expérience de transformation numérique spécifique. Dans chaque entreprise, nous souhaitons conduire six entretiens en moyenne (un responsable ressources humaines, un responsable de projet technologique – initiateur et porteur du projet de mise en œuvre –, deux managers et deux employés).
Les thématiques abordées lors des entretiens seraient les suivantes :

- Quel est l'impact du changement technologique sur les pratiques de travail et le rapport au travail ?
- Comment le processus de changement s'est-il déroulé / se déroule-t-il, quelles ont été / sont les étapes et les acteurs clé ?

- Quel a été / est le rôle de l'encadrement intermédiaire et de la fonction RH dans l'accompagnement du changement ?

Pourquoi XXX ?

Votre organisation nous intéresse car certains de vos restaurants sont dotés de bornes de commande automatique. Ce nouveau mode de fonctionnement occasionne ou a occasionné un changement de métier (en matière de compétences et d'interactions) pour certains membres de l'organisation. La mise en place de ces nouveaux dispositifs et leur impact sur les métiers et le sens au travail rendent le cas de votre organisation particulièrement actuel et intéressant.

Engagement vis-à-vis de votre organisation

Nous nous engageons aussi à présenter aux entreprises participantes les résultats de l'étude de manière individualisée. De plus, les organisations participantes recevront un rapport détaillé des résultats de l'étude d'une cinquantaine de pages environ.

Bibliographie sélective

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BRYNJOLFSSON, Erik et MCAFEE, Andrew. *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company, 2014.

PICHAULT, François. *Gestion du changement. Perspectives théoriques et pratiques*, De Boeck, Bruxelles, 2009.

ROULEAU, Linda et BALOGUN, Julia. Middle managers, strategic sensemaking, and discursive competence. *Journal of Management Studies*, 2011, vol. 48, no 5, p. 953-983.

2. Interview guide in French

The interview guides used in the third paper are presented. These interview guides differed whether the interviews were conducted with managers or coworkers and if the digital transformation had already happened on the site interviewees were working in. The interview guides are presented in French and in German.

Guide d'entretien – Sens au travail et transformation numérique des organisations

Présentation de la recherche

La numérisation des organisations est une thématique d'actualité dans le quotidien des organisations avec des changements liés à une évolution technologique. **Un changement doit « faire sens » pour les collaborateurs ; on s'interroge sur les manières dont l'organisation peut faire passer le sens. Notre étude vise à comprendre comment le changement est implémenté et perçu par les acteurs (représentants RH, managers intermédiaires, porteurs de projet, collaborateurs).** Pour ce faire, une dizaine d'études de cas sera effectuée au sein d'organisations de Suisse romande ayant connu des transformations technologiques importantes au cours des dernières années. Cette étude est parrainée par HR Section Romande, dans l'optique d'une présentation au congrès des sections romandes de HR Swiss en septembre 2017, congrès pour les professionnels de la fonction RH en Suisse romande et réunissant environ 500 personnes. L'entretien est enregistré et transcrit pour des raisons d'analyse. Les participants bénéficient d'un droit de regard sur la transcription. L'anonymat des participants et de leurs organisations est garanti.

Informations générales de contexte

Pouvez-vous m'expliquer quel est votre travail ?

Depuis combien de temps travaillez-vous dans cette position ? Qu'est-ce que vous faisiez avant de prendre ce travail ?

Pouvez-vous me parler des autres changements organisationnels que vous avez vécus?

Questions concernant le projet de transformation numérique

Pour les collaborateurs

Si le projet a été implanté sur le site

Pouvez-vous me parler de l'initiative XXX ? Qu'est-ce que c'est ? Comment est-ce que vous

avez été mis au courant de cette initiative ? Si vous deviez expliquer ce projet, comment est-ce que vous le feriez ?

Qu'est-ce que c'est, l'initiative XXX ? (Contenu : technologie, main d'œuvre, produit, emplacement géographique, culture d'entreprise)
Pourquoi est-ce que l'entreprise change ? (Contexte externe : environnement social, économique, politique, concurrentiel ; Contexte interne : structure, culture d'entreprise, politique interne)

Comment est-ce que l'entreprise met en œuvre le changement ? (Processus)

Pourriez-vous décrire les étapes et le calendrier du projet ? Pourriez-vous également décrire le rôle des principaux acteurs (managers, porteur de projet, RH, collaborateurs) ?

Quel rôle avez-vous joué dans l'implantation du projet ? Avez-vous partagé les documents d'information avec vos collaborateurs/collègues ? / Votre supérieur hiérarchique a-t-il partagé les documents d'information avec vous ?

Est-ce que vous avez eu à faire part du projet à des clients ? Si oui, comment est-ce que vous l'avez fait (et expliqué) ? Comment avez-vous expliqué le projet à vos collaborateurs/collègues ?

Comment cette initiative a-t-elle modifié votre travail et l'entreprise ?

Est-ce que vous considérez la mise en place de cette initiative comme un succès ? Pourquoi ?

Quelles préoccupations / inquiétudes avez-vous concernant le projet ?

Qu'est-ce que vous considérez comme une communication efficace ? L'entreprise a-t-elle bien communiqué sur le projet ?

Si le projet n'a pas été implanté sur le site

Avez-vous entendu parler de l'initiative XXX ? Qu'est-ce que c'est ? Si vous deviez expliquer ce projet, comment est-ce que vous le feriez ?

Qu'est-ce que c'est, l'initiative XXX ? (Contenu : technologie, main d'œuvre, produit, emplacement géographique, culture d'entreprise)

Pourquoi est-ce que l'entreprise change ? (Contexte externe : environnement social, économique, politique, concurrentiel ; Contexte interne : structure, culture d'entreprise, politique interne)

Comment est-ce que l'entreprise met en œuvre le changement ? (Processus)

Comment est-ce que vous avez été mis au courant de cette initiative ?

Quelles mesures (s'il y en a) allez-vous prendre pour mettre en place l'initiative XXX ?

Avez-vous reçu des informations du siège au sujet de l'initiative XXX ? Que disaient-elles ?

A votre avis, quel va être l'impact de l'initiative XXX sur votre travail et pour l'entreprise ?

Avez-vous eu des questions sur l'initiative XXX de la part de clients ou de collaborateurs ? Comment y avez-vous répondu ?

Quelles préoccupations / inquiétudes avez-vous concernant le projet ?

Qu'est-ce que vous considérez comme une communication efficace ? L'entreprise a-t-elle bien communiqué sur le projet ?

Pour les managers

Pouvez-vous me parler de votre rôle dans l'initiative XXX ? Quand et comment avez-vous été impliqué initialement ?

Qu'est-ce que c'est que l'initiative XXX ? (Contenu : technologie, main d'œuvre, produit, emplacement géographique, culture d'entreprise)

Pourquoi est-ce que l'entreprise change ? (Contexte externe : environnement social, économique, politique, concurrentiel ; Contexte interne : structure, culture d'entreprise, politique interne)

Comment est-ce que l'entreprise met en œuvre le changement ? (Processus)

Pourriez-vous décrire les étapes et le calendrier du projet ? Pourriez-vous également décrire le rôle des principaux acteurs (managers, porteur de projet, RH, collaborateurs) ?

Pourquoi l'entreprise a-t-elle lancé le projet XXX ? Quelle était l'origine de celui-ci ? Quelles ont été les différentes raisons ? Le projet a-t-il été lancé dans un contexte favorable ? Comment le projet a-t-il évolué au fil du temps ?

Comment est-ce que vous voyez les collaborateurs qui mettent en place le projet XXX ? Quel rôle les managers intermédiaires ont-ils ? Qu'est-ce qui fonctionne et qu'est-ce qui ne fonctionne pas ?

Pouvez-vous me parler des processus de communication entre le siège et les succursales ? Comment cela se passe-t-il ?

Quels sont les plus grandes difficultés dans la mise en place du projet XXX ? Qui a montré le plus de résistances ?

Comment est-ce que vous décririez le projet XXX à un nouvel employé ?

Quelles sont les différences entre un collaborateur qui travaille déjà dans une succursale / une unité où a été mise en place le projet XXX et un collaborateur qui travaille dans une succursale / une unité où cela n'a pas été le cas ?

Qu’est-ce que vous considérez comme une communication efficace ? L’entreprise a-t-elle bien communiqué sur le projet ?

Comment feriez-vous aujourd’hui ? Autrement/mieux ?

3. Detailed sample of the study

Company	**Interviews**	**Word count**
Retailer A	14 (three store managers, three cashier managers, six cashiers, one HR manager, one IT manager)	124’444
Retailer B	6 (one store manager, one cashier manager, two cashiers, one HR manager, one IT manager)	56’839
Total	**20**	**181’283**

Table VI 5: Composition and specificities of study sample (third article)

4. Detailed and anonymized description of the cases

Retailer A

Retailer A is a leading cooperative company in the Swiss distribution market. In the course of the 2010's, it launched at the same time its self-scanning system which allows its customers to scan their shopping throughout the purchasing process as well as its first self-checkouts which allow customers to scan their products themselves at the end of their shopping.

We conducted a case study within Retailer A because the development of self-scanning and self-checkout technologies represents a major challenge for the jobs within the organization. Our data collection was organized in a regional administrative center of the cooperative where we were able to meet the person in charge of training and the person in charge of IT for the project. We also conducted interviews in three shopping malls where we were able to interview in each case the manager, the administrative manager and two cashiers.

Retailer B

Retailer B is a leading cooperative company in the Swiss distribution market. In the 2000s, it launched a self-scanning service that allowed customers to pre-scan their items as they walked through the store to facilitate the purchase process. In 2013-2014, it launched its first self-checkouts, which allow customers to scan their products by themselves at the end of their shopping. These terminals also facilitate self-scanning procedures. Their implementation initially caused an outcry, with the media eventually announcing the disappearing of cashier jobs.

We conducted a case study within Retailer B because the development of self-scanning technologies represents a major challenge for the jobs within the organization. Our collection was organized in a regional center of the company where we were able to meet the person in charge of training and the person in charge of the IT for the project. We also conducted interviews in a shopping mall where we were able to interview the manager, the administrative manager and two cashiers. The data collection was completed by a day of participating observation in the self-checkout area.

5. Analysis grid

		Technology HR IT Service Company Employees Customers Competition Partners / Consultants
First phase	**Sender**	Bien sûr, Retailer B, ben il faut bien qu'ils évoluent. Il faut aller avec son temps et pis je dirai qu'ils n'ont pas le choix. Ils n'ont pas le choix, ben voilà, Retailer A, ils ont ça… ils sont obligés de suivre parce qu'autrement on a l'air vraiment… c'est la technologie, on doit faire avec. (Retailer B, I1) Eh bien, Retailer A est une entreprise à la pointe de la technologie, ça augmente le confort d'achat, ça offre aux clients des alternatives, ça simplifie la vie du client donc tout ça pour rester concurrentiel et puis il y a des évolutions de l'activité tel que l'a été le passage des caisses manuelles aux caisses scanning. (Retailer A, I2)
	Object	Notre rôle c'est de dire que c'est un confort qu'on donne à nos clients, ça va permettre de réduire l'attente en caisse… (Retailer B, I1) Le projet ça a été d'introduire des moyens technologiques qui semblaient un peu plus up to date tout en gardant les caisses traditionnelles mais justement de faciliter l'encaissement avec des outils qui correspondaient peut-être plus à ce que les jeune générations désirent, sans restreindre, parce qu'il n'y a pas que des Y et des Z… (Retailer A, I1)
	Receiver	Oui, il y a des critères. On est généralement sur des magasins qui ont des effets de pointe c'est à dire des moments dans la journée souvent à midi ou le soir ou il y a une fréquentation de client qui explose. Et puis même en ayant deux fois plus de caisse, on n'arriverait pas à absorber le flux clientèle. Donc finalement XXX pour nous, l'utilité aujourd'hui c'est de lisser le flux client sur une journée, de mieux absorber les effets de pointe de fréquentation client très fort. (Retailer B, I5) Les gens veulent assez, je ne veux pas dire tout, tout de suite mais ils veulent gagner en temps donc c'est vrai que le système XXX, ceux qui prennent les scanners, ils peuvent mettre directement dans les sacs et les sacs, ils peuvent les mettre directement dans la voiture. Tandis qu'aux caisses traditionnelles, ben tu mets dans le chariot, après tu mets sur le tapis et après tu remets dans les sacs. (Retailer A, I12)
	Helper	C'est quelque chose de nouveau et puis il faut faire avec la technologie nouvelle. Je dirai qu'on n'a pas le choix. (Retailer B, I3) Moi je pense que c'est quand même un phénomène un petit peu de mode. C'est vrai qu'aux Etats-Unis ça fait des années qu'ils ont les systèmes. Je crois qu'au Japon aussi. Après certains magasins l'ont d'autres pas, dont Retailer B, je sais que ça faisait quelques années qu'ils l'avaient et puis c'était aussi une demande des clients parce que les gens sont de plus en plus pressés. C'est

		vrai que si on peut gagner du temps. (Retailer A, I2)
	Subject	Donc de plus en plus on voit qu'il y a la technique, la technologie qui s'intègre à notre métier. Pour résumé, je dirais ben voilà : laissons faire la technologie les tâches qu'on n'aime pas faire et puis ça nous donne encore plus de temps, plus d'espace pour vraiment apporter notre vraie valeur ajoutée qui est humaine et qui ne sera pas remplacée par un robot. (Retailer B, I5) Retailer A est une entreprise à la pointe de la technologie, ça augmente le confort d'achat, ça offre aux clients des alternatives, ça simplifie la vie du client donc tout ça pour rester concurrentiel et puis il y a des évolutions de l'activité tel que l'a été le passage des caisses manuelles aux caisses scanning. (Retailer A, I2)
	Opponent	Bien sûr, Retailer B, ben il faut bien qu'ils évoluent. Il faut aller avec son temps et pis je dirai qu'ils n'ont pas le choix. Ils n'ont pas le choix, ben voilà, Retailer A, ils ont ça… ils sont obligés de suivre parce qu'autrement on a l'air vraiment… c'est la technologie, on doit faire avec. (Retailer B, I1) Donc dans le cadre du marché de détail actuel, la concurrence devient de plus en plus rude, donc conserver les parts de marché c'est assez difficile maintenant avec XXX, XXX qui arrivent. Donc le gâteau reste toujours le même mais il y a de plus en plus de gens autour de la table. Donc les parts ont tendance un peu à diminuer. (Retailer A, I8)

Table VI 6: Third paper analysis grid – first phase

		Technology HR IT Service Company Employees Customers Competition Partners / Consultants
Second phase	**Sender**	Ah ben une fois que XXX et que la direction suisse romande a dit il y a XXX chez vous : il y a XXX chez vous. Une fois que c'est décidé, c'est décidé. Ça c'est sûr. (Retailer B, I1) Oui, encore une fois ce sont des grandes maisons, ils savent exactement comment gérer la chose, comment communiquer, comment aider, comment mettre à l'aise. Eux n'agissent pas au hasard, ils savent exactement le comment, le pourquoi et le où. Ils nous donnent quand même la possibilité de s'intéresser… une grande maison restera toujours une grande maison. Ils nous donnent les moyens, les outils. (Retailer A, I4)
	Object	Pour attirer le client, il faut qu'il soit à l'aise et donc aujourd'hui c'est un vrai service client parce qu'avec ça, on régule beaucoup mieux l'attente. (Retailer B, I2) Ensuite il y a eu plutôt la partie formation : comment on va former les gens, comment on va faire passer ça chez les gens, comment on va recruter les gens. Puis après il y avait toute la partie communication soit grand public, soit à l'entreprise. (Retailer A, I2)
	Receiver	Pour attirer le client, il faut qu'il soit à l'aise et donc aujourd'hui c'est un vrai service client parce qu'avec ça, on régule beaucoup mieux l'attente. (Retailer B, I2) Parce qu'il y a aussi un autre aspect, c'est qu'à un moment donné, le système Subito est un système qui touche le client en premier lieu. Donc la première chose à faire c'est déjà de convaincre le client que le système est bon. (Retailer A, I4)
	Helper	Oui oui il y avait déjà eu… on a toujours des pilotes en suisse-allemande puis après quand la 1ère phase est validée, on fait dans les autres régions linguistiques, rien que pour le soft pour que ça soit juste écrit correctement. (Retailer B, I6) Ben il y avait déjà eu un grand changement parce que de passer de la caisse aux rayons, c'était déjà un grand changement pour les gens. Ils se sont dit : mais celui-ci, il vient d'où ? il n'est pas sur la même planète que nous. Donc ce changement-là a fait que certainement les autres changements derrière, c'était des 'petits changements'. (Retailer A, I7)
	Subject	Quand on démarre SCO dans un magasin, il y a toute une partie pédagogie à faire au niveau du client et pis ça, elles y prennent souvent du plaisir quand même. (Retailer B, I5) Donc il a fallu nous former nous au départ parce que savoir ce que c'était XXX et puis j'ai tout de suite vu dès les départs que la grande difficulté qu'on va avoir, c'était de faire passer ça auprès des personnes quoi parce qu'on entrait un petit peu le loup dans

		la bergerie, de convaincre les caissières et de dire : ben voilà ça va vous aider dans votre travail mais ça ne va pas vous enlever du travail… c'était un petit peu… ça j'avais des craintes. (Retailer A, I3)
	Opponent	Alors il y a des gens très positif mais il y a aussi des gens négatifs en disant ben voilà vous allez tuer le métier de caissière, vous allez licencier des caissières donc nous on les sensibilise aussi à la manière de réagir à des clients en leur disant attention vous risquez d'avoir quand même ce genre de réaction donc voilà comment vous pouvez expliquer à votre clientèle. (Retailer B, I5) On a regardé le profil de compétences et on a laissé quand même la latitude au gérant du magasin de faire en fait son recrutement puisque lui connaît les gens. Nous on insistait fortement d'être attentif à ça, c'est-à-dire de ne pas prendre la caissière qui est déjà réputée pour sa mauvaise humeur. (Retailer A, I2)

Table VI 7: Third paper analysis grid – second phase

		Technology HR IT Service Company Employees Customers Competition Partners / Consultants
Third phase	**Sender**	Je pense que ça donne une meilleure image de Retailer B en ayant ces machines, je veux dire ces caisses, le client il est libre de faire ce qu'il veut. Donc il a le choix, il peut aller en caisse normale ou en caisse SCO. (Retailer B, I3) Donc je crois que Retailer A cherche en tant que leader du marché, cherche à être le meilleur partout, offrir les meilleurs services aux clients. (Retailer A, I5)
	Object	Je pense que là, on perdait des clients et avec SCO ces jeunes avec leur sandwich et leurs boissons peuvent passer directement en SCO gagner du temps et les gens qui avaient leur caddie pouvaient justement… Parce que ça se disait qu'il ne fallait pas faire ses commissions à XXX à midi. Cela ça nous embête en tant que commerçant car les gens vous évitent un certain moment la journée. Et là, le SCO a résolu ce problème. On parlait de sens et bien là ce sont des choses importantes. (Retailer B, I5) Ça a bien fonctionné dès le départ, chez nous, on était même étonné du pourcentage parce qu'ils tablaient sur un pourcentage de 10% et puis je crois qu'on était à 12 et quelque, maintenant ça peut-être même augmenté, je ne serais pas vous parce que c'est vrai que je n'ai pas eu l'occasion de demander à ma responsable. Je pense que les clients étaient assez contents qu'il y ait le système parce que je sais qu'il y avait des clients qui allaient chez Retailer B et après quand on a eu le XXX chez nous, ben les clients sont venus chez nous. (Retailer A, I3)
	Receiver	Mais question rapidité c'est vrai que pour les clients, pour les ouvriers qui arrivent à midi et qu'ils sont pressés, c'est vrai qu'ils ont peu de temps et pis il n'y a pas d'attente. On a quand même pas mal de caisses alors il y a peu d'attente. (Retailer B, I4) Ça a bien fonctionné dès le départ, chez nous, on était même étonné du pourcentage parce qu'ils tablaient sur un pourcentage de 10% et puis je crois qu'on était à 12 et quelque, maintenant ça peut-être même augmenté, je ne serais pas vous parce que c'est vrai que je n'ai pas eu l'occasion de demander à ma responsable. Je pense que les clients étaient assez contents qu'il y ait le système parce que je sais qu'il y avait des clients qui allaient chez Retailer B et après quand on a eu le XXX chez nous, ben les clients sont venus chez nous. (Retailer A, I3)
	Helper	C'est quelque chose qui a toujours fait partie un peu de notre ADN. Souvent, quand on parle de l'accueil client chez Retailer B, on dit : ah ben c'est marrant chez Retailer B quand je demande où est un produit, on m'accompagne jusque dans le rayon et on va me donner le produit. Ça c'est quelque chose qu'on a toujours beaucoup travaillé. On a régulièrement fait des workshops. On en a fait un, c'était il y a deux ans sur l'amabilité. Donc régulièrement, justement c'est une thématique que l'on reprend. C'est aussi dans la plupart des formations, on parle d'accueil. Quand on va faire un cours sur les fruits et légumes, on va parler de comment on accueille le client dans son rayon fruits et légumes. Donc, l'accueil est quand même quelque chose qui fait partie de l'ADN et qui

		revient régulièrement. Et comme je vous l'ai dit, tout ce qui est rayon à services, là on veut encore renforcer le côté conseil, service et bien sûr accueil. Et même avant au niveau des lignes de caisse, l'accueil faisait partie, ce qu'on appelle le SBRAM : sourire, bonjour, regard, au revoir, merci. Ça, ça fait partie justement de notre ADN. C'est quelque chose d'important au niveau du client. (Retailer B, I2) Mais c'était quand même un changement de métier parce qu'elles doivent être comme je vous dis, elles ne sont plus des caissières, elles sont hôtesses… oui je vois ce que vous voulez dire… moi je trouvais que dans l'attitude ce n'était pas un très grand changement par contre, c'est clair que le rôle, il changeait quand même parce que ce n'est plus le rôle de la caissière qui a son chariot, sa marchandise elle arrive, elle scanne, « bonjour Madame », sourire, « bonjour, au revoir, merci ». (Retailer A, I2)
	Subject	Nous c'est clair, on part du principe de dire que la caisse elle fonctionne toute seule après c'est clair qu'on doit l'aider pour certaines tâches. (Retailer B, I6) Donc déjà pour le client, il y a un élément que le client ne se rend peut-être pas compte mais Retailer A met une grande confiance en ses clients quand elle fournit un système comme ça à ses clients donc quand on a discuté avec la direction ici de ça au début, on parlait de sécurité et tout ça, là on nous a tout de suite dit : il faut partir de l'hypothèse que les clients sont honnêtes, nous avons des clients honnêtes chez Retailer A. (Retailer A, I3)
	Opponent	En flic… oui ben voilà. On doit quand même surveiller. Ce n'est pas qu'on ne leur fait pas pas confiance, mais euh voilà. C'est vrai qu'il y a des clients qui arrivent et qui disent : ah c'est vous qui faites le gendarme. Ben oui mais moi je le prends au second degré. Si on prend ça… ce n'est pas du travail pour nous. (Retailer B, I3) Pas forcément la surveillance mais comment est-ce que je gère ma relation avec mon client quand je fais une validation partielle et puis quand je m'aperçois que tout d'un coup, il n'a pas scanné 3 articles. Qu'est-ce que je dis au client, il y a tout cet aspect-là de jugement, de comment est-ce qu'on aborde cette chose. Donc je pense que c'est là la difficulté. (Retailer A, I9)

Table VI 8: Third paper analysis grid – third phase

VII. Overview of professional experience and scientific contributions

Education and Professional Experience

Birth date	May 15, 1988, in Vevey (VD)
Nationalities	Swiss / French
Language skills	French: Mother tongue
	English: C2 level
	German: C1 level
	Spanish: A2 level

Academic Education

PhD in Management 2014 – Present

Chair of Human Resources and Organization, Department of Management, University of Fribourg, Switzerland.

PhD in Management, *Making sense of digitization: three studies on the digitization concept and its implementation in organizations*, under supervision of Prof. Dr. Eric Davoine.

PhD Courses

Université de Fribourg	Scientific Publishing in Economics (Prof. Jean-Robert Tyran)	10-11.10.2018
FORS (Swiss Centre of Expertise in the Social Sciences)	Festival des méthodes qualitatives	07-08.09.2015

Research seminars

Department of management, Université de Fribourg	Department research seminar 2018	01.02.2018
	Department research seminar 2017	25.01.2017
	Department research seminar 2016	27.01.2016

Chair of Human Resources and Organization, Université de Fribourg	Multiple chair research seminars	27.06.2018 30.05.2018 17.04.2018 21.02.2018 29.11.2017 25.10.2017 16.08.2016 16.06.2016 12.05.2016 11.11.2015 29.10.2015 21.10.2015 07.10.2015 16.09.2015

Master of Arts in Management 2010 – 2014

University of Fribourg, Switzerland.

Business Communication – magna cum laude

Master thesis: "L'e-RH à l'heure du web 2.0 en Suisse romande : une étude prospective"

Bachelor of Arts 2006 – 2010

University of Lausanne and University of Neuchâtel, Switzerland.

Modern French, Journalism and Communication, Computer Science and Mathematical Methods

Professional Experience

Teaching Assistant 2014 — Present

Chair of Human Resources and Organization, Department of Management, University of Fribourg and UniDistance, Switzerland.

Supervision of bachelor and master theses

Development and implementation of an online course for management students

Coordination and teaching in an “economy for non-economists” program

Internship in Human Resources and Training – 6 months 2013 — 2014

Radio Télévision Suisse

Development of an online training tool for managers

Student Assistant – 6 months 2013 — 2013

Chair of Human Resources and Organization, Department of Management, University of Fribourg, Switzerland.

Research in the field of HR management and digitization

Internship in Corporate Communication – 6 months 2012 — 2013

Radio Télévision Suisse

Media relations and online communication (community management, press review)

Teaching

Assistant for the following classes (preparing and giving case studies, exams preparation and correction):

2015 – 2018 **Introduction to Management**, Bachelor 1 – University of Fribourg

2014 – 2018 **Introduction to Management**, Bachelor 1 – UniDistance (in charge of 40% of the teaching)

2014 – 2015 **Managerial Competencies**, Master 1 & 2 – University of Fribourg

2014 – 2015 **Organizational Audit**, Master 1 & 2 – University of Fribourg

Coordinator and teacher:

2017 – 2018 **Program “economy for non-economists”** – University of Fribourg

2018 **Organizational Audit**, MBA – International Management School Geneva

Academic Work

Scientific Publications

Audrin B., Davoine E. (2018). " Une analyse de l'activité du dirigeant de PME par le modèle demandes-contraintes-choix ", *Recherches en Sciences de Gestion*, N° 126, 29-56.

Audrin B., Davoine E. (2017). " La fonction RH face à la numérisation des organisations : le cas des outils de communication numérique ", *Management & Avenir*, Vol. 92, N° 2, 15-39.

Audrin B., " Implementing self-service technologies: not without competition!" (under review).

Audrin B., Davoine E., Pichault F. " Implementing new ways of working: a Greimassian analysis " (under review).

Communications in Conferences

Audrin B., Davoine E., Pichault F. (2018). " Stories of implementing New Ways of Working: Using Greimas' actantial narrative analysis in five Swiss case studies ", EGOS, 5-7 July 2018, Tallinn.

Audrin B. (2018). " Making sense of automation: the case of self-checkouts ", 7th international conference Organizational Development and Change ISEOR/AOM, 7-8 June 2018, Lyon.

Audrin B. (2018). " Comment raconter la digitalisation ? Deux récits dans le secteur de la distribution ", Journée d'étude : La réalité de la fiction, ou des relations entre fiction, narration, discours et récit, 17 May 2018, CNAM, Paris.

Audrin B. (2017). " Numérisation des organisations et activité managériale : une étude de cas au sein d'une entreprise multinationale ", 7ème conférence Atlas/AFMI, 2-4 mai 2017, Antananarivo.

Audrin B., Davoine E. (2015). " La fonction RH à l'heure du web 2.0 – une étude prospective en Suisse romande ", 14 et 15ème Journées sur la Prospective des Métiers, 1-2 décembre 2015, ESSEC Business School, Paris.

Audrin B., Davoine E. (2015). " Rationaliser l'activité quotidienne du dirigeant d'entreprise : une analyse par le modèle Demandes-Contraintes-Choix ", 26ème congrès de l'Association Francophone de Gestion des Ressources Humaines (AGRH), 4-6 novembre 2015, Montpellier.

Articles in Professional Journals

Audrin B., Davoine E. (2017). " L'entreprise numérique: trois enjeux pour les managers 4.0 ", HR Today, Vol.3/2017, pp. 26-27.

Audrin B., Cerf M., Davoine E. (2016). " Existe-t-il un « Röstigraben » dans le recrutement ? ", Persorama, 4/2016, pp. 16-19.

Audrin B., Cerf M., Davoine E. (2016). " Les réseaux sociaux montent en puissance dans le recrutement ", HR Today, Vol.3/2016, pp. 30-31.

Audrin B., Salamin X., Davoine E. (2014). " Comment le Web 2.0 modifie les pratiques de travail ", HR Today, Vol.4/2014, pp. 20-21.

Audrin B., Salamin X., Davoine E. (2014). " Web 2.0 en entreprise : quels dossiers prioritaires pour la fonction RH ? " Persorama, 3/2014, pp. 32-35.