Haute Ecole

Groupe ICHEC - ISC St-Louis - ISFSC

Enseignement supérieur de type long de niveau universitaire

How collaboration and virtual teams encouraged by the NWoW might be a threat for companies and labour?

Mémoire présenté par
Sophie CRÉVIEAUX

pour l'obtention du diplôme de
Master en Sciences Commerciales

Année académique 2017 - 2018

Promoteur :
Monsieur Jacques FOLON

Boulevard Brand Whitlock 2 - 1150 Bruxelles

Acknowledgments

This paper and research would not have been possible without the support of many people.

I would first of all like to thank my thesis promoter, Mr. Jacques Folon for his precious guidance.

Many thanks to my parents, friends and colleagues for their encouragements during this year of redaction.

I would also like to express my deepest thanks to Alexander Heming for his revision of my work and Catherine Everaerts for her unconditional support throughout this redaction.

Table of contents

1° Part: General introduction

I. Research topic and objectives

This study has been conducted in the course of my Master in International Business and Management at Ichec and will be the subject of my final year's thesis.

The research topic chosen focuses on a current phenomenon in management and human resources: the broad concept of the *New Ways of Working (NWoW)*. The aim of this research was to look at the sub-elements falling within the NWoW and to analyse how some of them might have a negative impact on firms and its workers.

As an undergraduate, I had my first professional experience during my second year at Ichec. I worked as an intern in a Belgian public company employing over 13,000 workers. For the required internship report I chose to conduct my research on the effects of open spaces that are a part of NWOW. Being someone inquisitive, I decided further my research in the concept and to make it the research question that would lead me to my master's thesis.

I chose to study virtual teams as NWoW and on collaboration needed to these structures to work. I believe, this topic is worthy of consideration as businesses work within this new environment, with virtual teams. So far, collaboration regarding virtual teams has not been very much approached. Moreover, I am very interested in pursuing an international career and this research has surely proven me with new insights. That is why my objective is to improve existing literature on virtual teams and to bring new information to this unexplored topic of collaboration in virtual teams.

II. Methodology and structure

This thesis is thus focused on the research field; the objective was not to apply it to a specific organisation but to provide new insights to theory and to explore this almost-new topic of *collaboration within virtual work structures*. The paper following the deductive method is divided into 4 part: general introduction, literature research, field research and confrontation to theory, then conclusion.

The theory overview displays a complete picture of the practices included in the NWoW. It focuses then on virtual teams, their challenges and the conditions for their success among which collaboration. We concluded our literature analyses with many questions and possible issues which led us to formulate our research question *How collaboration and virtual teams encouraged by the NWoW might be a threat for companies and labour?*. We presented from our readings 3 hypotheses to try to answer this question and verified them through the collection of primary data. 14 interviews have been conducted applying the scientific method (Paquet, Schrooten, & Wattier, 2015). The last part of this field research confronts the results observed on the field with what has been previously observe by scholars before to expound a clear and balanced conclusion of our findings.

2° Part: Theory

I. Contextualisation

The world is not static but is on a constant evolution so are our economies and their administration. The traditional ways of management such as Taylorism, Fordism and any other hierarchical structures are now being replaced by new ways of organising work (Chênevert & Dubé, 2008; Silva & Ben Ali, 2010; Bijl, 2011; Ajzen, Donis, & Taskin, 2015; Philippe Escande, 2015).

Our capitalistic economy, that had been so far focusing only on productivity and performance as the key drivers for growth, is now questioned and on the move (Escande & Cassini, 2015). These new ways of organising work have been encouraged by the emergence of the ICT[1]'s (information and communication technologies), *the economy's globalisation and the increasing importance given to individuals* (Gavroglou, Ford, Totterdill, Savage, & Sacquepee, 2001; Chênevert et al., 2008; Bijl, 2011; Ajzen, Donis, & Taskin, 2015; Jemine, 2016). We will thus, before defining the New Ways of Working contextualise the concept by covering those 3 elements.

1. Emergence of ICT's

Over the 19th Century, the industrial revolution took place in the West allowing the rise and the legitimation of commercial and financial capitalism (Escande & Cassini, 2015). Due to the industrialisation of production (Larousse, n.d.) and the rise of trade exchanges, an organisational shift in offices followed. Indeed, during the 20th Century, new administrative activities such as insurance, telecommunication, banking and accounting became part of the business process. They increased the amount of paperwork and so the need for more office workers (Silva & Ben Ali, 2010).

It means that beyond factories, gains of productivity became objectives to reach when typing (handwriting abandoned), computing (tabulating machines) and communicating (telephone and telegraph). Offices have been described by Bijl (2011, p.21) as "administrative factories" where the emphasis was put on efficiency the same way as plants were in terms of hierarchical structure, staff departments and command and control management style.

Paper carrying all the information was the central recipe of that structure thus implying a strong tie to time and location. It was the era of established "machine bureaucracy", terms used by Mintzberg (1980 cited by Lunenburg, 2012, p.1). It is an organisation relying on a techno structure which implies that power is vertically centralised, made of many layers of control, formal procedures and standardised production processes. It

[1] ICT's can be defined as a " set of technologies from de convergence of the computer science and of the advanced techniques of multimedia and telecommunications, that enabled the emergence of communication channels more effective, improving the processing, the storing, the information dissemination and exchange." (Office québécois de la langue française, 2008).

results in a high level of formalisation and work specialisation (1980 cited by Lunenburg, 2012, p.1).

During the 1940's when atomic research started, the need for mass calculations encouraged the development of new computation tools thanks to computer science. These computational tools will be used by other sectors with the introduction of the microcomputer in the 1970's. Its use became generalised in the 1990's with its acceptance by management[2], its internal networking and later with the Internet (Silva & Ben Ali, 2010; Escande & Cassini, 2015).

These new tools enabled the creation of new jobs and transformed work conditions. Vaast (2008) sums it up by saying that computer science allowed the automation of any information-related activity; it was the beginning of the Era of sharing information (cited by Silva & Ben Ali, 2010).

2. Economy's globalisation

It is thanks to these evolutions in offices that the world and its assumptions changed very quickly and permitted the New Ways of Working to fit within this new world. (Bijl, 2011). Escande and Cassini (2015, p.2) call it the "third age" of Capitalism driven by 3 forces namely the "financial deregulation, trade globalisation and the digital revolution".

Digital revolution

Firstly because of ICT's information was no longer bounded to paper and thus to time and space. The costs of spreading information were lowered (Garrett, 2000; Silva & Ben Ali, 2010; Bijl, 2011; Kelliher & Richardson, 2012). The Internet triggered flows of information and capital to support trade beyond country borders and continents (Fonds Monétaire International, 2000; Silva & Ben Ali, 2010; Bijl, 2011; Kelliher & Richardson, 2012; Beitone, Cazorla, Dollo, & Drai, 2013; Escande & Cassini, 2015). This was made possible through the development and expansion of optical fibre technology[3] by satellite communication networks (Garrett, 2000; Rodrigue, 2000; Cable Organizer, 2017).

This dematerialisation of information thanks to the new tools developed, drove collaboration and ubiquity forward, permitting the virtualisation of relationships (Silva & Ben Ali, 2010; Kelliher et al., 2012).

[2] Typing was seen as a thankless task (Silva & Ben Ali, 2010; Servajean, 2013; Secretaire-inc, 2014).

[3] In an interview, the associate professor Robert Malaney from the University of New South Wales illustrates the difference between the optical fibre and the traditional copper band: " And fibre optics can definitely transfer more data at higher throughput over longer distances than copper wire. For example, a local area network using modern copper lines can carry 3000 telephone calls all at once, while a similar system using fibre optics can carry over 31,000."(Malaney, 2010)

Financial deregulation

The second force Escande and Cassini (2015) wrote about is the financial deregulation that enabled companies and entrepreneurs to access more capital from foreign markets and investors which in turn multiplied the amount of financial instruments (Fonds Monétaire International, 2000 ; Garrett, 2000). This was the beginning of international finance, born from increased access to information on trading markets.

A major role was played by the political trend and agenda (Governments, IMF, etc.) to "re-liberalise" the economies started in the 1970's-80's (Garrett, 2000). Bourguinat (cited by Beitone et al., 2013, p.252) defines this period by "la règle des trois D" (rule of the 3 D's) that refers to movements of compartmentalisation, of deregulation and of disintermediation. As a result, the markets became freer of regulations and intermediaries leading them to become more and more interdependent.

The rule consisted of: cutting exchange controls , allowing the market to determine interest rates (over-the-counter agreement) and the removal of barriers to foreign ownership of domestic assets. These factors encouraged firms and investors to expand their activities abroad (Beitone et al., 2013).

Initiatives such as trade agreements mushroomed at national, regional and global scales; and also at different integration levels (Garrett, 2000; Beitone et al., 2013). Freer trade was expected- amongst other impacts- to entail scale economies in the sectors affected by exports. Within an international competition context, it would endorse "transfer of technology and management best practices that [could] stimulate economic growth" (Garrett, 2000, p.976).

Trade globalisation

Thirdly, trade globalisation is what endorsed those new ways of working to also become global. Globalisation has been possible through the development of transportation. Indeed, many technological innovations in this field allowed movement of goods to be faster, cheaper i.e. more effective (Beitone et al., 2013 ; Institut du Nouveau Monde, n.d.).

Concerning the transport of goods, it is particularly thanks to the standardisation of the container (during the 60's-70's). It is used in maritime transport but also by road, by rail and sometimes by air; meaning that intermodal transport could be implemented and could help international trade to grow (Rodrigue, 2000; Robin, 2011; Beitone et al., 2013 ; Institut du Nouveau Monde, n.d.). The average hours to unload goods changed from 70 to 100 hours, to 10 to 20 hours as a result of transhipping gains. The flexibility and speed gained through this finding allowed transport costs to be 20 time cheaper than traditional bulk carriage. The monthly capacity for carriage became 3 to 6 times bigger than in the past (Rodrigue, 2000).

Hence the ease for people and companies to get what they needed wherever it was the best, the cheapest, the most specialised, etc. encouraged international trade. It did not only concern finished goods but also raw material, spare parts (especially for the car industry), competencies and skills (people) (Delapierre, 1996 ; Fonds Monétaire International, 2000; Garrett, 2000; Rodrigue, 2000). Rodrigue (2000, p.273) calls it the symbol of the "just-in-time" characterising our current economies.

As written above these innovations also made an impact on labour mobility (Garrett, 2000). As a matter of fact, people were no longer tied to their country's companies but saw their job opportunities extended to the international job market. Companies could source their activities wherever they could find the right workforce, production sites or target markets (Delapierre, 1996 ; Fonds Monétaire International, 2000; Rodrigue, 2000; Beitone et al., 2013).

Another element that triggered/was caused by trade globalisation and thus the movement of people is the multiplication of multinationals and the activity between branches located in different places (Garrett, 2000; Rodrigue, 2000; Beitone et al., 2013; Institut du Nouveau Monde, n.d.). Their activities include trade of goods and the needs in services resulting from this network. (Beitone et al., 2013). The information technology revolution decreased " (…) the costs of coordinating complex supply, production and distribution networks that are geographically decentralized." (Garrett, 2000, p.966).

Intra-firm trade accounted for 1/3 of world trade in the mid 1990's and the weight of subsidiaries doubled in world production between the beginning of the 1980's and late 1990's. Sales abroad of multinationals' subsidiaries (on-site sales of the subsidiaries) amounted to the double of the value of goods and services' world trade (Beitone et al., 2013).

Competition, growing globally and strengthened, drove companies to merge internationally (Institut du Nouveau Monde, n.d.; Garrett, 2000; Rodrigue, 2000). One main reason was the competitive pressure of newcomers from abroad, new groups and companies from other sectors relying on technology and new products. There were gateways between formerly distinct sectors such as the sector of computers and the sector of consumer electronic devices. These became one industry and one sector enabling synergies. These elements forced companies at the time to diversify their portfolio of activities (Delapierre, 1996).

The quickest way to grow within this context was on the one hand, to have an external growth strategy to face time and flexibility constraints. And on the other hand, cooperative structures had to be put in place to deal with an uncertain environment. These 2 strategies led to a new structuration type of forms: the network enterprise seeking for size and network effects (Delapierre, 1996; Johnson, Whittington, Scholes,

Angwin, & Regnér, 2014). These strategies were thus (caused) causing (by) a rise of international trade and workforce.

In brief, we see that international finance and trade supported by ICT's and its new types of corporations caused shifts in their services needs, workforce, etc. These shifts will be mirrored with people's personal needs that also changed. We will develop this shift in the next section.

3. Another mindset

It is thus thanks to the development of ICT's that globalisation has expanded. The increased access to information, to a booming choice in terms of goods and services, and to other countries, changed people's mindset and behaviours. (Escande & Cassini, 2015).

There are 2 points of view regarding this "new" mindset. On the one hand, content has been published about generations called *X, Y* and *Z* and a new related mindset. They are described as the people that grew up within this globalised, computer then digitally focused world (Silva & Ben Ali, 2010; Kelliher & Richardson, 2012). The appendix n°1 displays a descriptive table with the different generations from before WW2 to the generations that we are interested in: namely the generations X and Y (see APPENDIX 1: *Generations' insights*) (Philippe, 2015). These theory place these generations as the ones characterised by these shifts in mindset. They explain that these generations accounting for more than half of the working population triggered new ways to work (Philippe, 2015).

However on the other side, other scholars wrote that it concerns everyone's state of mind. They believe that anyone nowadays have faced and still faces shifts when it comes to think, act, organise their lives and work, etc. It is asserted that the actual technology uses have now become trans-generational and that therefore, we could observe a global emerging mindset, all generations included (Folon, 2014).

In both cases, shifts are faced by people today but what are they? From our readings, we noticed 2 relevant shifts:

- Firstly, there is "**an increasing influence and power of expression**"(Bijl, 2011, p.22);
- Secondly in "**social attitudes and orientations to work**"(Kelliher & Richardson, 2012, p.3).

Increasing influence and power of expression

Bijl (2011, p.22) writes that "Internet boosted tremendously both the individual's increasing influence and power of expression". Indeed, thanks to the **personal PC,** the **Internet and later social media**, people see their opportunity to individually express their wishes and complaints multiplied (Bijl, 2011). Customers gained exposure and

visibility: they became the reviewers everyone listens to. They use a common language, understood by a large number of users: English (Cameron & Stein, 2003).

Additionally, the **increasing amount of educated people** (see APPENDIX 2: *Projected world population by level of education*) also made the current working generations more aware. Graduated individuals tend to be more inquisitive and to legitimise their own value judgements due to their academic/scientific background. Therefore, they give themselves a right of criticism to question anything and to make their opinions heard (Bobineau, 2011).

Moreover, since market sizes increased with globalisation: the world production of goods and services faces a surplus, which reinforced this **shift of power towards customers**. It means that nowadays companies have to focus more than ever on individuals' feelings, needs and wants (Bijl, 2011). And people are aware of it.

The result is that the individuals start to **question this Western model** of over production and consumption, of profits at all costs made of short-term objectives, etc. They are able to see the world, its inequalities and damages that globalisation has created (Escande & Cassini, 2015).

People call for a "**capitalism with human face**" (Bijl, 2011, p.24). A new model starts to flourish from everywhere: it is taught by school, sought-after by companies and encouraged by authorities. The approach of the "triple bottom line" seems to fit this new mindset. This approach first appeared in 1994 (John Elkington cited by Investopedia, 2017). It focuses on the **3P's**, namely on **people, planet** and **profit** to achieve sustainability.

Change in social attitudes and orientation to work

When it comes to the work sphere, social attitudes and orientation have changed (Kelliher & Richardson, 2012).

In fact, a good **work-life balance** is what matters (Kelliher & Richardson, 2012). People's aspirations are not about job security anymore but about the individual himself (Escande & Cassini, 2015). Nowadays, people realise that they have the responsibility of their quality of life in terms of nutrition, sport, health, etc. They are able to make their work schedule fit physical and medical activities, social and family meetings (Bobineau, 2011).

Digital tools allow them to have and to expect **more freedom and flexibility** at work (Bijl, 2011). These generations' demand differ from the others in the vision of work and engagement: different ways (e.g. communication media and preferences), time (schedules) and locations (Cates & Rahimi cited by Kelliher & Richardson, 2012). It also differs in term of loyalty to their employers: if their needs are not fulfilled they leave.

They are able to do so thanks to their **ability to adapt to change**. As a matter of fact, people have faced many crisis of different nature in politics, finance, economy and social

spheres which forced them to be able to deal with an uncertain future (Desplats, Pinaud, & Alcaïde, 2015).

Thanks to the IT revolution and to freer information, the **hierarchical levels** are flattened. Indeed, authority is no more linked to knowledge but to personality, interpersonal skills such as charisma and influential skills, collaborative skills, etc. (Ramanantsoa cited by Escande & Cassini, 2015).

People are looking for **collaborative and stimulating contracts** rather than subordinate ones. Paradoxically, they are freer to organise their time and favour individual contributions from person-to-person (Desplats, Pinaud, & Alcaïde, 2015). They want to find the job that gives them empowerment and new challenges. (Escande & Cassini, 2015).

Another approach

Another approach we choose to add is the "**paradoxical dichotomy**" people represent now. This term is used by Gibson (2007) when she writes about globalisation and its effect on cultural diversity. Other authors such as Pleyers (2012), Beitone et al. (2013) also emphasise 2 extremes individuals face today when it comes to culture namely uniformisation and pluralism.

Even though it is known that culture differs among countries, tribes, social classes, ages and people, etc. a **homogenous culture** takes shape (Abrioux & Abrioux, 2012). We speak about a homogenous culture in terms of **new technologies use, property, consumption, immediacy** and **awareness** (non-exhaustive list):

- As a matter of fact, the development of the technology suppressed "international boundaries and opens cultures(…)". The **global access to information** enables people to acquire and get cultural properties including cultural signs, songs, dances, rituals, etc. (Gibson, 2007);
- Certeau (cited by Bobineau, 2011) speaks about a "**poaching" of cultures and values**. Individuals - for their entertainment - travel and take others' properties to translate, commodify it into a uniformising culture. Free goods, services and information is seen as a natural establishment. We explain this through the **shift from the property to the common share** that occurred with the global spread of new technologies (Desplats, Pinaud, & Alcaïde, 2015). People's social life irrevocably linked to social media encouraged and powered this phenomenon of mixed culture displayed everywhere (Bobineau, 2011) ;
- The **Western ideal** took over:
    - Global corporations such as Coca Cola, McDonald's and later Apple keep promoting everywhere a "homogenous set of values and beliefs" (Gibson, 2007), common modes of **consumption** and diffusion of new technologies. It implies careless mass consumption: symbol of wealth,

social acceptance and self-realisation to absolutely reach (Shaburdin, 2006; Bobineau, 2011; Abrioux & Abrioux, 2012);

- The media's influence and its access (with ICT's) have led young people from all around the world to dream and seek the **same lifestyle**. Shaburdin (2006) believes those inspirations become similar rather than linked to the own culture of each of them. E.g.: "disneyfication" and its happy ending frame, access to Facebook, etc. (Shaburdin, 2006, p.6).

- Another shift caused by the ICT's revolution is the people's relationship to time. Technologies suppressed our submission to time. We are now able to triumph over time by **immediacy** given by those communication tools: direct answer, no delay, juggling with time, being always reachable, etc.
  It follows the trend of **acceleration** that Capitalism has triggered for years now. Indeed, the global competition's stake has turned to time. The logic behind being the fastest to succeed, we believe, comes from the forever-capitalist mantra: "Time is money" (Bobineau, 2011).

Nevertheless, even though the "poaching" (Certeau, cited by Bobineau, 2011) of cultures and the Westernisation are hard facts, this is not the whole picture. And that is where there is a paradox. Seabrook (cited by Shaburdin, 2006, p.8) adds that " each society mediates global culture differently [and] that much of the integrity of cultures remains in spite of this". So interestingly, people fear that globalisation threatens cultural diversity while others believe it also creates a **pluralism** of new/ modified cultural identities (Shaburdin, 2006). And that it is this awareness of being homogenous but also plural that makes up this dichotomy (Gibson, 2007).

Thanks to the free movement of cultural goods: many different publics appeared from everywhere willing to get various cultural insights with different interpretations (Beitone et al., 2013). When Certeau (Bobineau, 2011) calls it "poaching": others believe in an open multiculturality powered by individuals through their use of ICT's (Cameron & Stein, 2003).

Gibson (2007) even goes further by asserting that ICT's preserve "languages, customs and culture and [provide for] self-representation and preservation of personal and collective identity by providing autonomy and empowerment".

We will use Lechner's work (2001) to gather elements that foster cultural diversity:

- **Pluralisation** due to human interactions where cultures mix;
- **Differentiation** of cultural flows that occurred differently in various spheres and may start in many places;

- **Contestation** on the spread and integration of ideas and images[4];
- **Glocalisation**; i.e. the different interpretation of norms and practices according to local cultures;
- **Institutionalisation** of diversity as a global and promoted value.

In a nutshell, the world became so integrated and interconnected that everyone today lives on a daily basis at the local level, with territorial attachments and a cultural identity but with a feeling that they belong to the globality of the world. Besides, actual generations living together share high expectation when it comes to their desires and needs for their consumer, work, social and (world) citizen lives. While they see each other as equal individuals: they also want freedom to be completely themselves (Bobineau, 2011). The 3 elements we developed i.e. shifts in influence/expression, social attitudes and culturality clearly complete each other and result in further changes we will develop later on with the New Ways of Working.

4. Conclusion

The 3 elements we chose to expand on namely ICT's, globalisation and individual's mindsets are now explicated and will help us understand why the New Ways of Working and its practices have been doubtlessly implemented. The next chapter will cover the New Ways of Working and its composing elements.

[4] The "contestation" element fairly represents this contradiction new generations face between irresponsible consumerism and their need to reinvent a more fair and sustainable world.

II. The New Ways of Working

This section will cover the general concept of the New Ways of Working, its driving forces and the definition of its many practices. We will then look at figures regarding these practices and its motivations to implement them.

1. Definition and driving forces

In the literature covered, we observed that scholars use many different definitions. The concept does not really have limits. The common frame is to include various ways of organising work described as "new" opposed to the former traditional ways of the industrial Era. That is why the concept starts with "New", to emphasises the shift but also the limitless evolution of those practices (Geary, 2003; Silva & Ben Ali, 2010; Bijl, 2011; Kelliher et al., 2012; Ajzen, Donis, & Taskin, 2015; Jemine, 2016).

As a first general definition, we will use Taskin's who is a specialised PHD professor on new forms of organising work at Université catholique de Louvain. He defines the New Ways of Working as:

"An organizational mix of flexibility practices of time and work space, of work organization and of management whose implementation is facilitated by information and communication technologies and which contributes to the project of a collaborative company and more democratic in its governance." (Taskin cited by Ajzen et al., 2015, p.10).

As a reminder, when approaching the concept we need to bear in mind that various forces drive these "new" practices and they are from different levels (Ajzen et al., 2015):

- Macro: globalisation, flexibilisation, digitalisation and individualisation;
- Meso: dilution of organisational boundaries, pressure on productivity due to global competition;
- Micro: personal expectations in terms of well being, etc.

From the macro layer, you can notice elements already covered in the former section (cf. supra p.8) namely globalisation, digitalisation and individualisation. We saw that these elements produced shifts in terms of competition, personal expectations, etc. It explains the links between causality and interdependence of the various forces coming from different levels, all at once. We will later explain how these forces lead to different motivations for companies and labour to follow these practices. The interest to classify them among the macro, meso and micro levels help us to understand the stakeholders' motivations within a rich environment.

We can therefore imagine that these various levels involve many practices making it difficult for scholars to conceptualise the NWoW as one specific theory. They consider it with an holistic approach whose practices will help us mark out the NWoW (Ajzen, Donis, & Taskin, 2015).

2. Practices

Ajzen et al. (2015) gathered and summarised the various practices linked to the NWoW. We used the practices they chose as a reference to formulate our own definitions based on several sources. We believe their academic backgrounds and knowledges on the NWoW will allow us to grasp them[5].

Practices of the NWoW	***Definitions***
Open space	The open space is an open work area set up in partitions-free surfaces or divided by furniture (>< individual rooms) (Boron, 2013 ; Crévieaux, 2015 ; Ajzen et al., 2015).
Shared office	Way to work in shared work spaces by workers using common work stations and any other work tools. None of the workers make an exclusive use of the space and the available tools: everyone uses them (Ajzen et al., 2015; Legifrance 2016).
Telecentre	Decentralised structure allowing teleworker to work in premises let for short, flexible periods of time (from hours to quarters) including facilities (ICT's equipment) and services similar to the traditional offices. It usually brings people closer from their home (Whyte, 2000; Tasin 2002; Morelli, 2003; Elsuwe, 2005; Proenza, 2005; Ajzen et al., 2015)
Mobile telework	Remote work carried out by employees working separately from a particular space (more than 25%); traveling for work or working at multiple locations. They usually work in transport and/or at their customers' premises thanks to the ICT's (Taskin, 2002; Andriessen & Vartiainen, 2006; Thomsin & Tremblay, 2007; Ajzen et al., 2015).
Virtual team	Team of people that are geographically, organisationally and/or time dispersed collaborating thanks to the ICT's in order to accomplish one or many specific projects (Langevin & Picq, 2001; Earnhardt, 2009; Ebrahim, Ahmed, & Taha, 2011; Ajzen et al., 2015).

[5] Michel Ajzen, PHD candidate whose research is about the practices of teleworking, is under the supervision of Laurent Taskin, PHD specialised in NWoW. Céline Donis is also doctor in this field. They are members of the ILSM (Louvain School of Management Research Institute) and of other recognised research institutions (Ajzen et al., 2015).

Autonomous teams or semi-autonomous	Team organised on workers that are collectively responsible for (organising) work and/or to produce goods and services. The members assume together managing functions and are accountable for their results (Roy , Bergeron, & Fortier, 2001 ; St-Jacques & Roy, 2002 ; Gouvernement du Québec, 2014 ; Ajzen et al., 2015)
Home telework	Work arrangement in which professional duties are performed remotely through ICT's; occasionally, alternatively or permanently from home (Tremblay, Chevrier, & Di Loreto, 2006; Ajzen et al., 2015; Beal, 2017; Doyle, 2017; OPM.gov, n.d.).
Management by objectives	Management technique in which individual or collective objectives are set and agreed upon jointly by managers and their subordinates. The objectives are monitored regularly a posteriori (Ajzen et al., 2015; Business Dictionary, 2017; Grimsley, 2017; Investopedia, 2017; MSG, 2017).
Knowledge management	Management practice and systems aimed at capitalising knowledge and the company's and its members' experience. Hence, the intellectual asset is captured, developed and shared within the company to enhance its performance and competitiveness (Quintas, Lefrere, & Jones, 1997; TechTarget, 2013; Ajzen et al., 2015; Business Dictionary, 2017).
Community of practices	People grouped around a common interest, problem or subject for a specific field. The community shares common activities, practices, knowledge and close values. As an outcome, the individuals of those communities contribute to the development of the community of practices' skills as well as their own (Daele, 2009 ; Davel & Tremblay, 2011 ; Ajzen et al., 2015).
Participative management	Managing practices involving workers in the process of defining and implementing the company's objectives and policies (Lazykoff, 1991 ; études & analyses, 2007 ; Ajzen et al., 2015).

Figure 2: ***Definition of the NWoW practices.*** Source: Ajzen, M., Donis, C., & Taskin, L. (2015, May-June). Kaléidoscope des Nouvelles Formes d'Organisation du Travail: L'instrumentalisation stupide d'un idéal collaboratif et démocratique. Gestion 2000.

From these practices, Ajzen et al. (2015, p.131) classified them among 3 “constitutive contents” that are: spatio-temporal flexibility practices and collaborative work modes resulting in participative management practices. These key mantras associated to the use of ICT’s result in practices that are together called the New Ways of Working. It implies various degrees and levels of intensity resulting in different actions.

Practices of spatio-temporal flexibility	**Modes of collaborative work**	**Practices of participative management**
Home work	Autonomous or semi-autonomous teams	Knowledge Management
Shared offices	Virtual teams	Management by objectives
Flex desk/ clean desk	Open spaces	Management by project
Co-working	Networked organisations	Collaborative autonomy
Telecentres		Participative management
Home telework	…	Total Quality Management
Mobile telework		Lean production

Figure 3: ***Associated practices to the constitutive contents of the NWoW.*** Source: Ajzen, M., Donis, C., & Taskin, L. (2015, May-June). Kaléidoscope des Nouvelles Formes d'Organisation du Travail: L'instrumentalisation stupide d'un idéal collaboratif et démocratique. Gestion 2000.

3. Figures in Belgian companies

It makes sense now to quantify the applications of the practices of the new ways of organising work. We will present collected data among Belgian companies for the research report of Laurent Taskin and Michel Ajzen (2015) called *Managing sustainable and innovative workplaces: NWOW, towards sustainable organizational performance?*. The report has been made in collaboration and used for publications of the HR specialists SD Worx (Laurijssen & Van Grieken, n.d.).

There are 2 reasons for which we used Belgian data and this report in particular. Firstly, Belgium is the field where we are considering to conduct our own data collection. It justifies having a specific first look at what has been observed so far. Secondly, as already written, the richness of the concept and its practices allow for more than one interpretation and definition of the NWoW. The multitude of practices, philosophies and

concerns behind it make it difficult to stick to one particular approach. And in the case of finding accurate figures, we believe it is more sensible to start using the figures related to the definition and limitation of the subject used, mainly Taskin's.

From mid-December 2013 until February 2014, 481 companies from of various sizes and sectors have been completely surveyed on the subject in Flanders (44%), Wallonia (28%) and Brussels (28%). Among the respondents, different profiles have participated i.e. HR managers, CEO, managers, department heads, etc. The data collected shows that the practices of the NWoW are implemented at various degrees:

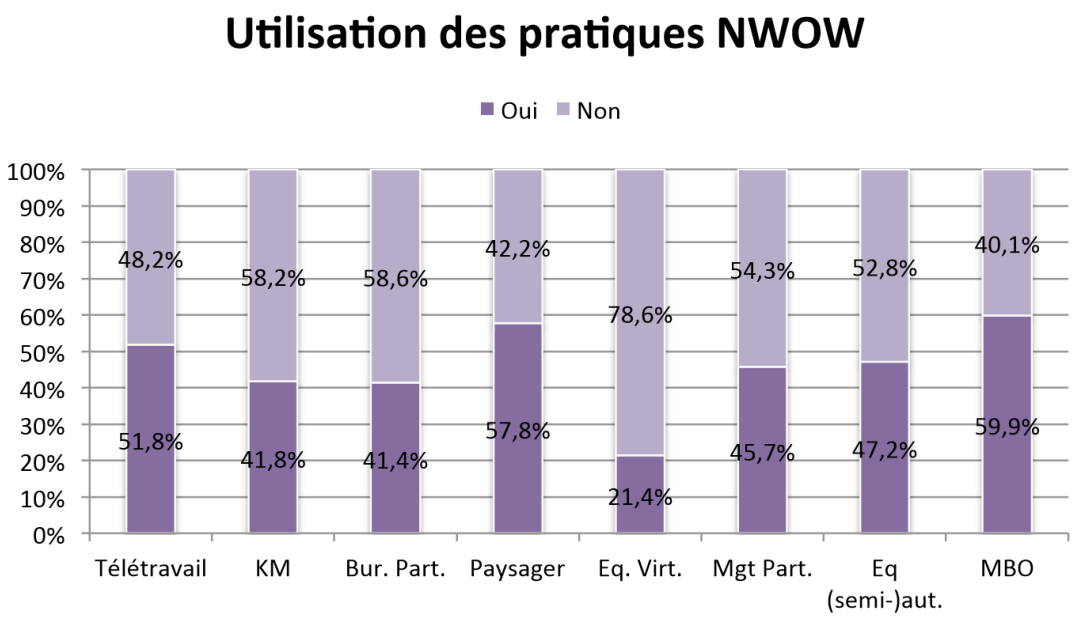


FIGURE 20: POURCENTAGE D'UTILISATION DES PRATIQUES NWOW DANS L'ÉCHANTILLON

Figure 4: ***Use of the practices of the NWOW.*** Source: Taskin, L., & Ajzen, M. (2015). Managing sustainable and innovative workplaces - New Ways of Working, towards sustainable organizational performance? Research report, Louvain School of Management Research Institute, Louvain-La-Neuve. Retrieved July 26, 2017

- 60% apply the MBO (Management by Objectives)[6];
- 58% have made open offices;
- 52% allow their workers to work elsewhere (telework);

[6] In facts, the MBO is not a "new" practices; it has started and being studied since the fifties (Ajzen et al., 2015; Geelkens, 2016). It might explain why this is the most popular technique used nowadays among the NWoW.

- 47% encourage autonomous/semi-autonomous teams;
- 46% include their staff in the strategic process (participative management);
- 41% make their employees share offices;
- 42% apply knowledge management (19% of them managed to create communities of practices);
- And only 21% of the respondents implemented virtual teams (Taskin & al., 2015).

As a whole, we can see that the NWoW's practices are used by more than 40% of the companies surveyed (from various sizes) except in the case of the virtual teams with only 21% of application. We can therefor wonder what are the reasons for such a difference between this practice and the others? One reason given by Taskin et al. (cited by Laurijssen et al., n.d.) is the organisational characteristics that link them together: international presence of the company, with different sites or labour networks. Yet we still if this small number may be more due to the difficulty of collaborating through virtuality rather the characteristics of the organisation. How such dynamic of collaboration needed in a team nowadays can work virtually?

When it comes to the decision to apply NWoW, only 43% of companies consulted their staff which is striking when companies claim to apply the NWoW within a specific project. As a matter of fact, they present the new ways of organising work as a more democratic and transparent view of work; a collaboration between its performers and its hierarchy (Ajzen et al., 2015).

4. Motivations

It may be interesting to wonder what are the specific arguments usually given by decision-makers when it comes to the NWoW. We listed the reasons given by directors and managers to implement associated practices. From our literature review, we noticed that those reasons were generally coming from 4 main motivations namely economical, organisational, social and environmental (Bijl, 2011; Kelliher et al., 2012; Ajzen et al., 2015, Taskin et al., 2015; Collard & Philippette , 2016; Jemine, 2016):

- **Economical motivation** aiming at:
  - Increasing productivity and performance *(e.g. flexwork and shared offices & virtual teams & autonomous teams & MBO)*;
  - A better administration of costs *(e.g. open and shared offices & virtual teams & autonomous teams & MBO)*;
  - Gaining the benefits of an attractive image among (potential) employees and customers *(e.g. telework & telecentres)*;
  - Entering new markets *(e.g. virtual teams)*;
  - Etc.
- **Organisational motivation** in order to:
  - Lead more effectively and target long-term and sustainable prosperity *(e.g. MBO)*;

- Favour exchanges and collaborations among employees *(e.g. shared and open offices & knowledge management & virtual teams & autonomous teams & participative management)*;
- Improve employability and flexibility *(e.g. shared offices & telework & virtual teams)*;
- Answer a specific needs of a few collaborators or of a team *(e.g. shared offices & telework & virtual teams)*;
- Develop a pleasant and modern corporate culture *(e.g. participative management*);
- Boost effectiveness and better availability of knowledge management and sharing *(e.g. community of practices)*;
- Reduce travel time *(e.g. telework & telecentres & virtual teams);*
- Reduce absenteeism *(e.g. flexwork)*;
- Attract and retain talents: to preserve loyalty *(e.g. autonomous teams & telework)*;
- Etc.

- **Social motivation** for:
  - Valuing workers as important assets to companies *(e.g. participative management)*;
  - An answer to changing professional expectations and demands of the new working generation *(e.g. participative management)*;
  - The reinforcement of commitment and implication of collaborators *(e.g. autonomous teams & MBO)*;
  - The improvement of the work/life balance *(e.g. telework)*;
  - The creation of a creative and inspirational environment and the development of innovation *(e.g. shared offices & autonomous teams)*;
  - Mobility improvement *(e.g. virtual team & knowledge management)*;
  - The increase of workplace wellness *(e.g. autonomous teams)*;
  - The alignment of each stakeholders' objectives (e.g. participative management);
  - Etc.
- **Environmental motivation:**
  - To be embedded into a more sustainable workplace *(e.g. shared offices)*;
  - To reduce paper use *(e.g. ICT use)*;
  - To reduce footprint *(e.g. telecentres & virtual teams)*;
  - Etc.

To sum up these researchers' outcomes, it turns out that the main objective behind the implementation of the NWoW is: improving costs reduction, economic performance and innovation through the use of new ICT's and a **flexibility logic** through collaboration, autonomous and empowered work given by committed individuals (Bijl, 2011; Kelliher et al., 2012; Ajzen et al., 2015, Taskin et al., 2015; Jemine, 2016).

Furthermore, Awon (cited by Ajzen et al., 2015) highlights the benefits of these practices in order to collect and enable the development of goods as well as knowledge. It can be done inside the company or through partnership with others. It is something that can be done within the knowledge management agenda. It is embedded in a **collaborative** logic where the emphasis is put on the improvement of qualitative collaboration among workers (Taskin et al., 2015). Besides, you can notice that a popular reason used by companies to implement many practices is *to favour exchanges and collaboration among employees*. This leads us to wonder " Does collaboration work in any case?"; "What are the effects of collaboration on companies and on their workers?". This is why we believe we should bear in mind this complex mix of motivations when analysing some of these practices may not benefit businesses and employees.

Another component that plays a role in the implementation of the NWoW is the strategic purpose. It can be part of an internal strategy but also part of a common purpose shared with other companies (Ajzen et al., 2015). Taskin et al. (2015) write about an **ad hoc logic** in which practices are put in place to answer a punctual need. It is for example the case of telework and virtual teams.

We may add elements such as coercive or mimetic factors to explain the great implementation of these practices (Ajzen et al., 2015). Acting by coercion or mimicry leads us to wonder if these NWoW have become so popular in our companies because they only follow a trend? It may be an interesting question to focus on.

We observe that even though a classification comes out and helps us to identify the nature of those changes within companies, they remain tools for companies to achieve their primary purpose: making business through profits. Indeed, listening to its staff and improving its working conditions will cause a better performance, which the company will benefit from. The same goes for the organisational motivations given. For example the negative outcomes of absenteeism in terms of paperwork and organisational cohesion are clearly established (Belga, 2014). And reducing this rate will not only benefit the organisation itself but also the costs avoided from these changes. The environmental motives are certainly linked when it comes to reduce travel with virtual teams or telecentres, which lead to a decrease in travel costs that also benefit the company's cost policy.

When it comes to employees' decisions to implement NWoW, they are not always consulted. As written above (cf. supra p.22), less than half of the surveyed companies (43%) actually asked their staff about implementing new ways of work (Ajzen et al., 2015). Moreover, the literature on the subject lacks content when it comes to the employees' motives for such practices. Kelliher & al. (2012, p.1) believe that individuals' motivations to apply NWoW practices are linked to the achievement of "a more satisfactory relationship between work and non-work activities". It confirms our

reasoning of the chapter of contextualisation when we write about another mindset characterised by new workers seeking a work/life balance (cf. supra, p.12).

Those motives are obviously the result of both interconnexions and its causes which means they are not realised independently but together. Indeed, as companies remain accountable for positive and increasing results, they will focus on figures. And leaders start to realise that they can perform better when paying attention to the organisation itself, its staff, the environment etc. (Ajzen, 2015). That is why there is such diversity in terms of applications and its motivations for the so called NWoW.
We saw that these NWoW imply a shift towards the individual as valuable capital to the companies and therefore a shift in attitudes regarding their needs and well-being when working (sustainable governance). It also encourages companies to tap into international labour to hire the people that fit their needs the best. It is thus presented by corporate leaders as a democratised and win-win situation for every stakeholder; enabling them to legitimize the implementation of such practices without really asking for opinions (Ajzen et al., 2015; Jemine, 2016), hence our willingness to take a closer "inquisitive" look in this research.

5. Conclusion

To end this chapter, we saw that the definition of the New Ways of Organising Work is not inalterable and therefore implies many practices, more or less popular. From the (non-exhaustive) list of practices given, we find it interesting to take a deeper look at the least popular: mainly virtual teams.

III. Virtual teams

We will go on with the study of virtual teams. The objective is to get a deeper understanding of this practice that seems to gain less ground than the others (according to the findings of Taskin et al., 2015). Besides the argument of the organisational characteristics given, we want to understand how such practice can embed "the project of a collaborative company"- as Taskin described - when it implies a geographic, organisational and/or time dispersion (2012 cited by Taskin et al., 2015, p.2). Since our cursus is internationally directed, this specific topic will also give us new insights that could be useful in the future. We will be reviewing this type of team from its context and origins to its definitions and its utility including illustrations on its use, its pros and cons and finally the biggest challenges they face.

1. Types of virtual work

First of all, there are different types of virtual works. We should clarify the various ways virtuality goes with remote or gathered workers, with their relationship to management and the workplace. We will then be able to set virtual teams within this virtual context.

Ebrahim et al. (2009) (also supported by Hertel et al., 2005) distinguished **4 different forms of virtual work** according to the number of people involved and their interaction with each other:

1° Partial or complete **telework** outside of the main workplace thanks to ICT's;

2° **Virtual groups** made of many teleworkers reporting to the same manager;

3° **Virtual teams** gathered around the same project and working together;

4° **Virtual communities** which are larger entities of distributed workers working thanks to Internet, common purposes but also roles and norms. The difference with virtual teams is that communities "(…) are not implemented within an organizational structure but are usually initiated by some of their members." (Ebrahim et al., 2009, p.2655)

Another classification supporting the first one was invented by Cascio and Shurygailo (cited by Ebrahim et al., 2009). It classifies virtual work according to 2 variables i.e. the number of locations and the number of managers:

Locations/Managers	**One**	**Multiple**
One	**Teleworkers**	**Matrixed Teleworkers**
Multiple	**Remote Team**	**Matrixed Remote Teams**

Figure 5: ***Types of virtual work.*** Source: Ebrahim, N. A., Ahmed, S., & Taha, Z. (2009, November 6). Virtual Teams: a Literature Review. Australian Journal of Basic and Applied Sciences, 3. Jordan: American-Eurasian Network for Scientific Information. Retrieved March 2, 2018, from https://ssrn.com/abstract=1501443

As we want to understand virtual teams in the context of "the project of a collaborative company" (Taskin, 2012 cited by Taskin et al., 2015): we believe that virtual teams also called remote teams are more relevant to study than the others. In fact, people teleworking or being in virtual groups are not gathered with a common purpose, they might not collaborate at all. Regarding virtual communities, its span may be too large as they are not comprised within an organisational structure, and are initiated by the members themselves.

2. Virtual team's origins

The team itself grew in popularity from the early 1960's and during the 1980's during the Total Quality Management movement[7]. Progressively, self-managed and empowered work teams popped up to kill bureaucracy and cycle time, to provide a better service. With globalisation and international competition flourishing during the 1990's, companies started to implement the team concept overseas to "integrate global human resource practices." (Ebrahim, Ahmed, & Taha, 2009, p. 2654)

At that moment, the freelance status was becoming very popular. As a matter of fact, there was a need for temporary contracts, specialised labour and more flexibility within this fast changing work environment. Companies started to tap into the international labour pool to find the specific skills they needed, wherever they were. It could be foreign talents as well as remote talents (e.g.: stay-at-home parents, students, etc.) (Johns & Gratton, 2013; Simpson, 2017).

It was made possible thanks to the ICT innovations; teams became virtual and grew quickly worldwide. Companies realised the cost benefits of the system: less physical presence and facilities, more choice in lower-cost talents, etc. (Langevin et al., 2001; Langevin, 2002 ; Hertel, Geister & Konradt, 2005; Leon, 2008; Livian & Parot, 2008; Ebrahim et al., 2009; Earnhardt, 2009; Johns et al., 2013; Ferrazzi, 2014; Simpson, 2017).

But freelance work couldn't completely fulfil everyone's needs. On the one hand, employees missed benefits of a total pay package (e.g.: health benefits), leadership and career development as well as equipment support. On the other hand, companies felt a lack of engagement from their freelancers (Johns et al., 2013).

It resulted in the next wave of virtual work where employees became "virtual corporate colleagues"(Johns et al., 2013, p.3). Employees were given the opportunity to work and to be virtually dispersed. They were committed to their company but ready to work together any time from anywhere to answer the needs of globalisation. Again, ICT's helped both sides to tackle their concerns (Leon, 2008; Johns et al., 2013).

[7] "Total quality is an approach to doing business that attempts to maximize an organization's competitiveness through the continual improvement of the quality of its products, services, people, processes, and environments." (Goetsch & Davis, 1995, p.6)

3. Definition of virtual teams

Now that we have determined the kind of virtual work to study and its context, we will define virtual teams. And before we present its definition, we should first find a definition of the team itself. We found Katzenbach and Smith's definition (cited by Ebrahim et al., 2009, p. 2654) interesting, as it is linked to what we previously wrote about the need of virtual/remote teams namely a common purpose and commitment:

" *(…) small number of people with complementary skills who are equally committed to a common purpose, goals, and working approach for which they hold themselves mutually accountable."* (Katzenbach et al. cited by Ebrahim et al., 2009, p.2654)

To define the virtual teams this time, we will use the formulation we have already made in the chapter of the New Ways of Working (cf. supra p.22). We used 4 different sources to establish our own description of the virtual team:

1) "Interdependent group working on a project across time and space relying on information and communication technologies." (Lin, Standing & Lui, cited by Earnhardt, 2009, p.1);

2) "small temporary groups of geographically, organizationally and/or time dispersed knowledge workers who coordinate their work predominantly with electronic information and communication technologies in order to accomplish one or more organization tasks." (Ebrahim et al., 2009, p. 2655);

3) "(...) groups composed of individuals with varied expertises, formed around a common project and working remotely, that is to say, not only in different places, but also often at different times when they are located in different time zones, finally, sometimes even while belonging to different organisations." (Langevin et al., 2001, p.2);

4) "Group of workers, geographically and/or organisationally dispersed and who are brought together using a combination of telecommunication and information technologies to perform their work, often as part of a specific project." (Ajzen et al., 2015, p.128).

Our own formulation: ***Team of people that are geographically, organisationally and/or time dispersed collaborating thanks to the ICT's in order to accomplish one or many specific projects*** (Langevin et al., 2001; Earnhardt, 2009; Ebrahim et al., 2009; Ajzen et al., 2015).

All definitions reviewed have these elements in common: virtual teams are a group of people gathered to achieve one goal by collaborating and helped by computer-driven technology to cross geographic, time and organisation boundaries. These criteria have

been set out by Bal and Teo (cited by Ebrahim et al., 2009) as constituent elements of a virtual team if all criteria were met.

We could go further and add the element of *complementary skills* and *commitment*, and end up with a final definition of virtual teams (Langevin et al., 2001; Earnhardt, 2009; Ebrahim et al., 2009; Ajzen et al., 2015) :

Team of equally dedicated people with compatible skills that are geographically, organisationally and/or time dispersed collaborating thanks to the ICT's in order to accomplish one or many specific projects.

Thanks to its definitions and its origins review: we clearly see that the internationalisation economy is an important factor explaining the need for virtual teams. But is there anything else? For what specific needs are virtual teams created? Let's look deeper into this question and try to find its answer in the next section.

4. Answer to a need?

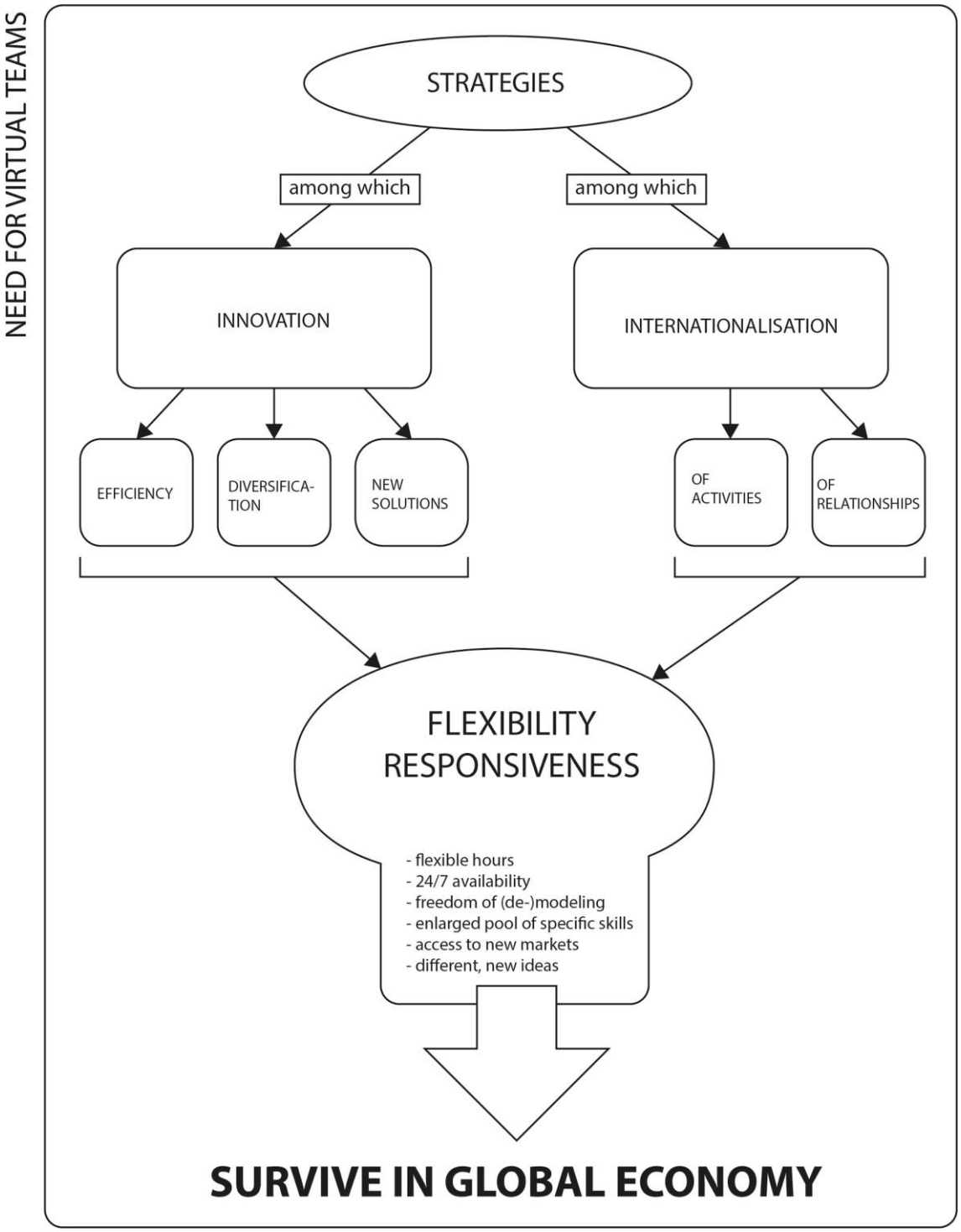


Figure 6: ***Need for virtual teams.*** Sources: Langevin et al., 2001; Bell & Kozlowski, 2002; Hertel et al., 2005; Kirkman & Mathieu, 2005; Gibson, 2007; Leon, 2008; Livian et al., 2008; Earnhardt, 2009; Ebrahim et al. , 2009; Bijl, 2011; Kelliher et al., 2012; Johnson, Whittington, Scholes, Angwin, & Regnér, 2014; Ajzen et al., 2015; Taskin et al., 2015; Simpson, 2017.

In the literature covered, all sources converge to the same observation to explain the implementation of virtual teams by companies: survive in the global economy. As previously written throughout this research, the economy has become worldwide and the requirements for its businesses to succeed have become more complex, urgent and

specific (Langevin et al., 2001; Bell & Kozlowski, 2002; Hertel et al., 2005; Kirkman & Mathieu, 2005; Gibson, 2007; Leon, 2008; Livian et al., 2008; Earnhardt, 2009; Ebrahim et al. , 2009; Kelliher et al., 2012; Ajzen et al., 2015). Among the various strategies required to face these complex and uncertain dynamics, businesses should be capable of differentiating themselves through:

- **Innovation** as a critical factor enabling to achieve competitive advantage over its peers. Companies focus on innovations to remain efficient, to diversify and to find new solutions for its actual or potential markets (Langevin et al., 2001; Hertel et al., 2005; Gibson, 2007; Livian et al., 2008; Ebrahim et al., 2009; Bijl, 2011; Kelliher et al., 2012; Johnson et al., 2014; Ajzen et al., 2015; Taskin et al., 2015; Simpson, 2017).
- **Internationalisation** of its activities and relationships to access global markets. Since the world economy has become interconnected and interdependent, companies need an international presence among consumers but also among its resources, partners, competitors, etc. (Langevin et al., 2001; Bell et al., 2002; Kirkman et al., 2005; Leon, 2008; Livian et al., 2008; Earnhardt, 2009; Ebrahim et al. , 2009; Bijl, 2011 ; Kelliher et al., 2012; Johnson et al., 2014; Ajzen et al., 2015; Taskin et al., 2015; Simpson, 2017).

Authors of the subject agree that to be successful, both strategies require **flexibility** as well as r**esponsiveness** in organisational arrangements. Human resources, being of a valuable importance for organisations, are not an exception (Langevin et al., 2001 ; Bell et al., 2002; Livian et al., 2008; Earnhardt, 2009; Ebrahim et al., 2009; Simpson, 2017). And that is where we observed that virtual teams are able to meet these needs:

- They provide **flexible hours** as people are working from different time zones. The working hours are therefore expanded and projects are completed faster. It is also important to note that the **“24/7” availability** of its members, enables virtual teams to respond to urgent situations (Livian et al., 2008). The team’s responsiveness to time is not negligible in this high-speed world and is a major asset for facing competition. It reduces, for example the time-to-market for new products developed in high competitive markets such as electronic devices’ (Ebrahim et al., 2009);
- They are quickly formed for specific projects regardless of geographical, time and organisation boundaries and are also easily dissolved. This **freedom of modelling and de-modelling** teams allow companies to quickly respond to any project (Bell et al., 2002; Earnhardt, 2009);
- They are composed of an **enlarged pool of specific skills**. Companies focus on key roles when recruiting and are able to tap into international labour when they miss a specific skill to build the right team thus virtual. Companies can now hire someone from anywhere they want as long as the Internet connects them to

each other (Langevin et al., 2001; Kirkman et al., 2005; Livian et al., 2008; Earnhardt, 2009; Ebrahim et al. , 2009; Simpson, 2017);

- Virtual teams are also a response for the companies' need to **access new markets**. As they are not necessarily (able to be) on site, co-workers living there could be an asset (Langevin et al., 2001; Livian et al., 2008; Earnhardt, 2009; Ebrahim et al. , 2009; Simpson, 2017);
- In order to innovate, what else than **different, new, disruptive, multicultural ideas** shared within a common and small structure? (Gibson, 2007; Ebrahim et al. , 2009).

The need to create virtual teams being explained, you can notice that these arguments meet the motivations that we presented in the section of the NWoW (cf. supra p.22). We partly used the same work for both section as they focus on all practices of the NWoW among which virtual teams (Bijl, 2011; Kelliher et al., 2012; Ajzen et al., 2015, Taskin et al., 2015; Jemine, 2016). The rest of the literature specifically interested in virtual teams supports the same facts e.g. productivity, innovation, entering new markets, improve flexibility, boost effectiveness, etc. (Langevin et al., 2001; Hertel et al., 2005; Gibson, 2007; Livian et al., 2008; Ebrahim et al., 2009).

5. Physical vs Virtual teams

Remote teams have been framed by defining them and identifying their common criteria namely: dispersed tem, working together and equally committed, to achieve a common goal, thanks to ICT's and compatible skills. However, if we take a step back we could say that now any people working together in team use digital tools and are not necessarily always sitting next to each other. It would mean that, to some extent, any "modern" team would by definition be automatically virtual. That is why we focused here on differentiating physical (also called traditional, conventional or collocated) versus virtual teams.

Bell et al. (2002) identified 2 characteristics distinguishing virtual teams from traditional teams: spatial distance and (information, date and personal) communication:

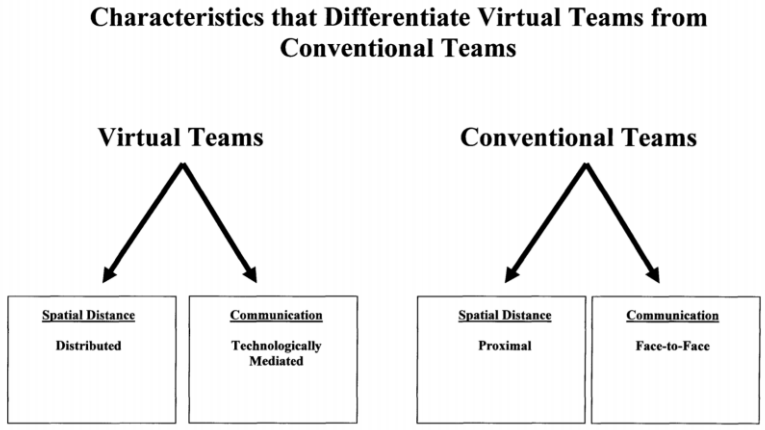


Figure 7: ***Characteristics that Differentiate Virtual Teams from Conventional Teams.*** Source: Bell, B. S., & Kozlowski, S. W. (2002, March 1). A Typology of Virtual Teams: Implications for Effective Leadership. Group and Organization Management, 27. Retrieved April 4, 2018, from http://journals.sagepub.com/doi/abs/10.1177/1059601102027001003

More frequently than within conventional teams, virtual team members are not collocated close to each other and face **space boundaries**. It results -in the case of virtual colleagues - in less face-to-face interactions and in **more computer-mediated communication**. Thus, we call a team "virtual" because of:

- The lack of physical proximity between its team members;
- resulting in a critical dependence on ICT's "(...) to communicate and share information and data (...)" (Bell et al. 2002, p.16).

Ebrahim and colleagues (2009, p.3) went further and differentiated both types of teams in the table below:

Table 6: classifying physical teams versus virtual teams

Activity	Physical teams nature	Virtual teams nature
Nature of interaction	opportunity to share work and non-work related information	the extent of informal exchange of information is minimal
Utilization of resources	Increases the opportunity for allocation and sharing of resources	each collaborating body will have to have access to similar technical and non-technical infrastructure
Control and accountability (over and within the project):	the project manager provides the context for ongoing monitoring of activities and events and thus enhances their ability to respond to requirements.	The collaborating bodies were accountable to the task leaders and the project coordinator who had limited authority to enforce any penalties for failure to achieve their tasks
Working environment	they encountered constraints accessing information and interacting with others outside the collocated team within the company	sometimes not able to share ideas or dilemmas with other partners.
Cultural and educational background	members of the team are likely to have similar and complementary cultural and educational background	the team members varied in their education, culture, language, time orientation and expertise
Technological compatibility:	situated and operating within a single organization, faces minimal incompatibility of the technological systems	compatibility between different systems in collaborating organizations ought to be negotiated at the outset

Figure 7: ***Physical teams vs virtual teams.*** Source: Ebrahim, N. A., Ahmed, S., & Taha, Z. (2009, November 6). Virtual Teams: a Literature Review. Australian Journal of Basic and Applied Sciences, 3.

Jordan: American-Eurasian Network for Scientific Information. Retrieved March 2, 2018, from https://ssrn.com/abstract=1501443

1. When it comes to their "**nature of interaction**": distributed teams cannot benefit from informal exchanges. They are limited because there is less or no opportunity for non-work relationships (no coffee breaks, no hallways, no small chats, etc.).
2. For the "**use of resources**", virtual teams do not share as much resources as if the team was collocated: virtual coworkers need the same access to infrastructures, but from different places.
3. With respect to "**control and accountability**", non-collocated teams do not allow much constant monitoring compared to teams working with their manager. In a physical team, the manager can use his authority and presence to improve the process and the outcome of the project at any time.
4. Within their "**working environment**", virtual team members may share creativity, concerns, etc. with partners less easily. Conventional teams are limited to access information and to connect with others inside the company that are not members of the team.
5. Regarding "**cultural and educational background**", it is more likely to differ in distributed teams in terms of languages, education, culture, experience, etc.
6. The "**technological compatibility**" is more easily put in place when members of a team operate within the same organisation (site).

This brief overview of the differences physical teams versus virtual teams being explicit, shows us some of the difficulties virtual teams might face. We wonder now, knowing the differences, why a company would choose to work through virtual teams rather than physical ones? What company and what number choose virtual teams? What has been observed on the field so far?

6. Use of virtual teams: field observations

To have concrete answer to our questions, we will once again use the research report made by Taskin and Ajzen (2015) on the New Ways of Working and organisational performance. As a reminder, they quantified the implementation of virtual teams among 481 companies based in Belgium from mid-December 2013 until February 2014.

- Among the **respondents**, different profiles have participated i.e. HR managers, CEO's, managers, department heads, etc. These are only managing functions.

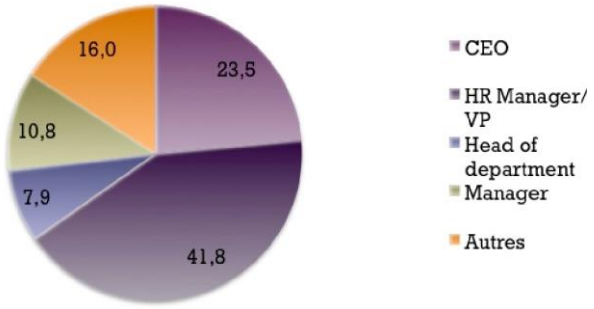


Figure 8: ***Respondents of the report.*** Source: Taskin, L., & Ajzen, M. (2015). Managing sustainable and innovative workplaces - New Ways of Working, towards sustainable organizational performance? Research report, Louvain School of Management Research Institute, Louvain-La-Neuve. Retrieved July 26, 2017

- Repartition on the Belgian **territory**:

- 28% of the surveyed organisations have their main workplace based in Wallonia;
- 28% of respondents as well have their main work location in Brussels;
- The 44% remaining implemented their work activities in Flanders.

- What about the repartition of the **companies** according to their **size**?

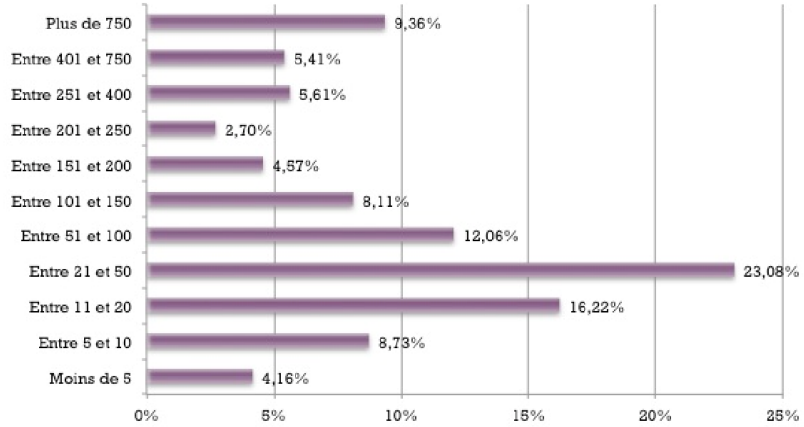


Figure 9: Companys' size. Source: Taskin, L., & Ajzen, M. (2015). Managing sustainable and innovative workplaces - New Ways of Working, towards sustainable organizational performance? Research report, Louvain School of Management Research Institute, Louvain-La-Neuve. Retrieved July 26, 2017

- The **sectors** in which the respondents' companies evolve are mainly services such as health, social action, trade, information and communication, finance,

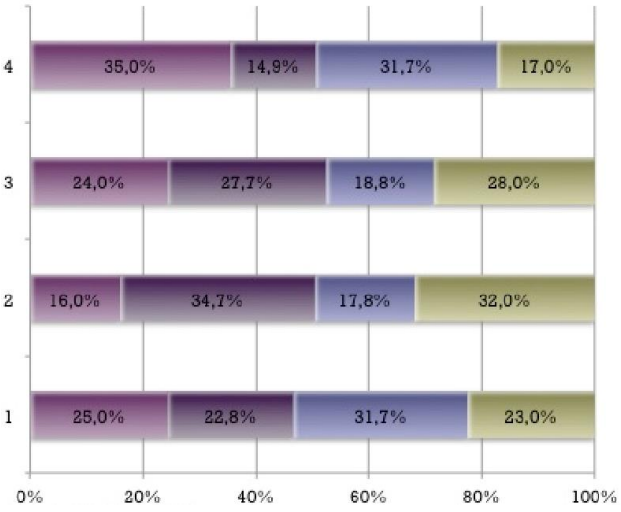
assurance but also manufacturing, construction and so on. We may also conduct our field research in the services sector only.

Here is what Taskin and his researchers studied on virtual teams: only 21% of the respondents implemented virtual teams. The report explains this small number by the organisational architecture that virtual teams are suitable for. Indeed, virtual teams suit structures that are international with more than one site, or that have international interests with different networks (Taskin et al., 2015).

Taskin et al. (2015) observed that 62% of the time, the staff was not included in the decision process. From the 37% remaining:

- All of them got involved through working groups;
- 2% of them got involved via their union representatives;
- 2% of them got involved with a questionnaire.

The next graph will help us compare our first readings explaining the needs for companies to create virtual teams (former section see p.) and the actual motivations given by the managers surveyed:



Motivations in the graph are ranked from 1 to 4 (1= first choice)

Each colour represents one motivation:

- To answer punctual needs of a few co-workers or of a work team
- To develop work flexibility within the company
- To rationalize cost and/or to increase performance
- To favour exchanges et collaboration among collaborators

Figure 10: ***Motivations for virtual teams.*** Source: Taskin, L., & Ajzen, M. (2015). Managing sustainable and innovative workplaces - New Ways of Working, towards sustainable organizational performance? Research report, Louvain School of Management Research Institute, Louvain-La-Neuve. Retrieved July 26, 2017

As you can see, the first reason given by companies for having virtual teams is "to rationalise cost and/or to increase performance" for 31,7% of the respondents. The 60% remaining represent a more or less equal repartition into the 3 other motivations. Starting from the most common:

- 32% apply a policy of cost rationalisation and/or of performance increase;
- 25% answer punctual needs of a few co-workers or of a work team;

- 23% want to favour exchanges and collaboration among collaborators;
- 23% are willing to develop flexibility at work.

Afterwards, it is flexibility at work and to favour collaboration that wins the second and third rank of the motivations given for creating virtual teams. The least motivation to apply virtual teams is when these teams are created to answer punctual needs of some collaborators or of a work team. The latter goes in line with the report's finding that 62% of time, the staff is not included in the decision process. The first motivation obviously remains budgetary.

We used another survey made on the usage of virtual teams, this time, in the US in 2012. The study has been conducted by the Society for Human Resource Management[8] (2012) on 379 randomly selected companies from its network. We find it interesting to compare the report we mainly used with another source also focusing on virtual teams. The organisation uses the same elements (as we do) in its definition of virtual teams: " Virtual teams, as defined in the SHRM poll, are groups of individuals who work across time, space and organizational boundaries and who interact primarily through electronic communications." (Minton-Eversole, 2012)

Among the respondents, 46% implement virtual teams within their organisation. The survey notices that businesses "(…) with multinational operations are more than twice as likely (66 percent) to use virtual teams compared with those having U.S.-based operations (28 percent)." (Minton-Eversole, 2012). This observation goes along with Taskin's report (2015). They both speak about international activities and "a more global focus" as important factors causing the need for virtual teams. The study also mentions the need for companies (49%) "to boost collaboration" (Minton-Eversole, 2012).

The companies surveyed reported that virtual teams helped them:

- To improve productivity for 39% of them;
- To minimise travel costs in 39% of the cases;
- To collaborate more across global business for 37% of them (Minton-Eversole, 2012).

Once again, it is about the international context in which the company is as well as the financial and performance objectives it targets.

Another report that we used is *Managing virtual teams – Taking a more strategic approach*. The report and its surveys - made in 2009 by The Economist Intelligence Unit

[8] "The Society for Human Resource Management (SHRM) is the world's largest HR professional society, representing 285,000 members in more than 165 countries. For nearly seven decades, the Society has been the leading provider of resources serving the needs of HR professionals and advancing the practice of human resource management. SHRM has more than 575 affiliated chapters within the United States and subsidiary offices in China, India and United Arab Emirates." (Society for Human Resource Management, 2018)

- were conducted in Europe among 407 companies from different industries. The respondents were polled "to assess the extent to which companies in Europe use virtual teams and how the teams are recruited and managed." (The Economist Intelligence Unit, 2009, p.1).

When interviewed about the reason for using virtual teams, 49% answered that it was "a natural way of managing teams"(The Economist Intelligence Unit, 2009, p.4). Nearly as many choose virtual teams to improve communication and collaboration with other business units in their company. Solely 11% said that they were using virtual teams to "facilitate more flexible working" (The Economist Intelligence Unit, 2009, p.4) and no more than 3% justified virtual teams for ecological reasons (to reduce the company's carbon footprint) (The Economist Intelligence Unit, 2009).

7. Benefits

Introducing benefits and drawbacks of virtual teams

In the former sections we have seen the reasons that could help us understand why virtual teams are implemented. The 2 next chapters will display a whole picture of the benefits and drawbacks observed by scholars, it will enable us to get a clear and balanced view of the findings on the subject and will help us in the formulation of our research question.

We choose to introduce the benefits of virtual teams with one meaningful sentence: "Virtual teams overcome the limitations of time, space, and organisational affiliation that traditional teams face" (Piccoli et al., 2004 cited by Ebrahim et al., 2009, p.2657). Indeed, in a survey conducted in 2009 by the Whu Otto Beisheim School of Management (cited by Ferrazzi, 2014), researchers indicate that distributed teams with the right management can outperform collocated teams. The same year, it is also supported by an Aon Consulting report (cited by Ferrazzi, 2014) that implementing virtual teams improves employees' productivity. Among the companies polled, some of them have seen their gains increase up to 43%.

However, it is not painless. Other studies show that 82% of the companies questioned did not reach their goals and that 33% assessed themselves as "largely unsuccessful" (Govindarajan, Gupta, 2001 cited by Ferrazzi, 2014, p.1). Deloitte (2005) also reports that 66% of its IT projects conducted via virtual teams could not satisfy the clients' requirements. Ferrazzi (2014, p.1) goes further and observed "(…) that most people consider virtual communication less productive than face-to-face interaction, and nearly half admit to feeling confused and overwhelmed by collaboration technology."

Nevertheless, 71% of the participants of the The Economist Intelligence Unit survey (2009, p.6) agreed "(…) that the pros of working in a virtual team outweigh the cons.". This last figure as well as those 2 last paragraphs open the reflection on the positive and negative effects of virtual team-works and gives us food for thought.

The benefits as well as the drawbacks have been gathered and classified according to 3 levels: individual, organisational and societal level. Those, with the societal level, have been used by some of our sources when sorting benefits and drawbacks of virtual teams (Langevin et al., 2001; Beer, Walton, & Spector, 1985 cited by Hertel et al., 2005; Harpaz, 2002 and van Gelderen et al., 2008 cited by Kelliher et al., 2012; Simpson, 2017). Moreover, we should not forget society when tackling a subject, as it is now a fully-fledged stakeholder in debates and public mind.

Benefits of virtual teams on individuals

More freedom and autonomy in action	**Livian et al., 2008; Ebrahim et al., 2009; Bijl, 2011; Kelliher et al., 2012; Fernandez, Guillot, & Marrauld, 2014**
Sense of responsibilities and feeling of empowerment increasing staff motivation	Livian et al., 2008; Ebrahim et al., 2009; Bijl, 2011; Kelliher et al., 2012 ; Fernandez et al., 2014
Provides time control and flexibility	Bell et al., 2002; Hertel et al., 2005; Livian et al., 2008; Ebrahim et al., 2009; Kelliher et al., 2012; ten Brummelhuis, Bakker, Hetland, & Keulemans , 2012; Fernandez et al., 2014
The contribution of the team members is optimised regarding the tasks achievement and organisational goal	Ebrahim et al., 2009
Team members are able to combine their professional and private life more easily, to their own pace	Langevin et al., 2001; Ebrahim et al., 2009; Bijl, 2011; Kelliher et al., 2012 ; Ferrazzi, 2014
Enables partial and under-control reachability with peers and stakeholders through virtuality: permanent physical distraction is avoided.	Kelliher et al., 2012 **;** Fernandez et al., 2014
Results in a better focus on tasks caused by less socio-emotional contacts and information	Ebrahim et al., 2009
"(…) enhances the global mind-set of virtual team members."	Simpson, 2017, p.281
Opportunity to exchange with people from around the world that increases cultural sensitivity	Livian et al., 2008; Ferrazzi, 2014, Simpson, 2017
Helps building professional and social networks	Bijl, 2011; Simpson, 2017
Creativity is developed	Ebrahim et al., 2009; Simpson, 2017
Knowledge is captured, transferred and shared	Ebrahim et al., 2009; Bijl, 2011; Simpson, 2017
Experience is enhanced	Ebrahim et al., 2009; Simpson, 2017
Competences are enlarged	Livian et al., 2008

Stereotypical thinking is erased	Simpson, 2017
Dynamic and freedom of movement of members among organisations, teams and projects.	Ebrahim et al., 2009; Simpson, 2017
Freedom to work from the home country, no need to move to another place	Simpson, 2017
Integrates remote people with low mobility caused by a disability, family duties or because they do not want to move to a foreign country	Hertel et al., 2009; Simpson, 2017
Thanks to written communication: reassures and helps introvert people to speak out more freely	Livian et al., 2008; Chollet 2014
Written communication allows to facilitate exchanges by introducing more rigour and precision in the writing of a foreign language	Livian et al., 2008; Chollet 2014

Figure 11: ***Benefits of virtual teams on individuals.***

As stated in the table above, virtual team members benefit from more freedom in action. Indeed, the dispersion of the members across space, time and/or organisations results in more autonomy given to individuals. They are responsible for the achievement of their tasks, deadlines, etc. as they are not under the direct supervision of their managers. Moreover, the distance with its peers allows the worker to avoid distractions that could be caused by physical interactions. Consequently they control their work or leisure time (at their own pace), feel empowered and motivated.

Virtual teams do not only benefit the individual's organisation itself but also enriches his link to others, his knowledge and creativity, etc. As a matter of fact, virtual teams gives the opportunity for their members to connect with an enlarged network of people, cultures, skills, and ideas resulting in building more knowledge and to develop creativity (and thus innovation). It provides people with different experiences, enlarged competences and new insights.

The model of virtual teams enables people to move from one project, team, and organisation to another while remaining in the same country. This freedom of movement allows people to accept more job offers and to remove this feeling of being *a mobile worker without a home*.

Last but not least, virtual teams make the integration of remote people and introvert people possible as they do not require constant F2F contact to be able to work. The communication being essentially written, it calls for more rigour and precision when writing in a foreign language.

Benefits of virtual teams on organisations and on teams

Reduces costs of office space rent and maintenance	**Langevin et al., 2001; Bell et al., 2002; Bijl, 2011; ten Brummelhuis et al., 2012; Hertel et al., 2005; Ebrahim et al., 2009; Silva et al., 2010; Kelliher et al., 2012; Ferrazzi, 2014; Simpson, 2017**
Decreases traveling and commuting costs	Langevin et al., 2001; Bell et al., 2002; ten Brummelhuis et al., 2012; Hertel et al., 2005; Ebrahim et al., 2009; Silva et al., 2010; Bijl, 2011; Ferrazzi, 2014; Simpson, 2017
Avoids costs to relocate staff, to get a visa, etc.	Ebrahim et al., 2009; Bijl, 2011 ; Simpson, 2017
Alternative to geographic mobility of executives	Langevin et al., 2001; Livian et al., 2008 ; Bijl 2011
Greater competitiveness of SME's thanks to knowledge growth and cheap transfer of information resulting in innovation	Ebrahim et al., 2009
Enables to hire external talents at lower costs	Langevin et al., 2001; Livian et al., 2008; Ferrazzi, 2014
In the case of globally distributed teams working in different time zones: ability to work around the clock	Langevin et al., 2001; Bell et al., 2002; Livian et al., 2008; Earnhardt, 2009; Simpson, 2017
Reduces development times and time-to-market	Earnhardt, 2009; Ebrahim et al., 2009; Kelliher et al., 2012**;** Simpson, 2017
Higher responsiveness regarding time	Hertel et al., 2005; Ebrahim et al., 2009
"Faster response times to tasks" (Ebrahim et al., 2009, p.2657)	Ebrahim et al., 2009 ; Kelliher et al., 2012
Quicker response to market demands, competition and any changing business environments	Bell et al., 2002; Livian et al., 2008; Ebrahim et al., 2009 ; The Economist Intelligence Unit, 2009
Greater flexibility: the team is able to work without space or time concerns	Ebrahim et al., 2009
Type of team with "flat and lean organisational structures" that helps to avoid "many bureaucratic procedures and hierarchical relationships (…)"(Simpson, 2017, p.281)	Kelliher et al., 2012; Simpson, 2017
"On time implementation of the tasks assigned, less resistant to change"	Ebrahim et al., 2009, p.2657
Greater "team effectiveness and efficiency"	Ebrahim et al., 2009, p.2658
Valuable for missions requiring "cross-functional or cross boundary skilled inputs":	Ebrahim et al., 2009, p.2657

"encourage the mutual sharing of inter-organisational resources and competencies"	
Allows to leverage restricted resources across geographic, time and other boundaries	Ebrahim et al., 2009 ; Bijl 2011
Unlimited global labour pool of expertise, know-how in any specialised field	Langevin et al., 2001; Hertel et al., 2005; Livian et al., 2008; Ebrahim et al., 2009; The Economist Intelligence Unit, 2009; Simpson, 2017
Enables to attract, select and retain talents regardless of location	Bell et al., 2002; Ebrahim et al., 2009, Bijl, 2011; Kelliher et al., 2012**;** Ferrazzi, 2014; Laffan, 2015
Those different talents united and collaborating are an important source of innovation	Ebrahim et al., 2009; Kelliher et al., 2012
"Provide a vehicle for global collaboration and coordination of R&D-related activities "	Ebrahim et al., 2009, p.2658
"The ratio of virtual R&D member publications exceeded from co-located publications"	Ebrahim et al., 2009, p.2657
"Higher degree of cohesion (Teams can be organized whether or not members are in proximity to one another)"	Ebrahim et al., 2009, p.2657
Enables the organisation to connect closely with the different actors of its production chain: managers, co-workers, partners, suppliers, etc.	Bell et al., 2002; Hertel et al., 2005; Ebrahim et al., 2009; Silva et al., 2010
Close connexion to clients	Bell et al., 2002; Hertel et al., 2005; Ebrahim et al., 2009; Silva et al., 2010
Synergies and cooperation among the different sites of the same organisation	Livian et al., 2008
"Creates and disperses improved business processes across organizations "	Ebrahim et al., 2009, p.2657

Figure 12: ***Benefits of virtual teams on organisations and on teams.***

When it comes to the advantages of virtual teams on organisations, they are numerous. We will start with the most obvious, the ones related to cost savings. Indeed the list of the financial benefits of having virtual team is great: less office space rent and maintenance, less traveling and commuting costs, less staff relocation cost, cheaper talents, etc.

Working around the clock reduces "product development times and response time to market demand" (Simpson, 2017, p.281) which benefit companies growing competitive on its markets. Enlarged schedules allows a quicker responsiveness but also flexibility; long procedures and implementation are forgotten and the teams is used to change.

Another element triggering competitive advantages and innovation is the common sharing of "inter-organizational resources and competencies" (Ebrahim et al., 2009, p.2657). The resources and people are no longer bounded to organisations, time and space: anything and anyone can be "shared" to the benefit of a project achieved by a team.

The virtual teams are benefiting organisations since it improves business processes inside the team but also across organisations, with partners, etc.

Benefits of virtual teams on society

Decreases commuting and "work-work" traffic	**Langevin et al., 2001; Hertel et al., 2005; Bijl 2011; Kelliher et al., 2012**
Reduces urban congestion	Langevin et al., 2001; Hertel et al., 2005; Kelliher et al., 2012
Drop in air pollution	Langevin et al., 2001; Hertel et al., 2005; Ebrahim et al., 2009; Kelliher et al., 2012
Lower CO2 emissions thanks to energy cut in heating, cooling and lighting the office	Bijl 2011
Facilitates "transnational innovation processes"	Ebrahim et al., 2009, p.2657
Helps in developing regions with low infrastructures and employment rate, integrate persons (…)" (Hertel et al., 2005, p.72)	Hertel et al., 2005, Simpson 2017

Figure 13: ***Benefits of virtual teams on sociéty.***

On the societal level, the benefits are non-negligible. They contribute in making the cities more pleasant and eco-friendly as the commuting traffic, urban congestion and air pollution and CO2 emissions are reduced. Moreover, it facilitates "transnational innovation processes" (Ebrahim et al., 2009,p.2657) and helps to grow "regions with low infrastructures and employment rate, integrate persons (…)" (Hertel et al., 2005, p.72).

8. Drawbacks

Drawbacks of virtual teams on individuals

Working remotely from each other dilutes interpersonal contacts among the collaborators which makes it harder to implement trust within the team	**Hertel et al., 2005; Leon, 2008; Earnhardt, 2009; Silva et al., 2010; Jemine 2016**
Lack of social connectivity: no links created nor sense of belonging to the team resulting in feelings of social and work isolation	Hertel et al., 2005; Livian et al., 2008; (The Economist Intelligence Unit, 2009 ; Silva et al., 2010 ; Bijl 2011; Kelliher et al., 2012; Simpson, 2017

Workers' fear of being forgotten in the career performance evaluation and plans due to their physical absence	Langevin et al., 2001; Kelliher et al., 2012
The geographical distance pushes the team members to avoid asking for help until they are blocked: loss of time	Livian et al., 2008
Digital traceability, triggering constant control and monitoring, is a source of stress	Besseyre des Horts, Isaac, & Leclercq, 2006; Fernandez et al., 2014; Jemine, 2016
Loss of work-life balance due to permanent availability and reachability occurred from the use of ICT's in the team	Besseyre des Horts, Isaac, & Leclercq, 2006; Ernst Kossek, Lautsch, & Eaton, 2009; Bijl, 2011; Kelliher et al., 2012; ten Brummelhuis et al., 2012; Fernandez et al., 2014; Jemine, 2016
Physical distance from peers and hierarchy that puts pressure to work more, limitless	Silva et al., 2010; Bijl, 2011; Kelliher et al., 2012; Fernandez et al., 2014
Cost of time and money for equipment and set-up	Simpson, 2017
Installation heaviness	Simpson, 2017
Harder to reach technician explanations or help when outside of the company	Leon, 2008 ; (Fernandez et al., 2014)

Figure 14: ***Drawbacks of virtual teams on individuals.***

Although there are plenty of advantages for individuals to work in virtual teams, they also experience a lot of inconveniences.

Firstly, the absence of (physical) contact creates social and work isolations that can lead to a lack of trust within the team. People also fear that their geographical absence harms their performance evaluation and eventually their career evolution. This distance from each other might not encourage the staff to ask question until they are blocked which could result in a loss of time.

Concerning the use of ICT's, they are doubtlessly needed but their use implies a constant traceability giving stress to the members. ICT's blur the boundaries between private and professional lives as people become permanently available and reachable. Moreover, the physical distance from each other and from authority pushes individuals to work more, limitless.

Not to mention the equipment itself: its cost and installation are heavy as well as the procedure when a problem is encountered. In fact, it becomes more difficult to ask for technicians' help when not working in the same place.

Drawbacks of virtual teams on organisations and on teams

"(…) increased chances of misunderstandings (…)"	**Hertel et al., 2005, p.72**

Problems of communication caused by distance and absence of face to face communication	Langevin et al., 2001; Ebrahim et al., 2009; Simpson 2017
The lack of body language in contacts leads to misinterpretations	Langevin et al., 2001; Silva et al., 2010
Struggle to communicate because of language or accent issues that may lead to misunderstandings	Langevin et al., 2001; Leon, 2008; Livian et al., 2008; Ebrahim et al., 2009
Cultural diversity involving different contexts, representations, conceptions and values that might result in clashes reducing good relationships of the team members	Langevin et al., 2001; Leon, 2008; Earnhardt, 2009; Ebrahim et al., 2009; Silva et al., 2010;Kelliher et al., 2012; Simpson, 2017
"Difficulty in the interpretation of decisions via virtual means"	Earnhardt, 2009, p.2
"(…) certain awkwardness between members of high power distance societies using high-context communication and those originating from egalitarian cultures often using low-context communication is possible"	Simpson, 2017, p.281
Workers rely on their peers' information delivered on the local situation which will have been the object of previous interpretation(s)	Langevin et al., 2001
Lack of collaboration and communication because of a lack of links created within the team because its members never met	Livian et al., 2008
Written communication is removed from its context and thus of its importance and emergency to answer quickly	Livian et al., 2008
Feelings are not perceivable in written communication which makes it difficult to notice if there is any misunderstanding	Livian et al., 2008
"This communication clash is the source of many conflicts and leads to mistrust, which hinders effective collaboration in international virtual project teams"	Simpson, 2017, p.283
"Vulnerable to mistrust, communication break downs, conflicts (…)"	Ebrahim et al., 2009, p.2658
Less interpersonal contacts between collaborators because there is no space for social interactions resulting in a lack of sense of belonging to the team	Hertel et al., 2005; Earnhardt, 2009; Silva et al., 2010 ; Simpson 2017
Remote management is likely to leave managerial gaps which prevent building trust and widen the gap between everyone's representations and sense of activity	Clergeau & Pihel, 2014

Feeling of isolation	Hertel et al., 2005; Earnhardt, 2009; Simpson 2017
Absence of visual elements from face to face contacts make it difficult to develop trust and to solve conflicts	Langevin et al., 2001; Silva et al., 2010
Fear of relocation and of knowledge transfer	Livian et al., 2008
Data security concerns	Hertel et al., 2005; Fernandez et al., 2014
Ease of information transfer leads managers to ask any possible information before their decision making hence slowed down	Langevin et al., 2001
Information overload due to constant need of ICT's use	Livian et al., 2008; Kelliher et al., 2012
Heavy connexion, sharing and download periods	Fernandez et al., 2014
Tendency to avoid sharing information as long as the work is not complete fearing to look incompetent	Langevin et al., 2001
Harder to monitor the members of the team's activity	Hertel et al., 2005
The difficulty of providing a constant guideline due to the remoteness of managers with the rest of their team(s)	Langevin et al., 2001
Complexity of organisational structures and of reporting systems to get coherent objectives	Langevin et al., 2001
Conflicts of objectives, priorities, investment due to the fact that the team belongs to different divisions or organisations	Langevin et al., 2001; Ebrahim et al., 2009
"(…) increased opportunity of role ambiguity and goal conflicts due to commitments to different work units." (Hertel et al., 2005,p.72)	Hertel et al., 2005; Earnhardt, 2009
Organizational barriers	Ebrahim et al., 2009
Unable " (…) to prevent unproductive developments in time, along with additional cost for appropriate technology (…)"	Hertel et al., 2005, p.72
Issues of internal operation due to high heterogeneity	Langevin et al., 2001
Hard to organise sharing periods (including planning and allocation of work) because of the spreading of the co-workers in space and time	Livian et al., 2008; Jemine, 2016
The struggle of having a shared understanding of how the team operates and must operate	Langevin et al., 2001

Figure 15: ***Drawbacks of virtual teams on organisations and on teams.***

As far as organisations and their teams are concerned, the biggest problem we see and interpret, as the one causing all other problems is communication. The distance, the lack

of face to face contact (and thus body language), the different languages spoken, the cultural diversity, the different interpretations, etc. are factors that might hinder team members from working and collaborating with each other. Virtual teams are missing (or face impediments to get) links created among the workers and the contexts (is it important? Urgent? Their interlocutor's feelings, etc.).

This communication clash triggers conflicts, mistrust in the team. The members, without meeting each other, might not identify themselves to the team and feel they don't belong to it. These feelings of isolation that we developed on the individual level might be amplified by these communication problems. This insecurity may increase the fear of relocation and/or of knowledge transfer.

Another element to add to the fear of knowledge transfer is data security. As the use of ICT's booms so do the digital threats. Besides, this ease of information transfer brings about managers to ask for as much information as possible before any decision making and might slow the project down. The amount of information shared and transferred itself can also take long periods. Scholars also notice that as long as the work is not complete, the members of the team tend to avoid sharing their information which also slows the process.

When it comes to the monitoring and reporting the team members' systems, superiors find it hard to have an eye on their staff's work. They also face difficulties in providing constant guideline as their subordinates are remote from them.

In the case of different divisions or organisations involved, conflicts of interest might pop up and lead to role ambiguity and goal conflicts.

To finish, the internal functioning of the team is not easy as planning involves different processes due to the spreading of the colleagues in space, time, organisation. Moreover, the heterogeneity of the team, even if bringing added value, might cause a struggle to have a shared understanding of operations and the team.

Drawbacks of virtual teams on society

Regarding any damaging effects virtual teams have on society, we did not find any in the literature. However, the rise of ICT's use brings concerns such as electronic dependence, health issues, inequalities as ICT's are not affordable for everyone, etc. They might be interesting topics for another research.

9. Challenges

After the enumeration of these many positive and negative factors, it becomes clear that virtual teams have undeniable positive effects. Indeed, we have seen considerably good outcomes at individual, organisational and societal levels. However, we also took a closure look at the dark side of virtual teams. Their implementation as well as their proper running are not easy and require a constant effort of communication and attention. We will now, from these drawbacks developed, list the biggest challenges

these teams face. It will later enable us to present the developments found in solutions and keys to succeed.

Report from The Economist Intelligence Unit

The graph we used below comes from the report *Managing virtual teams – Taking a more strategic approach*. The report and its surveys - made in 2009 by The Economist Intelligence Unit - were conducted in Europe among 407 companies from different industries. The respondents were polled "to assess the extent to which companies in Europe use virtual teams and how the teams are recruited and managed." (The Economist Intelligence Unit, 2009, p.1) The report displays a good overview and, for example with this graph, gives an idea of companies' opinion on the matter.

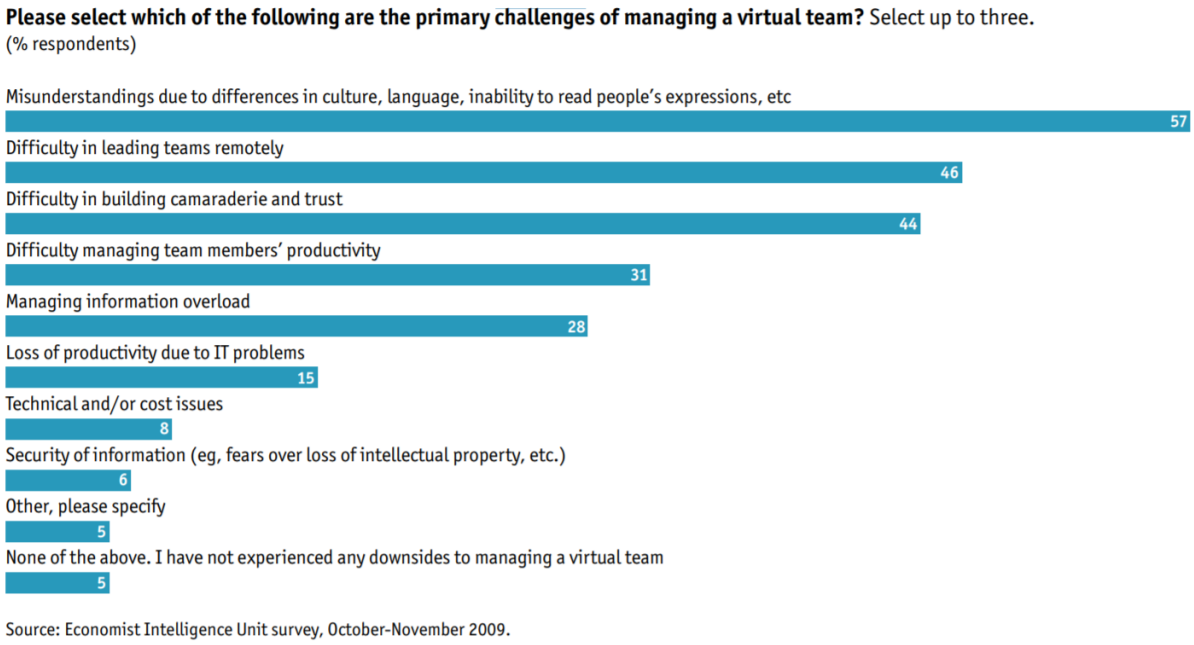


Figure 16: ***The primary challenges of managing a virtual team.*** Source: The Economist Intelligence Unit. (2009). Managing Virtual Teams - Taking a more strategic approach. Managing virtual teams - Taking a more strategic approach, the Economist Intelligence Unit, London. Retrieved June 7, 2018, from http://graphics.eiu.com/upload/eb/NEC_Managing_virtual_teams_WEB.pdf

Regarding the primary challenges faced by main respondents:

- 57% of them find communication challenging due to cultural differences, language difficulties, lack of body language, etc;
- 46% are challenged with remote management;
- Closely followed by the challenge of building "camaraderie and trust" (44%);
- And by difficulties in "managing team members' productivity", in "managing information overload", in "loss of productivity due to IT problems", etc.

Survey from the Society For Human Resource Management

Here we will once again use the survey that helped us getting some figures on the use and need of virtual teams (see section). They asked the respondents their opinion on the "[obstacles] that [prevent] them from being successful." (Minton-Eversole, 2012, p.1) :

- 51% of the professionals see the building of team relations as an obstacle;
- 49% agreed on time differences as an impediment;
- Distribution of work is only cited by 32% of the surveyed people;
- 26% mentioned differences in cultural norms;
- Only 25% of them see the management of a team as challenging.

As you can see, the figures from both reports support the former section focusing on the drawbacks those teams may have. They both show the same challenges but not always experienced by the same amount of professionals. Indeed, the first study cites cultural differences as the first challenge faced by virtual units members (57%) while the latter only recorded 26%. There is also a difference of nearly 20% of respondents when discussing the impediment of leading a virtual team. However, where (almost) the same proportion of respondents agree is on the challenge of building "camaraderie and trust" (The Economist Intelligence Unit, 2009, p.7), or in other words "team relations" (Minton-Eversole, 2012, p.2).

Other sources mentioning challenges within virtual teams

We found similar challenges example linked to distance, cohesion or time differences in other sources:

- Distance regarding leadership, management, control and monitoring, trust (Bell et al., 2002; Gibson & Gibbs, 2006; Clergeau & Pihel, 2010; SD Worx, 2015; Taskin 2015; Jemine 2016);
- Psycho-sociological effects of isolation (Livian et al., 2008; SD Worx, 2015);
- Cohesion and collaboration (Bell et al., 2002; Silva et al., 2010; SD Worx, 2015; Taskin 2015; Jemine 2016);
- Work and performance planning (Livian et al., 2008; Silva et al., 2010).

Another summary of what we have seen is the one of Kayworth and Leidner (2002) (cited by Bosch-Sijtsema, Fruchter, Vartiainen, & Ruohomäki, 2011, p.161), when presenting the 4 main challenges of distributed work:

1. "Communication challenges such as the lack of social cues, nonverbal communication, trust and conflict issues [also supported by Bell et al., 2002];
2. Cultural challenges when employees from different countries, national cultures and local organisation cultures cooperate;
3. Technology challenges [also supported by Bell et al., 2002];
4. Logistics (time differences and need for travel) (Kayworth and Leidner, 2002 cited by Kelliher et al., 2012)."

10.Conclusion

To close this chapter on distributed teams, we identified different types of virtual work and confirmed our will to get interested in virtual teams. Our objective was to understand why virtual teams were the least common practices of the NWoW (Taskin et al., 2015). Through our definitions and readings, it became obvious that remote teams serve the international characteristics of companies. Indeed, those companies whose goals are either innovation to diversify, to find new solutions; or to develop, assure its international presence (Langevin et al., 2001; Bell et al., 2002; Hertel et al., 2005; Kirkman et al., 2005; Gibson, 2007; Leon, 2008; Livian et al., 2008; Earnhardt, 2009; Ebrahim et al. , 2009; Bijl, 2011 ; Kelliher et al., 2012; Johnson et al., 2014; Ajzen et al., 2015; Taskin et al., 2015; Simpson, 2017).

We also wondered if at some point, all team were virtual. The lack of proximity as well as the critical need for ICT's seemed the explaining factor to us (Bell et al., 2002). Other differences observed by scholars led us in our research to investigate the numerous existing pros and cons of distributed teams (Ebrahim et al., 2009). We agreed that there were many encouraging factors to the implementation of remote teams. Nonetheless, we identified quite serious challenges that those structures (may) face. We observed that the challenges lie in the distance among members and their culture, with their hierarchy, with each other, with the team as a whole, etc. We now wonder how virtual teams can be implemented on a solid basis and what the keys developed in the literature to overcome these challenges and to eventually be successful are. The next chapter will thus focus on the solutions and keys for successful virtual teams.

IV. Conditions to succeed and Collaboration

You may have heard the story of the Mars Climate Orbiter, the spacecraft whose disintegration costed 125 million of dollars to the NASA. The failure was due to misunderstandings between the 2 teams involved in the project. They did not use the same measure units and were seperated from 1500 km. They both assumed the other team was using the same language and metrics. This example perfectly illustrates why it is important to coordinate well in dispersed team(s) and to do everything possible to overcome these distance challenges (Chollet, 2014).

This chapter will have an overview as well as a critical eye on the success keys found in the existing literature to overcome the challenges faced by remote teams. We will start by a review of existing surveys of professionals and compare it to specialized sources on the topic.

1. What surveys say

We also start here with a graph from **the report *Managing virtual teams – Taking a more strategic approach*** (The Economist Intelligence Unit, 2009, p.9) that asked the participants to select which keys to success were the most important for the creation of a virtual team:

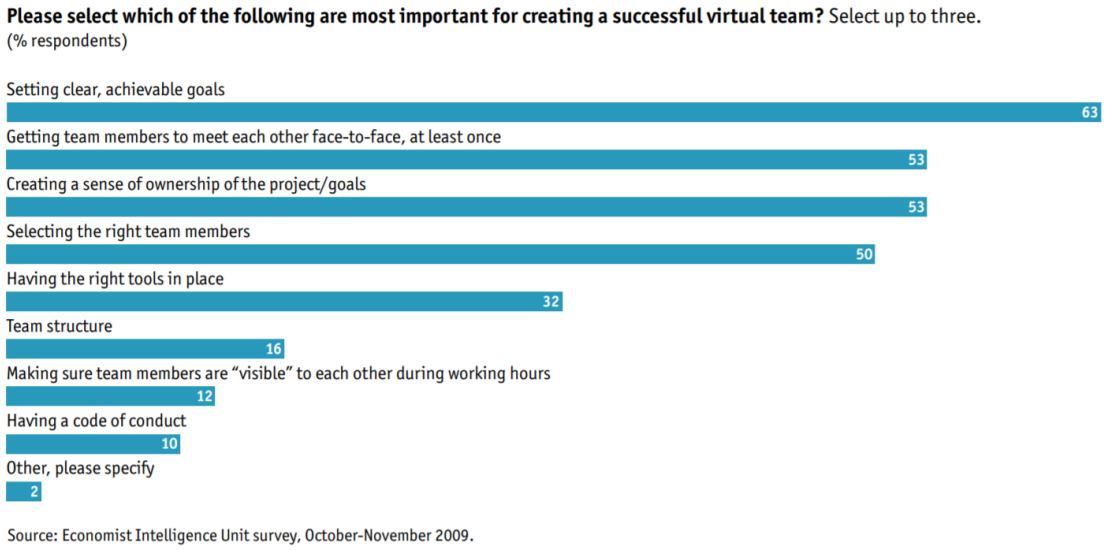
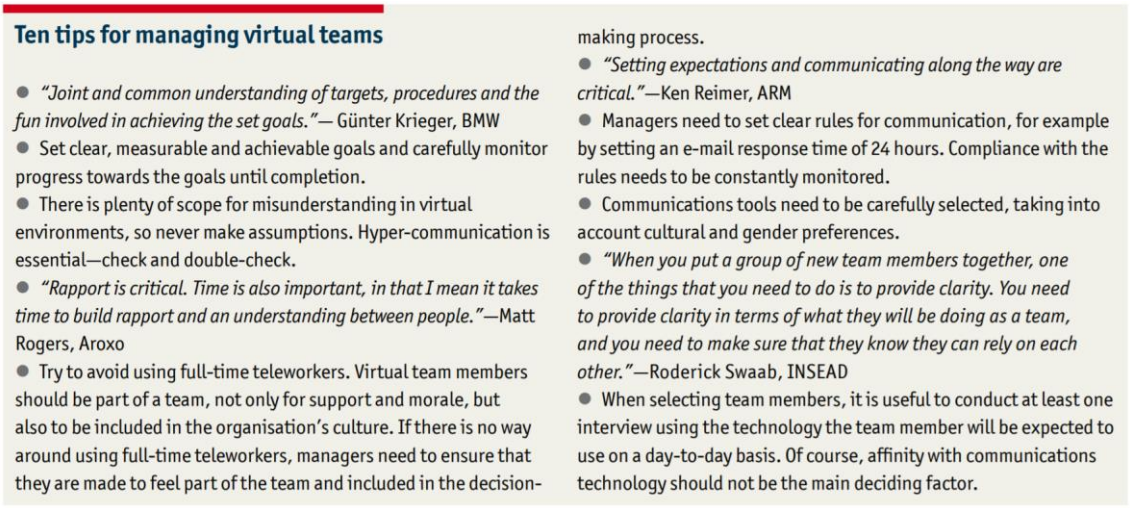


Figure 17: ***Important elements for creating a successful virtual team.*** Source: The Economist Intelligence Unit. (2009). Managing Virtual Teams - Taking a more strategic approach. Managing virtual teams - Taking a more strategic approach, the Economist Intelligence Unit, London. Retrieved June 7, 2018, from http://graphics.eiu.com/upload/eb/NEC_Managing_virtual_teams_WEB.pdf

- 63% of the respondents find it important to set clear and achievable objectives;
- 53% underline the importance of meeting each other face-to-face;
- The same number (53%) of answers support the importance of "creating a sense of ownership of the project/goals";
- Followed closely (50%) by the need to select the right team members;
- 32% voted for the necessity to have the right tools implemented;

- Only 16% selected the team structure as the most important when creating a virtual team;
- 12% talk about visibility of their team members during the working hours;
- Establishing a code of conduct seemed important to a small proportion of the surveyed companies: 10%;
- 2% specified other solutions (The Economist Intelligence Unit, 2009, p.9).

The report (The Economist Intelligence Unit, 2009) added to its written conclusion this sidebar *Ten tips for managing virtual teams* developed from the author Clint Witchalls himself and the professionals he interviewed:



Ten tips for managing virtual teams

- *"Joint and common understanding of targets, procedures and the fun involved in achieving the set goals."*— Günter Krieger, BMW
- Set clear, measurable and achievable goals and carefully monitor progress towards the goals until completion.
- There is plenty of scope for misunderstanding in virtual environments, so never make assumptions. Hyper-communication is essential—check and double-check.
- *"Rapport is critical. Time is also important, in that I mean it takes time to build rapport and an understanding between people."*—Matt Rogers, Aroxo
- Try to avoid using full-time teleworkers. Virtual team members should be part of a team, not only for support and morale, but also to be included in the organisation's culture. If there is no way around using full-time teleworkers, managers need to ensure that they are made to feel part of the team and included in the decision-making process.
- *"Setting expectations and communicating along the way are critical."*—Ken Reimer, ARM
- Managers need to set clear rules for communication, for example by setting an e-mail response time of 24 hours. Compliance with the rules needs to be constantly monitored.
- Communications tools need to be carefully selected, taking into account cultural and gender preferences.
- *"When you put a group of new team members together, one of the things that you need to do is to provide clarity. You need to provide clarity in terms of what they will be doing as a team, and you need to make sure that they know they can rely on each other."*—Roderick Swaab, INSEAD
- When selecting team members, it is useful to conduct at least one interview using the technology the team member will be expected to use on a day-to-day basis. Of course, affinity with communications technology should not be the main deciding factor.

Figure 18: ***10 tips for managing virtual teams.*** Source: The Economist Intelligence Unit. (2009). Managing Virtual Teams - Taking a more strategic approach. Managing virtual teams - Taking a more strategic approach, the Economist Intelligence Unit, London. Retrieved June 7, 2018, from http://graphics.eiu.com/upload/eb/NEC_Managing_virtual_teams_WEB.pdf

We can observe that these tips given by the author and some of the professionals surveyed meet the overall figures of the first graph. Indeed, both mention the importance of setting one common view of targets (clear, measurable and achievable) and procedures. Constant monitoring of performance, communication rules, etc. becomes even more critical for the success of virtual teams and for (hyper-) communication. Good relations are vital when working remotely because of the feelings of isolation, the conflicts and misunderstanding that may occur more often. Caution is observed in talent selection when it comes to their affinity and skills with ICT's (The Economist Intelligence Unit, 2009).

In Minton-Eversole's report (2012, p.1), we can see that the professionals surveyed on "the most successful teamwork behaviors" identified 3 elements:

1. 72% voted for solution brainstorming to tackle problems and issues;
2. 68% agreed on "setting goals for team initiatives and projects" (Minton-Eversole, 2012) as being the most successful teamwork behaviour.

3. And 63% identified “developing plans for team initiatives or projects” (Minton-Eversole, 2012) as a key to success.

2. Literature review

Let’s have a look at the rest of literature, what did they find and develop as conditions for virtual teams’ success? Are they the same as the ones identified by the 2 reports previously used? We believe it is interesting to compare these 2 professional papers with other sources of the existing literature.

Ferrazzi (2014) in his article *Getting Virtual Teams Right* writes about 4 essential success keys:

1. ***The Right Team;***
2. ***The Right Leadership;***
3. ***The Right Touchpoints;***
4. ***The Right Technology.***

We used this pattern because it gathers and sums up our findings on the subject correctly.

Key number 1: The Right Team

The starting point of the process is to hire **talents** that suit virtual work in teams (Johns et al., 2013). Interpersonal and teamwork skills such as good communication skills, emotional intelligence, autonomy in work, strength to recover from the chaos that might arise should be taken into account in the selection process. Their IT skills must be assessed as well; as they will constantly work with it. They also have to be culturally aware and sensitive to others (Witthaus, 2008; The Economist Intelligence Unit, 2009; Ebrahim et al., 2009; Silva et al., 2010; Langevin et al., 2011; Chollet, 2014; Ferrazzi, 2014).

Witthaus (2008) mentions **diversity** as a criterion when composing the team. She brings up creativity and productivity as long-term effects of the team heterogeneity.

Ferrazzi (2014, p.3) also mentions “social loafing” when talking about the **size of the team**: the more you are the less responsible you feel for output. The number of workers within a team shouldn’t exceed 10 people. Moreover, Hackman (n.d., cited by Ferrazzi, 2014) brings up the communication’s scope. He recorded that 10 conversations were necessary for the 5 people of the same team to “touch base with everyone else” (Ferrazzi, 2014, p.3) while 78 conversations were needed for a team of 13 people. That is also why the team members must be given clear roles and accountabilities to avoid this lack of involvement in results that may occur (Ebrahim et al., 2009).

Another interesting insight comes from Professors Huckman and Staats (2013, p.1) when they write about “**team familiarity**—the amount of experience individuals have working with one another (...) ”. They believe it is a success factor for teams (Chollet, 2014). They also use Hackman’s work (n.d.) on teams experiencing -as individuals- a learning curve.

They found out that when familiarity rose by 50%, failures dropped by 19%, and budget overspendings decreased by 30%. They also mention the competitive advantage built upon those familiarity capabilities created.

As far as leaders are concerned, they should possess the **right openness when handling a virtual team**. They should put traditional hierarchy and personal ambitions aside at the team's service. The leader of a virtual team is the one that is able to gather people and trigger communication even more than within a collocated team. Due to distance, this person should be able to delegate and act as a facilitator (a coach) while coordinating the team as a whole (Langevin et al., 2011; Laffan, 2015).

Concretely:

When hiring: behavioural interviews and personality tests, technology tests should be conducted (Ferrazzi, 2014);
When inheriting a team: same tools to evaluate on which weakness to coach the members of the team (Ferrazzi, 2014);
When member of a team: develops the skills mentioned as much as possible (Ferrazzi, 2014):
When composing the team: take the diversity factor into account (Witthaus, 2008).
Form teams of 5 to 10 members maximum (Ferrazzi, 2014);
Leaders should constantly remind everyone's role and accountability (Witthaus, 2008; Huckman et al., 2013);
Companies and managers should allow travel costs from time to time to include remote team colleagues (Huckman et al., 2013);
Companies and managers should consider employees' retention when facing external job offers (Huckman et al., 2013);
Managers should be able to hire former colleagues to join the team (Huckman et al., 2013).
Team leaders should be chosen based on their open-mindedness (Langevin et al., 2011; Laffan, 2015).

Figure 19: ***Concrete keys for the right people.***

Key number 2: The Right Leadership

Building **trust** and **relationships** between the team members but also with their manager is the first step. Leaders must foster people to present themselves, their expectations, their work behaviours, values, etc. (Witthaus, 2008; Ebrahim et al., 2009; Langevin et al., 2011; Ferrazzi, 2014; Laffan, 2015).

After building trust, the next step is to implement a regular **open dialogue.** This climate predisposes people to honesty and openness and the leader (especially in distributed teams) has to drive its people in that sense:

- Constructive criticism;
- Appointing an official advocate[9] when conference calling;
- As well as encouraging members for their practices improve communication and collaboration in the team;

…are the magic words (Gibson et al., 2006; Ebrahim et al., 2009; Langevin et al., 2011; Ferrazzi, 2014; Laffan, 2015).

Setting a **common and shared purpose and vision** is the third step leaders and their teams should not forget. The right leadership is the one that sets the vision and the goals for and with the whole team. (Witthaus, 2008; Ebrahim et al., 2009; Silva et al., 2010; Langevin et al., 2011; Johns et al., 2013; Laffan, 2015; Simpson, 2017). Roles and responsibilities should be clearly defined (Ebrahim et al., 2009; Langevin et al., 2011; Laffan, 2015). And the message should be regularly stated again.

In the meantime, it should also frame "the work in terms of team members' individual needs and ambitions." (Ferrazzi, 2014, p.5) (Laffan, 2015). The difficulty lies in the need for team managers to develop the individual competences of its staff while putting together this professional and cultural diversity in the team to build collective competences. This cohesion in work will enable a better collaborative work (Silva et al., 2010; Johns et al., 2013).

Concretely:

The team members should have fun while interacting with each other: "The fun and camaraderie match anything coworkers experience in person while ensuring that people are engaged in the conversation and focused on the specific tasks or topics at hand." (Ferrazzi, 2014, p.5);

Examples:

- **initiate informal conversations at each conference call starts;**
- **online video games foster connivence and mutual acquaintances (Chollet, 2014).**

Another suggestion made is "to give video tours of their workspaces" (Ferrazzi, 2014, p.4)

→ enables to mentally imagine the other when virtually communicating with each other → tackles the isolation issue of not physically working together (Chollet, 2014);

People should learn to regularly speak out with respect and in a constructive way (Gibson et al., 2006; Ferrazzi, 2014);

[9] "(…) noticing and speaking up when something is being left unsaid and calling out criticism that's not constructive." (Ferrazzi, 2014, p.4)

Leaders should set up and explain to the team "guidelines for team interaction" (Ferrazzi, 2014, p.5) reducing uncertainty, misunderstanding and enhancing trust (Gibson et al., 2006; Chollet, 2014; Laffan, 2015; Simpson, 2017). **Examples of interaction guidelines:** - **People should always have specific requests by mail (Ferrazzi, 2014);** - **Multitasking during (meeting) calls should be forbidden (Ferrazzi, 2014);** - **Follow-up email after video-conferences (Ferrazzi, 2014).** **It relates to communication but also to "decision-making" protocols concerning problem solving, information sharing, confidentiality, etc. (Witthaus, 2008, p.58).**
Everyone in the team should be able to remind or remember the common purpose of the team (Ferrazzi, 2014);
Individual preferences in work should be encouraged and supported with personalised methods to involve different work personalities (Johns et al., 2013).

Figure 20: ***Concrete keys for the leadership.***

Key number 3: The Right Touchpoints

There are some (critical) stages of the team where it would be useful for team members to meet in person (The Economist Intelligence Unit, 2009; Langevin et al., 2011; Ferrazzi, 2014).

An **initial meeting** (F2F or via video) would help the team members in many ways. The first 2 keys mentioned it already, meeting everyone from the team will help teammates and the leader to introduce themselves, to set "(…) their expectations for trust and candor, and [to clarify] team goals and behavioural guidelines." (Ferrazzi, 2014, p.6) (Witthaus, 2008; The Economist Intelligence Unit, 2009; Langevin et al., 2011; Laffan, 2015).

Physical contacts (eye contact, body language, etc.) trigger personal connections and trust between strangers working together "before long-term bonds develop." (Ferrazzi, 2014, p.6) (Ebrahim et al., 2009). The same goes for new member(s) entering an existing team: the team should meet all together in one place. A **mentorship** should be put in place **for new comers**: quick answers but personal (Ferrazzi, 2014).

Regular gatherings to celebrate victories and the short-term achievements are another way to motivate its people. It is also a good way, when possible, to tackle a problem or a conflict (Livian et al., 2008; Witthaus, 2008; The Economist Intelligence Unit, 2009; Langevin et al., 2011; Chollet, 2014; Ferrazzi, 2014). This ability to encourage and maintain contacts shouldn't be taken lightly when appointing a team manager (Langevin et al., 2011).

As already mentioned in the previous keys on leadership, **connectivity norms** should be put in place with regards to when and how to communicate. These norms should be thought of thanks to workers' previous experience but also gradually by electing the

ones that work the best. It implies of course a constant monitoring (Witthaus, 2008; The Economist Intelligence Unit, 2009; Kelliher et al., 2012; Chollet, 2014).

When it comes to different time zones the staff is in, everyone together should "identify **suitable times** at which everyone can be called, and rotate time frames for synchronous meetings so that the same people are not always inconvenienced." (Witthaus, 2008, p.58).

Concretely:

Managers should call for the meeting of its team members during the first stage of the team (Ferrazzi, 2014; Laffan, 2015);
If possible, people from a team should meet physically on a regular basis (Chollet, 2014; Ferrazzi, 2014);
People should establish and monitor connectivity rules (Witthaus, 2008; The Economist Intelligence Unit, 2009; Chollet, 2014; Simpson, 2017);
Suitable times for reaching team members should be equally set (Witthaus, 2008).

Figure 21: ***Concrete keys for the right touchpoints.***

Key number 4: The Right Technology

Any talented, collaborative and regularly meeting teams can fail if lacking the right **technology support.** Scholars write about the need for the right equipment (Ebrahim et al., 2009; Johns et al., 2013; Ferrazzi, 2014; Laffan, 2015). They also found that having someone as **technology facilitator** could be critically useful (Witthaus, 2008; Ebrahim et al., 2009).

The advantages of technology supports are numerous, for example:

- Conference calls helps each members to see each other and these visual cues enable to create empathy and trust within the team. (Ferrazzi, 2014);
- Direct calling or messaging allows "real-time conversations" (Ferrazzi, 2014, p.7) when needed. Besides, Ferrazzi (2014) mentions that texting is a great way to foster personal relationships. Ebrahim et al. (2009, p.2660) also support this idea and link "lateral communication" to the team's performance ;
- Discussion forums are an effective way to present issues to everyone and are a good way for the entire group to give useful input on the matter (even if not in their professional scope). Brainstorming is always a good idea because solutions can arise from "unexpected sources" (Ferrazzi, 2014, p.7).

Concretely:

Teams should benefit from collaboration platforms that ease conference calls in groups, direct calls or messaging, discussion forums, etc. (Ebrahim et al., 2009; Ferrazzi, 2014);
Organisations should avoid "sophisticated technology" (Johns et al., 2013, p.8) and rather invest in intuitive collaboration technology that fits the "desired business outcomes" (Johns et al., 2013, p.8). This support must be seen as a facilitator by its users[10] (Bell et al., 2002);
Technology norms should be applied to trigger creativity with the right "generative connection"(Collins & Kolb, 2012) and to encourage "regenerative disconnection" (Collins & Kolb, 2012) (The Economist Intelligence Unit, 2009);
Leaders have to observe how comfortable their team are with the tools they use (The Economist Intelligence Unit, 2009);
The team should appoint a technology facilitator (Witthaus, 2008; Ebrahim et al., 2009).

Figure 22: ***Concrete keys for the right technology.***

(Additional) Key number 5: The Right Training

There are a few **trainings** suggested by authors to contribute to the virtual team efficiency. As a matter of fact, collaborating and working on a project while not together physically can be prepared and taught through trainings. It concerns many aspects of the virtual team such as **distance management, self-management skills, virtual communication and meeting, technology knowledge, etc.** (Witthaus, 2008; Ebrahim et al., 2009; The Economist Intelligence Unit, 2009 ; Langevin et al., 2011 ; Simpson 2017).

Concretely:

Teams should be encouraged, forced to do training (Ebrahim et al., 2009; The Economist Intelligence Unit, 2009 ; Langevin et al., 2011). **Examples of trainings:**

[10] "Organizations are discovering that the closer a work technology experience is to an individual's personal use of devices and software, the faster the technology is adopted." (Johns et al., 2013, p.8)

- **"Task-specific business English training" (Levey, 2014, p.2) to help with language barriers;**
- **Cross-cultural training to teach cultural diversity and to raise awareness of its impact on the team's communication and relations(Levey, 2014);**
- **Soft skills training (Levey, 2014).**

Figure 23: ***Concrete keys for the right training.***

(Additional) Key number 6: The Right Collaboration

Witthaus et al. (2008, p.58) also suggest that to be able to "(…) [develop] trust and healthy communication patterns" in virtual teams, collaboration should be encouraged. Their guideline is intended to "(…) not allow the team to split into closed sub-groups or silos." (Witthaus, 2008, p.58). Indeed, distance as well as the use of computer-mediated tools can divide the group into many individuals. That is why it is necessary for everyone in the team to give a **collaborative dimension** to those tools (Silva et al., 2010; Collard et al., 2016).

Moreover, authors underline the cause-effect mechanism of collaboration fostering **team creativity (**Barczak, Lassk & Mulki, 2010; Cattie & van Riper, 2012) . Companies such as Microsoft (Ashbrook, Parsons, Seeger, Bolling & van Uum, 2012, p.4) also bring collaboration and innovation together. They mention an IBM study (2011) that confirms that 66% of CIO's surveyed believe collaboration is a "key to innovation".

Concretely:

"Focus on collaboration:

- **Goals are decided up front, along with key roles, commitments, and the rules of play.**
- **Leaders define the vision, set the boundaries, and then relinquish control. They understand that project leadership is not a power game.**
- **Roles and commitments are measured against well-communicated metrics.**
- **The culture mantra is to trust someone until he or she becomes unworthy of trust." (Johns, 2013, p.6)**

Figure 24: ***Concrete keys for the right collaboration.***

We note that the previous concrete keys presented also contribute to the development of the right collaboration. It goes from the leader that coordinates his team (instead of directing it) according to each personality within the group, to the constant work on communication climate, to planning of a suitable time to reach everyone including the use of connected and collaboration platforms.

3. Challenges accepted but questions remain...

We are now able to confirm that the professional sources that we used share the same points as the rest of the theory analysed. Each underlines the importance of:

- having the right people by your side within a virtual team (Ferrazzi, 2014) or in other words to select the right team members (The Economist Intelligence Unit, 2009);
- coordinated thanks to the right leadership (Ferrazzi 2014), by setting goals and remaining open to dialogue (The Economist Intelligence Unit, 2009; Minton-Eversole, 2012);
- supported by the right tools (The Economist Intelligence Unit, 2009; Ferrazzi 2014);
- and with the right touch points (Ferrazzi 2014) i.e. by meeting F2F (The Economist Intelligence Unit, 2009).

We chose to add 2 additional keys namely the right trainings and the right collaboration. Training "(...) and development [are] fundamental to business growth." (Ministry of Business, Innovation & Employment, 2018). The importance of helping its people grow and develop their skills is not to be proven anymore. Regarding collaboration, as previously mentioned, we noted that authors believe that collaboration is inherent to the success of a team.

Thus, we addressed the challenges related to people's commitment, to their skills, to distance, to time zones, to the use of ICT's. All in all, every element of our definition of virtual team has been questioned[11] and studied in terms of concrete solutions. However, one question remains: collaboration. So far in our research, collaboration is seen as an unquestionable key for (virtual) team's success. We notice that collaboration is inseparable from the other elements we have developed and from a team's operation in general, but to what extent? Is collaboration itself not challenging, especially in virtual teams?

Let's look back at what we have written so far on collaboration throughout this paper:

First, we have seen that thanks to the digital revolution, virtualisation of relationships were permitted through the digital collaboration and ubiquity created (Silva et al., 2010, Kelliher et al., 2012). We observed, that people now were looking for collaborative and stimulating contracts in work as part of a change in their mindset (Desplats et al., 2015).

Ajzen et al. (2015) presented the NWoW as a way to improve qualitative collaboration among workers. We wondered if collaboration could work in any case and what were its effect on companies and its workers. Then, those same authors put virtual teams as associated practices to collaborative work. After reviewing their figures on the use of the practices of NWoW: we discovered that virtual teams were the practices that were the least implemented. The organizational characteristics were the reason given for this

[11]As a reminder, virtual teams are teams of equally dedicated people with compatible skills that are geographically, organisationally and/or time dispersed collaborating thanks to the ICT's in order to accomplish one or many specific projects (Langevin et al., 2001; Earnhardt, 2009; Ebrahim et al., 2009; Ajzen et al., 2015).

small number (Ajzen et al., 2015). We asked ourselves, if such digital structure[12] could work with this level of collaboration needed.

We believe that the conditions presented to succeed in virtual teams provide many answers among which collaboration and vice versa[13], but questions remain. What does collaboration actually imply within a virtual team? To what extent is collaboration right in virtual teams? We will take a closer look at the concept of collaboration and at its implications with virtual teams.

4. Collaboration in work

Virtual teams and collaboration

Today, "throughout the world, we're seeing value creation and consumption shifting from individuals to the collective, organizing structures moving from closed hierarchies to open networks, task coordination evolving from top down to bottom up, and knowledge transfer shifting from a linear distribution to dynamic participation." (Ashbrook et al., 2012, p.2). This is how they describe social collaboration at Microsoft or in other words: a collective and coordinated work in open and flat networks through a "spirit of harmony and trust" (D'amour, Ferrada-Videla, San Martin Rodriguez, & Beaulieu, 2005, p.116).

D'amour et al. (2005, p.118) identify 4 concepts related to collaboration: "sharing, partnership, interdependency and power." With regard to virtual teams, we previously pointed out the utility of:

- sharing responsibilities, decision making, values, data, planning and intervention;
- building authentic and constructive relationship of its members with a common goal;
- everyone's contribution to the collective action, to the goal to achieve;
- recognising everyone's role and contribution as part of a shared power.

This process has to start from the early stages of a team. Indeed, " (...) it is unrealistic to think that simply bringing professionals together in teams will lead to collaboration. Since professionals have to trust each other before collaborative process can be established, there is a wide range of human dynamics that need to be developed within a team." (D'amour et al., 2005, p.126).

We believe that those "wide range of human dynamics" (D'amour et al., 2005, p.126) in virtual teams are more demanding than with other types of teams. The intensity of collaboration has to be higher and quite demanding as communication and proximity must be built at distance. As a matter of fact, we already mentioned Johns' work on that matter (cf. supra p.58). The process of collaboration is definitely time and energy

[12] with geographic, organizational and/or time dispersion

[13] The right collaboration can be achieved with the right people, the right tools, etc.

consuming. Each step or decision is negotiated and discussed; planning and interventions are shared; but by everyone from a distance, sometimes without knowing each other, etc. (D'amour et al., 2005). It is a never-ending story: a virtual teams' success is based on encouraging trust, communication through collaboration which has to be intensely worked on only at distance by its members.

Collaboration in figures

We asked ourselves how to put figures on this intensity of collaboration. It is described by Taskin et al. (2015, p.12) as "(...) [the measure] by the number of tasks performed by several people (individual dynamic vs collective dynamics), consider that the more people are associated, the more the intensity of collaboration is strong. This intensity is reinforced by the existence of collaborative, participative management and organizational forms of teamwork."

We deduct from this definition that new work environments foster and push people to collaborate more. Thanks to their research on 23,000 workers over the new work environment, CEB found out that more than ⅔ of them said "(...) that their jobs require more collaboration today than they did three years ago." (cited by Cattie et al., 2012, p.1). 60% of the respondents reported that their daily work needs regular coordination with about 10 people (Cattie et al., 2012).

Another research on *collaborative overload* through 300 organisations studied that over the last 20 years, the amount of time spent by managers and staff in collaborative activities has skyrocketed by 50% or more (Cross, Rebele & Grant, 2016).

Work overload can be explained by the moment where people spend more time working on ad hoc demands from their colleagues rather than finishing their own tasks and objectives (Leffort, 2017). We note that sometimes there might be a point of conflict to determine whether your co-worker's task is yours as ultimately the project to achieve is common. And it is where, we believe, it gets important to pay attention to this collaboration within virtual teams.

Cross et al. (2016) recorded that close to 80% of someone's work time is dedicated to requests, meetings, telephone calls and emails. They believe it is not worth it. "In most cases, 20% to 35% of value-added collaborations come from only 3% to 5% of employees." (Cross et al., 2016, p.2). From the moment these persons are known for being skilful and willing to help, "they are drawn into projects and roles of growing importance." (Cross et al., 2016, p.2). We could see this as a great contribution to the end purpose and to the team performance. However, it only adds to requests placed on the best collaborators whose intervention becomes essential and whose own work is slowed. The authors discovered that these valuable contributions usually go unnoticed as the demands come from anywhere.

They identify 3 kinds of "collaborative resources":

- “informational resources are knowledge and skills-expertise that can be recorded and passed on.”;
- “social resources involve one’s awareness, access, and position in a network (...)” ;
- and “personal resources include one’s own time and energy.” (Cross et al., 2016, p.3).

According to them, personal resources are the problem. Informational and social resources will not drain the employee’s supply as it can be shared with one single exchange. On the contrary, someone’s time and energy for demands is limited and if collaborating, reduces his availability for his own work. People rather use this third resource instead of specifying their need for informational or social resources or even instead of looking themselves (Cross et al., 2016). We can also wonder if the contributor doesn’t bask himself in this collaborative spiral.

Cross et al. (2016) also realised that the team’s (and its member’s) performance could be hindered. If the percentage of “demanders” exceeds 25%, it turns out to be a strong sign of voluntary turnover (Cross et al., 2016). After all, collaboration might not be the unquestionable and established way to work.

And this phenomenon might be deepened as our relationship to time has also evolved. With the use of electronic devices, we shifted to a period where we are not subject to time anymore. We are now able to play with time to get the most out of it which becomes the power. We became subjects to these hyperreactivity possibilities and this permanent and dependant availability that pushes us even more towards this never-ending circle of answering any request (Bobineau, 2011).

This argument of work overload is balanced by Cattie et al. (2012, p.1) whose positions on collaboration remain more nuanced. Writing specifically on virtual groups, they believe that dispersion removes the “water cooler effect”[14] which causes easy collaboration. They add that the increased workload caused from budget and workforce reductions has forced employees “(...) to focus on individual responsibilities over group initiatives.”(Cattie et al., 2012, p.1). They mention other results suggesting that “since 2008, agreement with the notions that employees cooperate to get the job done and share knowledge had declined by 9 percent and 2 percent, respectively.” (FedView cited by Cattie et al., 2012, p.1).

However, Cattie et al. do agree on the need for the right collaboration. They call for a selective encouragement of collaboration when it provides high potential effects[15];

[14] “Used to refer to the type of informal conversation among office workers that takes place around a water cooler.” (Oxford Dictionaries, §2).
[15] “Benefits of collaboration must outweigh the cost in terms of time and resources.” (Cattie et al., 2012).

from controlled various expertises and perspectives; with strong goal alignment and ground rules.

Our research question

These last 2 paragraphs display a different point of view that we should take into account when considering collaborations and its possible pitfalls. It teaches us that nuance must be adopted in our scientific research.

Still, this research on collaboration shows us that collaboration fails to win unanimous support. However, given the small amount of research on that matter especially within virtual teams, we believe it would be useful to continue on this topic. This is why we wonder and will make our research question:

How collaboration and virtual teams encouraged by the NWoW might be a threat for companies and labour?

We believe this question might give new insights on collaboration within virtual teams, as many scholars have not approached it. The next part of this paper will be intended for the research field and to confront our idea that collaboration and virtual teams might not be the *good new way to work.*

3° Part: Field research

The third part is aimed at the research that we will conduct on the field. We will start by formulating hypotheses to our research question that will enable us to initiate the ground research. We will then build our analysis model thanks to a conceptual analysis table made from the key concepts seen in our review, its different dimensions whose indicators will helps us to develop our data collection tool. The data will be collected and analysed in order to present the results from our field research. The last part will try to answer the question of this research by confronting results observed through our data collection with developments of our literature review (Paquet et al., 2015).

I. Research Design

This chapter will display the hypotheses built on the knowledges acquired during our bibliographic research of virtual teams and collaboration. The objective will be to confirm or refute those hypotheses. They will help us identifying the key concepts, dimensions and indicators of our problematic and will lead us to the research method to use (Paquet et al., 2015).

1. Our hypotheses

We stated the following research question: *How collaboration and virtual teams encouraged by the NWoW might be a threat for companies and labour?*

In order to try to answer our research question, we have formulated 3 hypotheses based on elements studied from literature that might impact virtual teams and collaboration.

***Hypothesis 1**: If there is no collaborative process discussed as soon as teams are created, then collaboration and virtual teams are a threat for companies and labour.*

***Hypothesis 2:** It there is collaboration overload in virtual teams, then collaboration and virtual teams are a threat for companies and labour.*

Hypothesis 3: *If personal collaboration outweighs informational and social collaboration in virtual teams, then collaboration and virtual teams are a threat for companies and labour.*

2. Analysis model

It is now time to elaborate the analysis model whose construction will allow us to choose the right tool to use for our data collection. The model used is a conceptual analysis table that summarises the synthetic structure of knowledge built from our different sources. It contains a list of the key concepts studied, its characterising dimensions as well as their indicators (Paquet et al., 2015).

The table (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*) is formed by the key concepts of our problematic: labour, company, virtual team and collaboration. We have brought out the dimensions from our theory review that also helped us formulating our hypotheses regarding collaboration in virtual teams. From these dimensions, we were able to see what indicator to identify and measure during the field research (Paquet et al., 2015).

To illustrate this method, from the key concept *collaboration* we listed its dimensions[16] among which intensity and by extent work overload if not handled well. These dimensions are manifested by indicators such as the number of task performed by several people; their percentage of time dedicated to requests, meetings, etc.; the existence of tasks' boundaries; etc. For the other dimensions and indicators of each concept, please see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*.

The analysis model being set up, we can pass to the selection of our research method: what data collection tool will we use? Where? How? We will answer these questions in the next chapter.

[16]always from our bibliographic research.

II. Research method

To provide quality, valid and reliable results, we must pay attention to the selection of the right data collection tool.

1) **Type of data to gather on the field**: primary data.
   Seeing the small amount of available secondary data, It would be little complete to conduct our ground research via collection of existing data. The objective of this research is to approach the phenomenon in a different way adopting an inquisitive approach unseen before in literature (Paquet et al., 2015).

2) **What to observe?**
   We grasp the theoretical concepts, we developed them in the first parts of this research. We know now that we need to collect primary data and illustrated the concepts and our questioning through the CAT[17] (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*). The data that we wish to gather are classified in 3 types. They relate to behaviours, opinions or intentions, and objective conditions of existence (Paquet et al., 2015).

   - Example of behavioural type of data to collect developed in our CAT: *Do you regularly meet with the rest of the team? How?*
   - Example of data linked to an opinion in our CAT: *Who is the best collaborator in the team?*
   - Example of data that relates to an objective condition of existence: *What is the size of the company?*

3) **Who to observe?**

   People working in this kind of structure: at distance with a common goal thanks to ICT's support. These subjects are thus stakeholders in the phenomenon

[17] conceptual analysis table

because they are able to provide answers to our indicators and questions (Paquet et al., 2015).

4) **How to observe?**

As collaboration within virtual teams has not been developed by many so far, we believe that the qualitative method will help us to understand the phenomenon more deeply (Paquet et al., 2015). We want to ensure a better understanding of virtual team collaboration as a threat.

5) **Sorting of data collection tools**

As previously explained, **the collection of existing, secondary data** is impossible. There are 3 types of tools left: direct observation, qualitative interview and survey (Paquet et al., 2015).

Direct observation is limited to observing behaviours when they occur without testimony. This method would not be complete because it could not respond to the indicators of the opinion or intention type that we want to study. Indeed the subjects observed do not intervene to produce the type of answer that we seek (Paquet et al., 2015).

Direct contact though the **qualitative interview** of virtual team subjects is a method that could fit our needs. We seek to know the state of collaboration between people of the same virtual team. It is therefore logical that we could collect their perception, opinion, experience of the situation (Paquet et al., 2015). The interview enables to obtain the 3 types of data that we built through our CAT. As a reminder, these are data on: behaviours, opinions or intentions, and objective conditions of existence (Paquet et al., 2015).

Given the exploratory nature of our research question, we believe **surveys** may not give the right answers as they are addressed to a large part of the population (Paquet et al., 2015). We want here to observe workers working inside a specific kind of virtual structure by adopting a qualitative form of research. In addition, the formulated indicators offer so many possible answers and content that a form to fill in would not encourage our target to answer completely and honestly. Nor can we pre-code our questions (Paquet et al., 2015).

This is why we will work with the qualitative interview. In our CAT, we have written the indicators under the form of closed, directive questions and under the form of open questions as well (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*).

To remain scientific and structured, we will conduct our interviews following the 4 steps of the interview developed by Paquet et al. (2015): the introducing discussion, beginning of the interview, the core interview and finally its closure. The interviews will be based on our interview guide and will be semi-structured as we want to let the people questioned to speak freely and as completely as possible.

The next chapter will be presenting the results and what we learned on the field of people collaborating in virtual team.

III. Research result

This chapter will display and summarise the data gathered from our field research. These data will enable us to verify our research hypotheses formulated to offer an answer to the question of *How Collaboration and virtual teams encouraged by the NWoW might be a threat for companies and labour ?* We will start by precising the analysis' scope of the research, and then continue by bringing together the interviews' data according to their dimensions and concepts.

After a pre-test of our analysis model or i.e. of our interview guide, we did not need to modify the content of our questions but we did change the order of the dimensions and their indicators studied. We also realised that for 2 different dimensions the same questions could be asked. Indeed, questions about trust[18] can fill different dimensions of collaboration like regarding leadership or partnership. We chose not to ask twice the same questions to the people surveyed. These adjustments produced more constructed responses of our targets. They neither felt like they were repeating answers to the same questions.

These virtual meetings were thus semi-structured with the help of our interview guide covering the following key elements:

- Labour: visualising worker's situation and background;
- Company: putting into context the company the team member work for;
- Virtual team: describing the virtual team involved;
- Collaboration: investigating collaboration within virtual teams. This last concept is the one that has been developed the most as it is the core concept of our research.

We have surveyed 14 people working in different service companies from the banking sector to consulting firms as well as people involved in digital services. We chose to focus on teams delivering services instead of products as they do not require as much

[18] E.g.: Do you trust your team co-workers?

confidentiality as products teams. Besides, from a career perspective we thought it would teach us a lot as we want to specialize in consultancy services.

Each interview has been mainly conducted on the phone or via video call as the workers involved in virtual teams were not necessarily in Belgium. These semi-structured interviews lasted between 45 minutes and sometimes more than 1 hour, depending on the interviewees' propensity to speak.

The results of the interviews conducted will be sorted by the dimensions and key concepts identified in our model of analysis (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*).

The results of the interviews conducted are sorted by the dimensions and key concepts identified in our model of analysis (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*).

1. Concept 1: Labour

Among the 14 virtual team members interviewed, we (virtually) met[19]:

- 2 managing directors of a video production company: **Julian** and **Adrien** share the same prerogatives but in practice Julian is more busy with the back office and Adrien leads the artistic production. They both studied 3D in Haute école Albert Jacquard and have created their company 6 months ago (Bondoit, 2018; Martial, 2018);
- 2 partners of a graphic design and communication start-up: **Lyonel** manages the back office and graphic design; and **Kamal** is in charge of prospection and communication. Lyonel studied architecture as well as computer graphics. Kamal's education background is broader: art history, journalism, cinema and media and other marketing trainings. They went into partnership with a third partner 1 year ago (Alzetta, 2018; Messaoudi, 2018);
- **Florian** is lead designer for a digital firm. He graduated in computer graphics from Haute école Albert Jacquard. He has been working for 11 months in the company (Bertelli, 2018);
- **Christophe** who is quality controller and **Florence** who is business data analyst. They both work in the same company specialised in financial analysis. Christophe was hired in December 2016 while Florence is under contract since 11 years. They respectively studied management science in Mons and management engineering in Liège (Bekaert, 2018; Dubus, 2018);
- **David** who has been working for 1 year as microcredit counsellor and **Liam** employed as compliance and risk manager since 2015. They both work in the financial sector. David studied management science and Liam is a former international business and management student (Taquin, 2018);

[19] As a reminder, for the most subjects we did not meet physically them

- ➢ **Dimitri** is the stand-in accounting manager for a company active in glass fiber industry. He is replacing someone for 9 months and started his mission 7 months ago. He studied economic sciences in Brussels and Bristol (Kozyreff, 2018);
- ➢ 3 subjects working in consulting companies: **Gil** is devOps data engineer in a big data consulting company. **Tom**'s function is strategy and management consultant and **Olga** is member of the global tax advisory team of a multinational. They have different backgrounds: Gil studied computer technology while Tom graduated in management and Olga in law. Gil's employment is recent, he started 2 months ago. Olga is gaining experience since 3 years and Tom counts almost a year of service (de Grove, 2018; Gatz, 2018; Shchur, 2018);
- ➢ **Leslie** is employed at the position of marketing specialist in the medical device sector after her graduation one year ago in international business and management (Bindels, 2018)(see APPENDIX 4: *Companies' characteristics*).

We see that the subjects' sample is varied in terms of educational background, scope of work and status. Indeed, it ranges from the junior consultant to the manager, including managing directors of a start-up.

Remaining in the services' sector, the fields of study and of work activity are various. We surveyed people involved in digital professions, financial positions, back and front offices, and in diverse aspect of consultancy i.e. in big data, strategy or custom trade (cf. supra p.69). What about their company's characteristics?

2. Concept 2: Company

We asked the subjects questions on the company they work for. Twice, we had the opportunity to interview 2 managing partners of a start-up: one created in France, the other in Belgium. We started to mention it in the former concept, the companies' activity range from finance, to digital strategy and consultancy, including the pharmaceutical and fiberglass industry (see APPENDIX 4: *Companies' characteristics*).

There are 2 types of firms in the sample, either private or public. 5 of our subjects work in a private company, small in size compared to the 13 other workers employed in public companies. We noticed with a small research that Olga as well as Christophe and Florence work for subsidiaries of a bigger group (see APPENDIX 4: *Companies' characteristics*).

Regarding firms' nationality:

- More than half of the subjects, 9 of them belong to European firms;
- 5 employees work for American firms (see APPENDIX 4: *Companies' characteristics*).

When it comes to their size, we selected a sample of workers from different-sized organisations:

- Julian and Adrien work by 2;
- Lyonel and Kamal are associated to a third partner;
- David ,Gil and Florian are employed by companies counting between 40 and 200 FTE's;
- The rest of the subjects are colleagues with thousands of other workers (see APPENDIX 4: *Companies' characteristics*).

David is the only one involved in a company whose projects are only located in Belgium. The start-ups's project come from Belgian, French or Australian and American customers. The other firms globally located their offices and plants in several countries (see APPENDIX 4: *Companies' characteristics*).

3. Concept 3: Virtual team

We are getting to the heart of the matter with the concept of virtual team and its dimensions namely structure, distance, raison d'être, age, number of project, implementation consensus, ICT and hierarchy (see APPENDIX 5: *Virtual teams' characteristics*).

Team's structure

Julian and Adrien are geographically dispersed in the same French city with no office shared.

The partners **Lyonel and Kamal** live in 2 different European countries, the third partner is in the USA (see APPENDIX 5: *Virtual teams' characteristics*).

Florian is employed by his French company to be at the client's office and is thus remote from the rest of the team but remains in the same country (see APPENDIX 5: *Virtual teams' characteristics*).

Christophe works with 2 other colleagues in the office of Brussels but as quality controller, has contacts with each of the firm's offices in the world. **Florence** is one of them. She is the local support in Roma for the zone Italy-Greece (see APPENDIX 5: *Virtual teams' characteristics*).

The counsellor **David** shares his working time between the agency of Charleroi, his clients and his manager in Liège. The office of Brussels gives him the clients' prospects (see APPENDIX 5: *Virtual teams' characteristics*).

Liam works with 4 other managers in Paris to direct the 28 countries for the consumer credit unit (see APPENDIX 5: *Virtual teams' characteristics*).

Dimitri leads a team of 4 people from Brussels, among which one is located in the Netherlands. His team is in relationships with a control manager in Brussels, another

team in France and with an Indian subcontractors that carry out the tasks given by the French and Belgian teams (see APPENDIX 5: *Virtual teams' characteristics*).
Gil works with another developer in a team of 6 employees. They collaborate with a salesperson, a project manager and 2 architects (see APPENDIX 5: *Virtual teams' characteristics*).
Tom's team is multicultural as its members in London are English (partner), American (manager), German (associate) and Belgian (Tom himself). There are also one consultant for each office in Bucharest, Brussels, Sydney, Chicago and Moscow (see APPENDIX 5: *Virtual teams' characteristics*).
Olga is part of a team of 20 to 30 people: 1 partner, 2 directors, 3 (senior) managers and senior and junior consultants she is part of. Her actual project is in coordination with another Deloitte team from Gent. The client is located in Switzerland (see APPENDIX 5: *Virtual teams' characteristics*).
Leslie is employed in the Benelux team, her manager lives in the Netherlands and the rest of the team is colocated in Brussels except for her commercial delegates who are on the road. No one is in Luxemburg (see APPENDIX 5: *Virtual teams' characteristics*).

Type of distance and raison d'être

The 14 people surveyed work in virtual structures due to geographical boundaries, some of them even face time zone differences with their team. It is often the case of workers that are responsible for a specific matter on each of the firm's entity in the world (Christophe, Liam and Tom). It is also the case of Lyonel and Kamal that work with their partner based in the USA or with Dimitri whose hierarchy and control are often based in the USA. We observed another interesting distance's type whose boundary is organisational. Florian's type is made of his digital agency's co-workers but also of his client's labour force. Dimitri delegates work with strict instructions and repetitive task to Indian subcontractors (see APPENDIX 5: *Virtual teams' characteristics*).

It is now time to focus on the raison d'être of these teams, why are they virtual. We gathered 8 different reasons explaining the need for virtual teams below (see APPENDIX 5: *Virtual teams' characteristics*):

1) Reason 1: avoid physical office cost (Julian & Adrien)
2) Reason 2: freedom to work from anywhere (Gil, Olga)
3) Reason 3: <u>more markets' coverage</u> (Lyonel & Kamal, David, Leslie)
4) Reason 4: more creative contracts with more budgets (Lyonel & Kamal)
5) Reason 5: easy foreign subsidies (Lyonel & Kamal)
6) Reason 6: <u>local support to client(s), needs</u> (Florian, Christophe, Florence, Liam, Dimitri, Tom)
7) Reason 7: proximity with regulatory authorities and central banks (Liam)
8) Reason 8: people's know how (Dimitri)

Team's age and number of projects

The 6 teams that have been created until last year, half of them were made to achieve only one project while the other half has worked on many project. It is the case of our 4 managing partners surveyed (see APPENDIX 5: *Virtual teams' characteristics*).

The older teams are either on a continuous project like the quality controller and the data analyst from Bureau van Dijck or busy for example with one great e-business platform project (see APPENDIX 5: *Virtual teams' characteristics*).

Implementation consensus and hierarchy

When it comes to finding a consensus for virtual teams implementation, it depends on the situation. 8 subjects out of the 14 have been asked before their team's creation: 6 of them initiated the project. it is Julian with Adrien, Lyonel with Kamal, Florence and Gil. From the 6 left: Christophe, Dimitri and Leslie started to work for the company after the team's implementation. The 3 other subjects were not asked for their opinion (see APPENDIX 5: *Virtual teams' characteristics*).

Flat hierarchy and equality among its members is observed among the 4 managing partners, in Liam's group, in Gil's team and at Leslie's work[20]. We can observe that except for Leslie, the subjects with a flat hierarchy are the one who decided together to make the team virtual or for Liam were at least consulted. The rest of the people that we questioned perform in a team with more than 2 hierarchic levels. It is the case of Florian, Christophe, Florence, David, Dimitri, Tom and Olga. This hierarchy can be either explained by the project magnitude[21],the controlling need of some projects[22] or by the junior status of the subject (see APPENDIX 5: *Virtual teams' characteristics*).

ICT's used

We will develop this indicator in the next key concept *Collaboration* as one of its dimensions namely *Right technology* needs the same answer and will be completed by the indicator on the collaborative tools and supports used.

[20] However, for the latter we have some doubts as in her team's structure, she describes more than one layer: the Benelux manager but also a country manager in Brussels (Bindels, 2018).
[21] Creation of an e-commerce platform for major player in packaging distribution in Europe (Bertelli, 2018).
[22] E.g.: quality control of financial data, accounting delivery for the head office, compliance with regulations, etc.

4. Concept 4: Collaboration

We divided the concept of collaboration into 15 dimensions, we will go through each of them and present its indicators summarised.

Dimension n°1: Right leadership

We asked 6 different questions as indicators of this 1° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

> *Do you know the expectations of your co-workers in the team? Have they been spoken out?*
> *Do you know your colleagues' value? Have they been spoken out?*
> *Do you trust your team co-workers?*
> *Can you say that you build constructive and authentic relationships with the other members of the team?*
> *Did you beforehand discuss guidelines in terms of communication, connection, decisions, etc. ?*
> *What are they?*
> *How does work communication within the team?*

Regarding the expression of each other's expectations, the subjects are generally expressing their expectations via weekly or regular compulsory meetings, written feedbacks or via a charter negotiated with the manager. We observe these formal practices among the American companies for which Dimitri and Tom work. It is obvious that our 4 start-up workers being associate have spoken about it before the signature. The only team who initiated twice a week meetings to set expectations is the team of Gil. However, not everyone in the sample had the opportunity to speak about it. It is the case of Florence bringing up her remote location as reason or Olga that says it is not needed but naturally observed. Florian underlined the fact that it was not needed as he was not sharing tasks with everyone in the team (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

To the question of whether they knew the values of their co-workers: only one team takes time once every months to have a coaching and to give the opportunity to the team members to express their points of views and their values. The rest of the subjects

assume they know everyone's value from the fact that they work from the same company with its own values (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

According to its member observed, trust is present in each team. Tom said that working together in the same company gave him no reason not to trust his colleagues. There is one exception: both Florence and Christophe have put trust with everyone into question. On the one hand, Christophe remains suspicious on the content he gets from his local supports as it is raw data that come directly from the client. On the other hand, Florence who is from the local support's side says there is no trust with the rest of the team in Brussels (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

People in general tend to think they built constructive and authentic relationships with the rest of the team. They all agree on the fact that some may have more connections with others due to common personalities. 2 exceptions remain, Florence saying that since she left the office of Brussels 7 years ago she does not know people anymore. She tries to put a face on any of her interlocutors. Dimitri regrets his lack of relationship with his Indian contacts. He explains that the subcontractor company changed a few weeks ago(Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

The importance of clear guidelines in the team differs among the workers studied. Adrien and Julian admit they do not have guidelines. They add that as friends and partners they do not make the difference between work and private life. One team reacted after realising they needed to establish guidelines which they did. Liam had one meeting to set everything but nothing has been written. Both Gil and Tom's teams do have a charter to collaborate with established guidelines. The people remaining said nothing had been established but that it was common sense what to do (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Communication in these teams also differs. Adrien and Julian communicate well as they use different tools when it concerns a private or a professional matter. Most of the teams communicate through emails and skype, and schedule meetings for urgent issues. Liam mentions the hard contact with the 28 other countries. He explains that the office of Paris constantly send them heavy instructions which makes it hard for them to

understand and to get their expectations. Florence speaks about another communication problem regarding the company's buyout by an American firm. She feels some information and communication became somehow sensitive. She also insisted on the fact that communication was an effort that she was doing especially because of her distance with Brussels(Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Dimension n°2: Right touchpoints

We asked 2 different questions as indicators of this 2° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

Do you regularly meet with the rest of the team? How? *What type of interactions do you have in the team?*

Team meetings are regular or happen once a week depending on the proximity of its members. Adrien and Julien meet once a week, it is also the case of Florian with the rest of its team. Tom has regular daily or weekly meeting as well. Regarding the other people we surveyed: they rarely do. E.g. Christophe and Florence never meet with the rest of the team, she takes the initiative when going back to Belgium once a year to come say hi to the office. Liam has interesting meetings, they are organised monthly and allows you to speak about any topics. Dimitri and Leslie rarely do unless it is for yearly team buildings. Gil insisted on the fact that their weekly meeting could be virtually or physical, the members can choose(Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

The interactions are for the most fluid and improved if the member met or know already each other. Florence said her interactions were only by mail with the rest of the team. Leslie was proud to describe her team as united but admitted that the language barrier with her Dutch manager could make the interactions hard sometimes(Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Dimension n°3: Right technology

We asked 2 different questions as indicators of this 3° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

What are the ICT's used?
What are the collaborative tools and supports used to work together?

We observed that all teams were using Skype (2 exceptions using WebEx) as a direct way to communicate with each other. The telephone seemed less popular in uses. Everyone was working via a platform like Google Drive or Dropbox to share their file and work. Jobs related to digital creation such as Julian's, Florian's, Gil's require more tools such as Slack, Hangouts, Adobe suite, etc. Olga, Florence and Liam added the intranet of their company as ICT used. The only persons that spoke about any backup of their work are the 4 new entrepreneurs (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

The teams collaborate through the ICT's mentioned above. We had the opportunity with this question to make them develop the question of the digital tools used as supporting their collaboration. Christophe mentioned the CRM program used by everyone in the world, local supports included. He also mentioned the work with the developer in Brussels improved by an online system of ticketing, type of notification for any modification to make in the database. Yet, Florence complains about the lack of collaborative tools that force her to look herself for the information needed. Dimitri in his accounting routine use *Certification, review tools developed by the company* that allows a review system with feedbacks, the different interventions (Belgians, Americans or Indians), etc. Liam and his co-workers have the chance to benefit from their own social network. Olga said that Deloitte had developed many supportive tools for collaboration (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Dimension n°4: Right training

We asked 1 question as indicator of this 4° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

Were you given training before to start working in the virtual team?

No specific trainings have been followed by our subjects. We noticed 2 interesting elements. Firstly, our digital content creators Adrien, Julian, Gil, Lyonel & Kamal observed that they did not need any trainings. Having started very early during their education to work through virtuality, they said trainings were not needed. However, Lyonel and Kamal remain proactive and after being coached to start their business, they

keep following e-learning trainings. Leslie said that other trainings helped her with her virtual distance with the manager. Olga pointed out the online tools available such as "How to use Skype". And Tom had the opportunity to start his job with a one-week training with his co-workers. It was not specifically focus on virtual work but helped them to create links (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Dimension n°5: Right collaboration

We asked 6 different questions as indicators of this 5° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

What are the collaborative tools and supports used to work together? *Have the objectives and roles of everyone been set correctly?* *How does the decision-making process work?* *Is everyone equally committed?* *Are there metrics to measure everyone's role and commitment? What are they?* *Do you trust your team co-workers?*

We already presented our observations of the collaborative tools used by these teams in the third dimension (cf. supra, P.76).

The setting of the objectives and roles of everyone wins unanimous support in the teams studied. Florian, Gil and Tom explained that the evolving nature of everyone's role in the team through the work progress. Julian and Adrien have been clear with their roles: they are willing to share everything and to be doing 50/50. The roles of Julian and Adrien remain evolutive but with the ultimate goal to suppress any task barrier (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

The decision process differs among the teams. Within the 2 start-up's, it is according to the competences involved. Still, they all mentioned the open dialogue in their groups. Christophe, David, Olga and Tom benefit from an autonomy in work, until a certain point. Olga and Tom mentioned the availability of their manager as a criteria when considering decisions. Dimitri and Leslie, also working for american groups, admitted their need to ask for approval, given the nature of their tasks[23]. Gil and Liam enjoy a

[23] Indeed, Dimitri is appointed for the accounting of a whole zone and needs a constant review and control of the company's accounts is in charge of (Kozyreff, 2018). Leslie markets pharmaceutical products, subjects to strict regulations (Bindels, 2018).

great autonomy in decision process. Gil is happy to be in a team where management is participative when issues arise. Florence observed a shift since the buyout and regrets that the decisions are now very hierarchised. Florian has the opportunity to speak out but the decision remains to the project owner (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

The next question regarding everyone's commitment made the subjects a bit uncomfortable. 13 of them answered positive. David and Gil realised that the initiator of the project might be more involved. David added that it was stabilising as each member takes turn for the meetings' leads. Dimitri and Florian underline the differences in mandates and culture to explain the different implications of people in the project. Florence remain convinced that not everyone is equally involved (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

When it comes to the use of metrics to measure the former indicator, it depends on the teams. There can be none, informal or formal metrics to measure everyone's role and commitment. Christophe, David, Liam and Florian are not aware of any metrics in their team regarding roles and commitment. The 4 entrepreneurs conduct informal feedbacks after completion or failure of a project. Lyonel computes everything statistically but says it is because "I like doing that", Kamal did not disagree when we mentioned it to him. Dimitri, Florence, Gil, Leslie, Olga and Tom conduct or are given feedbacks after completion of the project. They are tracked on their task and their completion timing as well (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Trust within the team has been mentioned in the first indicator (cf. supra, p.74).

Dimension n°6: Labour's perspective

We asked 1 open question as indicator of this 6° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

How do you see collaboration inside the team?

- Adrien: fluid, pleasant, in constant evolution (Martial, 2018);
- Julien: exchanging and sharing (Bondroit, 2018);

- Christophe: not always optimal with regard to the different time zones and the degree of certain urgent matters (Dubus, 2018);
- David: good in general, everything is written and improved with rolling meeting's leader (Taquin, 2018);
- Leslie and Dimitri: regular and united (Bindels, 2018; Kozyreff, 2018). Dimitri adds that it remains within the scope of your responsibilities (Kozyreff, 2018);
- Liam: excellent (Massi, 2018);
- Florence: "no problems" (Bekaert, 2018);
- Florian: well conveyed, well leveled (Bertelli, 2018);
- Gil: healthy and enriching (de Grove, 2018);
- Lyonel and Kamal: very good (Alzetta, 2018; Messaoudi, 2018);
- Olga: efficient because familiar co-workers (Shchur, 2018);
- Tom: open and direct because everyone shares the same values it is easy (Gatz, 2018).

Dimension n°7: Sharing

We asked 5 different questions as indicators of this 7° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

Do you all share responsibilities? *How does the decision-making process work?* *Do you all share the same values?* *Do you all share the same planning?* *Do you share with everyone in the team the same data?*

We noticed that when it comes to responsibilities sharing, it was commonly applied. Howver Christophe made a distinction between his colleagues of Brussels and their local supports giving quality and requirements as difference. Everyone agreed that at the team level everyone shared responsibilities, Florian excepted (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

The decision-making process of the teams screened has been explained in *Right Collaboration*'s dimensions (cf. supra p.78).

We started to approach value in the first indicator of dimension *Right leadership* by asking people if they knew the value of their peers in the team. The general answer was to assume that if you work for the same company, you all share the same corporate

values. We went further by asking them to develop the question *Do you all share the same values?*.
The answer is yes for the majority. Julian and Adrien remained objective while distinguishing their common values from their own way to work. Christophe, David and Dimitri, Lyonel and Kamal linked their common value sharing to the corporate values. Liam insisted on the benefits of their monthly coaching enabling him to transmit his values to the others. Florence and Florian remained sceptical underlining that years of service went with lack and forgetting of values. Gil seemed the most enthusiastic about a common sharing of values. Indeed, he explained that his team had been selected based of high potential profiles facing the same challenges. He spoke about the beauty of engineering and kindness allowing people with different values to share work and at some extent the value of accepting each other. The rest of the subjects namely Leslie, Olga and Tom simply answered yes (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

The Anglo-Saxon system in which Christophe, Dimitri, Olga and Tom work imposes a sharing of planning while the team of Gil chose to coordinate the team's planning. Adrien, Julian, Kamal, Lyonel, Liam and Florence do not face any planning sharing. Florian explained the weekly updates of the project progress but that daily plannings were not common (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

To the question of whether they were sharing the same data within the team, 6 answers were totally positive against 8 nuanced ones. Christophe's version and Florence's one support each other: raw data from the office are not always given to local supports and people like Florence working abroad gets data on the field only because she is there. Liam and Tom gathers data from each entities they work with. Those entities do not share with each other. Florian mentions some sensitive data that needs to be developed before to be shared, the same goes for Gil. Leslie faces marketing and business secrets that she cannot share with everyone in the team. Olga applies data sharing but observes that topics like the budget are hidden by the manager (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Dimension n°8: Partnership

We asked 2 different questions as indicators of this 8° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

Do you trust your team co-workers?
Can you say that you build constructive and authentic relationships with the other members of the team?

These 2 dimensions' observations have been developed in dimension n°1 namely *Right leadership* (cf. supra p.74).

Dimension n°9: Interdependency

We asked 1 question as indicator of this 9° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

Is everyone equally committed?

We explained our observations related to the team members' commitment in dimension n° 5: *Right collaboration* (cf. supra p.78).

Dimension n°10: Power

We asked 3 different questions as indicators of this 10° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

What are the skills of everyone? Are they compatible all together?
How is the hierarchy organised within the team?
Do you all share responsibilities?

Skills are usually described as complementary. Dimitri and Gil mention that the recruitment basis is the same but that different skills will be put together into the same team. Olga and Tom also support this point of view and highlight skills development through the different projects experienced. Christophe and Liam mention a difference in skills with the offices in the rest of the world. The tasks requirements are not the same and need varied skills (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

As already explained, Flat hierarchy and equality among its members is observed among the 4 managing partners, in Liam's group, in Gil's team and at Leslie's work[24]. We can

[24] However, for the latter we have some doubts as in her team's structure, she describes more than one layer: the Benelux manager but also a country manager in Brussels (Bindels, 2018).

observe that except for Leslie, the subjects with a flat hierarchy are the one who decided together to make the team virtual or for Liam were at least consulted. The rest of the people that we questioned perform in a team with more than 2 hierarchic levels. It is the case of Florian, Christophe, Florence, David, Dimitri, Tom and Olga. This hierarchy can be either explained by the project magnitude[25],the controlling need of some projects[26] or by the junior status of the subject (see APPENDIX 5: *Virtual teams' characteristics*).

The responsibility sharing has been approached in the dimension n°7 called *Sharing* (cf. supra p.80).

Dimension n°11: Starting step

We asked 3 different questions as indicators of this 11° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

> *Have the objectives and roles of everyone been set correctly?*
> *Do you know the expectations of your co-workers in the team? Have they been spoken out?*
> *Did you beforehand discuss guidelines in terms of communication, connection, decisions, etc. ?*
> *What are they?*

The objectives and roles' definition of the teams screened has been explained in *Right Collaboration*'s dimensions (cf. supra, p.78). The same goes for the 2 next indicators related to the expectations of team members and to guidelines' discussion, you can find them in dimension n°1 namely *Right leadership* (cf. supra p. 74).

Dimension n°12: Intensity and overload

We asked 4 different questions as indicators of this 12° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

> *How would you describe the intensity of collaboration in your team?*
> *What is the number of tasks performed by several people in the team (in %)?*
> *What is the percentage of your time dedicated to requests, meetings, telephone and emails?*
> *Are there clear boundaries set for everyone's task? What are they?*

[25] Creation of an e-commerce platform for major player in packaging distribution in Europe (Bertelli, 2018).
[26] E.g.: quality control of financial data, accounting delivery for the head office, compliance with regulations, etc.

Adrien, Julian, Florence, Leslie are categorical on the high nature of collaboration's intensity. On the other hand, David and Tom remain balanced and describe the intensity of collaboration at various level according to the stage of the project. Dimitri and Gil were not able to answer the question, they did not know what to respond. Florian notes that the collaboration's intensity is complex due to his distance with e.g. the developers. He also complains about the lack of competences at the level required by distance[27]. Olga admits that she is someone more productive on her own and that therefore she avoids collaboration on an intense basis. She believes in actions rather than in discussions (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Here come figures regarding the percentage of tasks performed by several people in the team:

- From 0 to 25%: Julian, David and Tom;
- From 25 to 40%: Adrien, Florian, Florence, Kamal, Lyonel and Olga;
- From 40 to 60%: Christophe;
- From 60 to 100%: Dimitri, Liam and Gil;
- Leslie was not able to answer the question (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

We notice from those figures 2 interesting points. First, Julian and Adrien working only by 2 gave 2 different numbers. it seems than Adrien believe more tasks are performed together with Julian while Julian thinks the opposite. It would be interesting to confront them with this observation. Then, the high % of tasks performed by several people in Christophe, Dimitri and Liam's team seem to be explained by the nature of their task (controlling, raw data to gather or transform, etc.). The same explanation goes for Gil who explained that their production was always discussed and reviewed through open dialogue with his peers (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Regarding the percentage of the subjects' time dedicated to requests, meetings, telephone and emails varies among the people:

- From 0 to 25%: Adrien and Julian, Florence, Florian, Gil, Lyonel, Leslie and Olga;
- From 25 to 40%: Tom only;
- From 40 to 60%: Christophe, David and Liam;

[27] While when talking about skills compatibility in his team, he said they were complementary (cf. supra p.82).

- From 60 to 100%: Kamal and Dimitri (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Subjects that gave an amount inferior to 40% tend to reduce this percentage but admit that it is part of delivering their work to communicate on the project and that it is thus inherent. Dimitri laughed and said that his high percentage was explained by his position: "this is my job". On the other side, Kamal said he really likes sending mails to help him with follow up, prospection, sketches, etc. (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

With reference to the setting of clear tasks' boundaries, we observed an interesting objective followed by 2 of our entrepreneurs. Adrien and Julien's objectives over the long term is to suppress any boundaries regarding tasks' assignment. They want to be able to switch any time if needed. On the contrary, Kamal and Lyonel did not put any limit because of the specific nature of their tasks. Christophe, Liam, Gil, and Olga explained their tasks were not limited neither. David, Dimitri and Tom see their tasks very structured in the team (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

Dimension n°13: Collaborators

We asked 2 different questions as indicators of this 13° dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

How are you seen by your colleagues with regards to collaboration? *Who is the best collaborator in your team? Why? Is his work noticeable? Rewarded?*

We surveyed the subjects on 2 aspects of team members as collaborators, we firstly asked how they were seen as collaborators and then we switched by asking who in the team they were seeing as best collaborating.

How are our subjects seen by their colleagues regarding collaboration[28]:

- Adrien, Florence and Leslie answered that they did not know (Martial, 2018; Bekaert, 2018; Bindels, 2018);

[28] We keep in mind that this question brings biased assumptions as they come from the subject speaking about what people think about himself/herself.

- Julian: united (Bondroit, 2018);
- Christophe: someone that likes to collaborate (Dubus, 2018;
- David: involved and reliable (Taquin, 2018);
- Dimitri: source of advice (Kozyreff, 2018);
- Liam: clear, concise, easy-going and tactful (Massi, 2018);
- Florian: utile and performing well (Bertelli, 2018);
- Kamal: bringing messy but new ideas (Messaoudi, 2018);
- Lyonel: organised and approachable (Alzetta, 2018);
- Olga: straightforward due to eastern origins (Shchur, 2018);
- Tom: capable of collaboration (Gatz, 2018).

With respect to who they see as the best collaborators, here is what we have heard:

- The 4 entrepreneurs all agreed on the collaborative nature of the partner in charge of back office duties, they are financially rewarded and recognised by the other (Alzetta, 2018; Bondroit, 2018; Martial, 2018; Messaoudi, 2018);
- Christophe, David, Florence, Leslie believe everyone in the team collaborates giving the best of themselves. David made a small difference with the project initiator as the one handling it the best (Bekaert, 2018; Bindels, 2018; Dubus, 2018; Taquin, 2018);
- Florian and Olga believe the manager and directors of the respective projects are the best collaborators. Florian admired the way of dealing with such complex projects, issues and people involved (Bertelli, 2018). Olga spoke about one director focused on eminence, being able to be everywhere and to be the one questioned about anything. This kind of collaboration is rewarded at Deloitte according to her. She regrets that the other director's amazing coaching goes unrewarded while appreciated by everyone (Shchur, 2018);
- Gil identified a co-workers appointed to encourage collaboration in the team. He said that this person had been hired to foster and mediate collaboration within the team (de Grove, 2018).

Dimension n°14: Collaborative resources

We asked 3 questions completing each other to define the collaborative resources used in work by our subjects (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*).

Regarding the time dedicated to requests, meetings, mails and calls: *What is the amount of informational resources given to your colleagues?* *What is the amount of social resources given to your colleagues?* *What is the amount of personal resources given to your colleagues?*

Subject/ type of resource	Informational	Social	Personal
Adrien	30%	10%	60%
Julian	/	/	/
Christophe	40%	20%	40%
David	30%	20%	50%
Dimitri	10%	10%	15%
Liam	70%	10%	20%
Florence	40%	25%	25%
Florian	10%	5%	30%
Gil	15%	3%	15%
Kamal	/	/	/
Lyonel	5%	10%	15%
Leslie	50%	40%	10%
Olga	20%	5%	15%
Tom	10%	5%	10%

Figure 25: ***Amount of collaborative resource by type.***

From this figure, we can see that some subjects such as Adrien, Christophe or Leslie use collaborative resources as 100% of the total time that they dedicate for requests, meetings, calls and emails (Bindels, 2018; Dubus, 2018, Martial, 2018). Others like Dimitri, Florian or Tom do not use 100% of their time to external sollicitations. As already written, Olga as well as Dimitri had mentioned the delivering part of these solicitations as part of their task (Bertelli, 2018; Gatz, 2018; Kozyreff, 2018; Shchur, 2018).

Dimension n°15: Threat

We asked 1 question as indicator of this last dimension (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*):

Do you see any threat in the team with regards to the collaboration involved?

Our last question of the interviews conducted is open. We wanted to enable our subjects to add anything they could think about. It was a good way for them to summarise the

interview and its outcomes. After a first reading of our transcriptions, we realise that some of the subjects spoke about threats in general and not on collaboration in team.

Leslie, Tom and Olga answered negatively (Bindels, 2018; Gatz, 2018; Shchur, 2018).

Julian and Adrien both agreed on the need for regular physical interactions. They believe physical contacts always show more truth than virtually (Bondroit, 2018; Martial, 2018). David added on the idea by saying that if the team mates could not see each other enough, the commitment might disappear progressively (Taquin, 2018).

Christophe only, underlines the time zone distance as a threat. Urgencies might not be directly addressed and might result in conflicts and misunderstandings. He added that distance do not permit to evaluate correctly the urgent degree of some requests (Dubus, 2018; also supported by Massi, 2018). Liam sees collaboration on international scale very hard as priorities are different everywhere (Massi, 2018).

The same goes for Dimitri when he mentions the contacts with Indians and the related misunderstandings due to geographical distance. He did not mention any threat to organisational distance though. However regarding this issue, measures have been taken. They recruited an accounting specialist from India to come to Europe and bring the method back his colleagues in India. It becomes easier (Kozyreff, 2018).

Florence from her career perspective, complains about her lack of visibility and career opportunities. She feels professionally isolated. She did not give any comments with regards to collaboration itself (Bekaert, 2018).

Gil is the only one that actually spoke about any possible threats related to collaboration in virtual teams. He observes that collaboration takes more and much time. He believes that doing collaboration is often at the expenses of something else. If wrongly implemented, he says it reduces your working time as well as your productivity. However collaboration in his team seems to work well. He described the actions put in place: collaboration time periods, coordinated planning, charter, etc (de Grove, 2018).

Kamal did not notice any threat and is willing to be in a working collaboration removing routine from work (Messaoudi, 2018). Lyonel thinks that the threat lies in physical isolation resulting in a loss of motivation (Alzetta, 2018).

IV. Analysis

From our literature coverage on virtual teams, everything converged to solutions regarding having the right team, leadership, touchpoints, technology, trainings and our research topic collaboration. We observed that all concrete keys presented required collaboration. We wondered if the collaboration's needs, especially in virtual teams, might not be beneficial after all. This is why we tool a closer look to collaboration and its implications in virtual work structures. We realised that the subject had not been studied deeply yet. We ended up formulating our research question *How collaboration and virtual teams encouraged by the NWoW might be a threat for companies and labour?*

We built 3 hypotheses to answer this question and to give new insights on the subject. This chapter is aimed at verifying these assumptions made through our readings with the data observed on the field. In the previous chapter, we summarised the results of our interviews conducted. We will now thanks to this, attempt to develop the answers of this research.

Hypothesis 1

If there is no collaborative process discussed as soon as teams are created, then collaboration and virtual teams are a threat for companies and labour.

The collaborative process had been framed by us through 3 indicators namely expectations setting, guidelines discussion and roles' definition (see APPENDIX 3: *Conceptual analysis table of the problematic linked to collaboration and virtual teams*).

Regarding the expectations discussed at the first stages of a team, we have seen among the subjects observed that either it was done beforehand or it was worked on regularly. The people who had no real opportunity to express their work expectations had the opinion that it could be naturally observed and that it was not a problem. There is only

one exception in our findings: Florence. She brought up her remote location. However her case is very specific as the company she works for has been bought by a bigger group and therefor faces related shifts (Bekaert, 2018).

Guidelines are not popularly spoken either in the team observed. The subjects again underlined the fact that guidelines were implied and that it was common sense to apply rules of good behaviours in a group (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

What differs from the 2 first elements is the roles' definition which is taken more seriously and formally than the expectations of everyone and team's guidelines. Indeed, we saw that each role has been set. The people interviewed were able to talk about it (Alzetta, 2018; Bekaert, 2018; Bertelli, 2018; Bindels, 2018; Bondroit, 2018; de Grove, 2018; Dubus, 2018; Gatz, 2018; Kozyreff, 2018; Martial, 2018; Massi, 2018; Messaoudi, 2018; Shchur, 2018; Taquin, 2018).

All in all we could conclude from these elements that the lack of discussion on the collaborative process (expectations and guidelines) might be a threat for companies and labour. They may result in challenges or issues such as lack of communication, misunderstandings, frustration, etc. However we remain reluctant to pose it as a threat. As roles are constantly set, even re-discussed during the project, we guess that there is still a form of discussion among team members. And as the different experiences of our subjects remain globally positive, we cannot clearly confirm this first hypothesis.

Hypothesis 2

It there is collaboration overload in virtual teams, then collaboration and virtual teams are a threat for companies and labour.

With regards to collaboration overload, 5 subjects describe collaboration as being intense. The experience of the others shows that collaboration is present but inherent and under control. We continue by illustrating and questioning this intensity of collaboration. For 10 subjects, it is less than 50 %. The 3 remaining (one did not answer) might be alarming as collaborative work would represent more than half of the working time. The literature defines it as working overload. However, we have seen with our subjects that the nature of their task implied to perform tasks together with someone else. It is thus due to the actual role of someone rather than due to unrelated solicitations. We believe that some positions and jobs require sometimes more collaboration than the others and that a distinction must be made among these professions.

The same observation goes with the percentage given on time dedicated to requests, meetings, telephone and emails. Nature of work is the explanation for the majority as they must gather information from other locations. There is only one case that concerns a preference to communicate and where the time dedicated is high (between 40 and 60). This subject is one of our entrepreneurs. These people seem to work more intensively as they are only 2 (or 3) and started their activity recently. The amount presented by Cross et al. (2016) is thus not verified within the virtual teams studied. Less than 80% of subjects' time are dedicated to these external solicitations. And again, a distinction should be made with regards to the collaborative nature of work.

Regarding the literature and its theory on the importance of task boundaries, Adrien and Julien are doing the opposite. Their long term objective is to remove any boundaries on tasks for a better flexibility. On the contrary, the 2 other entrepreneurs seem to be confident about their task. They define it as being so specific that there is no need for boundaries. Again, Anglo-Saxon style teams were the only ones to set boundaries and the rest did not see any restriction on tasks. In both case, subjects don't see the setting or absence of task boundaries as a threat to collaboration. We wondered during our literature review if the absence of boundaries could encourage this collaboration overload. We see here that our findings are incomplete to be able to go along with this hypothesis.

Hypothesis 3

If personal collaboration outweighs informational and social collaboration in virtual teams, then collaboration and virtual teams are a threat for companies and labour.

Literature taught us that the different types of collaborative resources were not always good to give to others. The theory said that if the amount of personal resource is superior to informational and social resources, it would be the sign of a wrong collaboration (Cross et al., 2016). We found that 3 workers out of the 14 surveyed see their time and energy more taken than the simple information or network resource that they provide. In Adrien's case, the entrepreneur, we could see it as the perfect illustration of the 3 other entrepreneurs. The directions to take are not straight yet as the start-up must survive first, which implies more energy and time. This would be seen as a threat if the subjects would have said it was threatening their business. It is not, as already written the ultimate objective for a company is to make profit. How to say that these efforts and intensive collaborations to make profit are a threat for their company and themselves? We can not confirm this hypothesis either.

4° Part: Conclusion

To conclude this research and our field of interest, after a complete literature review of the elements falling within the NWoW, we chose to focus our research on virtual teams and on their implementation. We saw that it was less implemented among the new ways to work and therefor thought it was worth of interest. We discovered their field of application, existing figures and listed many drawbacks to their distance and virtuality. After an overview of the challenge virtual teams may face we drew up a list of keys to succeed. Each keys implied a certain degree of collaboration. We wandered if collaboration within virtual teams might not be a threat for companies and their employees. This is why we continued our research by focusing on collaboration within remote teams' structures. The research being insufficient and offering a field to explore, we made it our research question.

From the field and the 14 interviews we conducted, we note that our sample offered a varied group of people from different backgrounds, types of teams and experiences. The 3 hypotheses formulated to find answers to our research question have not been conclusive. We assumed that in collaborative virtual teams there might be 3 threat to companies and labour namely the lack of preparation for collaborative processes, collaboration overload and too much energy resource given to collaboration.

Collaboration and its theoretical content offers a limited view of the actual panorama of possible collaborative work environment, among which virtual teams. The limits of this research were also time related. We had the opportunity to conduct 14 interviews but in a relative small amount of time, another data collection tool could have been useful. For example, a direct observation would have taught us a lot but would have required more time than we had. Another limit was our inability to get in touch, for the most, with each members of a same team. The interviews of Adrien, Julian, Kamal and Lyonel gave us a more complete view of their collaboration.

We believe that the topic must be studied more in depth and applied to specific aspects of the field such as: the nature of work and collaboration, start-up's efforts to collaborate while surviving. As already mentioned, we believe that interviews of several

people in the same team might have given us a more clear idea of collaboration within virtual structures.

To conclude this paper, we still do not know if collaboration within virtual teams is a threat but what we learned about collaboration gives food for thought on current work practices at the team level. We believe a team cannot survive without collaboration and this is why further research should be conducted on this still-not-well-known-and-unmeasured phenomenon.

5°Part : Reference list

Abrioux, F., & Abrioux, B. (2012, November-December). Comment nuancer l'approche générationnelle des attitudes au travail? Comparaison multifactorielle et qualitative de deux générations de salariés d'une entreprise multinationale. *RIMHE: Revue Interdisciplinaire Management, Homme & Entreprise*(4), pp. 91-109. Retrieved July 15, 2017, from https://www.cairn.info/revue-rimhe-2012-4-page-91.htm

Ajzen, M., Donis, C., & Taskin, L. (2015, May-June). Kaléidoscope des Nouvelles Formes d'Organisation du Travail: L'instrumentalisation stupide d'un idéal collaboratif et démocratique. *Gestion 2000*.

Alston, C. (2017). *Lesson*. Retrieved July 14, 2017, from Study.com: http://study.com/academy/lesson/generation-y-definition-characteristics-personality-traits.html

Andriessen, E. J., & Vartiainen, M. (2006). Mobile Virtual Work: A New Paradigm? Berlin, Germany: Springer. Retrieved July 24, 2017, from https://books.google.be/books?id=GQVcWixxvgQC&pg=PA53&dq=shared+office+definition&hl=fr&sa=X&redir_esc=y#v=onepage&q=shared%20office%20definition&f=false

Ashbrook, M., Parsons, D., Seeger, R., Bolling, B., & van Uum, E. (2012, December). The new world of social collaboration - Enabling new ways to work in the enterprise. *An Enterprise Strategy Program paper*. Microsoft Services Enterpise Architecture IP team. Retrieved July 28, 2018, from https://www.slideshare.net/Microsoft/new-world-of-social-collaboration

Barabel, M., Meier, O., & Perret, A. (2012, July 2). *Manager*. Retrieved July 14, 2017, from StudyramaPro: http://www.studyrama.com/pro/efficacite-professionnelle/manager/generations-x-y-et-z-la-guerre-des-trois-n-aura-pas-lieu-19439.html

Barczak, G., Lassk, F., & Mulki, J. (2010, December). Antecedents of Team Creativity: An Examination of Team Emotional Intelligence, Team Trust and Collaborative Culture. *Creativity and innovation management, 19*. Oxford, United Kingdom: Blackwell Publishing. Retrieved July 26, 2018, from https://www.researchgate.net/publication/228254201_Antecedents_of_Team_Creativity_An_Examination_of_Team_Emotional_Intelligence_Team_Trust_and_Collaborative_Culture

Beal, V. (2017). *teleworking*. Retrieved July 24, 2017, from Webopedia: http://www.webopedia.com/TERM/T/teleworking.html

Beitone, A., Cazorla, A., Dollo, C., & Drai, A.-M. (2013, Septembre). Dictionnaire de science économique. *Dictionnaire de science économique, Quatrième*, 523. Paris, France: Armand Colin.

Belga. (2014, March 11). L'absentéisme coûte 10,6 milliards d'euros. *La Libre Belgique*. Brussels, Belgium: IPM. Retrieved August 10, 2017, from

http://www.lalibre.be/economie/libre-entreprise/l-absenteisme-coute-10-6-milliards-d-euros-531e9dc0357024dca8585783

Bell, B. S., & Kozlowski, S. W. (2002, March 1). A Typology of Virtual Teams: Implications for Effective Leadership. *Group and Organization Management, 27*. Retrieved April 4, 2018, from http://journals.sagepub.com/doi/abs/10.1177/1059601102027001003

Besseyre des Horts, C.-H., Isaac, H., & Leclercq, A. (2006, January). Les conséquences paradoxales de l'usage des outils mobiles de communication sur les situations perçues de travail: une étude exploratoire sur l'impact humain et oranisationnel des technologies mobiles. Paris, France. Retrieved March 3, 2018, from https://www.researchgate.net/publication/46432522_Les_consequences_paradoxales_de_l%27usage_des_outils_mobiles_de_communication_sur_les_situations_percues_de_travail_une_etude_exploratoire_sur_l%27impact_humain_et_organisationnel_des_technologies_mo

Bijl, D. W. (2011). *Journey towards the New Way of Working - creating sustaiblanle performance and joy at work .* Zeewolde: PAR CC.

Bobineau, O. (2011, July 6). La troisième modernité, ou « l'individualisme confinitaire ». *SociologieS*. Consulté le July 15, 2017, sur https://sociologies.revues.org/3536

Boron, E. (2013). Les conditions de travail dans un open space : Le cas de la SNCF. Reims, France. Retrieved July 23, 2017, from https://dumas.ccsd.cnrs.fr/file/index/docid/931223/filename/memoire_M1_2013_Boron_Emelie.pdf

Bosch-Sijtsema, P., Fruchter, R., Vartiainen, M., & Ruohomäki, V. (2011, January). Challenging New Ways of Working for Remote Managers in Global Collaborative Work Environments. New-York, United States of America. Retrieved July 24, 2018, from https://www.researchgate.net/publication/230608575_Challenging_new_ways_of_working_for_remote_managers/citations

Business Dictionary. (2017). *Knowledge Management*. Retrieved July 24, 2017, from Business Dictionary: http://www.businessdictionary.com/definition/knowledge-management.html

Business Dictionary. (2017). *management by objectives (MBO)*. Retrieved July 24, 2017, from Business Dictionary: http://www.businessdictionary.com/definition/management-by-objectives-MBO.html

BusinessDictionary. (2017). *Definition*. Retrieved July 14, 2017, from BusinessDictionary: http://www.businessdictionary.com/definition/Generation-Y.html

Cable Organizer. (2017). *Learning Center*. Consulté le May 24, 2017, sur Cable Organizer: http://cableorganizer.fr/learning-center/article/historique-et-production-de-fibre-optique.html

Cameron, D. R., & Stein, J. G. (2003, January). Contestation et mondialisation: repenser la culture et la communication. Montréal, Canada: Les Presses de l'Université de Montréal. Retrieved July 16, 2017, from https://books.google.be/books?hl=fr&lr=&id=9LnfDJbulwoC&oi=fnd&pg=PA7&dq=gen

eration+X+and+mondialisation&ots=ce1gjTgl4v&sig=IGo3hNMR9Ss4xgXElCsrfM6Uu_Y#v=onepage&q&f=false

Cattie, C., & van Riper, K. (2012, December 7). *Collaboration's role in the new work environment*. (I. 1105 Media, Editor) Retrieved August 13, 2018, from FCW: https://fcw.com/articles/2012/12/07/collaboration-in-agency-environments.aspx

Chênevert, D., & Dubé, M. (2008, Winter). Les nouvelles formes d'organisation du travail: le rôle des pespectives contingente et institutionnelle . *Relations industrielles , 63*. (D. d. Laval, Ed.) Québec, Canada. Retrieved April 4, 2018, from https://www.erudit.org/fr/revues/ri/2008-v63-n1-ri2297/018125ar/

Chollet, B. (2014, February 2). Equipes virtuelles, défis réels : comment manager à distance. *Harbard Business Review France*. Gennevilliers, France: Harvard Business Review. Retrieved August 13, 2018, from https://www.hbrfrance.fr/chroniques-experts/2014/02/1431-equipes-virtuelles-defis-reels-comment-manager-distance/

Clergeau, C., & Pihel, L. (2010, April). Management à distance et santé au travail: quels sont les impacts de l'éloignement et de la méconnaissance du travail réel . *Annales des Mines - Gérer et comprendre, 102*. (ESKA, Ed.) Retrieved June 15, 2018, from https://www.cairn.info/revue-gerer-et-comprendre1-2010-4-p-4.htm

Clergeau, C., & Pihel, L. (2014, April). Management à distance et santé au travail: quels sont les impacts de l'éloignement et de la méconnaissance du travail réel? . *Annales des Mines - Gérer et comprendre, 102*. (ESKA, Ed.) Paris. Retrieved April 4, 2018, from https://www.cairn.info/revue-gerer-et-comprendre1-2010-4-p-4.htm

Collard, A.-S., & Philippette , T. (2016). Les compétences numériques et médiatiques des travailleurs face aux valeurs "NWOW". Namur, Belgium. Retrieved July 8, 2018, from https://www.itis.ulaval.ca/files/content/sites/itis/files/fichiers/DI2016_paper_1.pdf

Collins, P., & Kolb, D. (2012, January). Innovation in distributed teams: The duality of connectivity norms and human agency. (J. R. Clare Kelliher, Ed.) New-York, United States of America: Routledge. Retrieved July 10, 2018, from https://www.researchgate.net/publication/280495637_Innovation_in_distributed_teams_The_duality_of_connectivity_norms_and_human_agency

Crévieaux, S. (2015). *Rapport de stage.* Internship report , Bruxelles.

Cross, R., Rebele, R., & Grant, A. (2016, January-February). Collaborative Overload. *Harvard Business Review*. Boston, United States of America: Harvard Business Publishing. Retrieved July 31, 2018, from https://hbr.org/2016/01/collaborative-overload

Daele, A. (2009). *Encyclopédie de la formation.* Paris, France: Presses Universitaires de France. Retrieved July 24, 2017, from https://pedagogieuniversitaire.files.wordpress.com/2013/08/cdp_adaele.pdf

D'amour, D., Ferrada-Videla, M., San Martin Rodriguez, L., & Beaulieu, M.-D. (2005, May). The conceptual basis for interprofessional collaboration: Core concepts and theoritical frameworks. *Journal of Interprofessional Care, 19*. Abingdon-on-Thames, United Kingdom: Taylor & Francis. Retrieved July 30, 2018, from https://www.researchgate.net/publication/7664597_The_conceptual_basis_for_interprofessional_collaboration_Core_concepts_and_theoretical_frameworks

Davel, E., & Tremblay, D.-G. (2011). Communauté de pratique : défis et pratiques contemporaines . *Formation et apprentissage organisationnel - La vitalité de la pratique*. Montréal: Presses de l'Université de Québec. Retrieved July 24, 2017, from http://recitsrecettes.org/sites/default/files/davel_ettremblay_communautes_prat.pdf

Delapierre, M. (1996). Les firmes multinationales : évolutions structurelles et stratégies face à la mondialisation. *Les multinationales de l'agro-alimentaire*. Retrieved May 26, 2017

Desplats, M., Pinaud, F., & Alcaïde, J.-L. (2015). Manager la génération Y. (2). Paris, France: Dunod. Retrieved July 15, 2017, from https://www.dunod.com/entreprise-economie/manager-generation-y

Doyle, A. (2017, June 22). *What Is Telecommuting? - Definition, Pros and Cons*. Retrieved July 24, 2017, from the balance: https://www.thebalance.com/what-is-telecommuting-2062113

Dynamique Entrepreneuriale. (2016, February 23). *Génération X, Y, Z... tout cela a-t-il vraiment un sens ?* Retrieved July 14, 2017, from Dynamique-Mag: http://www.dynamique-mag.com/article/generation-xyz-tout-cela-sens.8390

Earnhardt, M. P. (2009, Spring). Identifying the Key Factors in the Effectiveness and Failure of Virtual Teams. *Leadership Advance Online, XVI*. Virginia Beach, United States of America: School of Global Leadership & Entrepreneurship Regent University . Retrieved March 2, 2018, from https://www.regent.edu/acad/global/publications/lao/issue_16/LAO_IssXVI_Earnhardt.pdf

Ebrahim, N. A., Ahmed, S., & Taha, Z. (2009, November 6). Virtual Teams: a Literature Review. *Australian Journal of Basic and Applied Sciences, 3*. Jordan: American-Eurasian Network for Scientific Information. Retrieved March 2, 2018, from https://ssrn.com/abstract=1501443

Ebrahim, N. A., Ahmed, S., & Taha, Z. (2011). Virtual Teams and Management Challenges. *Academic Leadership Journal, 9*(3), 1-7. Retrieved July 25, 2017, from https://hal.archives-ouvertes.fr/file/index/docid/690027/filename/Academic_Leadership_Journal_-.Management_Challengespdf.pdf

Elsuwe, M. V. (2005, May 23). *Qu'est ce qu'on télécentre?* Retrieved July 24, 2017, from Association Française du Télétravail et des Téléactivités: http://www.aftt.asso.fr/qu-est-ce-qu-un-telecentre

emarketing. (2017). *Glossaire*. Consulté le July 14, 2017, sur emarketing: http://www.e-marketing.fr/Definitions-Glossaire/X-generation--239011.htm#LBSmh28zelVilgWV.97

Encyclopædia Britannica. (2017). *Topic*. Retrieved from Encyclopædia Britannica: https://www.britannica.com/topic/trade-agreement

Ernst Kossek, E., Lautsch, B. A., & Eaton, S. C. (2009, January). "Good Teleworking": Under What Conditions Does Teleworking Enhance Employees' Well-being? *Technology and Psychological Wekk-Being*. Cambridge, England : Cambridge University Press. Retrieved March 29, 2018, from

https://www.researchgate.net/publication/228803243_Good_Teleworking_Under_What_Conditions_Does_Teleworking_Enhance_Employees%27_Well-being

Escande, P., & Cassini, S. (2015). *Bienvenue dans le capitalisme 3.0.* Paris: Albin Michel.

études & analyses. (2007, August 27). *Définition et les limites du management participatif*. Retrieved July 24, 2017, from études & analyses: https://www.etudes-et-analyses.com/gestion-strategie/management-et-organisation/memoire/management-participatif-320067.html

Fernandez, V., Guillot, C., & Marrauld, L. (2014, January). Télétravail et "travail à distance équipé"- Quelles compétences, tactiques et pratiques professionnelles ? . *Revue française de gestion, 238*. Cachan, France: Lavoisier. Retrieved April 3, 2018, from https://www.cairn.info/revue-francaise-de-gestion-2014-1-p-101.htm

Ferrazzi, K. (2014, December). Getting Virtual Teams Right. *Harvard Business Reviews*. Boston, United Stated of America: Harvard Business Publishing. Retrieved March 2, 2018, from https://hbr.org/2014/12/getting-virtual-teams-right

Folon, J. (2015, July 1). Le printemps numérique. (C. Copyright, Ed.) Belgium. Retrieved August 14, 2018, from https://books.google.be/books?id=kLpICgAAQBAJ&printsec=frontcover&dq=printemps+num%C3%A9rique&hl=fr&sa=X&ved=0ahUKEwjFjbHV-ezcAhWSZVAKHV68CxwQ6AEIMDAB#v=onepage&q=g%C3%A9n%C3%A9ration&f=false

Fonds Monétaire International. (2000, April 12). *Etudes thématiques .* Retrieved from Fonds Monétaire International: https://www.imf.org/external/np/exr/ib/2000/fra/041200f.htm

Garrett, G. (2000, August/September). The causes of globalization. (D. J. Samuels, & B. W. Ansell, Éds.) *Comparative political studies, 33*(6/7), p. 991. Consulté le May 26, 2017, sur http://journals.sagepub.com/doi/pdf/10.1177/001041400003300610

Gavroglou, S., Ford, C., Totterdill, P., Savage, P., & Sacquepee, S. (2001, April). New Forms of Work Organisation - The Benefits and Impact on Performance. Pat Savage. Retrieved April 9, 2018, from http://www.newunionism.net/library/workplace%20democracy/EWON%20-%20New%20Forms%20of%20Work%20Organisation%20-%20Benefits%20for%20Performance%20-%202001.pdf

Geary, J. F. (2003). New forms of work organization: still limited, still controlled, but still welcome? *Industrial Relations: Theory and Practice*(2). (P. Edwards, Ed.) Oxford, United Kingdom: Balckwell Publishing. Retrieved August 2, 2017, from https://books.google.be/books?id=uH7vMs0qkQYC&pg=PA338&dq=employers+were+seen+therefor+as+being+determined+to+move+away+from+old+ways+of+organizing+around+taylorist+principles+to+create+a+distinctly+new+form+of+work+organization&hl=fr&sa=X&ved=0ahUKEwiV_Z

Geelkens, M. (2016, February 4). Le NWOW, de l'utopie à la réalité. *Trends-Tendances*, pp. 72-75. Retrieved July 26, 2017

Gibson, C. B., & Gibbs, J. L. (2006, September 1). Unpacking the Concept of Virtuality: The Effects of Geographic Dispersion, Electronic Dependence, Dynamic Structure, and National Diversity on Team Innovation . *Administrative Science Quarterly, 51*. (C. U. Johnson Graduate School, Ed.) Ithaca, New York, United States of America. Retrieved June 15, 2018, from http://journals.sagepub.com/doi/abs/10.2189/asqu.51.3.451

Gibson, S. (2007). *Globalization and its Effect on Cultural Diversity*. Retrieved July 16, 2017, from ETEC 510: http://etec.ctlt.ubc.ca/510wiki/Globalization_and_its_Effect_on_Cultural_Diversity

Goetsch, D. L., & Davis, S. B. (1995). *Quality Management for Organizational Excellence* (8th ed.). Upper Saddle River, New Jersey, United States of America: Pearson Higher Education. Retrieved March 2, 2018

Gouvernement du Québec. (2014, August 19). *Équipes semi-autonomes*. Retrieved July 24, 2017, from Travail, Emploi et Solidarité sociale- Québec: https://www.travail.gouv.qc.ca/publications/archives/organisation_du_travail/organisation_du_travail/equipes_semi_autonomes.html

Grimsley, S. (2017). *What Is Management by Objectives (MBO)? - Definition, Advantages & Disadvantages.* Consulté le July 24, 2017, sur Study.com: http://study.com/academy/lesson/what-is-management-by-objectives-mbo-definition-advantages-disadvantages.html

Hertel, G., Geister Susanne, & Konradt, U. (2005). Managing Virtual Teams: A Review of Current Empirical Research. *Human Resource Management Review, 15*. Retrieved March 9, 2018, from https://www.researchgate.net/publication/222077564_Managing_Virtual_Teams_A_Review_of_Current_Empirical_Research

Huckman, R. S., & Staats, B. (2013, December). The Hidden Benefits of Keeping Teams Intact. *December issue* . Cambridge, Massachusetts, United States of America: Harvard Business Publishing. Retrieved July 1, 2018, from https://hbr.org/2013/12/the-hidden-benefits-of-keeping-teams-intact

Institut du Nouveau Monde. (n.d.). *La mondialisation*. Récupéré sur Institut du Nouveau Monde: http://inm.qc.ca/blog/la-mondialisation/

Investopedia. (2017). *Management By Objectives - MBO*. Consulté le July 24, 2017, sur Investopedia: http://www.investopedia.com/terms/m/management-by-objectives.asp

Investopedia. (2017). *Terms*. Retrieved July 14, 2017, from Investopedia: http://www.investopedia.com/terms/c/correlation.asp

Investopedia. (2017). *Triple Bottom Line*. Retrieved July 15, 2017, from Investopedia: http://www.investopedia.com/terms/t/triple-bottom-line.asp

Jemine, G. (2016, October). Un chantier de modernisation des contextes de travail: le "New Way of Working" dans une compagnie d'assurances. Strasbourg, France. Retrieved April 9, 2018, from http://hdl.handle.net/2268/200748

Johns, T., & Gratton, L. (2013, January). The Third Wave of Virtual Work. *Harvard Business Review*. Boston, United States of America: Harvard Business Publishing. Retrieved March 2, 2018, from https://hbr.org/2013/01/the-third-wave-of-virtual-work

Johnson, G., Whittington, R., Scholes, K., Angwin, D., & Regnér , P. (2014). Exploring Strategy - text and cases. (10th). Harlow, United Kingdom: Pearson Education Limited. Retrieved June 4, 2018, from https://books.google.be/books?id=rnn1nQEACAAJ&dq=exploring+strategy&hl=fr&sa=X&ved=0ahUKEwibguG9k7rbAhWCKlAKHcqiBW8Q6AEIJzAA

Johnson, G., Whittington, R., Scholes, K., Angwin, D., & Regnér, P. (2014). *Exploring Strategy.* Harlow, Belgium: Pearson Education. Retrieved May 26, 2017

Kelliher, C., & Richardson, J. (2012). *New Ways of Organizing Work - Developments, Perspectives and Experiences.* New York: Routledge.

Kirkman, B. L., & Mathieu, J. E. (2005, October 5). The Dimensions and Antecedents of Team Virtuality. *Journal of Management, 31*. SAGE Publications. Retrieved March 13, 2018, from https://www.researchgate.net/publication/228379911_The_Dimensions_and_Antecedents_of_Team_Virtuality

Knowledge@Wharton. (2017, June 22). Is IBM's Rethinking of Its Remote Work Policy a Bellwether? Philadelphia, United States of America: Wharton School of the University of Pennsylvania. Retrieved March 5, 2018, from http://knowledge.wharton.upenn.edu/article/companies-rethink-remote-work-policies/

Kose, A., & Prasad, E. (2012, March 28). *Finance and development - Capital Accounts: Liberalize or Not?* Retrieved July 11, 2017, from International Monetary Fund: http://www.imf.org/external/pubs/ft/fandd/basics/capital.htm#author

Krugman, P. R., Obstfeld , M., & Melitz, M. J. (2012). International Economics: Theory and Policy. Boston, Massachusetts, USA.

Laffan, S. (2015, January 23). Leadership characteristics for successful global virtual teams. *Sean's MBA Learning Journal*. Retrieved March 29, 2018, from https://mbasean.wordpress.com/2015/01/23/leadership-characteristics-for-successful-global-virtual-teams/

Langevin, P. (2002, February). Efficacité et contrôle des équipes virtuelles: une revue. *Comptabilité - Contrôle - Audit, 8*. Paris, France: Association fran!aise de comptabilité. Retrieved March 2, 2018, from https://www.cairn.info/resume.php?ID_ARTICLE=CCA_082_0087

Langevin, P., & Picq, T. (2001). CONTROLE DES EQUIPES VIRTUELLES : UNE REVUE. *22ÈME CONGRES DE L'AFC*, (pp. CD-Rom). France. Retrieved July 25, 2017, from https://halshs.archives-ouvertes.fr/file/index/docid/584636/filename/LANGEVIN-PICQ.PDF

Larousse. (n.d.). *Encyclopédie*. Retrieved from Larousse: http://www.larousse.fr/encyclopedie/divers/r%C3%A9volution_industrielle/61047

Laurijssen , J., & Van Grieken, B. (n.d.). *media.* Retrieved August 2, 2017, from sdworx: https://www.ecosia.org/search?q=Nouveau+Monde+du+Travail+et+entreprises+belges.+Quelles+pratiques+et+quels+enjeux%3F+sdworx&addon=chrome&addonversion=2.0.3

Lazykoff, V. (1991, March). Le management participatif à France-Télécom. *Politiques et management public, 9*(1), pp. 121-132. Retrieved July 17, 2017, from http://www.persee.fr/doc/pomap_0758-1726_1991_num_9_1_2980

Lechner, F. (2001). *Globalization Issues*. Retrieved July 16, 2017, from The Globalization Website: http://sociology.emory.edu/faculty/globalization/issues05.html

Leffort, G. (2017, February 15). *L'excès de lecture*. Retrieved July 31, 2018, from Blog Azendoo: https://blog.azendoo.com/fr/lexces-de-collaboration/

Legifrance. (2016, August 5). *Vocabulaire de l'économie et des finances (liste de termes, expressions et définitions adoptés)*. Retrieved July 24, 2017, from Legifrance: le service public de la diffusion de droit: https://www.legifrance.gouv.fr/affichTexte.do;jsessionid=D525CDDA53F335A4E4DEFB31237F5B63.tpdila20v_3?cidTexte=JORFTEXT000032968642&dateTexte=&oldAction=rechJO&categorieLien=id&idJO=JORFCONT000032966647

Leon, E. (2008). L'impact de la distance géographique sur la relation managériale: une fausse bonne question? Paris. Retrieved April 4, 2018, from colruyt.collectandgo.be/cogo/fr/home

Levey, S. (2014, July 16). Elvis, statistics and virtual teams. Retrieved July 8, 2018, from https://www.targettraining.eu/elvis-statistics-virtual-teams/

Livian, Y., & Parot, I. (2008, March). Les espoirs décus des équipes à distance. *Annales des Mines- Gérer et comprendre, 93*. (ESKA, Ed.) Paris, France. Retrieved March 13, 2018, from http://www.cairn.info/revue-gerer-et-comprendre1-2008-3-page-23.htm

Lunenburg, F. C. (2012). Organizational Structure: Mintzberg's Framework. *International journal of scholarly, academic, intellectual diversity*.

Malaney, R. (2010, October 21). Why is fibre optic technology 'faster' than copper? (S. Gary, Interviewer) Retrieved July 18, 2018, from http://www.abc.net.au/science/articles/2010/10/21/3044463.htm

Ministry of business, innovation & employment. (2018). *Training and development*. (N. Z. Government, Editor) Retrieved July 29, 2018, from Ministry of Business, Innovation & Employment: https://www.business.govt.nz/hiring-and-managing/getting-the-best-from-people/training-and-development/

Minton-Eversole, T. (2012, July 19). Virtual Teams Used Most by Global Organizations, Survey Says. (S. F. Management, Ed.) Alexandria, Virginia, United States of America. Retrieved June 6, 2018, from https://www.shrm.org/ResourcesAndTools/hr-topics/organizational-and-employee-development/Pages/VirtualTeamsUsedMostbyGlobalOrganizations,SurveySays.aspx

Morelli, N. (2003, January). *Product-service systems, a perspective shift for designers: A case study - The design of a telecentre.* Retrieved July 24, 2017, from ResearchGate:

https://www.researchgate.net/publication/223035847_Product-service_systems_a_perspective_shift_for_designers_A_case_study_-_The_design_of_a_telecentre

MSG. (2017). *Management by Objectives - Meaning, Need and its Limitations*. Retrieved July 24, 2017, from Management Study Guide: http://managementstudyguide.com/management-by-objectives.htm

Office québécois de la langue française. (2008). *Fiche terminologique* . Récupéré sur Le grand dictionnaire terminologique (GDT): http://gdt.oqlf.gouv.qc.ca/ficheOqlf.aspx?Id_Fiche=8349341

OPM.gov. (n.d.). *What is the definition of telework?* Consulté le July 24, 2017, sur U.S. ffice of Personnel Management: https://www.opm.gov/about-us/

Ost, C. (2016). International Economics and Business Cycles. *International Economics and Business Cycles*. Brussels, Belgium: Ichec.

Oxford Dictionaries. (2018). *English Oxford Living Dictionaries*. (O. U. Press, Editor) Retrieved August 13, 2018, from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/water_cooler

Paquet, G., Schrooten, V., & Wattier, S. (2015). *Séminaire de méthodologie et d'initiation à la démarche scientifique.Syllabus.* Bruxelles: Ichec.

Philippe. (2015, July 23). *Les générations X Y Z en détail*. Retrieved July 15, 2017, from NewsRoom- PublicisMedia: http://www.newsroom-publicismedia.fr/les-generations-x-y-z-en-detail/

Pleyers, G. (2012). Sociologie de la mondialisation: Au-delà des globalistes et des sceptiques. (U. U. [S.l.]), Éd.) *Recherches sociologiques et anthropologiques*, pp. 105-123. Consulté le July 15, 2017, sur https://rsa.revues.org/893

Proenza, F. (2005). Telecentre Sustainability: Myths and Opportunities. (C. Bishop-Sambrook, H. Wattenbach, & J. Dixon, Eds.) Roma, Italy: Food and Agriculture Organizations of the United Nations. Retrieved July 24, 2017, from http://libcatalog.cimmyt.org/download/reprints/96352.pdf#page=49

Quintas, P., Lefrere, P., & Jones, G. (1997, June). Knowledge Management: a Strategic Agenda. Retrieved July 24, 2017, from https://www.researchgate.net/publication/222487231_Knowledge_Management_a_Strategic_Agenda

Rioux, A. (2012, October 21). *Bibli*. Retrieved July 14, 2017, from Psycho-ressources: http://www.psycho-ressources.com/bibli/generations-x-y-z.html

Robin, J.-P. (2011, November 14). Le conteneur a révolutionné l'économie mondiale. *Figaro*. Paris, Paris, France. Retrieved May 23, 2017, from http://www.lefigaro.fr/conjoncture/2011/11/13/04016-20111113ARTFIG00214-le-conteneur-a-revolutionne-l-economie-mondiale.php

Rodrigue, J.-P. (2000). *Espace économique mondial : Les Economies avancées et la mondialisation.* Québec: Presses de l'Université du Québec .

Roser, M., & Ortiz-Ospina , E. (2018). *Global Rise of Education*. Retrieved August 5, 2018, from Our world in data: https://ourworldindata.org/global-rise-of-education

Roy , M., Bergeron, J.-L., & Fortier, L. (2001). Equipes semi-autonomes de travail: recension des écrits et état de la situation au Québec. Sherbrooke, Canada. Retrieved July 17, 2017, from https://www.usherbrooke.ca/ceot/fileadmin/sites/ceot/documents/Publications/Articles/Bordeau_Psychologie_du_travail_et_des_organisationspdf.pdf

Secretaire-inc. (2014, Avril 25). *La grande histoire des secrétaires*. Retrieved from Secrétaire-Inc: https://www.secretaire-inc.com/la-grande-histoire-des-secretaires/

Servajean, C. (2013, Janvier 16). Histoire des secrétaires. (J. Lebrun, Interviewer)

Shaburdin, Z. (2006, September). *Is Cultural Diversity Threatened by Globalisation.* Retrieved from Academia: https://www.academia.edu/4077545/Is_Cultural_Diversity_Threatened_by_Globalisation

Silva, F., & Ben Ali, A. (2010, Juin). Emergence du travail collaboratif: Nouvelles formes d'Organisation du Travail. (M. P. Ed., Ed.) *Management & Avenir*(36), 340-365. doi:10.3917/mav.036.0340

Simpson, D. (2017). Advantages and disadvantages of international virtual project teams. *International Business and Global Economy 2017, 36*. Gdańsk, Poland: Institute of International Business, University of Gdańsk. Retrieved March 30, 2018, from https://www.ceeol.com/search/article-detail?id=600016

Society for Human Resource Management. (2018). *About SHRM*. Retrieved June 6, 2018, from Society for Human Resource Management: https://www.shrm.org/about-shrm/Pages/default.aspx

St-Jacques , D., & Roy, M. (2002, September). Les équipes semi-autonomes de travail. Québec, Canada. Retrieved July 24, 2017, from https://www.usherbrooke.ca/ceot/fileadmin/sites/ceot/documents/Publications/Articles/09V6N2Roy.pdf

Taskin, L. (2002). Télétravail : Enjeux et Perspectives dans les Organisations. *Humanisme et Entreprise, 254*, pp. 81-101. Retrieved July 24, 2017, from https://dial.uclouvain.be/pr/boreal/object/boreal:21198?site_name=BOREAL

Taskin, L., & Ajzen, M. (2015). *Managing sustainable and innovative workplaces - New Ways of Working, towards sustainable organizational performance?* Research report, Louvain School of Management Research Institute, Louvain-La-Neuve. Retrieved July 26, 2017

Techno-Science. (n.d.). *Mondialisation*. Retrieved July 14, 2017, from Techno-Science: http://www.techno-science.net/?onglet=glossaire&definition=5465

TechTarget. (February 2013). *Knowledge Management (KM)*. Abgerufen am 24. July 2017 von TechTarget: http://searchdomino.techtarget.com/definition/knowledge-management

ten Brummelhuis, L. L., Bakker, A. B., Hetland, J., & Keulemans , L. (2012). Do new ways of working foster work engagement? . *Psicothema, 24*. Retrieved April 9, 2018, from http://www.psicothema.com/pdf/3987.pdf

The Economist Intelligence Unit. (2009). *Managing Virtual Teams - Taking a more strategic approach.* Managing virtual teams - Taking a more strategic approach, the Economist Intelligence Unit, London. Retrieved June 7, 2018, from http://graphics.eiu.com/upload/eb/NEC_Managing_virtual_teams_WEB.pdf

the Economist Intelligence Unit. (2018). *Home*. Retrieved June 7, 2018, from the Economist Intelligence Unit: http://www.eiu.com/home.aspx

Thomsin, L., & Tremblay, D.-G. (2007, March). Le télétravail sous forme de "mobile working": Qui le pratique et pourquoi? Montréal, Canada: Université du Québec. Retrieved July 24, 2017, from https://www.teluq.uquebec.ca/chairebell/pdf/NR_CB_2007_03.pdf

Tremblay, D.-G., Chevrier, C., & Di Loreto, M. (2006, July 1). Le télétravail à domicile : Meilleure conciliation emploi-famille ou source d'envahissement de la vie privée ? *Revue Interventions économiques, 34*. Retrieved July 24, 2017, from https://interventionseconomiques.revues.org/689#text

Vaast, E. (2008, Mars). Travail en réseau et réalités hiérarchiques - Ce que révèlent les systèmes d'information. Paris , France.

Whyte, A. (2000, June). Assessing Community Telecentres: Guidelines for Researchers. Ottawa, Canada: International Development Research Center. Retrieved July 24, 2017, from https://books.google.be/books?hl=fr&lr=&id=quysN68jJCIC&oi=fnd&pg=PR7&dq=definition+of+telecentre&ots=37UzGczL8E&sig=nCCwf-65iabpBdPFEYuaV_p-_28#v=onepage&q=definition%20of%20telecentre&f=false

Witthaus, G. R. (2008). Enhancing the Effectiveness of Virtual and Offshore Project Teams: Guidelines for Best Practice. *6*. Bangalore, India. Retrieved July 8, 2018, from https://www.academia.edu/440272/Enhancing_the_Effectiveness_of_Virtual_and_Offshore_Project_Teams_Guidelines_for_Best_Practice

Interviews conducted for the field research:

Martial, A. (2018, August 9). *Managing Director*. [virtual interview]. Belgium-France.

Dubus, C. (2018, August 10). *Quality Controller.* [virtual interview]. Belgium.

Taquin, D. (2018, August 7). *Microcredit Counsellor.* [virtual interview]. Belgium-Italy.

Kozyreff, D. (2018, August 4). *Accounting Manager.* [interview]. Belgium.

Massi, L. (2018, August 6). *Compliance and Risk Manager.* [virtual interview]. Belgium-France.

Bekaert, F. (2018, August 7). *Business Data Analyst.* [virtual interview]. Belgium-Italy.

Bertelli, F. (2018, August 5). *Lead Designer.* [virtual interview]. Belgium.

de Grove, G. (2018, August 5). *DevOps Data Engineer.* [virtual interview]. Belgium.

Bondroit, J. (2018, August 4). *Managing Director.* [virtual interview]. Belgium-France.

Messaoudi, K. (2018, August 8). Managing Director and *Commercial and Communication Manager.* [virtual interview]. Belgium-Dublin.

Bindels, L. (2018, August 8). *Marketing Specialist*.[virtual interview]. Belgium.

Alzetta, L. (2018, August 4). *Managing Director.* [virtual interview]. Belgium.

Shchur, O. (2018, August 10). *Consultant.* [interview]. Belgium.

Gatz, T. (2018, August 5). *Consultant.* [virtual interview]. Belgium-Londen.