UNIVERSITA' DEGLI STUDI DI PADOVA

DIPARTIMENTO DI SCIENZE ECONOMICHE ED AZIENDALI "M.FANNO"

CORSO DI LAUREA MAGISTRALE IN BUSINESS ADMINISTRATION

TESI DI LAUREA

"VIRTUAL TEAMS: A FOCUS ON THEIR CHARACTERISTICS AND FUNCTIONING"

RELATORE:

CH.MO PROF. GIANECCHINI MARTINA

LAUREANDA: SALOMONI VALENTINA

MATRICOLA N. 1104172

ANNO ACCADEMICO 2017 – 2018

Il candidato dichiara che il presente lavoro è originale e non è già stato sottoposto, in tutto o in parte, per il conseguimento di un titolo accademico in altre Università italiane o straniere.

Il candidato dichiara altresì che tutti i materiali utilizzati durante la preparazione dell'elaborato sono stati indicati nel testo e nella sezione "Riferimenti bibliografici" e che le eventuali citazioni testuali sono individuabili attraverso l'esplicito richiamo alla pubblicazione originale.

Firma dello studente

_____

Acknowledgments

Un importante capitolo della mia vita si conclude con questo lavoro, il momento tanto atteso è finalmente arrivato. Per questo è arrivato il momento di dire un grosso grazie alle persone che mi sono state vicine e che hanno fatto parte di questa esperienza supportandomi e sopportandomi.

Un ringraziamento particolare va alla mia relatrice, Prof.sa Martina Gianecchini per la fiducia e il supporto che mi ha dato in ogni situazione e che mi hanno aiutata a lavorare al meglio.

Ringrazio mamma Antonella, papà Paolo e Mattia, che hanno sempre creduto in me e nelle scelte che ho fatto, supportandomi in ogni momento anche con il sacrificio di vedermi lontana da casa pur di permettermi di realizzare i miei progetti.

Ringrazio le amiche di sempre, Giulia, Francesca e Giulia, che mi sono sempre state vicine nonostante la distanza e mi hanno sempre ascoltata nei momenti difficili e aiutata a prendere le cose dal lato giusto.

Ringrazio le amiche acquisite a Padova, Ludovica, una coinquilina fantastica con la quale ho condiviso vari disagi ma anche tanti momenti divertenti ed Alessandra, una compagna di studi diventata poi una grande amica.

Ringrazio Francesco e Francesco, i migliori amici che potessi desiderare per vivere un'esperienza travolgente come l'Erasmus.

Ringrazio tutte le persone che nel bene o nel male mi hanno aiutata a crescere sia personalmente che professionalmente nel corso di questi anni.

Infine, ringrazio Verdiana: ce l'abbiamo fatta.

Summary

INTRODUCTION

Virtual teams are groups of people performing common tasks interdependently; they are characterized by being geographically dispersed and for communicating through technology mediated communications (Gibson & Cohen, 2003).

Virtual teams are a management solution companies adopt in order to respond to the changes in business environment (Tenzer & Pudelko, 2016). They are flexible and horizontal structures, composed by heterogeneous people coming from different nations, cultures and background, sustained by the great innovation on information and communication technologies (Ganesh & Gupta, 2010).

Most of the companies do not plan to work virtually, in fact virtual teams are unplanned working configurations (Chang et al., 2011) that naturally arise from a different work context and so it is important to manage them properly.

The analysis proposed is drawn from a review of the literature, aimed to clarify the role of virtual teams in the organizations, their characteristics and functioning.

In the first chapter of this work it is provided an explanation of what a virtual team is and how virtual teams fit the organizational needs, as well as which are the advantages and disadvantages related to this kind of structures.

The second chapter provides insights about how to build an effective virtual team; the assessment should be take into account different factors, such as the duration the team will have, the structure and the team size in order to understand how the relationships will be developed, the languages and cultures represented within the team and the most important knowledge, skills and abilities that virtual team members should have in order to ensure the proper team functioning.

The third chapter goes into details of the everyday team life and explains which are the most relevant factors affecting the virtual team functioning in order to allow team leaders to shape their leadership style accordingly and design an appropriate action plan keeping into account the nature of the virtual team, the impact of task characteristics and context and the role of trust, communication and conflict.

The last chapter is about the relevance of having a performance measurement process in place; it describes the drivers for the definition of an effective system to evaluate performance and the biases that can occur while team members are asked to make evaluations or self evaluations.

1. CHAPTER ONE

AN OVERVIEW ON VIRTUAL TEAMS

1.1 Introduction

There are a great number of multinational corporations which commonly adopt global strategies (Ganesh & Gupta, 2010). They sustain their growth through merger and acquisitions, alliances or outsourcing strategies with the aim to enter new markets, expand their sales and broaden their customer base (DeRosa & Wittenberg).

As companies' boundaries are blurring and spanning across nations, it is increasingly common that firms find a way to manage their market reach and their employees across multiple locations, thus, it is increasingly common that people find themselves to work and collaborate with people of the same company or part of a different organization, who live in other nations or continents (Newell & Chand, 2007).

The evolving organizational needs combined with advancements in technologies made possible the delineation of virtual work. Companies experience an increasing need for untraditional work configuration and thus the need of virtual teams increased (Ganesh & Gupta, 2010).

As the business environment is becoming more complex and dynamic, it requires more flexibility and readily available information and knowledge to proficiently meet the objectives. In order to do face the challenging marketplace, organizations are putting effort in making their structures less vertical and more flexible.

Thanks to the technology advancements, companies could respect the new requirements and opt for virtual work configurations which help in mitigating the rigidity of organizational structure and boundaries (Lurey & Raisinghani, 2001).

In this chapter it will be presented an overview of virtual teams, starting with the rationales

for adopting such structures. After that there will a section related to the definition of the term and the main topics related to virtual teams.

In the last part of this chapter will be offered an idea of the advantages and the challenges related to virtual teams, concluding with a summary of the complexity linked to the topic.

1.2 Virtual team's trend

Virtual teams have become an alternative way for organising work (DeRosa & Wittenberg), it is a management solution to the global strategies, such as alliances or managing relationships between headquarters and subsidiaries (Tenzer & Pudelko, 2016).

According to a survey, "approximately 66% of multinational organizations use virtual teams, and most of the companies surveyed consider that this number will continue to grow" (Gilson et al., 2015). Some among the biggest companies as IBM, General Electric and SAP, use virtual teams for research and development matters, aiming to gather together people with the best competencies, regardless their work location. (Siebdrat et al, 2009).

Companies, in fact, are bringing together individuals dispersed all around the globe whom possess the right knowledge and skills and that collaborate through mediating technologies instead of face to face (Gibson & Cohen, 2003)

This trend is sustained and made possible by the great innovation on information and communication technologies, along with their increasing affordability (Ganesh & Gupta, 2010).

Virtual teams are flexible structures which can be adopted by different organizational functions, covering all the needs that may arise. Specifically, as stated in a survey conducted in 2009, the most common functioning roles of virtual teams are: strategy and business development, finance, general management, marketing and sales, project management, IT, customer service, R&D, operations and production. (The Economist Intelligence Unit Limited, 2009). Olson and Olson (2003) and Kanawattanachai and Yoo (2007) add that virtual team are adopted for new software or product development, or by financial analysts, designers, strategic consultants, researches and so on.

Virtual teams are becoming the heart of the globalization and they are evolving into the rule instead of the exception (Zander *et al.*, 2012), meaning that they are turning into a necessity and not just an option companies can decide to choose or not.

However most companies do not plan to work virtually and they often do not have relevant experience and know-how (The Economist Intelligence Unit Limited, 2009) as well as employees may lack important skills for working at a distance and managing different cultures. (Pinjani & Palvia, 2013).

The fact that virtual teams are unplanned working configuration, require organizations to think differently and to provide a new kind of management along with looking for candidates with appropriate skills and abilities (Chang *et al.*, 2011).

Global strategies are making the human capital more and more heterogeneous (Garrison *et al.*, 2010) and when people with no particular training for diversity and virtuality are required to start working in a virtual team, they may experience confusion and disappointment. This is because they lack the right competences needed to proper behave. The situation is exacerbated by numerous kinds of distances such as national, geographical, temporal, and contextual. The sense of unshared identity that originates has an effect of the team dynamics, specifically on communications (Gibson & Gibbs, 2006) and on the level of information exchanged as well as on the performance.

In order to mitigate the effect of distance it is important to be sensible about different perspectives and engage in some perspective taking activities to step into other member's shoes (Mortensen, 2015).

Virtual work should be shaped around frankness and open communication. Virtual team leaders should help highlighting the advantages virtual work can bring as well as mitigating the disadvantages, and make sure the team possess the appropriate tools to face the challenges. (Siebdrat et al, 2009).

Good team performance and task accomplishment depend on the ability of all team members to overcome the difficulties created by the virtual context and to the competence of communicating knowledge and complex information in a complete and quick way using computer mediated tools (Tan *et al.*, 2012).

The working environment in which virtual teams operate is poor in social presence and interpersonal interactivity, these factors may create difficulties in communication and collaboration (Liu *et al.*, 2008). Moreover, the physical and time distance, the lack of shared history context and the limited choice of communication channels exacerbate the difficulties, and this is the reason why virtual teams can turn in a disaster if not properly managed. (Kanawattanachai & Yoo, 2002). Thus, it is fundamental that companies operating in such a

dynamic and complex environment, effectively and efficiently manage the global knowledge resources in order to pursue and maintain a competitive advantage (Mukherjee *et al.*, 2012).

1.3 Virtual team definition

In order to understand how virtual teams function, it is necessary to provide a definition to what is meant with virtual team.

First of all, virtual teams are just one shape that virtual work, in particular Hertel *et al.* (2005) provide an overview of the various virtual work types. They discuss four kind of virtual work, precisely: telework, virtual groups, virtual teams and virtual communities. Telework is carried out when people are partially or completely outside the company headquarter and they are supported by information and communication technologies in order to perform their daily activities. If several teleworkers are combined together and report to the same manager, a virtual group is in place. What distinguish a virtual group from a virtual team, is that members need to work together toward a common goal.

For what concern virtual communities, they are composed by people whom collaborate via internet and are guided by a common purpose, norms and roles but usually they are detached from organizational structure.

Focusing on virtual teams, it is to be said that in the literature they are referred to using different terminology, the most common are: geographically distributed teams, virtual transnational organization, virtual teaming environment, cross national teams, geographically dispersed teams, virtual teams, cross-cultural distributed teams, multicultural distributed teams, international computer-mediated collaboration, computer-mediated distributed teams (Connaughton & Shuffler, 2007).

However, the most used is virtual team, and henceforth this will be the terminology used in this document.

There is not a single definition of virtual teams, even though the literature agrees on the following assumptions, reported in Gibson and Cohen (2003):

> ➢ members within the team are interdependent while performing their tasks, they are a social unit, sharing responsibilities for outcomes;

> ➢ members are geographically distributed;

> ➢ virtual team members mainly rely on technology-mediated communications rather than face-to-face interactions to accomplish their tasks.

Interdependence is an important pillar for virtual teams, because, with no interdependence there would be no need of managing team interactions. Instead, is necessary to design and think how members interact and participate.

The geographical dispersion implies that within virtual teams the level of diversity is higher with respect to the level in traditional teams. The heterogeneity relates demographical factors such as age, nation, race, culture, but also background, functioning role and so on. Members of virtual team are not co-located and their primary work sites are different. Specifically, they may be based in different buildings, cities, nations or even continents. The dispersion is also in time, in fact, virtual teams often span different time zone. Since dispersion influence the way relations are built, it is important that members are aware of the dispersion's level the team is experiencing so that they can behave appropriately. Often, in fact, when the level of dispersion is low, for example when members are located in different buildings, they may underestimate the level of virtuality which they are subjected to, and be unaware that the relationships are going to be different to the one they would have experienced located in the same office, desk by desk. (Siebdrat et al, 2009).

The great dependence on communication technologies distinguish virtual teams by traditional teams and the degree of reliance on electronic communication as well as the quality of the media of communication used, determines the degree of virtuality the teams is subjected to.

The degree of virtuality can vary from slightly virtual to extremely virtual according to the geographic dispersion and the extensive use of technology-mediated communications (Ganesh & Gupta, 2010). The level of virtuality a team is subjected to is usually driven by strategic factors, such as mergers, increasing market span, cost reductions and flexibility of the market, influences goals accomplishment (Mukherjee *et al.*, 2012).

It is important to assess it because accordingly there will be different level of complexity which should be approached specifically. The implication is that there is not a single way to manage virtual teams, but the approaches need to be managed according to the specific characteristic of the team.

Also important is the configuration the team has, meaning how many members of the team are present per location (Siebdrat et al, 2009).

Other attributions that complete the definition of virtual teams are advanced by Gibson and Gibbs (2006). In particular virtual teams show fluid membership, malleable structures and

are composed by members who are different from each other according to culture, nation of origin, organization and function. The dynamic nature of virtual teams is represented by the fact that members' roles and the relationships among each other are subjected to frequent changes. Also, team membership is changing quickly, determining often a high turnover. Moreover virtual teams are defined to be temporary structures that pursue a specific project such as a new product or software development, and when the objective is reached it is dismantled (Chang *et al.*, 2011).

1.4 The advantages brought by virtual teams

According to a survey, the 71% of the respondents agreed that the pros of working in a virtual team outweigh the cons (The Economist Intelligence Unit Limited, 2009), in fact virtual work can bring many advantaged to the company, thanks to the particular synergy created by heterogeneous members interacting with each other in a non conventional way. This heterogeneity and diversity of virtual teams are seen as an advantage because they help reducing groupthink and favourite creativity and innovation (Shrm Foundation 2014). Diverse intelligence combined with collaborative mechanisms, will exert team effort. It means that the virtual team will create better outcome than the one that could be obtained by each individual member alone (Gibson & Cohen, 2003).

Moreover, since big companies cover and serve different markets, each one with specific characteristics, having members located in different locations, permit to have team members with different local expertise. The specific knowledge turns in a better understanding of customers' needs, resulting in an increased customer satisfaction (Jain & Sobek, 2006) and in an overall improved responsiveness to the local market (Verburg *et al.*, 2013).

In addition, the time gap characterising teams composed by member located in different nations or continents could be an advantage. In fact, if managed properly it may help getting more done overall, because there is always someone working across the globe (DeRosa & Wittenberg).

In fact, if virtual team members are coordinated and they properly collaborate, then the work could be organized efficiently and accomplished quickly thanks to the time difference which gives the possibility to work on the project not only during the eight canonical hours per day. This helps in reducing the time to market and contribute to an overall responsiveness to the changing business environment (Mulebeke & Zhen, 2006).

Further, virtual teams offer flexibility and adaptability because they allow the identification of centre of excellence, composed by the best experts in specialised fields (Rosen *et al.,* 2007) who do not need to be together in the same place, but can contribute with their expertise at a distance. Such agglomeration of people may change according to the specific task or project the company need to accomplish, in order to always have on board the key people (Badrinarayanan & Arnett, 2008).

For these reasons, virtual teams enables companies to better respond to the increasing competition (Hunsaker & Hunsaker, 2008) and reach a competitive advantage.

In addition virtual work, allows companies to broaden the recruiting base, so that HR practitioners can select members without geographic constrains, increasing the likelihood to research for the best talents. A larger pool of available candidates, increasing the likelihood of finding the right and best knowledge that fit at best the job (Shrm Foundation 2014; Hunsaker & Hunsaker, 2008) which in turn will be able to complete the task more efficiently and quickly (Zander *et al.*, 2012)   .

Further, adopting virtual work and virtual team configurations, create the long term benefit to build a virtual workforce culture: in this way employees and team members learn how to do it and reinforce the functioning mechanism over time. (Aon consulting, 2009). Given the great expansion in the use of virtual teams, learning over time how to properly build and lead them will create a competitive advantage for the company.

In addition, as it is underlined in Cascio (2000), since members in virtual team mainly communicate through technology mediated communications, it is possible for companies to save on travel costs. This has both an economical impact as well as an environmental one, in fact, less travel means less emissions and pollution. Moreover, the possibility for employees to work at a distance contribute to better accommodate their personal and professional lives, as they do not need to make long travels or change location. Virtual teams may bring positive effects because nowadays stakeholders display a growing attention to the social and environmental aspects, and how companies deal with them.

1.5 Disadvantages and challenges of virtual teams

The positive aspects of virtual teams are coupled with complications. In fact, the same 71% that acclaimed for the benefits of virtual teams commented also that working virtually brings many challenges. According to a survey, the main ones are related to misunderstandings created by cultural and language differences and by the lack of physical bonds. Others

comprehend the difficulty of building trust and camaraderie, managing productivity and information flow, as well as the technical problems related to technology (The Economist Intelligence Unit Limited, 2009).

The factors that create complexity and difficulties in the management of virtual teams are also the aspects that distinguish them from traditional teams: the geographical dispersion and the use of technology-mediated communications. Geographical distance does not only signify that members are in different locations, but it implies that the communications might span different time zones. Because of lack of proximity, Gibson and Cohen (2003) stated that virtual teams often suffer from the "out-of-sight-out-of-mind" syndrome, which combined with cultural and contextual differences, makes task accomplishment more difficult.

Time difference, combined with cultural differences, the use of technology and the difficulty of transferring contextual information, can make people out of synch (Zander *et al.*, 2012) and create a complex and articulated communication process in which it is not easy for virtual team members to interpret the message or even give a meaning to silent. (Henttonen & Blomqvist, 2005).

With respect to traditional teams, virtual teams encounter more difficulties in sharing ideas, beliefs and expectations (Henttonen & Blomqvist, 2005), this is due to the extensive use of emails and computer mediated communications, which affects the information sharing process in general by reducing the opportunities to exchange nonverbal cues such as tone of voice, warmth and attentiveness which are seen as important factors for message clarity and communication richness (Gibson & Gibbs, 2006).

Additionally, technology might not be easy to use (Badrinarayanan & Arnett, 2008) and the phenomenon of "technophobia" may happen (Johnson *et al.,* 2001), in the sense that members might encounter difficulties in using and exploit it. This implies that it might be necessary a training in order to ensure that everyone has the same proficiency level in using software and programs.

The use of technology also turn the communication more task related, (Verburg *et al.*, 2013) making difficult the development of social relationships, which turns in a weaker team identity (Zimmermann, 2011). According to Garrison *et al.* (2010) such a dimension can be developed by conceding virtual team members the necessary time to build social bonds, cohesion, trust and commitment, important to strengthen team identity.

Additionally, virtual team members are likely to be very diverse from each others, in term of

14

race, culture, nation, language and educational and professional background.

Heterogeneity implies that people have different way of behaving and thinking, which might be inconsistent with one another.

This high level of diversity makes virtual team members more susceptible to negative effects, mining the advantages that virtual work could offer (Polzer *et al.*, 2006).

Furthermore, often virtual teams are built for a limited period of time, and are composed by people who have never worked together before (Lin *et al.*, 2008): the lack of shared history may have an impact on the patterns of information sharing and working together (Gibson & Gibbs, 2006).

This means that virtual team members do not share the same history, or the same future, so it can be hard to build trust and keep conflicts at a feasible level.

In the end, since the monitoring activity it is not easy to be accomplished in a situation in which people are not together and work at a distance, it is difficult to detect if a member tries to take advantage of the others. However this behaviour would lead to an unbalanced workload and to poor performance, affecting the virtual team as a whole (Greenberg et al., 2007).

1.6 Conclusions

Virtual work allows team members to accomplish tasks transcending traditional restriction of time and physical proximity (Luse *et al.*, 2013). The increasing companies' need for managing people at different locations due to global strategies, make virtual teams a good solution. They are flexible solutions which can be adapted for different organizational needs and adopted by different organizational functions.

It has not been clarified yet whether the advantages of virtual teams exceed the disadvantages or vice versa. This is because there is not a single type of virtual team, and according to which factors and contingencies are combined together, each team has to be managed specifically. However, since multinational corporation broadly use these configurations, they cannot leave the effective management of virtual teams out of consideration. Nevertheless managing a virtual team is rated as the second challenge of working virtually, in fact one in three executives agrees that too often virtual team are bad managed (The Economist Intelligence Unit Limited, 2009).

It is not clear how working virtually impact on performances, with this regard, a study

conducted by Govindarajan and Gupta (2001) on 70 virtual teams shows that just the 18% of those teams consider their performance completely successful, the remaining part was not satisfied with their goals accomplishment and one third judged their performance as unsuccessful.

In order to avoid negative outcomes and to prevent virtual team members to feel unsatisfied it is important that the virtual team leader and the team members are aware of what the challenges of a virtual team are, so that they can successfully deal with them. These difficulties relate building trust due to cultural differences, or communication breakdowns because of language barriers, time gap or technology mediated communications (Govindarajan & Gupta, 2001).

In order to facilitate the communication process in this virtual context, companies need to make investment in technologies. However, having the most advanced technologies is not per se a synonym of success. These technologies need to be integrated in the company and employees need to exploit and accept them as effective means of communication. Differently the company would not have the expected benefits from the investment as well as from the communication process of the virtual team.

If the members will be able to overcome the challenges, it will be easier to exploit the advantages brought by virtual work. For example, learning to exploit team members differences will foster creativity and innovation, which may be crucial in a virtual team set for the development of a new product.

To facilitate virtual teams, companies should involve the HR practitioners in the process of becoming virtual and invite employees to ask for clarification in order to address uncertainties (DeRosa & Wittenberg).

At the same time companies should provide trainings in order to give members tools to help them understand which behaviours could be appropriate or not, constructive or not. The most important ones are about cultures, technology and communication. This is true because if members would experience problems in these areas they will likely attribute those problems to lack of commitment or lack of functional ability (Greenberg *et al.*, 2007) and as a result the will not build trust and social affection and the performances will be low. Training about culture would help people understanding how to behave in a multicultural context and how to be aware and respect differences. Guidance about technologies is important in order to make virtual team members aware of the different tools available and how to fully exploit the technologies and transfer knowledge, this is related also to the

16

communication capacity in a virtual context and how should be a proper communication (DeRosa & Wittenberg).

2. CHAPTER TWO

THE INPUT FACTORS TO CONSIDER WHEN BUILDING A VIRTUAL TEAM

2.1 Introduction

The initial task when a team has to be implemented is the definition of the team's general purpose and the assessment of the level of virtuality it will be subjected to (Hertel *et al.,* 2005). In the matter of building a virtual team from zero, a general valuation is necessary as there are many diversity factors that impact the team functioning.

A preliminary planning phase is important in order to build an effective virtual team, in particular it should be determined how many people will be part of the team and how they will interact and coordinate and for how long, as it is relevant for the development of innovation. (Gibson & Gibbs, 2006).

Along with that, team composition is studied to affect the nature of coordination and performance (Malhotra & Majchrzak, 2014), implying that selecting the right members is crucial for the team's success. Thus, companies should put attention in the selection process, in order to monitor and control the degree of the diversity within the team and integrate it (Govindarajan & Gupta, 2001).

The candidates' evaluation will be done according to the functional role and to the technical abilities needed to perform the task as well as on personal characteristics (Greenberg *et al.,* 2007), relevant for working in a virtual environment with people different from each other. Instead, if the team is composed by people who already are part of the organization and already used to work together, then it should assessed whether the people are ready and aware of the shift and how it will impact their way of working.

Diversity is intrinsic in the definition of virtual teams. It is a relative concept, meaning that someone can be defined diverse only in relation with someone else. In Garrison *et al* (2010) is underlined that a member can be diverse from another one according to visible attributions, defined demographical, such as age, race, gender and country of origin. Team members who are demographically diverse may feel uncomfortable working together and they may be detached from others. A second set of attribution, defined informational, is related to the educational background, the functional expertise and the organizational position. Teams composed by members coming from the same function tend to perform better than those that are cross- functional, because, in the second case there is more complexity to be managed due for example to the fact that everyone need to get familiar with the technical language other professionals may have (Onpoint Consulting). So, during the virtual team's building phase this should be taken into account.

Finally a third set of attribution is related to differences in motivation and work values. It is not clear whether diversity in virtual teams is good or bad, however in order to funnel diversity into something positive, it is important to manage and control it, and this is possible through the candidates' selection.

The selection process enables leaders and HR to determine the degree of diversity the virtual team should display and research for the people who possess the appropriate characteristics. In this phase it is also possible to control some variable at team level, which will influence how the team is going to work.

In the following paragraphs four input factors will be explained, starting from the ones at a team level as the expected life of the team and its size and structure and proceeding with factors specific at the individual level as culture and language. Moreover, since the selection process is widely considered important for bringing on board the right members, the last section will be dedicated to the characteristics important for working in a virtual team.

2.2 Temporary or ongoing?

Depending on the organizational need a virtual team is built for and the strategic goal it has to accomplish, it should be clear since the beginning what is the expected life of the virtual team. It is important because whether a specific virtual team is built for a short term project or a long term task, it changes the processes and the relationships which will be put into

place.

It is the case of trust building, which in temporary teams will be more cognitive related rather than affective based (Kanawattanachai & Yoo, 2002). This means that in a temporary team, where members often lack a shared history, as they are gathered together for the matter of the project (Pinjani & Palvia, 2013) it is necessary that members establish their trust on the basis of their background and professional credentials rather than on shared past experiences (Kanawattanachai & Yoo, 2002). However, in temporary teams whose members are open to cultural and other diversities, it is possible to build team identity if the leader put in practice effective behaviours.

For what concern ongoing virtual teams, trust is seen to be very important for ensuring smooth team processes and functioning. In this case, trust should raise both from cognitive as well as affective aspects, meaning that in the beginning members would make evaluations according to informational attributes, but building long term interpersonal relationships is important as well. (Shrm Foundation 2016). Researches shows that teams working together for more than three years performed better than those with a shorter tenure. This suggest that it takes time to members to learn how to cooperate and work together effectively and that team learning and trust building occurs over time (Onpoint Consulting).

2.3 Team structure

Team structure refers to how the team is built, how many people are within it, how the responsibilities and the activities are shared and how the information flows. In view of the above, team structure highly determines the nature of the relationships within the team and ultimately it impact on performance (Liu et al., 2008).

A virtual team' structure can be more or less hierarchical. However, there is not a univocal idea of which configuration is the best, but an evaluation can be facilitated by analysing the working environment. In particular it is suggested by Liu et al. (2008) that if the working environment is not complex, a hierarchical structure should be adopted in which the level of individual accountability is high and free riding situations are unlikely to occur. On the contrary, if the virtual team has to deal with a dynamic and unstable environment, exacerbated by the communication process carried out mainly asynchronously, then a non hierarchical structure would increase flexibility and improve the responsiveness to the quick change in demand. In such a context, the interactions among team members will be more

unstructured and will occur ad hoc, according to the specific needs. As a result, more perspectives will be taken into account improving the quality of the decision making.

Another important aspect related to the structure is team size. This is a variable which has to be decided and controlled a priori and it may depend on the goal assigned to the virtual team or the level of virtuality. Team size affect the decision making process and how individual collaborate and create relations (Chidambaram & Tung, 2005).

However there is not a specific number of people a virtual team should be composed by, but for sure team size should allow leaders and companies to manage the team and maintain control. Team size should be decided combining the more knowledge and skills with the lower number of people. Whenever the team grows in number because more and diverse knowledge is needed, then it should be considered a structure that sees a core team surrounded by other subteams (Govindarajan & Gupta, 2001).

The idea proposed by Ferrazzi (2014), is to have a set of team members responsible for the strategy and the core activities and other members working on the operational activities, taking decisions about the daily work. In parallel it should be build a network of temporary or part time members which are involved only in specific stages of the project and contribute with a specialized knowledge.

The architecture of the team and subgroups gives an idea of the links among team members and the intensity of the ties built. A planning phase of the virtual team structure is relevant because if members are linked by stronger ties, this implies that they need to cooperate extensively and thus, it is important to evaluate if the personal characteristics of the members, such as predisposition, values, experiences and personalities can fit together at best to reach a common objective (Gibson & Cohen, 2003).

However, it is important to properly keep under control the situation related to subteams. In fact, even if in some situations having a bigger structure of subteams is a necessity, it can bring problems.

Subteams can arise naturally during the working activities or they can be planned in advance by the company. They can be built using the rational of let people of the same location working together, or creating a subgroup composed by people with a specific knowledge or expertise.

However the attributes used for the division into subgroups might trigger the issue of social categorization and in/out group dynamics. Depending on the context in which the team is

working and the members part of the team the fragmentation into subgroups may create problems (Polzer et al., 2006).

This is shown by O'Leary and Mortensen (2010), in fact, they sustain that if subgroups are built according to geographical basis, it is likely to provide fertile ground for social categorization. This means that virtual team members would encounter difficulties in consider themselves as part of a team. Again, Polzer et al. (2006) illustrate the case of a virtual team divided into two subgroups of similar size, comprehending people located in two locations. These members will experience more conflicts and less trust. The phenomenon is exacerbated if members within a subgroup are heterogeneous according to nationality. Unexpectedly, if members are divided into more locations with one member per location and the level of diversity among them is high, they experienced less self categorization problems.

For what concern team size, it is also can lead to problems, and thus it is important to manage it at best. The main linked problem is the social loafing phenomenon.

Social loafing occurs when members reduce effort and motivation in the project. A member dedicate less than his or her maximum, reducing participation and contribution. This phenomenon is likely to occur when members feel less responsible for the outcome (Ferrazzi, 2014) and when they believe the personal contribution to the goal would not make any difference (Chidambaram & Tung, 2005). In fact, if the team is composed by too many people, social loafing is more likely to occur because people suffer by the "dilution effect".

This problem is likely to affect virtual teams because it is exacerbated by the physical distance and by the technology-mediated communications (Ferrazzi, 2014). The reason is that in the virtual context occur many situations in which it is not easy to recognise individual efforts.

The fact that contributions are often pooled together, make it difficult to identify who did what. Another explanation is that when a member is isolated, for example is working alone in a location, he or she will feel more distant and his or her participation is likely to decrease (Chidambaram & Tung, 2005).

2.4 Culture

Culture is defined as *the deposit of knowledge, experience, beliefs, values, attitudes,*

meanings, hierarchies, religion, notions of time, roles, spatial relations, concepts of the universe, and material objects and possessions acquired by a group of people in the course of generations through individual and group striving (Olson & Olson, 2003).

Culture is something acquired and invisible that people simply take for granted, even though it has a great impact of the way they read and give meaning to the world around them. Differences in cultures have an impact on attitudes and values and it might lead to lower team cohesiveness and to greater misunderstandings (Shrm Foundation, 2014).

Moreover, it is a factor to be kept into account because members with different cultures tend to communicate in a different way and utilise different communication channels (Gibson & Cohen, 2003).

Xiao and Huang (2016) sustain that teamwork is affected by three kind of culture, in particular, national culture, organizational culture and team culture. Virtual teams are likely to be influenced by all the three types of culture, and this cause a great complexity to be managed.

Given the different type of culture each virtual team member may be subjected to, as soon as the virtual team is build, it is important to develop a common and unique culture, bringing together all the people in order to prevent the virtual team from experiencing challenges in communication and conflicts (Shrm Foundation, 2015).

Cultures are different because of many reasons, in Olson and Olson (2003) many of such differences are explained, hereafter some of the most relevant will be discussed. Culture affects and shapes the perception of hierarchies, the individualist or collectivistic attitudes, the attention to tasks and relationships, the perception of space, time and friendship, as well as the expression of agreement or disagreement and the type remuneration considered satisfying.

For what concern the perception of hierarchies and the way members use to report with their bosses, have and influence on the way activities are done (Shrm Foundation, 2015). For example, some members may consider the leader as a peer, while some others may shape the relationship with formality and deference. In this second case, virtual team members might need the leader's approval before sharing a personal contribution and they may need the leader's supervision to better perform their tasks. However, this is not always possible in virtual teams, where leaders and members may be geographically distant.

Individualistic and collectivistic behaviours impact on the use of explicit and implicit language and in the way members express their dissent (Gibson & Cohen, 2003).

24

Individualistic cultures usually adopt an explicit communication: they communicate what they want in a clear way, including dissent. On the contrary, members coming from a collectivistic culture tend to avoid direct confrontations and in order to do so, they communicate ambiguously using expressions such as "maybe", "perhaps" and "somewhat". In fact, they experience difficulties in expressing dissent since they do not want to mine the harmony within the team or put in a bad light some members.

Members with a different cultural background have a different orientation toward task and relationships. This means that, in some cultures it is important to solely focus on the goal accomplishment and on the activities needed to meet the objectives. In this case there is a high respect for timing and deadlines. In other cases members consider important building relationships and friendship. The management of task and relationship oriented people is no easy, the firsts may consider the seconds uncommitted to team's goals, while the seconds may consider the others insensitive.

Cultural differences make intricate also the division of responsibilities. In fact, according to different cultures, people feel more comfortable either with individual responsibilities or group responsibilities. The accountability system is to be decided at the beginning, when roles and activities are assigned, and in order to design a proper system it is important to take into account the cultural idiosyncrasies of each member.

In addition, it should be determined what motivate members: the appropriate remuneration is different according to personal values and attitudes, but also because of culture. In fact some members may need individual recognition such as money or personal benefits that show the status, while some others may prefer the eulogy of the team as a whole.

These differences greatly influence the way members interact. Given the great complexity created by the combination of the aforementioned factors, if virtual team members are not aware of the underlying cultural differences, working together could be a failure. However, if they understand and become able in handling those differences, the benefits arising from working in a multicultural context can be exploited (Olson & Olson, 2003).

In order to facilitate virtual team members in developing awareness for cultural differences, organizations should evaluate the possibility to provide a specific training about it. In a study presented in Shrm Foundation (2015) it is shown how training should be a cascaded process, starting from the top management telling stories to the lower level managers and so on, until getting to the single virtual team members. This would communicate to the virtual

team members, that cultural sensitivity is a valuable competence and that they should put effort in its development.

In order to determine whether members and leaders would benefit from a cultural training, they may be put in a situation where they need to apply cultural sensitivity in order to succeed: observing their reactions is an effective way to assess the overall level of cultural sensitivity.

2.5 Language

Being part of a virtual team often means dealing with people from different nations which speak different languages. Nowadays, English is commonly known and studied and is taken for granted that people can properly work using English instead of their mother language. However, language can be a barrier to effective communication and to informal information sharing (Tenzer & Pudelko, 2016). Also, it has a great impact on the means of communication virtual team members feel comfortable to use, in particular non native English may prefer asynchronous means of communication such as email rather than other richer media as videoconference is. The reason is that when using videoconference calls, members need to put great effort in comprehending, analysing, listening and formulating an answer quickly. If the proficiency level of non native English speaker is not very high, then they would rather prefer avoiding confrontational situations. In case of emails, members can take their time to reflect and elaborate and answer which is the most accurate expression of what they really mean. (Duranti & de Almeida, 2012).

In order to overcome this obstacle it is important that native English speaker understand and tolerate errors and imprecision and do not show disappointment (Tenzer & Pudelko, 2016) in this way members with a lower proficiency level would feel to express themselves without worrying about being blamed.

Moreover, investing in language training can bring to benefits. In fact, augmenting language knowledge would allow each member to properly express them and as a result there will be no need of third party mediator, such as a translator, favouring a more direct and spontaneous communication. (Govindarajan & Gupta, 2001).

2.6 Knowledge, skills and abilities (KSA)

When a new virtual team is built, it is necessary to choose the right people which will be

part of it. Through the planning and the selection phases, companies are able to have an overview of how the virtual team is going to be. This would help them in understanding which knowledge, skills and abilities should possess the members part of it in order to successfully operate within it. Selecting the appropriate people would give virtual teams as a whole the possibility to be successful and accomplish the goals.

Knowledge, skills and abilities (KSA) are the main selection criteria for virtual team members (Hertel *et al.,* 2005). In particular, Gibson and Cohen (2003) provide a wide examination of specific KSA at three levels: individual KSAs, team KSAs and team leader KSAs.

2.6.1 Individual KSA

Gibson and Cohen (2003), supported by Ferrazzi (2014), classified the most important candidates' characteristics in the following categories:

- ➢ Self management
- ➢ Communication
- ➢ Cultural sensitivity and awareness
- ➢ Trust
- ➢ Comfort with technologies

Self management relates to the capacity of virtual team members to self manage their work, by setting agendas, respect timing, prioritise and organise activities as well as motivate themselves. Moreover, proactivity is also relevant for virtual work. This implies that members understand which information are needed to accomplish their task and are willing to ask for information by engaging in active communication and overcoming the barriers of time and distance.

In order to do that, it is appropriate that candidates are able to properly communicate in a virtual context. This means that they can send information, ask for feedback and they can effectively choose the appropriate mean of communication according to the message they need convey and its urgency. Further, the lack of physical cues forces members to be sensible of interpreting tacit signals and to engage in one-to-one communications in order to clarify if they understood correctly.

Cultural sensitivity is related to being open to new experiences and flexibility. Hertel et al.

(2005) consider relevant also the extraversion, emotional stability and interpersonal and intercultural sensitivity. In Shrm Foundation (2015), it is said that people involved in a multicultural virtual team should be curious about other cultures and diversities, collaborative and great listeners as well as being inclusive and allow participation.

The ability of building trust is very important and it requires candidates to possess dependability, conscientiousness, integrity and agreeableness.

In the end, the capacity of using information technology tools and telecooperate (Hertel *et al.,* 2005) is a pillar for a virtual team candidate, as it is the primary way through which the communication is carried out. In fact, during selections it may be useful to ask candidates to accomplish a short task using the technology the virtual team members will be expected to use on a daily basis (The Economist Intelligence Unit Limited, 2009).

The mix of all the aforementioned KSA would prevent conflicts and motivation losses (Hertel *et al.,* 2005) and ensure the smooth functioning.

2.6.2 Team leader KSA

Companies' support is very important for the team leader, if fact, as leading a virtual team is a complex task, they should provide the team with infrastructures, technologies and training (Verburg *et al.*, 2013) in order to allow the leader to perform his or her job at best. A virtual team leader should possess all the competencies considered relevant for the membership in a virtual team, plus some others required to successfully carry out the job. Gibson and Cohen (2003) report that the responsibilities of a virtual team leader comprehend defining mission, set expectation and build team culture, assigning tasks, establish communication norm, coaching and motivate members, facilitate meeting and activities' execution, mediate conflicts and evaluate performances. In order to succeed a virtual team leader need to be willing to engage in open, sincere and frequent communication, in fact it is not easy lead at a distance and this require an extra effort in order to let dispersed members perceive they are not alone and their participation is valuable.

Because of the social loafing phenomenon previously defined, in order to avoid negative situations, a leader should pay great attention on the team dynamics and be able to recognize individual contribution and effort, especially when the members and the leader are not co-located.

Mukherjee et al. (2012) defined three broad categories of leaders' capabilities: cognitive,

social and behavioural. Cognitive capacities relate the multidimensional judgement and the relative ability to synthesise information, as well as the influencing others. Social competencies comprehend all the interpersonal skills necessary when managing a team composed by people very diverse from each other. Diplomacy, cultural sensitivity and awareness of differences are important in order to shape communications. In conclusion, behavioural skills are related to the capacity to shape their behaviours with a view to influence members and help the organization pursuing the best interests.

The mix of the mentioned KSAs, would create an effective virtual team leader.

2.6.3 Team KSA

The success of a virtual team relies in the capacity to accomplish goals and in the well being of the people engaged. Selecting the proper candidates and team leader is important to create a virtual team that works. However, when people are selected they need to understand how to work together and be integrated. In fact, if they cannot cope together the team is not going to provide the expected benefits.

The integration process should start very early in the team formation with a first face to face meeting. It is useful for defining roles, and communication norms, such has the acceptable response time, the management of priorities and urgencies, the use of shared work spaces (Watkins, 2013).

Gibson and Cohen (2003) identified as the most important KSAs for a team: problem solving attitudes, conflicts management, find a trade off between task and social communication and adopting a learning orientation.

Among the virtual team capabilities which matter the most, problem solving should be included. In particular, the problem solving process should be approached collectively, allowing all the team members to express their opinion, engage in active communication and when necessary, engage in negotiation in order to combine the different opinions. If the problem is solved through consensus the result will be, and will be perceived as more fair.

Further, a team that works should be able to recognise and solve conflicts. Because of physical distance and lack of social bonds, conflicts may be undetected and thus unresolved, and this can be very dangerous for the team functioning. Some conflicts may be related to

differences among team members, or some others to free-riding. However the problem is exacerbate when members do not communicate with enough frequency or stop communicating, do not show their commitment to the team and to the final goal. In this situation is up to the team member to properly manage the relationship with the members who exhibit these behaviours.

Another important competence virtual teams should possess is the ability to find a balance between task oriented and social oriented communication. Virtual teams tend to be more focused on tasks, sacrificing the creation of social relationships and informal communication. However virtual teams need to building social relationships in order to enhance cohesion, trust and ultimately have a positive effect of effectiveness, satisfaction and performance. (Lin *et al.*, 2008).

Lastly, it is important to adopt a learning orientation, which can be obtained by sharing ideas, encouraging collaboration and providing feedback.

2.7 Conclusions

The aim of this chapter was to clarify the importance of the planning and selection phases when building a virtual teams. The planning phase is meant as the control of the variables related to the virtual team, in particular how the virtual team members will communicate and interact with one another, the degree of virtuality and the structure. It is important because the different combination of the aforementioned factors would lead to different virtual team configuration. Planning relates also in the assessment of the characteristics that virtual team members should possess in order to successfully operate in such complex situation. Within the chapter the most important Knowledge, Skills and Abilities (KSA) have been discussed in order to provide a guideline regarding the best candidates to be selected for working in a virtual team. On completion of what just said, two input factors have been examined: language and culture. They are relevant in this phase because too often companies, dealing with virtual teams, need to take them into account and face their effect on team functioning.

Diversity is taken for granted when talking about virtual teams, but it is important to be aware that different factors may bring complications in the management of interpersonal relationships and in the communication process, leading to problems in the goal's accomplishment and performance.

According to how the team is built there will be peculiarity in the process and in the team dynamics. The main aspects related to team functioning will be explained in the next chapter.

3. CHAPTER THREE

VIRTUAL TEAM FUNCTIONING AND DYNAMICS

3.1 Introduction

The peculiar nature of virtual teams requires considering many factors that might have an impact on team functioning. How virtual team members interact and work together should be traced and analysed in order to anticipate problems or have the possibility to drive behaviours in the right direction. Precisely, according to a survey of The Economist Intelligence Unit Limited (2009) the most important factors that should be clarified and managed for the proper team functioning are:

- Setting clear and achievable goals

- Let team members meet face to face from time to time, or at least at the beginning

- Selecting the right team members

- Possess the right tools

- Define and appropriate team structure

- Having a code of conduct

Some of them have already been defined in the previous stages, such as having clear before the selection phase what is the wanted structure and the relations that are between team members or knowing which professional and personal characteristics are valuable and researched in candidates.

Other points are defined when the virtual team is formed. For example, in order to foster goals accomplishment it is very important to determine a clear definition of the main tasks and the activity planning so that members are facilitated in the understanding of which the priorities are. Providing team members with guidelines and code of conducts help them in

understanding what their actions are supposed to be (Maynard *et al.,* 2012).

The creation of shared understanding for social norms and communication rules reinforces trust and is important for knowledge creation. However, it should be taken into account that virtual team members tend to have different perspective and preconceptions due to differences and physical distance (Zimmermann, 2011).

Further topics as trust creation, communication, technological tools, task interdependence and team members relationships and leadership are important for the team functioning and thus they will better discussed in the following sections.

3.2 Task characteristics

Task characteristics can strongly influence the situation and the decision making process virtual team members need to face (Dundis & Benson, 2003). Different characteristics can have an effect on how the team should be structured or on the relationships interfering among virtual team members.

There are many attributes that can classify a task, among the most important is listed the task routines (Malhotra & Majchrzak, 2014), the task structure, the task interdependence and the task complexity. The task routines is related to how much regular a job is and how much it is composed by standard sequence of actions.`
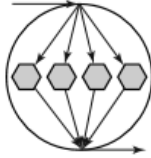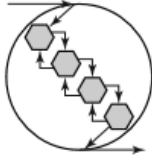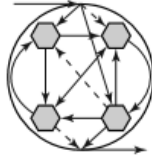
Task structure is the extent to which team members have clear in mind the work they have to perform. It is high when given specified goals; all team members understand how to behave and how to accomplish them. On the contrary, task structure is low when goal is vague and team members are uncertain about the actions to undertake (Dundis & Benson, 2003). Task interdependence is relevant as it affects team processes and ultimately team outcomes. This attribute has also a moderating impact on team diversity and team performance, by influencing virtual team members' interactions and coordination. In particular, when task interdependence is high, team members need to work at a strict contact and build an intense network of interactions because the outcome can be successfully reach only through joint effort and participation. It might result difficult at the beginning, however it helps overcoming differences more quickly. Differently, when tasks interdependence is low, members do not need to work together as the task can be split into several actions which can be performed by a single individual and recombined together at the end in order to form the final outcome

(Dundis & Benson, 2003). In this case it takes longer to get used to one another diversities as well as to develop trust and knowledge sharing (Pinjani & Palvia, 2013).

If norms and values are well communicated and understood among members, the sense of connectedness would increase, turning in higher task interdependence (Verburg *et al.*, 2013). Looking at a broader picture, task characteristics combined with the peculiarities of the environment in which the virtual team operates, impact of team functioning and give an idea of the interactions that will exist among team members. In particular, the combination of the different factors generates various level of task complexity.

The following scheme put in evidence how the interaction works:

Task Complexity Characteristics				
Work flow interdependence	Pooled	Sequential	Reciprocal	Intensive
Task environment	Static	————————		Dynamic
External coupling	Loose	————————		Tight
Internal coupling	Weak	————————		Strong
Task complexity	**Low**	←————————→		**High**

Source: Bell and Kozlowski (2002, p.20) in Gibson and Cohen (2003, p.251)

The variants taken into consideration in this model are the task environment, the external coupling and the internal coupling, which combined together form various levels of task complexity

The task environment can vary from static to dynamic meaning that members operating in a static environment will experience situations that are stable, routine and predictable, with a low need for a continuous monitoring. On the contrary, in dynamic environment, situations change quickly and there are more uncertainties, that is why it is required to team members to communicate more frequently.

External coupling express the relationship between the team and its task environment. It can be loose or tight, depending on how much the team activities are affected by the occurrence of the task environment.

Internal coupling represents the level of task interdependence among team members.

By the combination of these three factors, different work structures can take shape:

- *Pooled or additive:* each member performs individually an activity. At the end the activities are combined together into a finished product;

- *Sequential:* work and activities flow unidirectional from one member to the other;

- *Reciprocal:* the structure is the same as the sequential configuration, but the flow of information is bidirectional;

- *Intense:* this is the most interdependent structure in which team members need to collaborate on the activities simultaneously, applying problem solving competences in order to accomplish their task.

Being aware of how different characteristics related to the task and the environment might influence work structure can help in properly design the communication. Taking as an example a static environment with both internal and external coupling being loose and weak and where tasks are performed independently, the use of asynchronous means of communication is sufficient and appropriate. On the opposite, if the task complexity is high, then members would need to often exchange information and engage in idea generation processes, so that in this case it is more appropriate to adopt synchronous means of communication (Gibson & Cohen, 2003).

3.2.1 The need for coordination depending on task

Task characteristics require facing the issue of coordination. In fact, coordination is the management of dependencies among task activities (Espinosa *et al.,* 2007) and it represent the effort that team members put in managing the collective resources and the extent to which activities of all team members follow a rational flow and are logically coherent and interconnected with one another (Lin *et al.*, 2008).

The level of coordination needed is a function of the task complexity, indeed, a complex task would require a higher need of coordination, which is reached when all the interdependencies are well managed and under control, on the contrary, a routine task would not require a big effort in organizing activities.

According to the specific task, coordination can be carried out mechanically or organically. Mechanical coordination may be appropriate in case of routine tasks, when different members can work simultaneously on different part of the task without interfering with each other work. This would lead to the ability to every team member to predict what another member will do. In this case, coordination's procedures can be defined in advance through plans, schedules, manuals and specifications.

Differently, when the task is more complex members need to coordinate organically by exchanging feedback and interact frequently. In such a case, the need of continual and unpredictable flow of ideas and information do not allow to set actions in advance because the problem solving process can evolve in many directions. (Malhotra & Majchrzak, 2014).

Coordination's achievement is facilitated when members:

- already know each other;
- know the nature of the task they are going to perform;
- are awareness of who is doing what and the architecture of the interactions.

It is to be said that by interacting over time, team members develop shared knowledge, which can be meant in two ways: the long term knowledge and the awareness.

The first is achieved and reinforced over time through training and experience and this is permanent. Differently, awareness depends on the specific situation, thus it changes over time.

However, shared knowledge helps coordination because favourite members to create more accurate expectation and explanations about task events and members behaviours (Espinosa *et al.,* 2007).

3.3 Trust

Trust is *the extent to which a person is confident in and willing to act on the basis of the words, actions and decisions of another* (Kanawattanachai & Yoo, 2002). In Polzer *et al.* (2006) trust is defined as *the willingness of a team member to be vulnerable to the actions of his or her teammates on the basis of the expectation that other members will perform actions that are important to the trustor.*

Trust is an important factor in team processes as it can increase the level of confidence members put in building their relationships and it promote information sharing (Gibson &

Cohen, 2003), in fact it is a key ingredient when it comes to forming, developing and maintaining collaboration (Newell e*t al.,* 2007).

These considerations make trust very important in virtual teams, where, due to geographical distance and members' heterogeneity, personal connections are less frequent as well as the development of tacit knowledge (Newell e*t al.,* 2007).

The creating of trust and social bonds since the early stages of team formation it is relevant in order to enhance the communication and collaboration and foster a sense of oneness and membership. A trusting climate favourite cohesion, commitment and enables the development of a new way of thinking which take the benefits of diversity, leaving a part conflicts. (Henttonen & Blomqvist, 2005).

Moreover, a trusting climate would reduce the cost of monitoring (Liu *et al.,* 2008) meant as the effort put by team members for monitoring what the others do in order to check that they do not make mistakes or they effectively commit to the common project. The antecedents of trust are reputation, social similarity and commitment, as well as open and personal communication, showing care and concern for the well-being of the others. The first impression really matters, especially in a context where stereotypes are likely to be used. In fact, if they are not able to gather first hand impressions and getting familiar with people and context, it is likely that they will form stereotyped impressions, which may lead to biases. (Henttonen & Blomqvist, 2005).

In the definition of trust provided by Kanawattanachai and Yoo (2002) trust is a construct composed by two different foundations: cognitive and affective. Cognitive based trust is related to the calculative and rational characteristics demonstrated by the trustee. It is developed in the early stages of team formation, suggesting that it is very important to choose members which show integrity (Newell e*t al.,* 2007) and competence in their functional area and able to reach good performance level (Greenberg *et al.,* 2007). Members are more likely to trust and be dependent from members who are reliable, responsible and honest. Members will trust each other believing that other members will do what he or she declared would have done in a timely and professional manner. It is particularly relevant to push on cognitive trust if the virtual team is going to exist for a limited period of time.

Affective based trust involves building social and emotional relationships, meaning that members are interested in getting to know others and willing to open themselves to the other component of the team. This type of trust relates the capacity of members to care about the

well being of each other and the capacity to act beyond profits rationales (Newell e*t al.,* 2007). This is especially important when a virtual team is going to cope for a long or indefinite period of time.

Trust formation can be influenced by the propensity to trust, being open and believe others owned by each team members (Greenberg *et al.,* 2007).

According to Gibson and Cohen (2003), in order to allow trust formation, two conditions are necessary: the presence of risk and interdependence. Risk is related to uncertainty and a perceived probability of loss. When members start to work with someone they do not know, they experience a given level of risk because they do not know how others are going to behave. An adequate level of risk can foster trust formation by letting space to other members to demonstrate their reliability and trustworthiness.

The second enabling condition is interdependence, meant as *the degree to which one party depends on the actions or information of another in order to accomplish work* (Gibson & Cohen, 2003, p. 64). The development of trust is related to a continuous need for interaction and information exchange especially in a virtual and multicultural context characterized by diversities and ambiguities (Liu *et al.,* 2008). Social communications such as greetings and exchanging personal information are important. The frequent communication would facilitate team members collecting evidences about the credibility, reliability and trustworthiness of other colleagues.

Building trust is not easy, especially in a virtual context, however, trust is easy to disrupt in fact it may be sufficient a single faulty action to ruin it. When trust is violated members experience anger, stress and disappointment and they may not be willing anymore to trust others. Lower level of trust will influence the members' ability to carry out tasks and the level of performance (Kanawattanachai & Yoo, 2002). In order to keep under control the negative effects and reinstate the previous level of trust, the trust violator should be involved. He or she should be aware of what happened, assume responsibilities and reconcile with colleagues by sincerely explaining the reasons behind the deviant behaviour (Muethel et al., 2012). Low levels of trust would interfere with information flow and may affect the quality of the decision taken, as well as decreasing satisfaction and members' willingness to continue to work with the team. (Liu *et al.,* 2008).

3.4 Communication

3.4.1 Type of information

The information exchanged among team members can be of different nature. In particular three type of information are identified and explained in Gibson and Cohen (2003): task, social and contextual information.

Task information relates to how to carry out the task and the alternative way to do it, perform an activity or use how to use a tool, as well as giving information about timing and deadlines, the status of the work and the resources available to do it.

Social information is about individuals and their relationships with each other. Information about personal goals, personality traits, backgrounds are important to favourite the interactions among members.

Lastly, contextual information concerns the surrounding environment and working conditions; in a virtual team there are as many contexts as many different locations. Contextual information comprehend, for example, the degree of supervision a member is subjected to, the available equipment and technology and their accessibility, cultural norms, holidays schedule, office layout as well as local norms and policies.   Different   locations imply different availability and accessibility of technologies, holidays, or standard for measurements and these are important details that members should know about.

Research shows that virtuality has a larger impact on the distribution of contextual information than task and social information, in fact there are methods for sharing task and social information within the virtual team, while instead, contextual information are taken for granted.

However an effective team should transform unshared information into shared so that members can use it while taking decisions and making inferences or evaluations.

Contextual information are difficult to be shared, mainly because people tend to take for granted their work environment and to imagine that other members in other locations experience the same conditions as they do. In this way they do not spend time understanding which could be the useful information to provide or which questions should ask remote members to gather relevant information about their working environment.

Since virtual team members tend to be very diverse among each other, the information that should be shared is more, because comprehend the information about all the personal background or about the specific locations and contexts.

Anyway, for a proper team functioning, the different types of information should be managed

separately, for example in order to manage properly the contextual information, it can be useful to organize visits to each location, so that members can see and better understand the differences in the context, and acquire a special sensibility.

3.4.2 Communication in the early stages of team formation

A team is not able to leave communication out of consideration, even though it can become a difficult and delicate issue especially when talking about virtual teams.

Communication has to be dealt with carefully because otherwise it might turn into an obstacle to the team, rather than helping in reaching the success.

Leaders should spend time and resources in designing a communication process, starting from the very early stages of team formation, however, this effort should not be spent in an overcommunication but in defining how to communicate effectively. In fact, the quality and the predictability of the communication are more important than the frequency, suggesting that communication norms need to be developed. Otherwise member may not be able to understand when an issues is important, leaving unattended the relative email (Ferrazzi, 2012b).

Tenzer and Pudelko (2016) affirm that overcommunication and the use of different media to convey the same message can improve the communication process in case of language barriers; in fact, repeating messages through different channels can provide the opportunity for a better communication, reducing misunderstandings. This tactic might for example be adopted to persuade a member doing something, but it is unlikely to be used if the aim is to gather information. However, they agree that overcommunication would lead to an information overload, which might induce confusion about the appropriate communication protocol to adopt.

As communication helps creating relationships between members, it can make a difference in how team members work together, thus, it is important to be disciplined about the way they will communicate.

The starting point for building such a discipline is to give rhythm to the communications, by scheduling regular meetings, sharing the agendas in advance, agreeing on communication protocols and be respect the meetings' beginning and end (Watkins, 2013). Scheduling regular meetings has been identified to be a best practice in high performing teams as it serves as a commitment and helps members communicate and express their effort toward the

common goals, showing also the personal contributions (Onpoint Consuilting).

In order to build effective communication, it is important to have each member of the team involved, such a process can take longer time with respect to traditional teams as it is necessary to fill the gaps created by the physical distance.

Members need to become familiar with other's personal needs, concerns aspirations and interests and to be interested in knowing the other team members' idiosyncrasies such as accents, way to express and inappropriate use of vocabulary. Such effort is determinant in order to set the stage for a future proper communication, in fact, for example, if members do not understand each other's accent it would be impossible to reach efficacy and efficiency during meetings. In turn, if members feels they cannot communicate properly because they cannot get in touch or understand each other, they would start feeling frustrated considering the necessity to getting things done and the scarce availability of time (Gibson & Cohen, 2003).

Discipline about communication is reflected also in determining what the communication content should be; in particular from the very beginning some topics should be clarified: goals, roles, accountability and reward. These help team member to have an idea about what the team does and what will be the future course of actions as well as understand how he or she can find his or her place within the team and act accordingly.

Then the discussion should be focused on clarifying which are the reasonable days and times in which the communication can take place, in fact, as members are spread in different locations they might encounter different time zones or be subjected to different holiday and days off, confrontation about such issues will ensure a proper flow in the communication. According to this information, it is important to establish a regular rotation to spread the load of uncomfortable meeting time equally.

Moreover, it should be also clarified how the communication during virtual meetings should occur, like limiting background noise or side conversations, as well as listening actively and allow everyone to talk and express opinions (Watkins, 2013).

Further, leaders should evaluate which technologies are available to members in order to determine which communication media are appropriate for specific messages and situation. This is also a matter of definition of priorities, in this way all members will be aligned about the urgency of a specific request (Gibson & Cohen, 2003).

As of now, it is evident that it is put a greater emphasis on task related communication rather that in developing interpersonal relationships (Lin *et al.*, 2008), for this reason it is important

42

to create also a water cooler, especially in the early stages of team formation in order to permit people to create and reinforce social bonds. Greenberg *et al.* (2007)   suggest that it can be done through an interview process, according to which a member make an interview to another one about personal and professional aspects and then present everything to the rest of the team.

In this way members will have the chance to get to know each other and find out common experiences.

When team members have already started working together, they might start every meeting by discussing about what activities they are doing and which of them are going well and what instead is more challenging (Watkins, 2013). In this way members have the opportunity to understand a working situation through a more emotional lens.

However, it is recommended in the very first meetings to provide a short presentation of each member, saying what is his or her professional background and in which functional area he or she is professional of, pointing out which particular expertise him or she posses and why that is relevant to the task accomplishment. The leader should evaluate if other things are relevant to be communicated, for example if a member has specific characteristics or knowledge which might be useful to the rest of the team as well. In addition, if an individual has already worked in a virtual context, it should be pointed out.

Further, if the virtual team will perform activities similar to the one carried out in a traditional team, the leader should stress this point in order to underlying process and functioning members already knows.

Communication about personal information is relevant because in this way members will start creating their ideas starting from true information and not on false attribution or perceptions (Greenberg *et al.,* 2007). Also, members might be kinder in their attributions if the team has a strong identity and if the similarities among members are stressed out, this would help the team experience less conflicts, behave more cohesively and being more satisfied (Gibson & Cohen, 2003).

Problems in the information sharing process, united with geographical dispersion, complex context and uncertainty, might provide fertile ground for wrong attributions. Attribution is a process through which members make inferences about a situation. There can be two types of attribution: dispositional or situational. The difference is that in the first case the explanation of a particular event is assigned to a specific person, in the second, to external factors. The

problem in virtual teams is that members do not have enough information to make the correct attribution. Wrong attributions often turn into personal attribution and thus the cause of a specific situation is assigned to team members even though it is not the case. Making dispositional attribution requires less mental energy rather that situational attribution; in this second case in fact the person will evaluate all the external factors which might have been the root of the problem.

Wrong attributions and problems in the information sharing process, exacerbate by time and physical distance may lead to suboptimal and dysfunctional performance, such as poor decision quality, low trust, in group and out group dynamics by location and escalation of commitment failures (Gibson & Cohen, 2003).

3.4.2 Information sharing

Knowledge sharing is the process through the existing knowledge is spread and shared among team members and new knowledge is brought into the team from external environment; it contributes to team effectiveness by allowing an efficient use of team resources. The result is increasing levels of cohesion, satisfaction and motivation. Barriers to knowledge sharing are lack of trust, which is exacerbated when communications are not frequent and regulars, time constraints and deadlines, especially when members are busy and engaged in "local" on site activities, technology constraints, ineffective leadership, cultural differences (Rosen et al., 2007).

A new born team in which people do not have much personal information about their peers, problems in information sharing might be particularly dangerous. Gibson and Cohen (2003) state that in virtual teams the information tends to be more dispersed and this brings more challenges and barriers in the information flow. In addition, the physical distance united to the scarce communication might cause the creation of subgroups per location as it is less time consuming exchanging information for members that can interact face to face.

They continue defining the importance of the information sharing process for team unity, trust creation, reaching team goals and for the prevention from the common knowledge problem or biased discussion. This effect implies that members tend to focus the discussion on information which is already in common, but if the information properly flows among members and locations, the team will benefit from the richer informational base. Moreover, in order to ensure that the information flows smoothly, it is important that when one member or

a set of members receive a new piece of information, they should determine whether it might be useful to share it with other colleagues or if they already have it. If they decide to communicate the new information, they need to pick the appropriate means of communication and be sure that the message reached the target and that the target understood the message correctly.

The first problems in information sharing might start here: in fact people who possess the knowledge might not understand that their colleagues do not have it but would need it. Alternatively, if members communicate the information, it is possible that the attempt is a failure due to technical errors or because the message was addressed wrongly. The problem in this case is that often the failure may go unnoticed. Again, even if the message reaches the target, it is not sure that the receiver recognizes the new information.

Technology has also an impact on the confirmations, meaning that when people have to confirm they received a message, doing it face to face is immediate and easy, but doing it by writing back a message is time consuming, so people might leave out this action.

In case of failure in communication or information sharing, it arises the problem of interpretation of silence which can have different meaning across cultures or context, in particular it can be seen as a sign of agreement, disagreement or even as indifference and lack of commitment (Gibson & Cohen, 2003).

Dealing with silence happens also when people have different ideas about the necessity of providing confirmations, it could happen that some members do not find useful to confirm the reception of an email or do not confirm the agreement toward a given action. On the other side, other members might find natural to receive a kind of feedback; the resulting misalignments can create problems in the daily activities so it is important to define at the team level a set of rules regarding confirmation and the specific cases in which they are necessary or when not.

Geister *et al.,* (2006) suggest that members should try to build and effective feedback system since is very important for reaching a common understanding and improving performance, as well as giving members a sense of knowing each other and being informed about the activities other members are performing, considering that they cannot physically monitor what others are doing. Instituting a team feedback system triggers social comparison processes which make increase the overall performances. In fact if the performance level of the various members is different and the expected level of performance is not clear, then members will

apply social comparison in order to reduce discrepancies, taken as a model the performance level of the strongest member.

They continue by identifying the different types of feedback: outcome feedback that contains information concerning performance and process feedback which is about how a job or an activity has been performed. In a virtual context, process feedback often does not only include task related information but also social and contextual information and it is thought to improve interpersonal processes, and thus the overall team performances.

It is shown that process feedback contributes to increase motivation and satisfaction, especially in those virtual teams who lacked these factors in the beginning.

Feedback are differs also because the source can vary from the individual member, to the leader or to the team. According to the source that releases the feedback, it can be more or less authoritative.

Moreover the feedback's scope can differ, for example it can be used for evaluative or developmental matters.

However, in a virtual team context it is not easy for every member to recognise which specific form of feedback is given, because different cultures or context may present different assumptions about feedback system.

A proper information sharing flow is also ensured when the virtual team efficiently balance the use of synchronous and asynchronous means of communication in order to improve coordination, decision making process and problem solving activities. Technology is a challenging factor for information sharing in virtual teams since it has an impact on the easiness and the speed at which member share the information and also because the level of social cues that are possible in a face to face interaction, such as vocal tone, loudness, rhythm, hesitations and so on, are not possible in technology mediated communication.

Moreover, when communication is carried out through asynchronous means, people tend to leave out many details which instead would have included verbally (Gibson & Cohen, 2003). Hopefully, if virtual team members have worked together in the past, this will help them making "less lean" electronic media of communication because members already have some knowledge about media, context, and can deal with the absence of non verbal cues. (Ganesh & Gupta, 2010).

However, sharing information in a virtual and diverse context is not without challenges and messages can be misinterpreted so members should try not to be too harsh, as well as

carefully measure sarcasm and humour since they do not translate in the same way across cultures (Berry, 2014).

Understanding what other team members are trying to communicate might not be easy, it is useful to check the proper understanding by saying like "Are you saying that..?" or "Do you mean..?", this is especially useful when verbally taking important decisions (Savitz, 2012) since the risk of divergent interpretation and misunderstanding is real. In order to eliminate ambiguity and further underlying the concept, members should explicitly say "Yes, I mean" or "No, I mean" (Watkins, 2013), in this way members will externalize the thought process, they will better get to the point so that it is clear to everyone in which direction the conversation it is moving and what can be the final output. Of course it is also important to be capable of listening without judging and accept different ideas and opinions as well as critiques (Savitz, 2012).

What favourite information sharing is making sure that people can openly communicate and express their ideas with no blame attitudes.

Such attitude is displayed in a sense of psychological safety defined at a team level by the organization and by the team leader as the "shared belief about the consequences of interpersonal risk-taking" (Cordery & Soo, 2008).

A psychological safe environment is characterized by members who support and trust each other and who show mutual respect. This orientation helps in reducing the risk perception that each members feel in participating in a new team as well as in the creation of trust; moreover it enables open and spontaneous communication, thanks to the exchange of informal and unsolicited information, the no blame attitude and the willingness to talk about differences, listen actively and remaining open to other ideas (Gibson & Gibbs, 2006).

The practices that favourite the creation of psychological safe environment are shown in the suspension of judgement in order to stimulate people sharing their contribution and make them feel at their ease: colleagues should behave respectfully and be interested as well as appreciate the effort. When someone brings a new idea, other members should exploit this contribution in a constructive way, by offering suggestions and not critiques and analysing the initial point of view by highlighting the good observation and make a counterproposal (Berry, 2014).

In particular asking for clarifications and explanations as well as answer quickly, will be interpreted as a sign that members are available to listen to each other and they commit to the

project (Greenberg *et al.,* 2007).

As an example, sharing the work in progress files might not be easy for team members, but it could be useful for every member and for team leader to gather information about the completeness of the work, the commitment level of each member and if there are problems in the execution (Cordery & Soo, 2008), this is possible just if the whole team has the right attitude and people are comfortable in sharing personal work.

3.4.3 Shared understanding

Gibson and Cohen (2003) identify shared understanding as an important factor for the proper team functioning. Shared understanding helps to anticipate and predict behaviours of the team members, enabling other members to make assumption, being aware of what activities have been performed and what will be the next moves, with no need of constant monitoring. In order to foster the predictability it is useful to clarify members why they are involved in the team, what are the goals and the activities to be accomplished and how they can contribute, as well as what is expected from them. (*Savitz*, 2012).

If members learn together and develop mutual and consistent expectations, the result will be less resources spent in the sense that members will be more coordinated, higher performance thanks to an increased participation and cooperation during meetings (*Savitz*, 2012), better members' satisfaction, less conflicts and frustration.

Gibson & Cohen (2003) continue listing the factors that facilitate and impede the creation of shared understanding.

Among the factors that make easier the development of shared understanding there is having similar backgrounds or sharing common experiences, as well as communicate frequently, receiving and giving feedbacks and develop team spirit. This means that the longer teams have been working together, the easier should be to get to know each other and develop the communication process. Thus, it is relevant to know if members have already worked together and try to ensure continuity to the team. In fact, although virtual team are dynamic structures and the often have fluctuating membership and high turnover (Cordery & Soo, 2008) a stable and consistent team membership will help the team being more effective and performing (Onpoint Consulting). A higher turnover will make more difficult to create team spirit, shared understanding and team learning.

On the other side, one of the factors that can be detrimental to shared understanding is

diversity, due to the fact that people from different ethnicity or educational background tend to view things differently and have different perspectives or ideas and so creating a common ground might be more difficult. Also, geographic distance may foster an inefficient and insufficient flow of information, based only on formal, planned and opportunistic interactions. Engaging in communication is very important for this matter but when the team has cultural and language differences, team members should be open minded and focus of the beauty of building something together rather than pointing out the possible grammar errors or odd behaviours (Berry, 2014).

Further, the contextual differences related to different work, geographical environment, technologies and cultures may negatively influence the creation of shared understanding by slowing communications and increasing conflicts.

3.5 Conflict

Conflict is a dimension of group interaction processes and it can be defined as disagreements among group members that stem from perceived incompatibilities or discrepant views and goals (Polzer *et al.,* 2006).

Conflict may arise because of different causes, it may be superficial or deeply-rooted, involve only few team members or be more scattered. According to the specific characteristics of the conflict in place, the implication for the team functioning are different and it should be approached and solved differently.

Gibson and Cohen (2003) state that a given level of conflict within teams creates benefits by fostering discussion, confrontation and avoid groupthink and so improving the decision making process. However, not all conflicts bring these kinds of benefits, and at this matter they define three types of conflict: relationship conflict, task conflict and process conflict.

Relationship conflict arises from differences in personality, which may create hostilities and annoyance among members. When members experience this situation they are distracted by the task and they are less willing to cooperate and work together. This type of conflict has a negative effect on team performance, members' satisfaction and the likelihood team members will be willing to work together again in the future.

Task conflict is in place when members have different viewpoints about team's task or activities. If members do not agree on how a specific task should be performed, then they could talk about it and get to an agreement. This is why moderate level of task conflict can create benefits to team performances and improve decision making process.

Process conflict comprehends disagreements on how to do a task or divide resources. This type of conflict is detrimental to team performance because do not allow team members focus on relevant topics or to the global picture but they argue on small part of processes.

In order to undertake the proper corrective measures it is important to understand what type of conflicts virtual team members are experiencing which is not always easy as they might misperceive the reason of the conflict or even not be aware that a conflict is in place. Such a situation often happens in newly formed teams in which there is a high level of diversity fostering a high complexity to be managed and different perspectives to be integrated.

Moreover it should be taken into account that conflict avoidance is typical of many cultures and this attitude is very corrosive.

From a leadership point of view, organization and managers should invest resources in helping team members detecting and managing conflicts as it can increase trust, respect and intimacy with each other (Ferrazzi, 2012a).

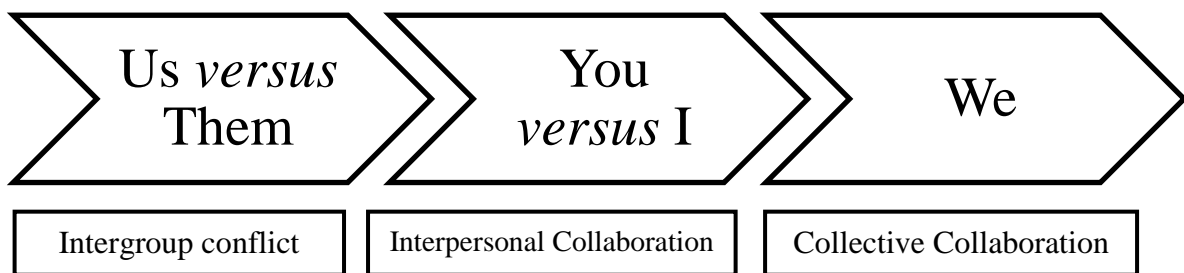### 3.5.1 Social categorization triggers conflicts

The tendency to formulate in-group and out-groups results in the self categorization process which means preferring the presence of members with similar characteristics while isolating the ones much diverse (Garrison *et al.,* 2010). This is particularly true when a virtual team is new born and people know little about each other and do not have the evidence of objective facts and thus they start make wrong assumptions which can lead to misinterpretation (Govindarajan & Gupta, 2001).

In Polzer *et al* (2006) is stated that interaction between subgroups may cause initial contrasts making team members be even more identified with their subgroup, making vain the efforts for common vision and unity. The study analyses the effect of colocation as a parameter for self categorization: in particular, being in the same location can make people more willing to cooperate with the colocated members and form better relationships, by for example splitting tasks or it is communicate easily. The negative effects of colocation are at their maximum

50

when a virtual team is constituted of two colocated subgroups both internally homogeneous with respect to nationality; such a structure creates more conflict and less trust than fully dispersed teams.

Social categorization is a process put in place in order to divide people into in-group and out group according to feelings of similarity and dissimilarity (Triana *et al.,* 2012). This happens when a team is not homogeneous and members can categorize themselves according to one or more attribute (Polzer *et al.,* 2006). Differences are usually at the surface level and the most common are age, gender, race, organizational membership; these differences help team members to develop self-identity.

Newell *et al.* (2007) suggest that this process of can be detrimental when it triggers stereotypes and excludes members of minority whom would feel isolated and ignored. If this tendency is not kept under control, team members would create subgroups and start using the logic of "us vs. them" creating then intergroup conflicts. In particular, they identify three types of interactions that might occur when there are subgroups within a virtual team:

Us *versus* Them	You *versus* I	We
Intergroup conflict	Interpersonal Collaboration	Collective Collaboration

Intergroup conflict occurs especially when members start working together for the first time and they do not feel part of the same entity, so they do not work together and support each other in order to reach the team's goals. When there is not trust, people tend to judge people through an in – out group lens. Distinctions and wrong perceptions may arise and be exaggerated, leading to finger-pointing and low communication or understanding the other frame of reference or point of view, which make worse the information sharing. In order to solve the situation it is important to pay attention to how members within the group interact with the ones out of the group, ad creates opportunities for discussion: information sharing is the starting point for the development of collaboration (Gibson & Cohen, 2003).

When collective collaboration is reached, people will be more prudent before blaming and

accusing a member of a transgression. The "We" phase can be reached by creating social bonds which help achieving shared reciprocity and in the end a more quickly problems handling. (Newell *et al.,* 2007).

In particular three steps are identified by Gibson and Cohen (2003) for this matter, first, members have to gather together and share their diverse ideas, experiences and knowledge. Then the different inputs need to be put together and integrated in order to create a proper fit.

In the last phase, it is important that all the team members participate and interact with each other by using as inputs for the conversation the integrated ideas collected and they provide feedback in order to favourite the creation of synergies.

The milestones necessary to collaboration is a clear and open communication, the presence of trust among team members and the development of shared understanding regarding team goals and tasks. A lack in collaboration will be detected especially during meetings, when people will make turn inefficient the time. This situation is exacerbated by the fact that time is a limited resource and members are reluctant to invest extra time, especially because they are often overloaded with work because of their parallel roles offline or in other virtual teams.

Work overload has a negative effect on the effort members put in participation and communication, however, effective collaboration can be created only if members dedicate time to the other members by exploring and deal with different cultures, considering the different assumptions and beliefs of each one. The lack of collaboration will start a circle of misunderstandings and frustration.

It is possible to fight social categorization by developing inclusion which is defined in Triana *et al.*

(2012) as *the extent to which individual feel involved in the team and able to influence team decision making.* They identify that also team identity is related to inclusion and that the underdevelopment of both of them can have negative effects on team member's actions.

In particular their focus is on minorities and on the importance that those members feel accepted and at their ease by participating and contributing to team discussion as well, so that he or she can feel that the final outcome was also fruit of his or her contribution.

Although in the literature it is said that having preliminary face to face meetings is

recommended in order to allow members getting to know each others, in case of a virtual team with members belonging to minorities this might not be the best practice.

In fact, when a virtual team gather together for the first time, rules and norms are formed or naturally emerge from the interactions of team members and once they have emerged, they influence the way team members behave within the team. When a team is diverse, in the first face to face meeting minority members might not express their opinions and ideas, and thus they would not concur in establishing the rules of the game. In such a situation, having preliminary computer mediated communications might give the chance to everyone to express themselves.

3.6 Leadership

Leading a virtual team is a challenge, the designated person will have to organize the interactions among people with linguistic, cultural and functional differences operating in a situation that lack of geographical proximity. The capacity of a leader to overcome barriers to communication and favourite trust creation among members by applying conflict resolution abilities and integration skills is crucial for the goals' accomplishment (Govindarajan & Gupta, 2001).

A leader can make a difference in virtual team functioning. In fact, he or she can positively influence team effectiveness and efficiency, by adequately distribute tasks to the competent members, by setting clear goals, roles and responsibilities. It is relevant to clarify how the task is designed and what are the detailed processes needed to complete it (Watkins, 2013) because role ambiguity and unclear role expectations may cause stress and may lead to biased behaviours such as free riding and unwillingness to put effort to the team's activities. (Zimmermann, 2011).

A leader should also provide guidance, motivation and should promote interpersonal relationships among team members in order to create cohesion and synergies (Gibson & Cohen, 2003). In order to motivate and guide members at best, leaders should find out what team members care the most, so that they can choose the most appropriate individual messages able to increase satisfaction and appreciation (Savitz, 2012).

A direct relationship between the leader and the team members would make people more accountable and might give the opportunity to team members to ask for clarifications, making them more satisfied.

Virtual team leader has the power to keep under control the free riding problem which may affect the team, mining its success. In order to do so, a leader should provide quantifiable objectives and milestones in order to foster accountability, both at individual, subgroup and team level. It will make easier to understand if everyone is contributing to the team activities or if some members are reducing commitment (Onpoint Consulting). If such a situation is detected in time, the leader, using his or her conflict resolution skills (Govindarajan & Gupta, 2001), may directly ask to non participating members for their contributions (Greenberg *et al.,* 2007). However it should be kept into account that milestones are a useful tool for tracking commitment, it should not be used to oversight team members' work as it would cause a loss in motivation (Watkins, 2013).

On the other side, when milestones and short terms objectives are met, the leader should recognize individual contributions in order to increase team identity and foster commitment and participation (Greenberg *et al.,* 2007).

However, in order to better accomplish his or her tasks, a leader need to gain the trust of the team members. Three types of trust are categorized in Gibson and Cohen (2003), in particular:

- ➢ Role performance trust;
- ➢ Altruistic behaviour;
- ➢ Affective bond trust.

The first type of trust is related to the fact that a team leader has to be an expert and demonstrate the right competences and skills in order to perform the necessary actions to reach team goals. The altruistic behaviour is reached when a leader can properly demonstrate his or her virtual team members that he or she will act for the good of the team, even if this means overshadowing self interests. This is related to ethical integrity, reliability, consistency and experience, relevant characteristics that allow members to consider the leader trustworthy.

The last component of trust is about the ability to build friendship bonds and long term relationships.

This is particularly important as, among team leader's tasks, there is also the support for developing interactions and communications among virtual team members. The aim is to encourage non task related communication, in order to create social bonds, keeping into account that in a virtual context it takes longer than in traditional teams (Greenberg *et al.,*

2007).

Keeping into account that virtual teams have different timing with respect to traditional teams, and thus it may take longer for developing trust, social bonds or collaboration among team members, it is important that the leader monitors the activities and revises the process if things are not moving in the right directions (Onpoint Consulting) and applies adjustments when needed (Watkins, 2013).

However, the presence of a virtual team leader is not always the rule. In fact, due to specificity in the team's structure, a leader might not be appointed making all the virtual team members equally responsible for the team outcomes and performance. That is why is relevant that all the virtual team members possess self management skills.

In such a situation, Gibson and Cohen (2003) suggest that a leader may emerge spontaneously during the daily interactions. An emergent leader is a person who is skilled in facilitating others' work and motivates them, and he or she can do it through written word. He or she is able to engage in effective communication and provide clarifications about tasks and activities. Having an emergent leader would allow a given level of supervision which turns in better processes and team functioning, as well as facilitating trust creation.

3.7 Context

In 1999, NASA sent a Mars orbiter into space, but the launch was not a success: it exploded, causing a loss of hundreds of dollars. The team who was working on the project was a virtual team communicating mainly via emails and spread across two locations: California and Colorado. The project failed because they did not realised they were using different metric units, so all the calculations and measurements were biased. They made assumptions and took for granted that they were aligned about basic aspects, but they did not consider contextual differences. The root of the problem was found in the unstructured communication process and in the assumption that the two subteams were sharing the same context and language (The Economist Intelligence Unit Limited, 2009).

In Gibson and Cohen (2003, p. 354), context is defined as *a way of life and work in a specific geographical area with its own set of business conditions, cultural assumptions and unique history. [..]Context is fixed to a geographical location with a way of life and work embedded in a cultural and historical tradition and is very slow to change.*

Virtual teams are characterized by people working from different locations, so it is likely that different contexts are represented within the same team. Context adds complexity to the virtual team functioning and it might have an impact on its effectiveness, too.

Bjørn and Ngwenyama (2009) suggest that diversities in context can be recognised in three categories: the lifeworld, the organizational structures and the work practice. The lifeworld comprehend experiences, beliefs and values that people use in order to guide their behaviours in the interaction process. These are unarticulated, tacit and taken for granted.

Differently, the organizational structures are explicit, articulated and visible; they comprehend policies, norms, ritual and pattern of behaviour. Lastly, the work practice is related to language, norms and practices specific to a profession. The meaning assigned to symbols and words is different across contexts.

Moreover, different contexts cause also a difference in holidays, calendars and working hours and days. This is because they are based on religions and traditions which differ all around the world (Olson & Olson, 2003).

Further, people in different context may have different physical infrastructures, meant as technological base and as accessibility to technologies. These differences relate the various electronical power or cable types from a location to another one, or the restrictions to the use of some technologies, due for example to different organizational or national policies or to prohibitive costs of such technologies.

A different technology base may create problems in communication: different settings of security firewalls may recognise as potential viruses some specific file extension, in this way the emails attachment may never reach the target.

Or again if a member works with an obsolete technology, or an obsolete version of the same software, his or her efforts may be vain, and if the other members are not aware of it, they may interpret it as a lack of effort in the project.

Contextual differences have an impact on the type of pressure received by superior who in turn may influence the way members conduct their activities and relate to other peers. As virtual teams also work through different time zone, they may encounter difficulties in setting videoconference calls. Often, video conferences are set outside the regular working hours. However, given contextual differences, members may deal with different policies about pass codes, security settings, or parking restrictions (Gibson & Cohen, 2003).

56

All the little incompatibilities aforementioned may create frustration as well as slow the work path. That is why contextual differences should be reshaped, adapted and integrated according to the emerging needs and the social interactions put in place by the virtual team members. Integration is *the process of coordinating separate people into a balanced whole that produces behaviour compatible with the complexity of the team's environment* (Gibson & Cohen, 2003, p.355).

When dealing with multiple contexts, members should engage in transparent communication and do not make assumptions or take things for granted: better to double check and ask for clarifications even for the most basic issue. (The Economist Intelligence Unit Limited, 2009).

In order to allow members to get to know each other context, they should be encouraged to share information about their backgrounds and their working locations. However, as members are working at a distance, in order to make more effective and easy to imagine, members could make video tours (Ferrazzi, 2014) or whenever possible, they should physically visit other members' locations. (Rosen *et al.,* 2007).

A better understanding of different context would facilitate coordination, as well as unify the expectations about accessibility and communication practices (Malhotra & Majchrzak, 2014).

3.8 Technology in virtual teams' communications

Virtual teams are composed by members who perform their activities from different locations, far from each other. It is recommended, at least once in the early stages of team formation, that members meet face to face (Onpoint Consulting), as it helps them to memorize faces and voices and it contribute to trust formation and the development of relationships (Watkins, 2013).

However, for most of the time, communications among team members are carried out through computer mediated means of communication, depending also on the degree of dispersion the virtual team is subjected to and on the type of task the team carries on. The reliance on ICT is defined in Malhotra and Majchrzak (2014) as *the extensive and exclusive use of ICT to manage individual interdependencies and information flows in order to achieve the team's common goal.* The degree of reliance of ICT changes from virtual team to virtual team; however, it should be defined in advanced before the team starts working.

An exclusive dependence on technology mediate communications may have negative effects on team performance; this is because it creates barriers to shared understanding or

spontaneous communication as well as to the generation of common ground, cohesion and collaboration. This is due to the fact that, as it is faster talking than typing, members would leave details out and oversimplify communication. Moreover through computer mediated communications it is not possible to observe body language and facial expression. Given these complications, the likelihood of conflicts would also increase.

Moreover, it should be taken into account that the decision making process through computer mediated communications takes longer than face to face, because feedback are not immediate (Cappel & Windsor, 2000).

Indeed, the whole reliance on ICT may bring advantages such as lower travel costs or the available knowledge at any time and place, with no need to wait for face to face meeting in order to take decisions.

Additionally, due to cultural differences, people may be more comfortable using computer mediated communication as they feel freer to express their ideas and speak without being interrupted, increasing the ability to gather more points of view (Cappel & Windsor, 2000) and thus take decisions while evaluating different perspectives.

According to a survey (The Economist Intelligence Unit Limited, 2009) the ranking of the most used communication tools in virtual teams are:

- Emails
- Telephone
- Videoconference
- Virtual meeting space
- Shared calendar
- Instant messaging

Each type of communication tool has pros and cons, the aim is to understand which one are the most suitable for a virtual team, taking into account its specific structure and task characteristics. Information and communication technologies in fact, can be positively related to team performance if they can serve the team's coordination needs (Malhotra & Majchrzak, 2014).

3.8.1 Media of communication: an evaluation

Various means of communication serve different needs and can be used in different situations, according to the nature of the message to be conveyed, to the level of urgency and also to the characteristics of the virtual team.

Moreover, the choice of the media the virtual team is going to utilise depends also on the type of task carried out by the team. This means that the technologies used depend on the level of task complexity and on its routine that is why the team will need different media of communication to properly accomplish the goals. In case of complex task, the team will need technologies that allow confrontation, generation of ideas and negotiation, while in case of a simpler task; relevant technologies are the ones that allow proper information sharing in order to make everyone updated.

Additionally when choosing the media of communication the team will utilize, it should be taken into account the individual preferences and the extent to which the individual feel comfortable in using such a tools. According to differences in culture and contexts, team members may have different preferences and according to demographical differences in age (Tenzer & Pudelko, 2016) or functional background, members may display different proficiency levels with regards to different media of communication (Duranti & de Almeida 2012) and might consider some of them too advanced and difficult to use.

In order to reach a correct team functioning and an effective information sharing, the aim is to choose tools that members are comfortable with and are willing to exploit at best, so that in the end the can fully express themselves (Shrm Foundation 2014). Doing that is not an easy or automatic task; in fact there is not a solution which fits all the virtual teams as each one has to be assessed specifically.

However, Mortesen and O'Leary (2012) provide some guidelines, in particular, they affirm that the right technology should satisfy three criteria: simplicity, reliability and accessibility. The first criteria stands for underlying the importance of choosing a medium which is easy to use so that the attention of the virtual team member can be devoted only to the message to be conveyed. At the same time, it is important that members trust the medium they are using, without worrying and wondering if the message reached the target. Moreover, due to geographical distance, the technology chosen should be accessible by everyone in the team, even though the person is travelling. Accessibility also translates in the necessity to provide all virtual team members with the same systems and the same settings, in order to avoid

distinctions which may be perceived as if within the team there are "first-class" and "second-class" members (Watkins, 2013).

The right technologies are not always the newest or the ones with more features, in particular there are pros and cons linked to each media of communication and it changes for every virtual team.

3.8.2 Characteristics of media of communication

Media of communication can be divided into two broad categories: synchronous and asynchronous. The difference is in the moment the communication occurs: synchronicity implies that people interact in the same moment, whereas asynchronicity implies a delayed communication.

Synchronous means of communication comprehend the ones that allow natural speech and high transmission velocity (Tenzer & Pudelko, 2016) in this way, such media allow members to communicate in real time and thus they may help members getting to know ach others quicker. According to Duranti and de Almeida (2012) synchronous means are for example chat and instant messaging, audio and video conference or phone. Some of these only permit one to one communication whereas some others allow group communications, with more than two members interacting at the same time. Moreover, for some of them, such as videoconference, it is necessary a preliminary planning phase, in order to find a day and an hour in which every member of the team is available, given the time constraint due to time gaps relative to different locations.

In addition, the use of video conference should be a thoughtful choice especially in virtual teams where people are characterised by different culture, gender and language (The Economist Intelligence Unit Limited, 2009).

However, the use of instant messaging, chat, electronic whiteboard or other synchronous application sharing fosters the collaboration and the perception of closeness among team members as they have the possibility to contact other distant members. Such means of communication also favourite the frequency and spontaneity of collaboration and the possibility to ask for clarifications and getting quick feedback (Malhotra & Majchrzak, 2014). In particular, the use of electronic whiteboards for taking notes during meetings may help members to follow and correct errors or discuss in real time about misinterpretations, resulting in avoid false consensus and reach more democratic and thoughtful decisions

(Ferrazzi, 2012a).

Asynchronous means of communication are emails, web pages, discussion forum or intranet platforms. The information conveyed through these tools can be processed by members at different time and with the speed they find appropriate, that is why these tools are appropriate for sharing documents or big amount of data. Moreover, the development of online discussion forum and shared virtual workspace may serve as a way to keep every member updated and aligned on the most important task related information as well as on the most salient issues and problems (Ferrazzi, 2012a).

Asynchronous tools are widely used in virtual teams as they offer a simple and easy way to interact even though such an off line communication may hinder and delay the development of mutual understanding (Tenzer & Pudelko, 2016). In order to further understand how virtual teams use different media of communication, it is useful refer to the media richness theory described in Duranti and de Almeida (2012). This theory has three aspects that help classifying a media of communication: richness, interactivity and social presence. Richness is the media capacity to convey verbal and non verbal stimulus and facilitate shared understanding. The richest media of communication possible, according to this statement, is the face to face interaction, as it enables people to be together, talk and observing in real time reactions, body language and facial expressions.

For what concern interactivity, this measures the speed at which the feedback can occur: a synchronous mean of communication will have a higher level of interactivity with respect to an asynchronous mean.

Social presence is the degree of proximity the participants perceive, asynchronous means such as emails or telephone, often lack of naturalness and do not allow social cues

Interacting face to face allows team members to convey much more information than asynchronously: for example email or telephone which are often said to be less effective because of the lack of naturalness which turns in a increasing effort for conveying information properly (Tan, *et al.,* 2012).

According to media richness theory, the organization's success is determined by the ability to properly process information and assign the appropriate means of communication to a given message. In particular the media of communication chosen should be able to balance the richness needed and the task's characteristics. The aim is to reduce the uncertainty and equivocality related to the information transferred, in order to face situations in which there is a lack of information or the information available is unclear, ambiguous and may be subjected

to different interpretations (Lin *et al.*, 2008). It is argued that for uncertain tasks leaner media are a better solution, whereas for a more equivocal tasks richer media better fit.

Media richness facilitates the exchange of information and the creation of social cues as well as the possibility to have immediate feedback and clarifications and convey greater social presence (Tan, *et al.,* 2012).

A different opinion about this theory is stated by Chong *et al.* (2012), they sustain that it is not straightforward that being colocated or using rich media of communication such as videoconference calls foster information sharing. In fact virtual teams are usually composed by people very different from each other according to demographical factors or background. The psychological distance that results from their interactions could mitigate the good effect of colocation, making communication less constructive and inhibiting critical information sharing.

Virtual teams use a combination of synchronous and asynchronous means of communication, depending on the type of task they need to accomplish, or the technology they have. For an effective communication, the different communication tools should be combined properly in a way that they contribute to each other effectiveness.

For example, in order to foster a better participation of members during videoconferences, it might be useful to provide in advance the material and slides that will be discussed during the meeting in order to allow members to come prepared and facilitate those members who are not native English speakers (Shrm Foundation 2015).

The proportion of reliance on synchronous and asynchronous means of communication depends also on the dispersion in terms of time, the team is subjected to.

Time dispersion influences team dynamics by reducing the time available for planning synchronous communication. Moreover, each virtual team member may be subjected to different local pressure or organizational policy which might prohibit meeting outside the normal workday. This means that meetings will necessarily be during the workday and those members will be subjected to a work overload, with the risk to reduce the effort put in the virtual team, such as in the asynchronous preparation for the meetings.

If members do not come prepared to the meetings, there will be a waste of time at the beginning of the meeting in revising the material as well as a loss of motivation and commitment to the team activities.

Members who spent time getting ready for a meeting may not willing to do it anymore and

they may reduce effort and attention, arriving purposely late at the meetings or be with their mind somewhere else and doing other things related to local tasks. The result will be time spent in organizing ineffective synchronous communication due to the fact that people do not fully contribute as they are distracted and do not collaborate (Gibson & Cohen, 2003).

3.9 Conclusion

The aim of this chapter was to provide an overview on all the factors that have an impact on virtual team functioning. Such drivers need to be known by leaders and organizations as well as by team members so that they have instruments to assess the situation, behave accordingly and adopt best practices. In order to manage a virtual team it is important to properly mix all the relevant factors so that members can put effort in creating a proper fit.

What emerge from the literature is that a potential issue deriving from virtual work is related to communication, coordination, difficulty to create trust and relationships and the likelihood of greater level of conflicts (Siebdrat et al, 2009).

In fact, if a work environment is characterised by people coming from different locations, cultures and talking various languages, such a diversity, combined with the high reliance on technology, can inhibit communication, the development of shared understanding and the creation of trust, with a detrimental effect on team performance.

These problems can be overcome only with the creation of social bonds that help enhance cohesion, trust and satisfaction (Lin *et al.*, 2008), it should taken into account that in a virtual context, building such relationships requires longer time (Garrison et al., 2010) with respect to traditional teams.

In fact, communication in virtual teams is not a natural process; virtuality requires communication being more explicit because members do not benefit from the physical presence, and thus cannot observe and guess conclusions based on the body language, such as nods of assent, eyes rolling or head shaking expressing disagreement (Greenberg *et al.*, 2007).

Aside from all the complications communication brings, leaders should encourage frequent interactions, so that members get to know each other idiosyncrasies, create trust, help cooperation and limits conflicts and misunderstanding. When relationships are built, members will feel more obliged to perform their task at best and when required, as well as help others when needed and commit to the team objective (Gibson & Cohen, 2003).

4. CHAPTER FOUR

PERFORMANCE EVALUATION

4.1 Performance in virtual teams

Performance appraisal is necessary in order to determine if a team reached successfully its goals and if its actions were effective; it is a managerial instrument needed by leaders and all team members in order to have a feedback over each one's behaviours. In this way it is possible to understand, in case of negative outcome, if something went wrong and how to change it in the future.

In a traditional team, leaders and participants are sit desk to desk, so they are able to observe much of the work done by their peers and subordinates; in this case the evaluation can be carried out on the outcome such as attendance, perceptions' of effort, cooperation and collaboration (Gibson & Cohen, 2003).

It is also to be taken into account that in such a setting, judgements is carried out among people coming from similar organizations and cultures.

This reasoning does not stand when talking about virtual context; in virtual teams the performance evaluation does not only include the assessment of individual contribution, but it is a wider concept related to the contribution of the single member to team performance such as his or her adaptability to a new and changing work setting, his or her ability to acquire and share knowledge and information given the difficulties created by time gap, physical distance and technology mediated communication.

When designing a performance evaluation model, it is an appropriate to link the performance measures to the overall strategy of the company as well as to the desired outcomes for the team. Moreover, it should be determined from the beginning what, how, why and when to carry out the assessment process (Gibson & Cohen, 2003).

Measuring individual contribution in a virtual setting it is not easy and the criteria assessed need to be explicit and determinable. Gibson and Cohen (2003) provide some example of the different dimension of outcomes virtual team leaders might consider: team, individual and process.

Team outcomes are related to variables like quality, quantity, creativity, cost and timeliness of team's deliverables as well as customer satisfaction, new product development status, new customers identified and new revenues generated.

Individual outcomes consider the same measures analysed for the team outcome but assessed at the individual level in order to understand what were the contribution of each team member to the overall performances; this is relevant to verify if the team member met the personal deadlines or targets and how this is linked to the participation to the team's life.

In a virtual environment the individual participation can be evaluated by using the electronic repository in order to record the frequency and richness of the interventions.

Financial indicators are part of the outcomes measures, however, it is important not to invest too much attention on them because they show an incomplete picture of the virtual team functioning as they refers to past performances and they do not provide any insights on future potential or problems (Kaplan & Norton, 1992).

Results measures, such as market share, inventory and costs provide an overview of how the company is performing but no insights regarding the path and the actions undertaken to get there or the future actions to adopt next. Moreover they are usually defined within a function and so it is not possible to monitor what happens across functions (Meyer, 1994).

These factors can be taken into consideration in order to have an overall picture of how the team performed in relation with the task and the final goals.

Leaders should not choose between financial and operational measures, in fact a single set of measures cannot provide a clear vision on performance and there is the risk to focus only on a given area, whereas it is necessary to have an overview on more than one simultaneously (Kaplan & Norton, 1992).

Differently, process measures monitor the task and the activities that produce a specific result throughout the organization. Such measures provide a more complete view and are appropriate to check the performance when projects within the organization are carried out with the help of cross functional teams. Such cross functional teams do not have boundaries

within the organization and so in order to track their effectiveness it is necessary to span different areas (Meyer, 1994).

The variables related to the process can be identified taking into account for example the extent to which an individual is able to solve conflicts, or the timeliness in which he or she could provide useful and on time information as well as the willingness to help colleagues when assistance was needed.

Process measures include the monitoring of team morale, the system utilization and its availability. Moreover, since it is difficult to observe how team members are interacting with each other, it can be useful to investigate the information sharing, collaboration and the level of satisfaction of each member; good indicators can be the extent to which a team member uses his or her expertise in the appropriate way, what is the level of conflict or if a member personal contributions add value and knowledge and contribute to the team learning (Gibson and Cohen, 2003).

The definition of an effective performance measurement system is an articulated process, in which different variables need to be taken into account, Meyer (1994) provides four guidelines on this topic.

First it is important that the measurement system is tailored on the team's needs as it should serve as a feedback system from which understands the corrective actions needed. So, measures should not be chosen by top management only, in particular because virtual teams often have not a leader or the relationships among team leader and members could be sporadic, meaning that each member is empowered to identify problems and propose a solution in order to get aligned with the target objectives and performances.

Defining the performance measurement system should be a joint effort between the top management and the team. The first should define the strategic goals and ensure each team has the proper training needed to devise its own measures, the latter should provide information about the most significant measures that should be monitored. Also they should jointly define the modes and timing relevant for reviewing performances and measurement system

The other factor to be taken into account is that the measurement system designed should be consistent and aligned with the company strategy. Ideally a team's work should perform small

tasks and activities in order to support the general company's objectives.

When defining the measurement system it is important to be very explicit about the attribution of roles and goals as well as in the description of objectives in order to avoid doubts and misunderstandings. In particular such objectives should be written down in order to start working having in mind a common language that reduces and preferably eliminates the risk of divergent interpretation.

If the performance measurement system is actively defined by a team, its members put effort in creating a common language and this helps sharing and understanding the goals and the objectives. Moreover in this way it gets easier to identify the relevant capabilities and task needed to complete the job.

Thirdly, since virtual teams are often cross functional, they need to pick, along with traditional result measures, measures that span different function and serve to monitor all the different phases of value creation. Such indicators are more dynamic and help leaders and teams to observe activities and capabilities needed to reach a given result and thus, it is easier to observe what could be the corrective actions to improve the performances.

In the end, key performance indicators should be limited in their numbers, in order to ensure members spend too much time scrutinizing them and lose the focus on the other daily activities. Moreover, performance measures should not be static in time, but they should be revised periodically in order to assess whether the indicators are still relevant. It is important that the performance measurement system changes along with changes in the organization, otherwise, measures are not useful to interpret how the company is performing.

4.2 Making evaluations and self evaluations

Feedback from others and job observation are important in order to improve one's job performance. They are usually part of the performance evaluation process and so, every definite period of time, members get their performance assessed (Atwater *et al.,* 1995). Since leaders cannot directly observe subordinates, it is much difficult to provide an evaluation on how the person behaved in the team and how much his or her contribution was valuable; for this reason it is necessary to have further sources for performance evaluation. A team leader should design the performance evaluation process using different means for the assessment in order to get a general overview and have more data to draw his or her opinion.

Such sources can be self evaluation, evaluation from peers or evaluation from other stakeholders linked to the team.

It should be taken into consideration that these sources can be subjected to biases, in particular they can differ from the same type of ratings performed in a face to face team (Gibson & Cohen, 2003).

Diverse rating sources can release different evaluations as individuals have a significantly different view of their own job than the one retained by other members and so it is likely that the self evaluation can differ from the feedback received by others (Atwater *et al.,* 1995). In particular, it is stated in Gibson and Cohen (2003) that in a virtual context, self ratings are usually more inflated and less accurate with respect to the self ratings carried out in face to face settings. This can be attributed to the fact that normally the virtual context lacks of a feedback system related to individual contribution and so members perceive their contribution as very valuable even though it is not like that. Such absence of feedback brings to the difficulty of objectively evaluate oneself and the tendency of being defensive, contribute to the biased self evaluation (Atwater *et al.,* 1995).

The possible problems deriving from inflation is that members do not perceive which their weaknesses are and it is likely that they will not be able to understand how to change their behaviours. In addition, individuals that inflate their self evaluation tend to seek less feedback from others and if they receive negative feedback they are less able to elaborate and accept them (Atwater *et al.,* 1995). Also, individuals assume more personal responsibility for success than failure meaning that they tend to see themselves more personally accountable when it comes to own successes and to discern a connection between their personal actions and the outcome. Differently, in case of negative or unwanted outcomes they tend to attribute their failures to external factors such as the intrinsic difficulty of the task and they do not find associations between their behaviours and the outcomes (Miller, 1976).

Since team members prefer to receive feedback that confirms their self perceived emotionality and assertiveness, they are more likely to attend to and remember social feedback that confirm rather than disconfirm their self conception. In fact when they receive a feedback not aligned with their self ideas they tend to interpret it in a way that minimizes the impact: after listening to another person expressing an evaluation about them, people tend to recall only the statements that confirmed their self ideas.

This mechanism is applied in order to create compatibility between the social feedback and the self ideas and foster stability in the perceptions and relations (Swan & Read, 1981).

The process of evaluating others' performance is subjective and many extraneous factors can influence this flow at different stages; errors or deviation in ratings from the true performance happen in how individual record and process information input as well as how they recall them in the memory (Judge & Ferris, 1993).

When it comes to evaluate others' performance the process undertaken is composed by a series of steps. At first the rater attends to gather information relevant for the appraisal; at this stage it should be taken into account which is the information the rater considers salient and which are his or her preconceived notions. In fact a rater could look for information that is consistent with the affect he or she feels for the rate in order to avoid disaffirmations of the impression created.

In particular, the raters acquired the least information about the ratee for whom they had the highest affect suggesting that a raters want to preserve the positive feelings toward the rate by seeking for few information or seeking for information that confirm the affective impression. Negative information or impression in general are weighted more heavily that other information, especially if the rater has negative feelings for the rate.

This is relevant because raters do not acquire equally all the information available, but they make a personal selection which will have an influence of the final performance evaluation. The information gather is then encoded and remains in the rater's memory until the time he or she has to recall it in order to formulate the decision. In the encoding phase rater preserve their affect toward the rate by perceiving all the new information to be comparatively less meaningful that the prior information on which the affect was based.

Some biases might occur also in this recall phase as for example a member might recall only the information consistent with the preconceived notions (Robbins & DeNisi, 1994). Additionally, the recall is influenced by the relationships nature between the rater and the rate, in particular, positive affect facilitates the recall of positive information stored in the memory (Judge & Ferris, 1993).

Moreover, when individuals are asked to formulate judgements about others, they retrieve relevant judgements already formed during previous interactions or they create evaluation starting from the information taken from the long term memory. In fact, when individuals meet new people they spontaneously tend to form judgements or inferences (Wayne & Ferris,

70

1990); working with people in the everyday life, allow to have information regarding the social groups they belong to and to have in mind prototypes and stereotypes so that when it comes to formulate judgements, it is possible that social categories induce a biased evaluation.

The propensity is to rely on the target information characterising a given social group rather than base the evaluation on more abstract and general information. Moreover the tendency is also to take the behaviours of a small numbers of people parts of a social group as representative of the behaviours of the whole group. Such information is easily available in our memory and this has an influence on the weight attributed to that piece of information when it comes to make judgements (Clark & Rutter, 1985). Demographic similarity influences the supervisors affect toward subordinates triggering the similarity-attraction phenomenon (Judge & Ferris, 1993).

Once the first impression or idea is formed, the individual tend to start the future evaluation of the person starting from this point (Wayne & Ferris, 1990) in fact people are more likely to recall information that confirms rather than disconfirms their beliefs about others (Swan & Read, 1981).

Gibson and Cohen (2003) sustain that evaluation from other colleagues tend to be more objective in the virtual context, in particular because there are less biases due to friendship or liking.

Such biases, although lower, can occur also in the virtual setting, in particular interpersonal affect can impact and mine the rating accuracy and increase the rating errors. If a rater has developed positive feelings for the ratee it is likely that the evaluation both for good or poor performance will be more consistent with the affect feeling created.

Interpersonal affect is influenced for example by past performance; this can be noted in leaders that are more inclined to like and feel more affect to subordinates that performed good. This is due to the fact that better performance makes the leader look better or because the leader is uncomfortable in providing negative feedback. (Robbins & DeNisi, 1994)

Affect can influence both the process and the outcome of performance evaluation. However, it has been said that if affect for a rate is in place, the rater could propose a judgement that is inflated; in the specific case in which a rater perceive that the ratee's performance is not consistent with the information he or she has acquired, then it is necessary to reasoning on the

inconsistency in order to understand what are the differences and how the evaluation should change (Robbins & DeNisi, 1994).

The most common phenomena triggered by the presence of positive or negative affect and relationships between the rater and the ratee are leniency, severity and halo effect.
Leniency is the tendency to give extremely high ratings, whereas severity is the opposite, when only very low ratings are assigned; when a rater has positive feelings for the ratee, his or her evaluations tend to be more lenient, whereas if the relationship between then is negative, the leniency will be lower.

Halo effect is the tendency to give similar ratings to different performance dimension for the same ratee. In this way the evaluation loses its critical sense, becoming too general to be useful. It has found out that this effect increases are the rater and the ratee are more familiar with each other. This effect is highlighted especially when the relationship between the rater and the ratee is negative; in this case the rater tends to give negative ratings to all the dimension of the performance.
There are also other factors that can influence the accuracy of performance assessment such as the roles of the raters and rates, the rating instruments or the context in which the evaluation takes place. Some other errors could be linked to the inadequate sampling of job behaviours by raters or the personal expectation and perceptions of the raters (Tsui & Barry, 1986).

4.3 Conclusions

In order to make virtual teams work it is necessary to design a performance evaluation process in order to monitor the improvements and the percentage of goals' completion.
By doing so, it should be taken into account that ratings are subjected to biases and they could differ according to context, sources or means used.
However, since performance evaluation cannot be left out of consideration, it is relevant to keep in mind all the possible difficulties encountered in the recording and interpretation of the feedback gathered especially in the virtual context in which communications are complex, the creation of social boundaries is not natural and team tend to me heterogeneous under several points of view.

Bibliographical References

AHN, H.J., LEE, H.J., CHO, K. and PARK, S.J., 2005. Utilizing knowledge context in virtual collaborative work. *Decision Support Systems,* **39**(4), pp. 563-582.

ALGE, B.J., WIETHOFF, C. and KLEIN, H.J., 2003. When does the medium matter? Knowledge-building experiences and opportunities in decision-making teams. *Organizational Behavior and Human Decision Processes,* **91**(1), pp. 26-37.

ALTSCHULLER, S. and BENBUNAN-FICH, R., 2010. Trust, Performance, and the Communication Process in Ad Hoc Decision-Making Virtual Teams. *Journal of Computer-Mediated Communication,* **16**(1), pp. 27-47.

AON CONSULING, (2009). The reality of virtual work: is you organization ready?. Available from [http://www.aon.com/attachments/virtual_worker_whitepaper.pdf]. Last access 19/02/2018.

ATWATER, L., ROUSH, P., and FISCHTHAL, A., 1995. The influence of upward feedback on self and follower ratings of leadership. *Personnel Psychology*, **48**, pp. 35-59.

AUBERT, B.A. and KELSEY, B.L., 2003. Further Understanding of Trust and Performance in Virtual Teams. *Small Group Research,* **34**(5), pp. 575-618.

BADRINARAYANAN, V. And ARNETT, D.B., 2008. Effective virtual new product development teams: an integrated framework. *Journal of Business and Industrial Marketing,* 23, pp. 242-248.

BERRY, P., 2014. Communication Tips for Global Virtual Teams. *Harvard Business Review*. Available from [https://hbr.org/2014/10/communication-tips-for-global-virtual-teams]. Last access 19/02/2018.

BIERLY, P.E., STARK, E.M. and KESSLER, E.H., 2009. The Moderating Effects of Virtuality on the Antecedents and Outcome of NPD Team Trust. *Journal of Product Innovation Management,* **26**(5), pp. 551-565.

BJØRN P. and NGWENYAMA O., 2009. Virtual team collaboration: building shared meaning, resolving breakdowns and creating translucence. *Information Systems Journal,* **19**(3), pp. 227-253.

BOOZ & COMPANY INC, (2007). When teams fail: the virtual distance challenge. Available from [https://www.strategy-business.com/media/file/leading_ideas-20070522.pdf]. Last access 19/02/2018.

BRADLEY L. KIRKMAN, BENSON ROSEN, PAUL E. TESLUK and CRISTINA B. GIBSON, 2004. The Impact of Team Empowerment on Virtual Team Performance: The Moderating Role of Face-to-Face Interaction. *The Academy of Management Journal,* **47**(2), pp. 175-192.

CAPPEL, J. J. and WINDSOR, J. C., 2000. Ethical Decision Making: A Comparison of Computer-Supported and Face-to-Face Group. *Journal of Business Ethics,* **28**(2), pp. 95-107.

CASCIO, W. F., 2000. Managing a virtual workplace. *The Academy of Management Executive,* 14, pp. 81-90.

CHANG, H.H., CHUANG, S. and CHAO, S.H., 2011. Determinants of cultural adaptation, communication quality, and trust in virtual teams' performance. *Total Quality Management & Business Excellence,* **22**(3), pp. 305-329.

CHIDAMBARAM, L. and TUNG, L.L., 2005. Is Out of Sight, Out of Mind? An Empirical Study of Social Loafing in Technology-Supported Groups. *Information Systems Research,* **16**(2), pp. 149-168.

CHONG, D.S.F., EERDE, W., RUTTE, C.G. and CHAI, K.H., 2012. Bringing Employees Closer: The Effect of Proximity on Communication When Teams Function under Time Pressure. *Journal of Product Innovation Management,* **29**(2), pp. 205-215.

CLARK, N., and RUTTER, D., 1985. Social categorization, visual cues and social judgements. *European Journal of Social Psychology,* **5**, pp. 105-119.

CONNAUGHTON, S.L. and SHUFFLER, M., 2007. Multinational and Multicultural Distributed Teams. *Small Group Research,* **38**(3), pp. 387-412.

CORDERY, J.L. and SOO, C., 2008. Overcoming impediments to virtual team effectiveness. *Human Factors and Ergonomics in Manufacturing,* **18**(5), pp. 487-500.

CUMMINGS, J.N. and HAAS, M.R., 2012. So many teams, so little time: Time allocation matters in geographically dispersed teams. *Journal of Organizational Behavior,* **33**(3), pp. 316-341.

DAIM, T.U., HA, A., REUTIMAN, S., HUGHES, B., PATHAK, U., BYNUM, W. and BHATLA, A., 2012. Exploring the communication breakdown in global virtual teams. *International Journal of Project Management,* **30**(2), pp. 199-212.

DE JONG, R., SCHALK, R. and CURSEU, P.L., 2008. Virtual communicating, conflicts and performance in teams. *Team Performance Management,* **14**(7/8), pp. 364-380.

DEROSA, D. and WITTENBERG, H. OnPoint Consulting interview: Setting virtual teams and leaders up for success. Available from [http://cdn2.hubspot.net/hub/425573/file-2237282976-pdf/Documents/harrywittenberg-interview.pdf?t=1501863745642]. Last access: 19/02/2018.

DUNDIS, S. and BENSON, S., 2003. Building more effective Virtual Teams: An examination of the task variable in online group problem-solving. *International Journal on E-Learning,* **2**, pp. 21-41.

DURANTI, C. M. and de ALMEIDA, F. C. (2012). Is more technology better for communication in International virtual teams?. *International Journal of e-Collaboration,* **8**, pp. 39-55.

DURNELL, C.C., 2001. The Mutual Knowledge Problem and Its Consequences for Dispersed Collaboration. *Organization Science,* **12**(3), pp. 346-371.

EBRAHIM, N. A., AHMED, S. And TAHA, Z., 2009. Virtual Teams: a Literature Review. *Australian Journal of Basic and Applied Sciences,* **3**(3), pp. 2653-2669.

ESPINOSA, J. A., SLAUGHTER, S. A., KRAUT, R. E. and HERBSLEB, J. D., 2007. Team Knowledge and Coordination in Geographically Distributed Software Development. *Journal of Management Information Systems,* **24**(1), pp. 135-169.

FERRAZZI, K., 2012a. How to Manage Conflict in Virtual Teams. *Harvard Business Review*. Available from [https://hbr.org/2012/11/how-to-manage-conflict-in-virt]. Last access: 19/02/2018.

FERRAZZI, K., 2012b. Virtual Teams Can Outperform Traditional Teams. *Harvard Business Review*. Available from [https://hbr.org/2012/03/how-virtual-teams-can-outperfo]. Last access: 19/02/2018.

FERRAZZI, K., 2014. Getting Virtual Teams Right. *Harvard Business Review*. Available from[https://hbr.org/2014/12/getting-virtual-teams-right]. Last access 19/02/2018.

GANESH, M.P. and GUPTA, M., 2010. Impact of virtualness and task interdependence on extra-role performance in software development teams. *Team Performance Management: An International Journal,* **16**(3/4), pp. 169-186.

GARRISON, G., WAKEFIELD, R., XU, X. and `KIM, S., 2010. Globally distributed teams. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems,* **41**(3), pp. 27-48.

GEISTER, S., KONRADT, U. and HERTEL, G., 2006. Effects of Process Feedback on Motivation, Satisfaction, and Performance in Virtual Teams. *Small Group Research,* **37**(5), pp. 459-489.

GIBSON, C.B. and COHEN, S.G., 2003. *Virtual teams that work creating conditions for virtual team effectiveness.* San Francisco: Jossey-Bass.

GIBSON, C.B. and GIBBS, J.L., 2006. Unpacking the Concept of Virtuality: the effects of geographic dispersion, electronic dependence, dynamic structure and national diversity on team innovation. *Administrative Science Quarterly*, **51**, pp. 451-495.

GILSON, L.L., MAYNARD, M.T., JONES YOUNG, N.C., VARTIAINEN, M. and HAKONEN, M., 2015. Virtual Teams Research: 10 Years, 10 Themes and 10 Opportunities. *Journal of Management,* **41**(5), pp. 1313-1337.

GIORDANO, G. and GEORGE, J.F., 2013. The Effects of Task Complexity and Group Member Experience on Computer-Mediated Groups Facing Deception. *IEEE Transactions on Professional Communication,* **56**(3), pp. 210-225.

GONZÁLEZ, M.G., BURKE, M.J., SANTUZZI, A.M. and BRADLEY, J.C., 2003. The impact of group process variables on the effectiveness of distance collaboration groups. *Computers in Human Behavior,* **19**(5), pp. 629-648.

GOVINDARAJAN V. and GUPTA A. K., 2001. Building and effective global business team. *MIT Sloan Management Review.***42**(4), pp. 63-71.

GREENBERG, P.S., GREENBERG, R.H. and ANTONUCCI, Y.L., 2007. Creating and sustaining trust in virtual teams. *Business Horizons,* **50**(4), pp. 325-333.

GRIFFITH, T.L., SAWYER, J.E. and NEALE, M.A., 2003. Virtualness and Knowledge in Teams: Managing the Love Triangle of Organizations, Individuals, and Information Technology. *MIS Quarterly,* **27**(2), pp. 265-287.

GUILLAUME, Y.R.F., VAN KNIPPENBERG, D. and BRODBECK, F.C., 2014. Nothing Succeeds Like Moderation: A Social Self-Regulation Perspective on Cultural Dissimilarity and Performance. *Academy of Management Journal,* **57**(5), pp. 1284-1308.

HAMBLEY, L.A., O'NEILL, T.A. and KLINE, T.J.B., 2007. Virtual team leadership: The effects of leadership style and communication medium on team interaction styles and outcomes. *Organizational Behavior and Human Decision Processes,* **103**(1), pp. 1-20.

HENTTONEN, K. and BLOMQVIST, K., 2005. Managing distance in a global virtual team: the evolution of trust through technology-mediated relational communication. *Strategic Change,* **14**(2), pp. 107-119.

HERTEL, G., GEISTER, S. and KONRADT, U., 2005. Managing virtual teams: A review of current empirical research. *Human Resource Management Review,* **15**(1), pp. 69-95.

HUNSAKER, P.L., and HUNSAKER, J.S., 2008. Virtual teams: a leader's guide. *Team Performance Management,* 14, pp. 86-101.

JAIN, V.K. and SOBEK, D.K., 2006. Linking design process to customer satisfaction through virtual design of experiments. *Research in Engineering Design,* 17, pp. 59-71.

JARMAN, R., 2005. When Success Isn't Everything – Case Studies of Two Virtual Teams. *Group Decision and Negotiation,* **14**(4), pp. 333-354.

JARVENPAA, S.L., SHAW, T.R. and STAPLES, D.S., 2004. Toward Contextualized Theories of Trust: The Role of Trust in Global Virtual Teams. *Information Systems Research,* **15**(3), pp. 250-267.

JOHNSON, P., HEIMANN, V. and O'NEILL, K., 2001. The "wonderland" of virtual teams. *Journal of Workplace Learning,* **13**(1), pp. 24-30.

JUDGE, T., and FERRIS, G., 1993. Social context of performance evaluation decisions. *Academy of Management Journal,* **36***,* pp. 60-105.

KANAWATTANACHAI, P. and YOO, Y., 2002. Dynamic nature of trust in virtual teams. *Journal of Strategic Information Systems,* **11**(3), pp. 187-213.

KANAWATTANACHAI P. and YOO Y., 2007. The Impact of Knowledge Coordination on Virtual Team Performance over Time. *MIS Quarterly,* **31**(4), pp. 783-808.

KAPLAN R.S and NORTON D.P., 1992. The Balanced Scorecard – Measures that Drive Performance. *Harvard Business Review*, January – February, pp 71-79.

KAPLAN R.S and NORTON D.P., 1993. Putting the Balanced Scorecard to Work. *Harvard Business Review*, September – October, pp 1-14.

LIN, C., STANDING, C. and LIU, Y., 2008. A model to develop effective virtual teams. *Decision support systems,* **45***,* pp. 1031-1045.

LIU, X., MAGJUKA, R.J. and LEE, S., 2008. An examination of the relationship among structure, trust, and conflict management styles in virtual teams. *Performance Improvement Quarterly,* **21**(1), pp. 77-93.

LUREY, J.S. and RAISINGHANI, M.S., 2001. An empirical study of best practices in virtual teams. *Information & Management,* **38**(8), pp. 523-544.

LUSE, A., MCELROY, J.C., TOWNSEND, A.M. and DEMARIE, S., 2013. Personality and cognitive style as predictors of preference for working in virtual teams. *Computers in Human Behavior,* **29**(4), pp. 1825.

MAJCHRZAK, A., MALHOTRA, A., STAMPS, J. and LIPNACK, J., 2004. Can Absence Make a Team Grow Stronger. *Harvard Business Review*. Available from [https://hbr.org/2004/05/can-absence-make-a-team-grow-stronger]. Last access: 19/02/2018.

MALHOTRA, A. and MAJCHRZAK, A., 2014. Enhancing performance of geographically distributed teams through targeted use of information and communication technologies. *Human Relations,* **67**(4), pp. 389-411.

MARTINS, L.L., GILSON, L.L. and MAYNARD, M.T., 2004. Virtual Teams: What Do We Know and Where Do We Go From Here? *Journal of Management,* **30**(6), pp. 805-835.

MAYNARD, M.T., MATHIEU, J.E., RAPP, T.L. and GILSON, L.L., 2012. Something(s) old and something(s) new: Modeling drivers of global virtual team effectiveness. *Journal of Organizational Behavior,* **33**(3), pp. 342-365.

MEYER C., 1994. How the right measures help teams excel. *Harvard Business Review,* May – June, pp. 95-103.

MILLER, D., 1976. Ego involvement and attributions for success and failure. *Journal of Personality and Social Psychology,* **34,** pp.*,* 901-906.

MOCKAITIS, A.I., ROSE, E.L. and ZETTINING, P., 2012. The power of individual cultural values in global virtual teams. *International Journal of Cross Cultural Management,* **12**(2), pp. 193-210.

MORTENSEN, M., 2015. A First Time Manager's Guide to Leading Virtual Teams. *Harvard Business Review*. Available from [https://hbr.org/.../a-first-time-managers-guide-to-leading-virtual]. Last access: 19/02/2018.

MORTENSEN, M. and O'LEARY, M., 2012. Managing a Virtual Team. *Harvard Business Review.* Available from [https://hbr.org/2012/04/how-to-manage-a-virtual-team]. Last access: 19/02/2018.

MUETHEL, M., SIEBDRAT, F. and HOEGL, M., 2012. When do we really need interpersonal trust in globally dispersed new product development teams? *R&D Management,* **42**(1), pp. 31-46.

MUKHERJEE, D., LAHIRI, S., MUKHERJEE, D. and BILLING, T.K., 2012. Leading virtual teams: how do social, cognitive, and behavioral capabilities matter? *Management Decision,* **50**(2), pp. 273-290.

NEWELL, S., DAVID, G. and CHAND, D., 2007. An analysis of trust among globally distributed work teams in an organizational setting. *Knowledge and Process Management,* **14**(3), pp. 158-168.

O'LEARY, M.B. and MORTENSEN, M., 2010. Go (Con)figure: Subgroups, Imbalance, and Isolates in Geographically Dispersed Teams. *Organization Science,* **21**(1), pp. 115-131.

OLSON J., and OLSON G., 2003. Culture surprises in remote software development teams. *ACM Queue,* 1, pp. 52-59.

ONPOINT CONSULTING. Success factors of top performing virtual teams. Available from [http://www.onpointconsultingllc.com/hubfs/Documents/Virtual_Team_Study_Report_2015. pdf]. Last access: 19/02/2018.

PICCOLI, G. and IVES, B., 2003. Trust And The Unintended Effects Of Behavior Control In Virtual Teams. *MIS Quarterly,* **27**(3), pp. 365-395.

PINJANI, P. and PALVIA, P., 2013. Trust and knowledge sharing in diverse global virtual teams. *Information & management,* **50**(4), pp. 144-153.

POLZER, J. T., CRISP, B., JARVENPAA, S. L. and KIM, J. W., 2006. Extending the Faultline Model to Geographically Dispersed Teams: How Colocated Subgroups Can Impair Group Functioning. *The Academy of Management Journal,* **49**(4), pp. 679-692.

POTTER, R.E. and BALTHAZARD, P.A., 2002. Understanding human interactions and performance in the virtual team. *Journal of Information Technology Theory and Application,* **4**(1), pp. 1-23.

POWELL, A., PICCOLI, G. and IVES, B., 2004. Virtual Teams: A Review of Current Literature and Directions for Future Research. *The DATABASE for Advances in Information Systems,* **35**(1), pp. 6-36.

ROBBINS, T.L and DENISI, A.S., 1994. A closer look at interpersonal affect as a distinct influence on cognitive processing in performance evaluations. *Journal of Applied Psychology,* **79**(3), pp. 341-353.

ROSEN, B., FURST, S. and BLACKBURN, R., 2007. Overcoming Barriers to Knowledge Sharing in Virtual Teams. *Organizational Dynamics,* **36**(3), pp. 259-273.

SANTOS, V.R., SOARES, A.L. and CARVALHO, J.Á, 2012. Knowledge Sharing Barriers in Complex Research and Development Projects: an Exploratory Study on the Perceptions of Project Managers. *Knowledge and Process Management,* **19**(1), pp. 27-38.

SAVITZ, E., 2012. Building Virtual Teams: Strategies for High Performance. Available from [https://www.forbes.com/sites/ciocentral/2012/03/30/building-virtual-teams-strategies-for-high-performance/#6b66f7686b66]. Last access: 19/02/2018.

SIEBDRAT, F., HOEGL, M. and ERNST, H., 2009. How to manage virtual teams. *MIT sloan management review,* **50**(4), pp. 63-68.

SHRM, 2014. What's next: Future global trends affecting your organization. Evolution of work and the worker.
Available from [https://www.shrm.org/foundation/ourwork/initiatives/preparing-for-future-hr-trends/PublishingImages/Pages/Evolution-of-Work/2-14%20Theme%201%20Paper-FINAL%20for%20Web.pdf]. Last access: 19/02/2018.

SHRM, 2015. Engaging and integrating a global workforce.
Available from [https://www.shrm.org/foundation/ourwork/initiatives/preparing-for-future-hr-trends/Documents/2015%20TL%20Exec%20Summary-FINAL.pdf]. Last access: 19/02/2018.

SHRM, 2016. Engaging and integrating a global workforce.
Available from [https://www.griffith.edu.au/__data/assets/pdf_file/0015/816000/1-16-Research-Brochure-FINAL.pdf]. Last access: 07/08/2017.

STRATEGY&.PWC, 2013. Designing the digital workplace: Connectivity, communication, collaboration. Available from [https://www.strategyand.pwc.com/reports/designing-the-digital-workplace]. Last access: 19/02/2018.

SUCHAN, J. and HAYZAK, G., 2001. The communication characteristics of virtual teams: a case study. *IEEE Transactions on Professional Communication,* **44**(3), pp. 174-186.

SWANN, W., and READ, S., 1981. Acquiring self-knowledge: The search for feedback that fits. *Journal of Personality and Social Psychology,* **41,** pp. 1119-1128.

TAN, W., TAN, C. and TEO, H., 2012. Conveying information effectively in a virtual world: Insights from synthesized task closure and media richness. *Journal of the American Society for Information Science and Technology,* **63**(6), pp. 1198-1212.

TENZER, H. and PUDELKO, M., 2016. Media Choice in Multilingual Virtual Teams. *Journal of International Business Studies,* **47**(4), pp. 427-452.

THE ECONOMIST INTELLIGENCE UNIT LIMITED, 2009. Managing Virtual Teams. *The Economist.* Available from
[http://graphics.eiu.com/upload/eb/NEC_Managing_virtual_teams_WEB.pdf]. Last access: 19/02/2018.

TRIANA, M.D.C., KIRKMAN, B.L. and WAGSTAFF, M.F., 2012. Does the order of face-to-face and computer-mediated communication matter in diverse project teams? *Journal of Business and Psychology,* **27**(1), pp. 57-70.

TSUI, A., and BARRY, B., 1986. Interpersonal affect and rating errors. *Academy of Management Journal,* **27**, pp. 619-635.

VERBURG, R.M., BOSCH-SIJTSEMA, P. and VARTIAINEN, M., 2013. Getting it done: Critical success factors for projects managers in virtual work settings. *International journal of project management,* **31**(1), pp. 68-79.

WAYNE, S., and FERRIS, G., 1990. Influence tactics, affect and exchange quality in supervisor subordinate interactions: A laboratory experiment and field study. *Journal of Applied Psychology,* **75**, pp. 487-499.

WALTER, J.B., 1995. Relational Aspects of Computer-mediated Communication: Experimental Observations over Time. *Organization science,* **6**(2), pp. 186-203.

WARKENTIN, M.E., SAYEED, L. and HIGHTOWER, R., 1997. Virtual Teams versus Face-to-Face Teams: An Exploratory Study of a Web-based Conference System. *Decision Sciences,* **28**(4), pp. 975-996.

WATKINS, M.D., 2013. Making Virtual Teams Work: Ten Basic Principles. *Harvard Business Review*. Available from [https://hbr.org/2013/06/making-virtual-teams-work-ten]. Last access: 19/02/2018.

WATSON-MANHEIM, M.B., CHUDOBA, K.M. and CROWSTON, K., 2012. Perceived discontinuities and constructed continuities in virtual work. *Information Systems Journal,* **22**(1), pp. 29-52.

XIAO, L. and HUANG, D., 2016. Between-team communication in the intercultural context. *Information, Communication & Society,* **19**(7), pp. 940-955.

ZANDER, A., and HAVELIN, H.H., 1960. Social comparison and interpersonal attraction. *Human Relations,* **13**, pp. 21-32.

ZANDER, L., MOCKAITIS, A.I. and BUTLER, C.L., 2012. Leading global teams. *Journal of World Business,* **47**, pp. 592-603.

ZHANG, S., SHEN, W., and GHENNIWA, H., 2004. A review of Internet-based product information sharing and visualization. *Computers in Industry,* 54, pp. 1-15.

ZEITUN, R.M., ABDULQADER, K.S. and ALSHARE, K.A., 2013. Team Satisfaction and Student Group Performance: A Cross-Cultural Study. *Journal of Education for Business,* **88**(5), pp. 286-293.

ZIMMERMANN, A., 2011. Interpersonal relationships in transnational, virtual teams: Towards a configurational perspective. *International Journal of Management Reviews,* **13**(1), pp. 59-78.