

Accidents on the digital highway

*A qualitative research on conflict dynamics in Virtual Teams when
technology-mediated ways of communication are in use*



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The last two years were an emotional roller coaster for me. I graduated from HBO Facility Management and I started at Radboud University for the Premaster Business Administration. I chose the specialization Organisational Design and Development and today, two years later, I hand in my Master Thesis. This thesis - dealing with conflict dynamics in Virtual Teams - is the final step to complete my master's degree from Radboud University.

The writing of this master thesis was a very intensive process. I developed my academic skills and my knowledge of conflict dynamics increased significantly. I look back on a process in which I developed personally but also as a researcher. It was a process with ups and downs, but I survived the downs due to all the help I got. Now I will take the opportunity to express my sincere gratitude to everyone who helped me throughout this period of writing my master thesis.

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Hopefully, you will enjoy reading my master thesis.

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Abstract

Although academic research has proven the benefits of Virtual Teams, little is known about the challenges of working in a Virtual Team. Especially, the vulnerability of conflicts and the long-term effects influenced by Technology-Mediated communication are not considered in prior research. The main objective of this master thesis was to fill this gap by studying how Technology-Mediated communication influences conflict dynamics in Virtual Teams.

In this qualitative study, eight Virtual Team members working together in one virtual team have been interviewed. The interview questions focused on their successful and less successful conversations. Follow-up questions were especially raised on the less successful conversations in order to understand how the conversation led to a conflict in terms of cause, core process, effects and feedback loop.

The contribution to the literature on TMCs are two new features: emotionality and velocity. With regard to emotionality, the results showed that the virtual team members use tools with a webcam function to talk about emotional topics. With regard to velocity, the results showed that the level of stress determines which tool the users take. Additionally, the results of the study revealed that Technology-Mediated Communication influences the nature of conflicts, because it changes the specificity, directness, duration, depth of background information, and the representation of text and voice. Furthermore, this study adds two insights to our understanding of the role of technology-mediated communication in time-related dynamics: informality and assumptions/stereotypes. In a Virtual Team, there are limited opportunities to address the conflict in an informal setting. This results in conflicts with a longer time span. Besides, Virtual Team members do not know their team members well enough and therefore they create assumptions and stereotypes. This study proves that it is necessary to fill in the unavailable personal information by yourself to understand what others do or think owing to a conflict situation.

Keywords: Virtual Teams, Technology-Mediated Communication, conflict, dynamics, conflict dynamics

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1. Introduction

The business environment has undergone rapid transformations during the twenty-first century (Rezgui, 2007). One of the transformations in the business environment is caused by globalization. Globalization creates new structures and relationships between both organizations as well as organizational members around the world (Acs & Preston, 1997). As a result of globalization, the use of Technology-Mediated Communication (hereafter: TMC) increased (Hertel, Geister, & Konradt, 2005). TMC is defined by Spitzberg (2006) as: “any human symbolic text-based interaction conducted or facilitated through digitally-based technologies” (p. 630). TMC includes all tools and applications that can be used for distance communication, such as telephone calls, text messaging, e-mails, instant messaging and video conferencing (Dienlin, Masur, & Trepte, 2017). Organizations can benefit from this transformation if the right form of organization is in use.

Many organizations reacted to this transformation by introducing a new form of organizing: Virtual Teams (Ale Ebrahim, Ahmed, & Taha, 2009). A Virtual Team is a group of people who works on interdependent tasks guided by a common purpose and who interacts across space, time, and organizational boundaries with links strengthened by webs of communication technologies (Lipnack & Stamps, 1997). Working in Virtual Teams reduces the costs of operations and makes it easier to gain the required knowledge (Hinds & Bailey, 2003). Besides, team members get a task that fits best with their knowledge and personality. Team members can work independently across boundaries (Ale Ebrahim et al., 2009) and are therefore able to organize their own time. This creates a working environment in which team members are flexible and responsive (Powell, Piccoli, & Ives, 2004). Virtual Teams are growing in prevalence, but they also come with important challenges that still require more research (Ale Ebrahim et al., 2009).

One of the main downsides of Virtual Teams is the particular vulnerability of conflicts. A conflict is a sharp disagreement or collision in interests between two or more actors (Jones, Bremer, & Singer, 1996). A static ideology of conflicts views a conflict as a separate action. However, conflicts can be seen in broader terms, as a process instead, which is called dynamics (Wall & Callister, 1995). Conflict dynamics, as a combination of conflict and dynamics, show that a conflict develops over time in four stages: causes, core process, effects, and feedback loop. Taken this cycle into consideration, a cause is the beginning of a conflict. The core process transforms a cause into an effect. The effects create a feedback loop to affect the cause again.

This cycle takes place within a context and flows through numerous iterations (Wall & Callister, 1995).

Conflicts in virtual teams often have to do with their mode of communication. In other words, Virtual Team members' work is not restricted by time and place, and thus, their communication is strongly facilitated by TMC (Ale Abraham et al., 2009). Virtual Teams have limited opportunities to talk face-to-face and therefore rely entirely on TMC for their communications. The use of TMC is studied by Baralou and Tsoukas (2015), who identified three interconnected features of TMC which could act as a mediator in conflict dynamics: synchronicity, rehearsability, and reprocessability. Existing research mostly viewed conflicts as a static action and thereby ignored the different patterns of conflict that might occur over time (Jehn & Mannix, 2001). Even more, TMC is ignored in existing models of Virtual Teams (Wakefield, Leidner, & Garrison, 2008). In sum, until now, little is known about how conflicts evolve over time in Virtual Teams when the team members communicate by means of TMC. This research tries to fill the research gap and therefore this research will contribute to the existing literature of Virtual Teams, TMC and conflict dynamics. The main research question of this research is: **How does Technology-Mediated Communication influence conflict dynamics in Virtual Teams?**

Qualitative research methods are used to answer the research question. Based on interviews, an understanding is created about how Virtual Team members address conflicts, influenced by TMC, in terms of cause, core process, effects and feedback loops. The interviews are conducted in a semi-structured way. The sequence of questions and the ad-hoc follow-up questions are determined by the flow of the interview and the participants' answers (Symon & Cassell, 2012). In this way, both the deductive and the inductive approach are required to answer the research question. The results of this study will provide Virtual Teams with a better understanding of the development of conflicts in their team.

The paper is organized as follows. The next chapter provides a theoretical background by discussing the concepts of Virtual Teams, conflicts dynamics, and TMC. The third chapter explains the research methods applied. Chapter four presents the results. Quotes are used to enrich and strengthen the elaboration of the results. The final chapter contains the conclusion and discussion, including practical implications, limitations, and recommendations for further research.

2. Theoretical background

Chapter 2 discusses the theoretical background of this study. The chapter consists of three parts. First, Virtual Teams are discussed as a new form of organizing. Second, the concept of conflict dynamics is introduced by explaining the concepts of conflicts, dynamics, and the combination thereof. Third, TMC and its influence on conflict dynamics in Virtual Teams are discussed.

2.1 Virtual Teams as a new form of organizing

The flow of economic activities from one country to another has increased enormously in the last centuries, which resulted in globalization (Johnson, 2002). Organizations benefit from globalization. The benefits include increased market access, increased access to capital and increased access to technology and information (Totonchi & Kakamanshadi, 2011). While there are also downsides to globalization, globalization is proven to create benefits if an organization deals with it in the correct way.

Simultaneously and as a consequence of globalization, the widespread adoption of information and communication technology benefits organizations. Especially the internet makes it cheaper and easier for organizations to extend their markets, manager their operations and coordinate value chains across organizational boundaries (Totonchi & Kakamanshadi, 2011). The internet also enriches communication flows between team members. Communication by TMC aid to overcome geographical, temporal, cultural and organizational boundaries. Similar to globalization, the widespread adoption of TMC also has downsides. However, if organizations deal with it in the correct way, it can create benefits.

Adequately dealing with this transformation in society requires a new form of organizing. A Virtual Team is seen as such a new form of organizing (Ale Ebrahim et al., 2009). A Virtual Team is a group of people who interact through interdependent tasks guided by a common purpose and who work across space, time, and organizational boundaries with links strengthened by webs of communication technologies (Lipnack & Stamps, 1997). Respectively, there is spatial distance between members of a Virtual Team and communication is technology-mediated (Hunsaker & Hunsaker, 2008). TMC creates an environment in which people can ‘talk’ as a group outside the meeting room (Kiesler & Sproull, 1992).

A Virtual Team is seen as a new form of organizing because it organizes task division, task allocation, information provision and reward provision in a new manner relative to existing forms of organizing (Puranam, Alexy, & Reitzig, 2014). Task allocation and division are done on the basis of accurate knowledge on a personal level. In other words, team members get a

task that fits best with their knowledge and personality. Besides, information provision is done on the basis of TMC in an online setting. This means that all information is shared by online applications and databases. The reward provision of Virtual Teams has to do with the local arrangements around payments. In sum, Virtual Teams represent a growing response to create organizational benefits in a new form of organizing (Kiesler & Sproull, 1992).

2.2 The reasons why organizations want Virtual Teams

The reasons why organizations want Virtual teams are widespread. Importantly, Virtual Teams have certain benefits and they are growing in prevalence (Ale Ebrahim et al., 2009). The trend of Virtual Teams can create benefits from an organizational viewpoint and from an individual viewpoint. On the one hand, the organizational viewpoint focusses on organizations and lower cost productions. On the other hand, the individual viewpoint focusses on the social benefits for individuals.

Firstly, from an organizational viewpoint, a Virtual Team can be a response to the need of overcoming boundaries (Cascio & Shurygailo, 2003). Virtual Teams thus overcome the limitations of time, space and organizational affiliation. Virtual Teams can also work under lower-cost operations by reducing travel costs. Besides, an organization can gain the required knowledge from all over the world (Hinds & Bailey, 2003). The organization is able to unite experts in highly specialized fields working on a great distance from one another (Malhotra, Majchrzak & Rosen, 2007)

Secondly, from an individual viewpoint, team members get a task that fits best with their knowledge and personality. Besides this, team members can work independently across boundaries (Ale Ebrahim et al., 2009) and are therefore able to organize their own time. Therefore, Virtual Team members can perform their work without concern of space or time constraints. This all creates a working environment in which team members are flexible and responsive (Powell et al., 2004).

2.3 The drawback of working in a Virtual Team

In general, organizational operations depend on teamwork, collaboration and group creativity of employees (Khan, Hussainy, & Iqbal, 2017). That is to say, organizations use teams and teamwork as a way to connect interdependent employees to achieve certain outcomes or accomplish particular tasks by sharing ideas (Berry, 2011). The team members communicate

on different projects and deadlines and some tasks need to be performed to actually reach these deadlines.

Communication is the process of transferring information, meaning, and understanding between two or more parties. Communication provides the basic building blocks of an organization and is therefore fundamental to get any work done. It is used to collaborate, make decisions, and to achieve organizational objectives (Berry, 2011).

The way of communication differs between traditional and Virtual Teams. The word 'virtual' is used to emphasize a technology-supported style of working (Anderson, McEwan, Bal, & Carletta, 2007). Accordingly, their communication exists through TMC rather than face-to-face communication. Because of TMC rather than face-to-face communication, the dialogical interactions should be seen in broader terms (Baralou & Tsoukas, 2015): dialogues with real others, quasi-dialogues with invisible others, and quasi-dialogues with virtual artifacts (Baralou & Tsoukas, 2015). All these dialogues differ in existence concerning the dialogues in face-to-face communication. To start with dialogue with real others. A dialogue with real others could be best translated to a face-to-face dialogue that takes the form of three related steps: person A talks to person B, person B reacts, and person A continues talking (Hermans & Hermans-Jansen, 2003). Secondly, quasi-dialogues with invisible others are situations in which person A communicates with person B and at the same time communicates with an invisible person C. In this way of knowledge creation, Virtual Team members can bring information from individuals outside the meeting into the meeting. Finally, quasi-dialogues with virtual artifacts help team members focally see things they did not see before or would forget to do otherwise (Baralou & Tsoukas, 2015). An example of a quasi-dialogue with virtual artifacts is responding to e-mails that are not always related to the meeting at hand.

Taken together, the Virtual Team members need to communicate by TMC to reach a shared idea by different dialogical interactions. When TMC is not used in the right way or when the ideas are not in line with one another, different conflicts can arise (Berry, 2011).

2.4 Conflict dynamics

2.4.1 The nature and categorization of conflicts

Conflicts are a regular part of humans' daily experiences because conflicts are social phenomena that occur in personal life and work-life settings (Meluch & Walter, 2012).

In personal life, the conflict can be on a personal level and interpersonal level. In the first place, the conflict is within one person. In this situation, a conflict arises because the

individual needs to play more than one role at the same time (e.g. mother and friend). In other words, the conflict arises because of the feeling that certain demands of each role cannot be met simultaneously (Wall & Callister, 1995). In the second place, conflicts can appear between two different parties. Given that, a commonly used definition of conflict is a sharp disagreement or a collision in interests between two or more actors (Jones et al., 1996). What these interests are, is somehow divergent in literature. It is something the party cares about or something that concerns someone (Thomas, 1976).

The aforementioned definition of conflicts on interpersonal conflicts can relate to work-life settings too. Hinds & Bailey (2003) developed a theory-based explanation of how Virtual Teams provoke team-level conflict. They identify the mechanism by which conflict is engendered in Virtual Teams, which are tasks, affectives, and processes (Hinds & Bailey, 2003; Berry, 2011; Kankanhalli, Tan, & Wei, 2006). These three types of conflicts are discussed consecutively. Firstly, task conflicts refer to disagreement about work content and include differences in how a task should be accomplished. Secondly, affective conflicts include affective components based on relationships such as tension and friction between group members. These disagreements can have the characteristics of anger and hostility among group members. The main examples of affective conflicts are mutual dislike, personality clashes, and annoyance among team members. At last, process conflicts are defined. Process conflicts deal with the team's approach to task-, methods and group processes. One example of a process conflict is related to the division of responsibilities over persons. Process conflicts, therefore, arise when there is confusion about who is doing (or has done) what and when (Hinds & Bailey, 2003).

2.4.2 Dynamics and the importance of time

Referring to the definition of conflicts, a sharp disagreement or collision can be seen as static or dynamic. A static ideology of conflicts views conflict as a separate action. The focus is on what someone does or does not and thus on a specific situation. However, in a conflict situation, it is not only about what one does or does not, but also on how the other reacts. Thus, conflicts can be seen in broader terms, as a process instead, which is called dynamics (Wall & Callister, 1995).

The word 'dynamics' can be illustrated in the story of the Karelia war in the winter of 1940. Prior to calling something a war, diverse actions are consecutive to each other. After the initial challenge, dispute parties militarized for some time before transitioning to a dormant phase for the upcoming period. This dormant phase took a long period. The evolution obscured

over time as well. The resolution only occurs after the transition between periods of militarization, inactivity, and negotiations (Jones & Metzger, 2018). Jones and Metzger (2018) mentioned that in average territorial disputes appear around eleven transitions between various stages during their lifetimes.

Previous explanations of dynamics showed that time is an important aspect. War is a typical example of a situation in which the process unfolds across different moments in time. The different actions and decisions disappear during different phases. Dynamics thus refer to a process that unfolds across several stages (Jones & Metzger, 2018). These stages are approximately a sequence of actions or a transition of actions (Senese & Vasquez, 2008). The number and nature of the stages may vary depending on the duration of the total process. The same applies to conflicts (Wall & Callister, 1995).

2.4.3 Conflict dynamics

The concepts of conflict and dynamics can be combined in ‘conflict dynamics’. The definition of Jones et al., (1996) and Jones and Metzger (2018) can be combined which give the definition of conflict dynamics: ‘a conflict is a process that unfolds across several stages which result in a sharp disagreement or a collision in interests between two or more actors’. This definition highlights that conflicts should be seen as a process instead of a separate action.

In a conflict process, most of the time, patterns of conflicts shift and change over time (Jehn & Mannix, 2001). Viewing conflict as a process prospects conflict as ongoing actions that comprise multiple, discrete stages. What happens in one stage of conflict can have negative or positive consequences in later stages. The conceptual representation of conflict dynamics consists of four related stages as displayed in the conflict cycle (Figure 1).

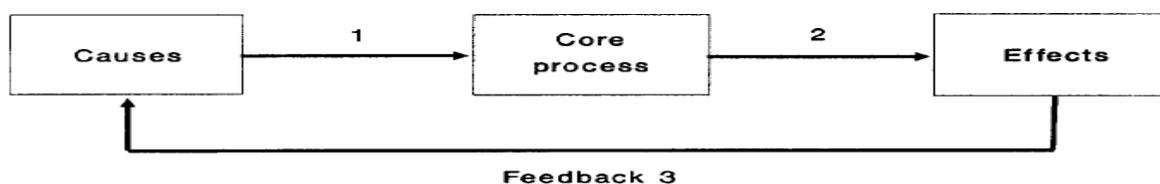


Figure 1: Conflict cycle (Wall & Callister, 1995)

Each stage of the model is explained in general. The causes of a conflict are the initial reasons for the challenges. These causes can be grouped into different categories. Firstly, one category embraces the characteristics of the parties involved in the conflict. Every conflict situation consists of two or more parties and these parties all have their personalities, values, and goals. Secondly, another category of causes embraces the interpersonal relationships

between the parties. The interpersonal relationship consists of the perceptual interface, communication, behaviour, structure, and previous interactions. Finally, the third category of causes is embraced to issues. When two or more parties come into conflict, it is usually due to some issue(s). The issues that create conflicts are often the ones that are complex, vague, and multiple because these issues are more likely to generate misunderstandings, tap into divergent interest, and/or unearth dissimilar goals (Wall & Callister, 1995).

The causes are transformed by the core process from the previous state to a future state. Typically, this core process is a face-to-face, synchronous, language-based communication process that looks like interaction in the following manner: person A talks to person B, person B reacts, and person A talks further (Hermans & Hermans-Jansen, 2003). Hence, the core process is, therefore, the dialogue that transforms an issue.

The effect is the outcome of a conflict. An effect is an issue and can be classified in the same way as to causes. The causes leading to an effect on individuals, interpersonal relationships and issues (Wall & Callister, 1995). First of all, the heaviest effect of conflict is on individuals, explained as upset parties (Bergman & Volkema, 1989). The behavior of upset parties can be manifest in a number of ways such as anger, feelings of hostility, anxiety, and stress. As explained by Wall and Callister (1995), this behavior can lead to personal frustrations, lower job satisfaction and reduced motivation and performance at work. The second effect of conflict is on interpersonal relationships. In a conflict setting, the other party is mostly viewed as an obstacle to reach a person's goal which can affect less-than-affordable perceptions of the other party. The relationship between parties changes by way of conflict. At last, conflict can have a transformation of the issue itself as effect. An issue can change subjectively as well as objectively. As parties are in conflict, simple issues become more complex. Additionally, tradeable issues can become a matter of principle if a conflict lies in front (Wall & Callister, 1995).

Moving from cause to core process to effects is an independent event within a larger set of events. Consequently, going through this cycle once is considered as an episode in time (Pondy, 1967). Each episode exhibits a sequence of development, as shown in Figure 1. Thus, a conflicted relationship can be characterized by stable patterns that appear across one episode in time. This orientation is the basis of the definition of conflicts.

However, Wall and Callister (1995) created another stage in their conflict cycle which shows the dynamics of conflict: the feedback loop. The feedback loop is a behavioural change that alters the original cause or generates new causes (Wall & Callister, 1995). The feedback

loop shows that this cycle can circulate multiple times. It is an information exchange between what has happened and what will happen or what happens right now, which makes a conflict dynamic.

The feedback loop can take the form of five conflict-handling modes described by research on traditional teams: avoidance, accommodation, competition, collaboration, and compromise (Rahim 1983; Thomas & Kilmann, 1974; Thomas, 1976). Each of the conflict-handling modes is unique in the way that it incorporates specific behaviors of an individual in a conflict situation (Meluch & Walter, 2012).

2.5 Technology-Mediated communication as a mediator in conflict dynamics

Referring to sub-chapter 2.3 which mentioned the definition of Virtual Teams, highlights that Virtual Team members are strengthened by webs of communication technologies (Lipnack & Stamps, 1997). This chapter provides more insight into the different TMC tools and their features. It indicates how TMC can be a mediator in conflict dynamics.

The different TMC tools allow individuals to communicate and share information and data regardless of time and space (Hunsaker & Hunsaker, 2008). TMC is defined by Spitzberg (2006) as: “any human symbolic text-based interaction conducted or facilitated through digitally-based technologies” (p. 630). TMC tools can be telephone calls, text messaging, e-mails, instant messaging (e.g. WhatsApp, Facebook Messenger, Skype chat), video conferencing, and other types of specialized groupware organizations have in use (Dienlin et al., 2017; Garner & Poole, 2013). Television, hearing aid or radio does not belong to TMC because they provide no interactive communication via the medium (Spitzberg, 2006).

TMC has to deal with uneven distribution of information, unevenly weighted information, and information that resists transmission (Hinds & Bailey, 2003). First of all, an uneven distribution of information can occur in at least two ways. One way of uneven distribution is when team members are purposely or accidentally excluded from communications (Hinds & Bailey, 2003). Another way of uneven distribution occurs when team members may not reveal all the information that they hold (Hinds & Bailey, 2003). Sometimes, not all team members are informed about e-mails sent by one team member to another (Cramton, 2001). These three ways of uneven distribution of information can lead to a situation in which some team members work with incomplete information while the team members assume that all the information is universally shared. Besides, TMC has an impact on the weight that members place on different pieces of information. As a result, some topics never received

the attention that the sender desired or sometimes topics are entirely overlooked. This can lead to frustration and misunderstandings. Finally, there are still types of data that cannot be sent by TMC, which has negative implications for the completeness (Hinds & Bailey, 2003).

Considering TMC and the way it works out in teams indicates that TMC operates as a mechanism that lifts social relations out of their local context of interaction (Giddens, 1990). This phenomenon is called the dialectic of presence and absence (Baralou & Tsoukas, 2015). There is not a now and here. This presence-absence dialectic is crucial in virtual dialogues since individual team members are present to one another through their communications but also absent because they lack a holistic sense of embodied interaction (Dreyfus, 2001).

The dialectic of presence and absence has to do with distinct features of some TMC tools, affecting users with particular types of interactions. The use of some tools depends on the context and the purpose for which they are used, for example on the nature of the task (Hunsaker & Hunsaker, 2008) or on different features (Baralou & Tsoukas, 2015). To start with the nature of the task. Some tasks are very complex when thinking about the costs, effort, resources, and duration needed to accomplish a task. There is evidence that teams choose e-mail to share extensive and detailed information (Hinds & Bailey, 2003). Other research shows that phone calls and conference calls are used to solve problems of presence and absence (Maznevski, & Chudoba, 2000). On the other hand, the specific communication technology that teams use depends on the different features it could have. Baralou and Tsoukas (2015) distinguished three interconnected features of TMC which could lead to conflicts: synchronicity, rehearsability, and reprocessability. These three features are elaborated in the next parts.

Synchronicity

IT-mediated communication can be categorized into synchronous and asynchronous messages. Synchronous messages occur in real time. Opposite to synchronous messages, asynchronous messages are messages over time, where no direct reaction is given. Thus, in case of synchronous messages, team members are online and communicate at the same time and in case of asynchronous messages, participants are not necessarily online and communicating simultaneously (Hinds & Bailey, 2003).

Telephone calls and video conferencing require team members to be online at the same time, so these tools are high in synchronicity. E-mails and instant messaging are lower in synchronicity since people do not need to be online at the same time.

Rehearsability

Secondly, rehearsability is the extent to which a tool provides the opportunity to fine-tune the message before sending it. TMC tools that support rehearsability enable the sender to carefully craft a message before transmission to ensure that the intended meaning is expressed. A high level of rehearsability improves a recipient's information processing. By way of contrast, a high level of rehearsability can indicate delays in the transmission of messages. Senders and/or receivers then need a longer time to compose messages (Dennis, Fuller, & Valacich, 2008).

E-mail and instant messaging have a higher level of rehearsability than for example video conferencing. Significantly, by using e-mail, participants have time to reflect, research or consider their replies before responding (Khoshafian & Buckwitz, 1995). Video-conferencing is a face-to-face conversation and therefore there is no opportunity to fine-tune the message before responding.

Reprocessability

Finally, reprocessability is about the possibility of retrieval. The level of reprocessability indicates the extent to which the TMC tool enables a message to be re-examined or processed again, either within the conversation or after the conversation took place (Dennis et al., 2008). Reprocessability enables both senders and recipients to reread and reconsider prior messages before engaging in a conversation or before engaging in a meeting. Reprocessable information is important for transmissions of new, complex or large volumes of information shared in conversations.

Both e-mail and instant messaging have a high level of reprocessability. E-mail provides users a permanent written archive/record of the conversations with no extra effort or costs (Berry, 2011). The reprocessability of telephone calls or video conferencing depends on the availability of recording equipment (Baralou & Tsoukas, 2015).

Figure 2 shows a summary of the features of technology-mediated tools.

	Synchronicity	Rehearsability	Reprocessability
Email	Low	Medium–High	High
Teleconferencing	High	Medium–Low	Low–High
Collaborative S/W	High	Medium–High	High

Figure 2: Features of technology-mediated tools (Baralou & Tsoukas, 2015)

2.6 The way Technology-Mediated Communication influence Conflict Dynamics in Virtual Teams

TMC impacts the team members' way of discussing topics (Hinds & Bailey, 2003). Team members bring in a variety of ideas, opinions, and viewpoints by communicating on different topics by TMC. Virtual Team members have limited opportunities for talking face-to-face and therefore may discuss by using, for example, phone or e-mail. All the members should be able to combine and synthesize diverse perspectives that contribute to an effective decision-making process (Parayitam, Olson, & Bao, 2010). If not, conflicts can consist of what should be done.

The changing format of communication in Virtual Teams can lead to conflicts more than in recent years. Recently, it is common for people to take their entire network of contacts with them during the day. That is to say, in their spare time but also in their working time. People communicate with their network throughout the whole day via texts, e-mails and social media websites (Berente, Hansen, Pike, & Bateman, 2011). In addition, it is well established that the use of TMC enables new kinds of interactions to take place due to a variety of studies (Berente et al., 2011; Hinds & Bailey, 2003; Nicolini, 2006). By TMC, communicative boundaries considerably expand, and the new communicative boundaries reshape communication patterns and processes through which collaboration among virtual team members is achieved (Berente et al., 2011).

The information written about Virtual Teams and TMC could indicate that Virtual Teams members who employ TMC could experience other causes, other ways of discussing topics in the core process, other effects and another way of conflict handling in the feedback loop than traditional groups. The timing of communication is, for example, more likely to be a cause of conflict in TMC than in face-to-face communication. The core process is not based on face-to-face communication but on TMC. Therefore, the dialogical way of communication between two or more parties should be seen in broader terms. In addition, the effect of a conflict could be different from traditional teams. Virtual Team members collect and distribute data differently than traditional teams and they also hold different relationships with team members (Hinds & Bailey, 2003). The feedback loop could also be different from a traditional team because Virtual Teams members communicate by TMC and therefore do not see each other on a daily basis.

2.7 Research question

Taking everything together, Virtual Teams are an example of a context in which conflict dynamics can take place. Respectively, the spatial distance in a Virtual Team is distributed and the way of communication is technology-mediated (Hunsaker & Hunsaker, 2008). One of the main downsides of Virtual Teams is the particular vulnerability of conflicts based on the communications they need to accomplish.

Past research focused mostly on static levels of conflict and thereby totally ignored the different patterns of conflict that might occur over time (Jehn & Mannix, 2001). Additionally, TMC is largely ignored in existing models of Virtual Teams (Wakefield et al., 2008). Until now, we do not know how a conflict evolves in a Virtual Team over time. Therefore, the research question is: **How does Technology-Mediated Communication influence conflict dynamics in Virtual Teams?** The definitions of the most important concepts of this research are presented in table 1.

Table 1: Definitions of most important concepts

Concept	Definition
Conflict	Conflicts are a sharp disagreement or a collision in interests between two or more actors (Jones et al., 1996).
Dynamics	Dynamics refers to a process that unfolds across several stages (Jones & Metzger, 2018).
Conflict dynamics	A conflict is a process that unfolds across several stages which results in a sharp disagreement or a collision in interests between two or more actors.
Virtual Teams	A Virtual Team is a group of people who interact through interdependent tasks guided by common purpose who works across space, time, and organizational boundaries with links strengthened by webs of communication technologies (Lipnack & Stamps, 1997, p.7).
Technology-Mediated Communication	TMC is any human symbolic text-based interaction conducted or facilitated through digitally-based technologies (Spitzberg, 2006, p. 630).

Dialectic of presence and absence	A situation in which time and space are not linked through place (Baralou & Tsoukas, 2015).
• Synchronicity	Synchronicity describes the extent to which a tool enables communication at the same time (Baralou & Tsoukas, 2015).
• Rehearsability	Rehearsability is the extent to which a tool provides the opportunity to fine-tune the message before sending (Baralou & Tsoukas, 2015).
• Reprocessability	Reprocessability is about the possibility of retrieval (Baralou & Tsoukas, 2015).

3. Methods

This chapter outlines the methodological choices to answer the research question: **How does Technology-Mediated Communication influence conflict dynamics in Virtual Teams?** The chapter starts with a description of the overall research design. The next sub-chapter explains the case. Subsequently, the choices regarding the sample and data collection are explained. The next part substantiates the choices around data analysis. This chapter ends with the measures taken on ethics.

3.1 Research design

This research studied how TMC influences conflict dynamics in Virtual Teams. Because of the sensitive nature of conflict dynamics, a qualitative research method was applied (Verschuren, Doorewaard & Mellion, 2010). The research topic was too sensitive to capture effectively through survey or experiment studies (Symon & Cassel, 2012).

There are different perspectives for doing qualitative research (Symon & Cassel, 2012). This research matched best with the interpretivism perspective. The interpretivism perspective integrates human interest into a study and assumes that access to reality can only be realized through social constructions such as language, consciousness, shared meaning and instruments (Myers, 2008). The researcher, as a social actor, should appreciate differences between people, according to the interpretivist approach (Saunders, Lewis & Thornhill, 2012). Interpretivism was especially useful for researching conflict dynamics because this study emphasized the personal experience of the participants.

3.2 Case description

A single case study was chosen in order to make statements about a specific phenomenon in the real world (Yin, 2009; Bleijenbergh, 2013). It was impossible to separate conflict dynamics from its context and according to the goal of this research, it was even important to understand conflict dynamics within their specific context: Virtual Teams. The case study helped to focus on conflict dynamics within a single setting (Eisenhardt, 1989). By focussing on more teams or more organizations, the context would change which would have made it more difficult to analyze why something happens.

For the case selection, a Virtual Team from Delta¹ has been contacted. The selected Virtual Team consists of six people: Tobias², based in the Netherlands; Tomas, based in Portugal; Luka, based in Serbia; Jakub, based in the Czech Republic; Devin, based in France and the team is managed by Daniel, based in Belgium. Every team member is responsible for a local team on site. The local team of The Netherlands consists of seven members, whereof two people participated in this research. The team members are Site IT Services Senior Analysts, Site IT Service Manager and Contractors of the Netherlands and form a team to reach a common goal.

This Virtual Team use a range of technological tools which mediate the communication of the members, such as (a) synchronous teleconferencing programs as Skype, (b) asynchronous and synchronous collaborative software developed for collaborative creation, sharing and editing of files, for instance SharePoint (information about capital, projects, milestones, presentations, drawings, developments, roadmaps, organizational charts, etc.), (c) synchronous and asynchronous tracking tools such as OneNote (the digital whiteboard) and Yammer (same idea as Facebook), (d) asynchronous e-mail to keep team members up-to-date and (e) telephone calls for local assignments. The Virtual Team members consult twice a week digitally by using these tools. Twice a year they try to see each other face-to-face. The focus of this research included TMC and therefore the two face-to-face meetings were not included in this research.

3.3 Sample and data collection

The goal of data collection was to represent the viewpoints of Virtual Team members who agreed to participate in this research by sharing their experiences and feelings about conflict dynamics in Virtual Teams.

The participants of this research were chosen with a non-probability sampling method, namely via purposive sampling. The non-probability sampling technique indicates that the choice for participants is based on the researcher's judgments regarding the participants' characteristics that are important to address the research aim (Symon & Cassel, 2012). This means that the researcher actively chose appropriate participants while actively excluding others. The choice for non-probability sampling was aligned with the interpretivism perspective of qualitative research. Purposive sampling provided the opportunity to select a homogeneous group.

¹ The name of the organization is a pseudonym

² The name of the interviewees is a pseudonym

The choice for a purposive homogenous sampling resulted in similar participants, which allowed the researcher to explore them in great depth with minor differences. The participants in this research were part of a particular sub-group, the IT department. All the employees of this department were included in the sample. The study's sample contained: one Site IT Service Manager, five Site IT Service Senior Analysts and two contractors. Table 2 shows the respondent list of this study.

Table 2: Respondent list

	Name	Location	Job title
1	Tobias	The Netherlands	Site IT Services Senior Analyst
2	Daniel	Belgium	Site IT Service Manager
3	Ad	The Netherlands	Contractor of Site IT The Netherlands
4	Tomas	Portugal	Site IT Services Senior Analyst
5	Devin	France	Site IT Services Senior Analyst
6	Jakub	Czech Republic	Site IT Services Senior Analyst
7	Freek	The Netherlands	Contractor of Site IT the Netherlands
8	Luka	Serbia	Site IT Services Senior Analyst

For this qualitative study, eight interviews have been conducted. Interviews generate information in the respondent's own words (Bleijenbergh, 2013). Additionally, interviews are suitable gateways into what goes on in an organization (Symon & Cassel, 2012). For this research, interviews were chosen as the main source of data collection to establish a picture of the research topic through the eyes of the interviewees. It was important to understand how the interviewees experience conflict dynamics (Symon & Cassell, 2004). Interviews were preferred over focus groups because conflicts are sensitive by nature and therefore cannot be discussed in a group setting. It might be that there are other persons in the room who are part of the described conflict situation or persons who have intentions to abuse the shared stories. If this is the case, it is likely that people will not speak openly.

The invitation of the participants started at the beginning of June 2019. It started with an informal talk about this research in a team meeting by the contact person of the organization. The contact person shared the purpose of this research with his team members during a Skype meeting. The contact person then sent the contact details of the participants to the researcher. The researcher sent out the first invitations on the 5th of June. The e-mail of the researcher was

written in a slightly formal way. Two days later, the contact person communicated informally the purpose of the research again in Teams (a team collaborative Software Tool). Unfortunately, still, no one reacted. The researcher sent a reminder on the 11th of June. The first reaction was negative in the sense that the team members communicated to have no time for the research project. In mutual consultations with the contact person, it was decided to schedule appointments in the participants' agendas. Although the interviews were scheduled by the interviewer instead of the interviewees, all participants were pleased with the interviews.

The questions were semi-structured, which is a combination of the unstructured and the open construction (Alvesson & Ashcraft, 2012). This means that the researcher used an interview guide which included open-end questions. However, the sequence of questions and the ad-hoc follow-up questions were determined by the flow of the interview and the participants' answers (Symon & Cassell, 2012). A semi-structured form was chosen because it gives guidance during the interview, yet at the same time, it provided opportunities for new perspectives to arise (Symon & Cassell, 2012).

The interviews were structured as follows. The first part of the interview was useful to get to know each other by asking for personal information. Then, the interview proceeded with questions about successful conversations that the interviewee experienced in Virtual Teams. This gave an overview of what the person enjoys in his work. Thereafter, block 3 was about creating general insights in challenges in conversations in Virtual Teams. Block 4 was the final block and included the reflection of the interviewees. The interview guide is presented in Appendix 7.1 and 7.2.

The interviews all took place via Skype since all participants were Virtual Team members. The interviewer was at the same location during all interviews. For every interview, a project room at Radboud University was booked for a time slot of 1.5 hours.

The interview duration varied between 45 to 60 minutes and the interviews have been conducted in English or Dutch. The interviews with the interviewees from the Netherlands and Belgium were performed in Dutch (4) and the other interviews were performed in English (4). The interviews in Dutch allowed the respondents to express themselves in their native language without language barriers. This was not the case for the interviews in English. These interviews were neither conducted in the native language of the interviewer nor in the native language of the interviewees.

Finally, all interviews were recorded because of the semi-structured nature of the interviews. Recording was a suitable way to make sure that all information was captured. Besides, it gave the researcher the opportunity to pay attention to the responses of interviewees and act upon them. All participants gave permission to record the interviews.

3.4 Data analysis

All interviews were transcribed manually directly after the interviews were held. The transcripts capture every word and silence the interviewee used. Some notes were added to the transcript by the researcher to clarify the situation. The notes were indicated as ----- message ----- in order to distinguish them from the words of the interviewee. The quotations from the Dutch interviewees were translated into English by the researcher.

The coding process was a combination of the deductive a priori template of codes approach outlined by Crabtree and Miller (1999) and the data-driven inductive approach of Boyatzis (1998). The combination of deductive and inductive allowed for conflict dynamics in Virtual Teams to be integral to the deductive template analysis, while, at the same time, allowing for new episodes of conflict dynamics in Virtual Teams coming up directly from the data using inductive coding. A deductive approach allowed the operationalization of key concepts based on previous knowledge gained in the conflict cycle in Figure 1 (Babbie, 2015). The conflict cycle gave focus and guidance by researching how TMC influence conflict dynamics in Virtual Teams. This approach suited the research well because this research was aligned around the conflict cycle in four stages: causes, core process, effects, and feedback loop. Sensitizing concepts were used, by thinking about a conflict in a specific way. Further, this research included an inductive approach since we did not know how conflicts play out in a virtual environment which makes use of TMC. In other words, how conflicts worked out in a virtual context based on TMC is something that is studied in this research (Bleijenbergh, 2013). The inductive approach started from empirical observations in a real-life context. Thereafter, the systematic comparison between the observations and abstractions led to general valid statements, which in turn became the starting point for new theories (Bleijenbergh, 2013). In the interviews, respondents were asked for a description of a specific conflict episode in time. Then, conflict dynamics in Virtual Teams were illustrated in a detailed way by employing inductive reasoning. Based on this, patterns were recognized.

The combination of deductive and inductive analyses was guided by template analysis. Template analysis was applied as a mean of organizing and scanning the raw data for

subsequent interpretation. Template analysis created a relatively high degree of structure in the process of data analyses (King, 2012). The main reason for choosing template analysis was due to its flexible character. This research focused on a subjective theme, conflict dynamics, whereby flexibility was of great importance. Template analysis thus gave structure for data analysis by a priori codes based on the theoretical framework but also enough flexibility for the data to unfold (Symon & Cassel, 2012).

The coding process of the collected data is based on the steps described by Fereday and Muir-Cochrane (2006). Out of their six steps, four steps were used in the current research. The first step was to develop the code manual. In this research, four codes formed the code manual and act as the deductive part of this research. Thus, the first round of coding was based on the four main codes, which guided the data analysis but do not capture everything (Fereday & Muir-Cochrane, 2006). Codes were made according to Boyatzis (1998) and identified as: the code name itself, the definition of the code and a description of how to know when the theme occurs. The code manual can be found in Appendix 7.3. The second step was to summarize data and identifying initial themes. In every transcript, the key conflict episodes were highlighted by colour. The key points were retrieved from the question: “can you give me an example of a conversation that was a challenge for you?” For the summary of each transcript, see Appendix 7.4. In step three, the codes from the code manual were applied to the transcripts with the intent of identifying meaningful segments. All parts of the text were matched with a fitting code. Besides, inductive codes were assigned to certain parts of the text. Inductive codes should be assigned to parts of data that described a new theme (Boyatzis, 1998). These new codes are different than the pre-defined codes or they enlarge a code from the a priori code manual (Fereday & Muir-Cochrane, 2006). The processing of this step can be found in Appendix 7.5. The inductive approach was used here to understand the pattern between two conflict episodes, which is usually most visible in the feedback loop. Here, no theory was available about how a conflict episode relates to another because it is a subjective theme. The last step, step four, was about connecting the codes and identifying themes. The connecting of codes was the process of discovering patterns and themes in the data (Crabtree & Miller, 1999). This step revealed the similarities and differences between interviewees. The progress of step four can be found in Appendix 7.6.

3.5 Ethics

The researcher was personally involved at different stages in the research and therefore this study can be ethically challenging (Sanjari, Bahramnezhad, Fomani, Shogi, & Cheraghi, 2014). There is no universal set of duties by which researchers might consider their practice as ethical (Symon & Cassel, 2012; Diener & Crandall, 1978). However, Symon and Cassel (2012) provide a number of virtues that steers a researcher in the direction of ethical research. The relevant virtues of this research are described in this sub-chapter.

One important virtue for this research project was a deliberative conversation (Symon & Cassel, 2012). During the interviews, silence was accepted which resulted in a situation in which the participant could speak freely. After asking one question, the participant had the time and space to react to the questions and comments. So, the participant was at ease and the possibilities of overhearing or interruption were limited as much as possible.

Another important virtue when doing interviews was the sensitivity of handling participants' relationships/data (Symon & Cassel, 2012). Talking about conflicts can be difficult due to its sensitive nature. The interviewer asked for personal experiences with conflicts and this kind of information should be treated with care. Time was taken to gain the trust of the participants at the beginning of the interview. Before the research started, all the participants got a full explanation of the purpose of the research, the level of their expected involvement and duration. All the participants had the opportunity to withdraw from the research at all stages of the interview. The information provided to the interviewees before the interviews started can be found in Appendix 7.1 and 7.2.

Confidentiality and anonymity (Symon & Cassel, 2012) were the third virtue. The participants should feel comfortable during the conversation. Radiating confidence towards the participant should lead to an open atmosphere. At the start of each interview, the participants got an explanation of how confidentiality and anonymity were used in this research. Although the interviews were recorded, the information remained in the hands of the researcher. Only with permission, this information can be made public. In the written documents, the participants' personal information was replaced by fictional information.

4. Results

This study provides insight into how TMC influences conflict dynamics in Virtual Teams. During the interviews, insight has been gained on how the Virtual Team members think about TMC in terms of successful and less successful conversations. The process that has been observed is how the Virtual Team members go through less successful conversations which resulted in conflicts in terms of cause, core process, effects, and feedback loops. The sub-chapters below describes the results. The first sub-chapter describes the characteristics of the Virtual Team. Information about their interdependent tasks, common purpose, and the boundaryless workspace are given. The second sub-chapter elaborates on the technology-mediated way of communication. The third sub-chapter is about the nature of conflicts in Virtual Teams. Finally, the last sub-chapter is about conflict dynamics in Virtual Teams.

4.1 Characteristics of the Virtual Team

The observed Virtual Team can be called a Virtual Team since they have interdependent tasks guided by a common purpose and they work across space, time and organizational boundaries by using TMC.

The observed Virtual Team works together on several interdependent tasks on a project basis. One project they work on is upgrading the IT-infrastructure, called Enterprise Video for Associates (EVA). In this project, the Virtual Team members are working on optimizing IT tools such as routers, connectors, beamers, webcams, headsets, microphones, screens, slide screens, etc. In another project, called Digital Genius, the Virtual Team members focus more on the necessary skills and knowledge required to deal with these tools. *“We want to give people a guide, that they know how to use Skype the best, for example”* (Interview 2, Site IT Service IT Manager). These tasks are interdependent tasks because the team members’ action depends on the tips and tricks shared by other team members to continue their task. In other words, they apply the improvements of one site for another site. *“It is for example about how I upgrade the WIFI connection in one of my factories. x can learn from that. Either, I can give you some advice. He has his own specific problems, for example, culture. He is somewhere else. He asks something if he needs help or if he doesn’t know how to do something (Interview 6, Site IT Service Senior Analyst).”*

The interdependent tasks are guided by a common purpose. The observed Virtual Team is brought together to make sure that the organization as a whole follows the IT-trends in terms of technology. *“That we use the latest things that can bring value to the business. You know*

that we do not fall behind the trends (...)” (Interview 8, Site IT Services Senior Analyst). They do that by solving IT problems. However, they want to do more than only repairing PCs, for example by helping other departments with new forms of technology that they can use as a new form of communication: *“But we want to do more to help the business as a whole. We always call that “above and beyond”: of course, that PC must be repaired, that is a fact, but we also help e.g. Marketing to find new forms of technology that they can use as a new form of communication”* (Interview 2, Site IT Services Manager).

The team works across space, time and organizational boundaries by using TMC to reach this common purpose. First of all, the Virtual Team members can choose where they want to work. As can be retrieved from the following quote, one alternative is working in the garage: *“I sometimes work in the garage during a meeting. If I have a meeting from 2 to 3 and I want to go biking at 3 o'clock, I already put on my cycling clothes and I am busy lubricating my chain”* (Interview 1, Site IT Service Senior Analyst). Other alternatives are working home, in the garden or in public transport. Second, the Virtual Team members work across different time zones. In more detail, the observed Virtual Team is responsible for locations in The Netherlands, Belgium, Balkan Region, Slovenia, Iberia, Spain, and Portugal. All these locations are located in different time zones, varying between -3 to +3. It is therefore not uncommon to work outside regular office hours. *“Sometimes I have to call colleagues at 10 in the evening. I think that's just part of the job (...). I am here at the office for 50% and I work outside office hours”* (Interview 1, Site IT Service Senior Analyst). As a consequence, the different time zones force them to work across time. Third, the Virtual Team members cross organizational boundaries in order to solve local issues. Every site has outsourced employees who deal with local site support. These employees place new screens, insert new hard disks into laptops and carry out local installations of applications and software. Consequently, team members do not have the possibility to move to one of the team members’ offices which makes it necessary to communicate by TMC. The following quote illustrates the latter: *“Look at all the sites we have in Europe. It is so incredibly diverse that we have to. We can't afford to sit together in one room and do everything together”* (Interview 2, Site IT Service Manager).

4.2 The technology-mediated way of communication

TMC tools enable team members to work on interdependent tasks in different places, different time zones, and across organizational boundaries (Lipnack & Stamps, 1997). This sub-chapter analyses the tools used in this team by using the features outlined by Baralou & Tsoukas (2015):

synchronicity, rehearsability, and reprocessability. The results of this study led to two new features: emotionality and velocity. The first sub-chapter describes these two new features. The second sub-chapter describes the analysis of the TMC tools by applying the five features mentioned above. The results are summarized in tables (Table 3-8).

4.2.1 Emotionality and velocity

All interviewees reported that they are aware of what they want to achieve with the conversation. One of the interviewees illustrates this with the following quote: *“When you want a pleasant communication, you need to think about the aim of the communication”* (Interview 4, Site IT Service Senior Analyst). However, some interviewees find it hard to decide which TMC tools are suitable for their tasks or purpose. The three features of Baralou & Tsoukas (2015) are applied by the interviewees in deciding which tools to use. Besides, the interviewees mentioned two new features they use for deciding which tools are suitable for a specific conversation.

The first feature is ‘emotionality’. The implication of emotionality is twofold. On the one hand, emotionality is the capacity to communicate emotions without having to verbalize them. In other words, emotionality is about the possibility to send a smiley rather than explicitly writing about emotions. On the other hand, emotionality is about the observed sensitivity of the TMC tools. In other words, the easiness to share emotional information. For example, some interviewees always use a tool with a webcam function for talking about emotions and others only use the phone for talking about emotions. One team member reported that the video is the key feature to become familiar with the expressions of the other party. *“If the camera turns on, you immediately talk to someone in another way. You also see how someone reacts”* (Interview 1, Site IT Service Senior Analyst).

Another feature that determines when to use which tool is ‘velocity’. Velocity is directly related to the response time. Even if two persons are online at the same time (synchronicity), the response time could be delayed or prolonged. Therefore, velocity is slightly different from synchronicity. The interviewees prefer some tools over other tools if they want to get a fast reaction. One of the tools which are suitable for fast reactions is Skype chat. *“Skype chat if you want an immediate answer”* (Interview 4, Site IT Service Senior Analyst). Skype chat helps the team members to quickly discuss things. Another tool suitable for fast reactions is phone calls because speaking is faster than typing. *“I am quite quick on my keyboard, but still it is much faster to just call. Then you have the answer directly (...)”* (Interview 6, Site IT Service Senior Analyst).

4.2.1 Analysis of TMC features

In order to communicate with each other, the participating team in this research has some main TMC tools, which are e-mail, chat, Yammer, phone call, Skype and video conferencing. These tools are described in the same sequence as stated above.

The first TMC tool is e-mail. Each member has his own e-mail address and receives around 30-40 e-mails per day from colleagues. Usually, they use e-mail to communicate about operational issues, processes, and projects. The synchronicity of e-mail is considered low because e-mail does not provide an acknowledgment of receipt, so team members do not know if someone received the e-mail, which confused them. Thus, it is most of the time unknown for the team members when someone replies. At the same time, it is unknown if the receiver of the e-mail reacts to everything even to everyone in the e-mail conversation. *“Some replied directly, and others do not react or after 3 weeks. Maybe someone reacts to you but not to another person. And that person is only reacting on that message and not on the initial message”* (Interview 4, Site IT Service Senior Analyst). On the other hand, some interviewees argued that e-mail is very useful if you want to clearly inform something. You can take time to clearly inform someone and you have the opportunity to share large documents. Another main reason why e-mail is useful is for sending messages that are not urgent. Receivers can take the time to read and interpret the information written in the e-mail which indicates a high level of rehearsability. Furthermore, there were some suggestions that e-mail is high in reprocessability, however, as one interviewee said, it is hard to have an overview of all e-mails if the amount of e-mails sent is too high. One of the interviewees mentioned that if he uses e-mail as his main tool, his mailbox will probably expand with 30-40 e-mails a day. *“If for example, you need to tell someone about how many cables you need and how many access points, it becomes hard. This is a lot of hardware that needs to be in a formal way of writing, and you cannot pass all this information in one e-mail”* (Interview 6, Site IT Service Senior Analyst). Above all, the interviewees experience writing and reading an e-mail as time-intensive. The following quote illustrates the latter: *“If you want to write a good e-mail you have to read 3 or 4 times. It may be that you are either suggestive, or you are too short, or you have given too little information”* (Interview 1, Site IT Service Senior Analyst). This indicates that the velocity of e-mail communication is low. The emotionality of an e-mail is also low. The message in an e-mail is most of the time considered as direct and straightforward, without showing emotions. *“In an e-mail this is true. You take something a bit sensitive. I don’t know why. You could have a misplaced view of one of your team members because he is not performing very well, or you*

have some comments on the work he or she is doing. I hate to do that by email. I want to do that face to face or by video” (Interview 5, Site IT Service Senior Analyst).

Table 3: Analysis of e-mail in relation to TMC features

E-mail	
Synchronicity	Low
Rehearsability	High
Reprocessability	Medium/low
Velocity	Low
Emotionality	Low

Skype chat is another main communication tool for the team. This application is always open on every screen. The Skype tool provides the status of one party to the other party by showing a green sign for ‘available’, a red sign for ‘busy’ or ‘do not disturb’ and a yellow sign for ‘be right back’, ‘off work’ or ‘appear away’. The team uses Skype chat for informal sessions as well as formal sessions. In the first place for informal sessions. Chat provides the team members an easy opportunity to talk about hobbies, holidays and relationships. In the second place, Skype chat is also effective for formal talk, according to the interviewees. The formal talk is mostly about operational work, for which they need specific server codes and process codes. One example of this number and letter combination for an incident or request is: *“INC463717 of RITM5366372”*.

Considering synchronicity, team members do not have to be online at the same time. One of the interviewees mentioned that some people forget to use the right grammar and interpunction. This illustrates that the rehearsability of chats is low; people do not check their messages before sending them. This downside can be overcome by the high level of reprocessability. Skype chat provides the opportunity to quickly save messages. Even if you miss a conversation, you automatically receive an e-mail with the notification that you missed the conversation. The interviewees experience Skype chat as an easy and fast way of communication with immediate reactions. Skype chat helps to confirm the understanding of information sent by others. The team members can quickly ask for clarification. This indicates a high level of velocity. Besides, the use of emoticons/smiley increases the effectiveness of skype chats for these team members because the smileys help to interpret the state of mind of the other party. *“You can use emoticons. Then you can get rid of the feeling of other persons and their meaning about their statements or sentences. I use emoticons a lot” (Interview 6, Site IT Service Senior Analyst).* This indicates a high level of emotionality.

Table 4: Analysis of chat in relation to TMC features

Chat	
Synchronicity	High
Rehearsability	Low
Reprocessability	High
Velocity	High
Emotionality	High

Yammer is another main communication tool. Yammer is a type of specialized groupware where users can post messages, read updates from others, ‘tag’ topics and more. Yammer is useful to ask something to several people at the same time, according to the interviewees. *“For example, I can use Yammer for things I want to share that do not immediately relate to one person. For example, in the site IT group, I can ask a question to about 400 people at the same time”* (Interview 1, Site IT Service Senior Analyst). So, Yammer is a tool for sharing something and get feedback.

Yammer is not as effective as it should be for this Virtual Team. The purpose of Yammer was to introduce a new method of virtual communication. However, today, the interviewees reviewed Yammer in the same way as e-mail. Most network groups consist of around 50 members. These members all post around 10-15 messages every hour. This suggests that Yammer creates an overload of information.

The synchronicity of Yammer is low. Virtual Team members do not have to be online at the same time. Especially, the synchronicity of Yammer is analysed as very low because you can talk to a group of people instead of talking to an individual person. The rehearsability of Yammer is experienced as high because you have the opportunity to think about a message before you post it. The team attends to use Yammer instead of e-mail because e-mail is only a history for yourself and Yammer acts as a history for everyone. More precisely, they experienced that Yammer shows all the communication flows which creates a better overview and the possibility to reprocess information. However, the extensive possibilities to follow everyone and read all the team members’ posts is not always desired. The quote below illustrates this: *“But now I follow two different networks and within these networks, I have probably 50 different working groups. I cannot follow them. Even if am interesting in them, I cannot follow them. The information in Yammer ends the same as my e-mails, it is too much. Too much information and I cannot filter it myself”* (Interview 5, Site IT Service Senior Analyst). There is no evidence on the level of velocity and emotionality.

Table 5: Analysis of Yammer in relation to TMC features

Yammer	
Synchronicity	Very low
Rehearsability	High
Reprocessability	Very high
Velocity	-
Emotionality	-

Phone calls are another communication tool. Every team member has a mobile phone with an international sim card. The charges are paid by the company. The average employee calls around 5-10 times a day. Some felt that phone calls are somehow outdated, while others consider phone calls as one of their favorite TMC tools because it provides tone and volume. *“Phone calls are good, intonation is clear”* (Interview 1, Site IT Service Senior Analyst). One of the interviewees always takes the phone to explain what he implies with some text message sent. This indicates that the level of emotionality is high.

Both communication partners need to be available at the same time and therefore the synchronicity of phone calls is high. One interviewee said that you can use phone calls for issues or quick wins or if you want to discuss something. This indicates that the velocity is also high. However, there were some negative comments on using phone calls too. Phone calls do not provide rehearsability and reprocessability according to the interviewees. *“(…) If you want to ask about how someone did their tasks without having it on paper, the phone is useful. For example, by doing something out of the process (…)”* (Interview 1, Site IT service Senior Analyst). This quote implies that they use phone calls for something that they do not want on paper. Phone calls are also used to fasten processes. The following quote illustrates a straightforward process for requiring a new laptop: *“If a line manager requests an account for someone – he says, I want a laptop, tablet, telephone, headset, docking station, second screen – he needs to fill in six separate request forms. All those requests are separate forms”* (Interview 1, Site IT Service Senior Analyst). This example shows that some processes are obligated but very straightforward. Therefore, the Virtual Team members prefer phone calls over filling out all separate forms.

Table 6: Analysis of phone calls in relation to TMC features

Phone calls	
Synchronicity	Very high
Rehearsability	Low
Reprocessability	Low
Velocity	High
Emotionality	High

In recent years, Skype expanded from no use to daily use in this team: “*Years ago, Skype was in its infancy. However, now it has almost become commonplace. Within Delta, this is almost the most important form of communication now*” (Interview 2, Site IT Service Manager). The team uses Skype sessions for meetings.

Everyone can join the meeting and can switch their webcam on. The fact that everyone can join a meeting indicates the synchronicity of Skype conversations. The team members should be available at the same time. The same as for phone calls, Skype sessions do not provide rehearsability and reprocessability options. This is mostly because you cannot think about your words in advance and the conversations are not saved in a cloud. It depends thus on the recording options if the team members can reprocess a skype session or not. Skype sessions are experienced as the main tool which overcomes the missing gestures. The interviewees experience Skype as a tool that immediately changes the way you talk to someone because it shows how someone responds and what someone is doing. “*You see how someone responds. You can see if someone is secretly answering their mail during your conversation*” (Interview 1, Site IT Service Senior Analyst). This quote illustrates the high level of emotionality in Skype conversations.

Table 7: Analysis of Skype in relation to TMC features from Baralou & Tsoukas (2015)

Skype sessions	
Synchronicity	Very high
Rehearsability	Low
Reprocessability	Medium/low
Velocity	-
Emotionality	High

When too many people join the Skype session, so-called video conferencing is used. Video conferencing is used for training sessions, workshops, and PowerPoint presentations. These kinds of events take place once or twice per year. The intention is still to do these events face-to-face, however, when someone cannot come to the office, the team provides the opportunity to do it

virtually by using video conferencing. One of the largest PowerPoint presentations was from the CEO. The task of the Virtual Team was to introduce the CEO by an audio and video setup to all the joiners.

All people need to be online at the same time. Besides, video-conferencing can be used by a large group. This indicates a very high level of synchronicity. The high level of synchronicity provides the opportunity to communicate at the same moment in time. Team members do not have a lot of time to think about their reaction beforehand, which indicates a low level of rehearsability. Video conferencing tools offer the possibility to record the session and thus the reprocessability is medium/high, depending on the recording options. Independent if the meeting is recorded or not, the beamer films the entire room so speakers could see how someone behaves or what someone is doing. *“Some meeting rooms have the opportunity to film the entire room so you can see how someone responds”* (Interview 1, Site IT Service Senior Analyst). There is no evidence on the level of velocity and emotionality of video-conferencing.

Table 8: Analysis of video-conferencing in relation to TMC features

Video-conference settings	
Synchronicity	Very high
Rehearsability	Low
Reprocessability	Medium/high
Velocity	-
Emotionality	-

4.3 The nature of conflicts

The observed Virtual Team within Delta experiences conflicts regularly by communicating with different communication partners and by using the tools mentioned in the previous sub-chapter. First of all, they talk to managers of other departments. They have regular calls to provide insights into how the Virtual Team is in terms of deployment, budget, supporting users and Key Performance Indicators (hereafter: KPI's). The team also talks about what to do in the next months. Secondly, the contractor company is a communication partner. The Virtual Team manages a local team on site. Thus, that local team is not a Delta colleague. The third communication partner is the supplier of TMC tools and applications. The fourth and final communication partner is the team itself. They have a team call every week. Unfortunately, the conversations sometimes end in a conflict.

Sub-chapter 4.3 provides an analysis of the different conflict episodes by following the conflict cycle of Wall & Callister (1995). The first part is about the causes of the conflicts experienced by the Virtual Team. The second part is about how the causes are processed. The last part is about the effects of a conflict on this Virtual Team. The feedback loop is discussed in chapter 4.4.

4.3.1 The causes of conflict

In the first place, there are causes of conflict which are not specifically caused by TMC but also occur in traditional teams. One cause of conflict mentioned by the interviewees was the bad performance of one of the communication partners. The communication partner did not understand how to install the server because he made use of the wrong technical information. Another cause of conflict, not directly related to TMC, was about the inability to come in time. One of the team members experienced this as a cause of conflict because from that moment, the Virtual Team member could not trust his communication partner anymore.

One specific cause of conflict in this team which is directly related to TMC is delayed reactions, as described by the interviewees. This cause especially occurs when the team members use e-mail as a TMC tool. *“I recently had a situation in which I sent an e-mail to my colleague. I asked him to send two documents. Two days later he had not responded yet. I sent another e-mail asking if he wanted to send these documents (...)”* (Interview 3, Contractor IT Support Specialist). This quote demonstrates that e-mail is low in synchronicity and velocity which can result in conflicts. Another interviewee sent an e-mail to a business partner. It was an e-mail which took more than three days, without continuous response. After two days, the interviewee decided to stop talking. The following quote illustrates this point: *“She was not available for 2 days. I also could not walk by because she was in America. (...) If she doesn't respond, I won't respond to her again when she comes online”* (Interview 2, Site IT Service Manager).

Another cause of conflict directly related to TMC was showing the wrong status to other team members. The interviewees experience that it is hard to know if someone is online or offline. *“(...) It is obviously harder to reach someone by Skype (online) than have a quick conversation at the coffee corner (offline) (...)”* (Interview 6, Site IT Service Senior Analyst). The possibility to go to the physical office is absent in Virtual Teams and thus they need to trust the status team members show.

The most conceivable TMC tool that provides the option to show a status is Skype chat. Skype chat shows the correct status when someone signs in or are not active anymore. However, the status can also be corrected manually. For example, the option ‘do-not-disturb’ shows other colleagues that they do not want to interrupt. *“If you show the status ‘do not disturb’, everyone knows that you don’t want to be disturbed because you are busy”* (Interview 2, Site IT Service Senior Manager).

Another tool that provides the option to show a status is e-mail. Team members fill in an ‘out-of-office notification’ if they are on holiday. Figure 3 shows an example of an out-of-office notification.

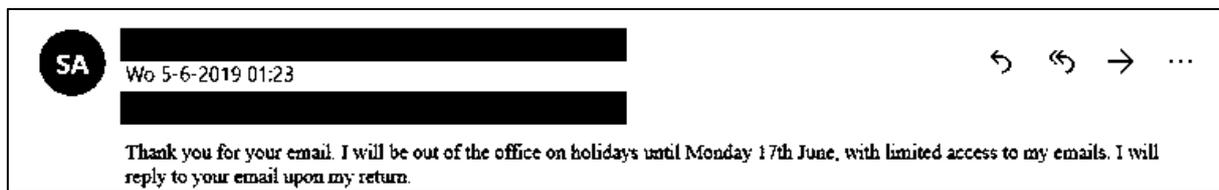


Figure 3: Out-of-office notification

In both tools, the wrong status can be shown. Showing the wrong status can lead to a lot of frustrations. One of the interviewees explains this in the following quote: *“Be sure that you are available and show your correct status to the others. If you are in a presentation, show that you are in a presentation (...). But with a status ‘available’ I can reach you and I want to be able to reach you”* (Interview 2, Site IT Services Manager). If someone is not reachable, it will become harder to come into contact which can be a cause of conflicts according to the interviewees.

4.3.2 The core process of conflicts

The core process of conflict dynamics is quite similar for Virtual Teams as traditional teams. Every dialogue requires specific and well-aligned arguments, in traditional teams as well as in Virtual Teams (Hermans & Hermans-Jansen, 2003).

A situation in which the virtual team needs to provide specific and well-aligned arguments is by buying a new server. The strategy of the observed Virtual Team is to have as few servers as possible. Therefore, team members need to argue why they think that a server is necessary. In one described conflict episode, one of the team members had a discussion with another team member about the installation of a server. The following quote illustrates this dialogue: *“This morning, I discussed with one of my team members who wanted to install a server for a local application on a site. That is fine, but our motives/strategy is to have as few servers as possible on site. Only when there are no other possibilities”* (Interview 2, Site IT

Service Manager). When more sites want a server, they need to discuss why they think that a server is the best option. The team members challenged each other because they wanted to be completely sure that the action is the right solution. If it turned out that they could also use a cloud solution or another site's dataset, they could also go that way. However, if the arguments are not in line with one another, it can become a conflict.

In general, the dialogue in this Virtual Team has a positive character. They see a conflict as a situation in which two parties cannot work together. The dialogue is there to repair the cause of conflict. One of the interviewees explained this by using the 'tree metaphor'. By shaking a tree, some leaves fall on the ground. This interviewee said that he finds it quite nice to shake a tree and see what falls out. The same holds for a dialogue about conflicts. The following quote illustrates this: *"I like to shake the tree and see what falls out. I want to be provocative. I think a conflict is a situation in which two parties cannot work together and I like to build that bridge to work together. If things go wrong, it's fine, but you have to make sure that you can work together in the future"* (Interview 1, Site IT Service Senior Analyst).

The difference of the core process in relation to traditional teams lies in the specificity, directness, the depth of background information, and the representation of text and voice. First of all, the team members had difficulties to be specific about what they want. It is, for example, most of the time impossible for them to put all the information about IT problems in one e-mail or to explain everything by Skype. Therefore, numerous e-mails go back and forth about the same topic without specific ideas. As a solution, the Virtual Team members still prefer face-to-face communication. The following quote illustrates this point: *"In face to face, you can recall something on a daily basis, but in virtual communication, you cannot (...)"* (Interview 6, Site IT Service Senior Specialist). Secondly, a dialogue by TMC changes the directness of communication. It is much easier to be direct in virtual communication than in face-to-face communication. The directness is showed by excerpts from a chat:

1.	Tobias	<i>Did you read the request number? What you did is wrong!!!</i>
2.	Communication partner	<i>Oh.</i>
3.	Tobias	<i>You are stupid.</i>

Figure 4: Chat outline Tobias and his communication partner (1)

In this chat outline, one of the interviewees wrote directly ‘you are stupid’. He did not accept the behaviour of the communication partner and was able to swear on chat. A second explanation of the directness was given by another interviewee. In virtual communication, the dialogue starts directly as visualized in excerpts from a chat:

1.	Tobias:	<i>What happened?</i>
2.	communication partner:	<i>I install the server</i>
3.	Tobias:	<i>No, you didn't</i>
4.	communication partner:	<i>Sure, I did</i>

Figure 5: Chat outline from Tobias and his communication partner (2)

This chat visualizes how a conversation sometimes looks like. It shows that both communication partners were very short in their writings. They asked what they need to ask without some small talk in the beginning and even no greetings after the conversation. One other interviewee highlights the directness of virtual communication:

1.	Person A 10:11:	<i>Hi Tobias</i>
2.		<i>Engineer is still stuck in the traffic. He will be there soon</i>
3.	Person B 10:12:	<i>Ok</i>
4.	Person B 10:18:	<i>According to several sites, there are no traffic jams in</i>
5.		<i>The Netherlands at the moment</i>
6.	Person A 10:22:	<i>Still checking Tobias</i>

Figure 6: Chat outline person A and B

Again, this chat indicates that the writing is direct and straightforward. A reaction as “OK” is one indication of direct messages. This chat also shows the reaction time between messages. It shows that there are around two minutes in between a message which can be considered as a high level of velocity. Direct and straightforward conversations happen sometimes when the team members experience high pressure or are having stress. If they then receive a ticket (a request) with high urgency, they can react in a direct way without small talk. The following quote illustrates this point: “If you receive a ticket with high urgency and you are just dealing

with something else. Then I react direct and in the wrong order: Hey x, you can take a look at the ticket. Oh, and did you sleep well last night? Was it busy on the road? That's the wrong order, I know. It depends on how much pressure or stress I have" (Interview 3, Contractor IT Support Specialist). In line with this argument, TMC changes the linearity or sequence of the conversation according to another interviewee. For some team members, it is a challenge to have a personal conversation by TMC while at the same time keep it short and to-the-point.

Thirdly, the difference in a dialogue lies in the depth of background information. The interviewees mentioned that the depth of background information is lower in virtual communication than in face-to-face communication. By replying to e-mails, continuously new people are added to their team member conversations. The problem is, most of the time, that the added people do not know enough about the topic of discussion. The same holds for Skype sessions, in which people do not know why they are in the meeting. One empirical example related to the upgrade of the meeting rooms with a new Skype system. This comprised of implementing new TVs, cameras, and microphones. For the implementation, not only IT specialists are involved but also office managers. The office manager can interrupt the conversation without having appropriate background knowledge. *"For example, if I will upgrade the meeting rooms to a new skype system, which means new TVs, cameras etc. "Before you can do that, you need to communicate with the officer. Officially this is a young lady managing the offices, but they are not really interested in the IT characteristics and mostly do not understand the IT talk. However, they need to hire the local vendors in for example Hungary to for example install the system and connect the TVs to the wall. (...)* (Interview 6, Site IT Service Senior Analyst).

Above all, the representation of text and voice is different in the core process of a conflict in face-to-face communication and TMC. The interaction in the core process of TMC is lower than in a face-to-face core process since gestures and eye movements are lacking. One of the interviewees explained this with a statement about the variation in functional language and body language. *"I believe that people communicate 70% with their bodies. And 30 percent is purely functional"* (Interview 1, Site IT Service Senior Analyst). Especially when talking about conflicts, it turns out that attitudes and eye movements are of high importance. One example of a gesture is 'rolling with the eyes'. *"If something is really bad, then yes, body language and gestures are very important. Rolling with the eyes is an example. Absolutely. But indeed, also attitude, you know that someone slumped"* (Interview 2, Site IT Service Manager).

4.3.3 The effects of conflicts

Conflicts in Virtual Teams have similar effects as traditional teams. First of all, misunderstandings create personal irritations. This has not only to do with TMC but for example because of the other parties' characteristics. The following quote illustrates the latter: *"I have one customer; it is not because of Skype but because of personal characteristics. Some people are just as they are. I cannot work with them. Even not in face-to-face and also not virtual"* (Interview 4, Site IT Service Senior Analyst). Another effect of conflict is a lower level of trust, which includes the lack of guarantees. One of the interviewees explained how a meeting, most of the time, ends. At the end of a meeting, some people say, "I will pick it up". However, if everyone wants to do something then the idea breaks down again, according to the interviewees. This situation is visualized in the following quote: *"Thank you for this meeting and say, "I pick it up". If you say, who picks it up? Everyone wants to do something and then the idea breaks down again. You have to show leadership, otherwise, everyone will tell you what to do and it won't happen"* (Interview 1, Site IT Services Senior Analyst). This quote thus illustrates that Virtual Team members cannot trust others when they want to pick up some tasks. They make a planning to make sure that everyone will pick up their tasks as discussed in the meeting.

4.4 Conflict dynamics

Conflicts can be seen as a process wherein the feedback loop is the key component (Wall & Callister, 1995). This sub-chapter describes how TMC changes the time span of conflict episodes by describing three different dialogical interactions: dialogue with real others, dialogue with invisible others and dialogue with virtual artifacts. Two new insights on conflict dynamics are described in the second and third part of this sub-chapter: informality and the creation of assumptions and stereotypes.

4.4.1 The time span of conflicts

The dialogical interactions in Virtual Teams should be seen in broader terms than the communication in traditional teams (Baralou & Tsoukas, 2015) which change the time span between different conflict episodes.

Some conflict episodes showed a direct and straight dialogue with real others. The team members find the cause of conflict, collected facts, talk about it and deal with the effect. *"I prepared that conversation for myself in advance. I collected some facts, searched for my expectations and the other party's expectations. I looked for what went wrong. We tried to reach*

a conclusion together. Then the question came in, how are we going to pick it up properly to still finish it well?" (Interview 7, Contractor IT Support Employee). Both parties talk directly to each other, in an appropriate time frame.

This kind of interaction can be best translated to the accommodating style of conflict-handling from Thomas and Kilmann (1974). Accommodating in this team consist of providing background information, explain what you want to achieve, and set up things again. Other responses to the question 'what is accommodation for you' included that working together means that you cannot simply avoid or compete with people. This is illustrated by the following quote: *"Give all the background and explain a little bit what I want to achieve and what I expect from the other person end. To come to on the ground again and to set up things. Sometimes this is quite difficult. But sometimes these are people we need to continue with. You cannot avoid them"* (Interview 4, Site IT Services Senior Analyst). In relation to conflict dynamics, accommodating in combination with TMC helps to prevent a conversation from conflict by thinking about the use of words in a more explicit way before sending it. Like one interviewee said: *"(...) With this person I think at every message I send: what would this be for him, maybe I should first start with good morning, how was your weekend. And then, I have a case in progress, can you take a look at it?"* (Interview 3, Contractor IT Support Specialist). Suitable tools for accommodating are e-mail, Skype chat, and Yammer. These tools are high in rehearsability and reprocessability which provides the opportunity to fine-tune the message before sending it and reread the text after sending it.

Other conflict episodes showed a conversation without continuous response. It can be assumed that there were other conversations in between. The conflict took much longer than in the case of a dialogue with real others because the issue is continuously discussed with a third person. The assumption is visualized in the following quote: *"I saw the message and approached the end-user by asking what he exactly expects from me? The end-user said: I discussed this issue with my manager, including a print screen of the text"* (Interview 3, IT Support Specialist). This is an example of a dialogue with invisible others by e-mail. If team members do not respond immediately, then team members have the opportunity to connect with others in between the conversation. In the e-mail conversation, both persons talk to invisible others in order to collect relevant information from individuals outside the virtual meeting.

Similarly, in skype sessions and phone calls, you have the option to only listen to the conversation instead of responding. The 'mute' option helps to hold conversations with invisible others. All team members can use the 'mute' option during the meeting. Using the 'mute' option sounds as an indication that you are doing other things in between. *"If people use*

the option mute, what I said, people are doing other things while participating in a meeting. (...)” (Interview 1, Site IT Service Senior Analyst). The members in the conversation do not know what the member who is muting is doing. *“Do you 13 seconds for me? I need to solve something. ‘Mute’.”* (Interview 3, Contractor IT Support Specialist).

Conversely, virtual artifacts help to speed up a conflict. One of the interviewees explained that he often uses virtual artifacts (e.g. pop-ups) to trigger someone. *“For example, if something needs to be done for the end of next week. I send an e-mail and in this e-mail, I entail a reminder, a pop-up, on Thursday next week, so it will just appear as a pop up when you have a meeting. It reminds you that it should be done before tomorrow”* (Interview 8, Site IT Service Senior Analyst). In this situation, the pop-up helps to reach the point of satisfaction for both parties earlier. The quote illustrates e-mail as the main virtual artifact. However, phone calls and Skype sessions are also suitable TMC tools for triggering and reaching a point of satisfaction. *“E-mail is perfect to give each an overview. But when it comes to eradicating a conflict, discussion or escalation, avoid e-mail at all times. Then Skype is the best tool for me. Both are available and you can discuss it directly. If necessary, old-fashioned telephone calls are suitable”* (Interview 2, Site IT Service Manager). Phone calls and Skype sessions are very high in synchronicity and velocity. Also, the emotionality level of both tools is high, so it provides the opportunity to share sensitive information, which is mostly the case in conflicts. The downside of using phone calls or Skype sessions as a tool for talking about conflicts is the low level of reprocessability. These two tools do not provide the opportunity to retrieve the exact words said in the conflict.

Above all, independently from the kind of dialogue the team members perform, the main advantage of TMC for this team is the opportunity to talk to someone at another moment in time: *“Sometimes, I think, tomorrow I have fresh energy, then I’ll start talking about it again”* (Interview 3, Contractor IT Support Specialist). This indicates that TMC provides ‘freedom’ to decide when and how to react. Besides, it indicates that communication about conflicts executed by TMC takes more time than face-to-face communications about conflicts. Tomorrow is one day later than the explicit moment the conflict started.

Avoiding (Thomas and Kilmann, 1974) the other party is a contradiction of the freedom that TMC provides. If someone does not understand the effects of his or her action on the primary process or misunderstands the aim of the conversation, some of the interviewees do not see a positive way forward with this person. For them, avoiding this person is the best way to handle the situation. The following quote illustrates this point. *“(…) If it has consequences for my actions, I would rather say that I want to talk to someone else (...)*” (Interview 1, Site

IT Service Senior Analyst). Another reason for avoiding a situation is that the person expects that the other party does not change their behavior: *“I do not longer enter into a dialogue. I have the idea that they are not going to say, come on, we will change our behavior”* (Interview 3, Contractor IT Support Specialist). Avoiding someone is easier in a Virtual Team because the possibility to see someone at random is not realistic.

4.4.2 The possibility to talk about the conflicts in an informal setting

It is important what happens during the break or after the meeting as this creates a relationship with your team members according to the interviewees. The observed Virtual Team members explained that they cannot continue the conversation after the meeting, for example in the coffee corner. The coffee break becomes a ‘virtual coffee’ in Virtual Teams. You can have a coffee break, but you do not see the other team members in real life. Instead, in a face-to-face meeting, you can go together to the coffee machine and can do some small talk. This is impossible for a Virtual Team meeting. Some people catch up after the meeting virtually, but it is not easy according to the interviewees. *“When you do that for virtual communication, some team members catch me up after the meeting by chat and ask me how they think it is going, but mostly they don’t. It is not easy”* (Interview 5, Site IT Service Senior Analyst).

If the team members catch up after the meeting, they use phone calls or skype conversations. The quote in paragraph 4.2.1 illustrates that the team members use phone calls for something they do not want on paper. Besides, the team members use Skype conversations for catching up, because the reprocessability is low. The team members mostly do not use e-mail, Skype chat or Yammer because these tools have a too high level of rehearsability and reprocessability.

One of the interviewees explains the missing of a ‘virtual coffee’ with an example: *“For example, if the manager is speaking to a group of 4 to 5 people. If you go out of the meeting and your manager is not there, you can say to your other team members: “he, what do you think about that, it is stupid isn’t it haha”. Or I think that is not good. Absolutely”* (Interview 5, Site IT Service Senior Analyst). Especially when the manager said something stupid or irrelevant, the team members do not use e-mail, Skype or Yammer.

4.4.3 The creation of assumptions and stereotypes

A traditional team talks to each other frequently, especially on a personal level. *“You just know them, and you make good assumptions about how they think or what they would like or what*

they don't like" (Interview 6, Site IT Service Senior Analyst). Face-to-face communication makes people think they know each other. It gives them a sense of familiarity. When using TMC, however, you need to make assumptions about the personality of someone. One of the interviewees joined the team last January. He communicated with the other team members at least once a week, but the first time he met the team in real-life was in July. The relationship the interviewee had with his team members was built on virtual communication and assumptions: *"You can imagine how many assumptions and ideas I already build up for myself about other team members. Because you create a whole relationship in 6 months by Skype and then thereafter that was the first time that I saw them face-to-face"* (Interview 6, Site IT service Senior Analyst).

The interviewees think that it is necessary to fill in the information you miss about someone by yourself. Especially by talking to someone from different cultures, making assumptions cannot be prevented: *"You miss a lot of information and you will fill this up with assumptions. (...). And that even will be worse when you are talking to someone from different countries. Because even though we are all Europeans we are all very different and talking from different languages and different accents. Maybe I am too soft for Hungary and maybe too hard for Belgium for example"* (Interview 6, Site IT Service Senior Analyst).

Some tools provide more room for assumptions and stereotypes than other tools. First of all, it depends on the amount of information required to create an account. To create an e-mail account, the user generates a personal e-mail address and password. The e-mail address of Delta has the same format for everyone: firstname.lastname@delta.com. So, everyone in the company knows the first and last name of the person with whom they communicate by e-mail. In addition, Skype software requires a skype name. For phone calls, the amount of background information is lower. Everyone can call someone if you have the right phone number. The lowest amount of background information is in Yammer. Everyone can create an account and only a name is necessary. This could also be a nickname. When an input field is required, this must be explicitly stated. In most cases, 'mandatory' is placed behind the field which is mandatory to fill in. Table 9 provides an overview of the tools in relation to the background information you have about someone.

Table 9: Tools in relation to the creation of assumptions and stereotypes

TMC tool	Background information
E-mail	Required: first name, last name Optional: location and date of birth
Skype chat	Required: Skype name Optional: profile picture, phone number, e-mail, location and date of birth.
Yammer	Required: (nick)name
Phone calls	Required: phone number
Skype sessions	Required: Skype name Optional: profile picture, phone number, e-mail, location and date of birth.
Video-conferencing settings	Required: Skype name Optional: profile picture, phone number, e-mail, location and date of birth.

The users of the TMC tools have the option to fill in more information than what is mandatory. For example, to create an e-mail account, users have the possibility to fill in their date of birth and location. Especially in a Virtual Team, the location is of high importance, with reference to the various time zones and workplaces. Some people do not want to fill in their date of birth or do not upload a profile picture: *“In Skype calls, frequently, you don’t see the picture and sometimes even don’t know how old the person is (...)”* (Interview 6, Site IT Service Senior Analyst). This creates situations in which people start to make assumptions about the physical appearance, age or locations of the other team members. Most of the time, this will lead to conflicts.

Instead, providing personal information leads to the creation of stereotypes, like in the following example in which the location is provided *“(...) If you talk to Chinese or Indians, they are humble and don't say ‘no’”* (Interview 1, Site IT Service Senior Analyst); *“If you go to America, a lot of bombary, this is like that, and thus.. soo.. People are yelling and screaming”* (Interview 1, Site IT Service Senior Analyst) or if the sexes are showed: *“(...) Officially this is a young lady managing the offices, but they are not really interested in the IT characteristics and mostly do not understand the IT talk (...)”* (Interview 6, Site IT Service Senior Analyst).

No matter what kind of information is required or optional within the tool, a tool only shows facts and no subjective characteristics of a team member. *In Skype calls, you cannot see if the person is shy or how much experience he or she has”* (Interview 6, Site IT Service Senior Analyst). As this quotation showed, Skype sessions do not show personal feelings or

experiences and thus team members need to make assumptions about the personality/experiences of the other team member. Another example showed the creating of assumptions in e-mail conversations. When people are added to an e-mail conversation, the others assume that the joiner read all the previous e-mails. Unfortunately, this is not always the case which leads to conflicts.

The creation of assumptions and stereotypes is thus aligned with TMC tools. The analyses show that assumptions and stereotypes are visible when using voice-related tools, such as Skype sessions. Also, in a text-related tool such as e-mails assumptions and stereotypes are visible. However, there is no evidence that the creation of assumptions and stereotypes depends on a specific TMC tool.

5. Conclusion and discussion

The first part of this chapter gives a summary of the results and an answer to the main research question, including the contribution of this research to current literature. The second part presents the practical recommendations for the observed team and/or similar cases. The chapter ends with the discussion of this research including the limitations and the recommendation for future research.

5.1 Conclusion

Globalization and the increase in the use of TMC lead to an increase of Virtual Teams (Ale Ebrahim et al., 2009). Virtual Teams are booming because of the benefits associated with them (Cascio & Shurygailo, 2003; Hinds & Bailey, 2003). Working in Virtual Teams provides organizations benefits such as overcoming boundaries, lower-cost operations and getting the people with the best knowledge from all over the world (Cascio & Shurygailo, 2003). Besides, Virtual Teams have benefits for the individual worker in a team, in the sense that the job fits better with their knowledge and personality (Ale Ebrahim et al., 2009).

Virtual Teams, however, also come with important challenges, that need to be understood. A challenge is acceptable as long as a team deals with the challenge in the correct way. If the team does not deal with a challenge in the correct way, a conflict can arise. Conflicts in Virtual Teams often have to do with their mode of communication. Virtual Teams have limited opportunities to talk face-to-face and therefore rely entirely on TMC for their communications (Ale Abraham et al., 2009). The use of TMC is researched by Baralou and Tsoukas (2015), who identified three interconnected features of TMC which could influence conflict dynamics: synchronicity, rehearsability, and reprocessability. These features could be studied as static or dynamic. Static research only focuses on one moment in time. However, conflicts can be seen in broader terms, as a process instead, which is called dynamics (Wall & Callister, 1995). Conflict dynamics, as a combination of conflict and dynamics, show that a conflict is visible over time in four stages: causes, core process, effects, and feedback loops. Current literature does not describe how TMC influence conflict dynamics in Virtual Teams. This led to the following research question: **How does Technology-Mediated Communication influence conflict dynamics in Virtual Teams?**

First of all, the results showed that the observed Virtual Team choose their TMC tools on the basis of what they want to achieve with the conversation. These findings contribute to the research of Hunsaker and Hunsaker (2008) as well as Baralou and Tsoukas (2015). Both

mention that the choice for a specific TMC tool and the IT-infrastructure is very important. Baralou & Tsoukas (2015) showed that Virtual Team members decide which tool they need for a specific conversation based on three features: synchronicity, rehearsability, and reprocessability. This study contributes to the study of Baralou & Tsoukas (2015) by adding two new features: velocity, and emotionality. The results showed that the level of stress determines which tool the users take. If they want a quick and fast conversation, they take chat. However, if they want to clearly inform someone, then e-mail is a better option. Besides, the results showed that the observed Virtual Team members always use tools with a webcam function to talk about emotional topics.

Despite the observed Virtual Team members think about the aim of their conversation and what they want to achieve, sometimes their conversations end in a conflict. TMC influences the various stages of conflict dynamics in Virtual Teams, namely cause, core process, and effects.

Initially, the causes of conflict in a Virtual Team are not different from the causes of conflict in traditional teams. Virtual teams also have to deal with the inability to come in time and bad performance of communication partners. One interesting finding was the specific cause of conflict adjusted by TMC, which is delayed reactions. Malhotra et al., (2007) also found that disrupted responses lead to frustration and irritation. Another important finding was the wrong status of team members as a cause of conflict. The possibility to go to the physical office is absent in Virtual Teams and thus they need to trust on the status that team members show. This status is especially of importance in chat sessions since people expect to get a fast reaction. The reaction time is delayed when people do not show their correct status. This result is in line with the research of Baralou & Tsoukas (2015). These results further support the idea of unclarity for Virtual Team members whether there is someone online, and who is at the other side of the collaborative software (Baralou & Tsoukas, 2015).

Subsequently, every dialogue in the core process requires specific and well-aligned arguments, in traditional teams as well as in Virtual Teams (Hermans & Hermans-Jansen, 2003). The core process in this Virtual Teams is also about providing facts. The difference in relation to traditional face-to-face communication lies in the specificity, directness, duration, the depth of background information, and the representation of text and voice due to the use of TMC in Virtual Teams. First of all, TMC creates a barrier to be specific about what you want. This results in ten e-mails or more about the same topic before coming to an agreement. Secondly, TMC makes it easier to be direct. People do not dare to swear to people in the coffee corner but by TMC tools, there is more distance. Sometimes they even do not know the person

to who they talk. Thirdly, TMC has an influence in terms of depth of background information. A virtual conversation easily includes many people and it is not always ensured how much knowledge these people have about the topic of discussion. Finally, TMC gives a different interpretation of text and voice. This has to do with the missing of gestures and eye movements. TMC can overcome this barrier by using smileys and emoticons, however, still, the results show that it is harder to interpret messages by TMC than in a face-to-face conversation. However, all these influences of TMC on conflict dynamics rely on the tools used for the specific conversation.

Interestingly, this study showed the core process of a conflict situation in a Virtual Team using TMC as positive instead of negative. This outcome is contrary to that of Jones et al., (1996) who suggest that a conflict is always negative. The described conflict episodes showed that dialoguing about a miscommunication can lead to better arguments. The arguments are, due to a dialogue about the miscommunication, more aligned and more grounded to missions and visions. This has specifically to do with the rehearsability and reprocessability of the tools in use.

Moreover, Virtual Teams have similar effects on conflict as traditional teams. A conflict leads to an effect on individuals, interpersonal relationships and issues (Wall & Callister, 1995). These findings are in accordance with those obtained by this research. A lower level of trust and lack of guarantees are two aspects that influenced conflict dynamics in Virtual Teams but also in traditional teams

Overall, the main contribution to the literature on conflict dynamics is what this research found out about the feedback loop. The findings first illustrate that it takes longer to come to a solution by using TMC. Namely, the way forward or backward differs in virtual communication. TMC does not provide enough personal information because you only 'know' each other via an online medium. Above all, it is much easier to come back to a certain message at another moment in time if you do not have the energy to react directly. Besides, this research found out another influence of TMC in time-related conflict dynamics, especially about stereotypes and informality in conflicts. The interpretation of a conflict situation comes from assumptions and stereotypes. It is necessary to fill in the unavailable personal information by yourself to understand what others do or think. Besides, the walk to the coffee corner is missing. TMC can overcome this barrier by the use of a 'virtual coffee' but still, the coffee moment is individual, and you cannot talk to other persons about a situation that happened before. The results show that the informal talk during the meetings and at the coffee corner is the most important insight for a feedback loop.

5.2 Practical implications

As mentioned at the beginning of this Master Thesis, Virtual Teams are growing in popularity in many organizations all over the world, because of the benefits associated with them (Cascio & Shurygailo, 2003; Hinds & Bailey, 2003). Yet, at the same time, Virtual Teams face challenges when dealing with TMC. The ways in which TMC influences conflict dynamics in Virtual Teams is studied in this research. The findings of this study have a number of practical implications for future practice in Virtual Teams.

The first practical implication relates to the use of e-mail as TMC. Although this Virtual Team does not make use of e-mail on a daily basis, this research included a lot of conflict episodes related to e-mail conversations. Two remarks must be made. First of all, a team should only use e-mail for non-urgent messages, so only when an answer is not necessary within 24 hours. This will reduce the number of e-mails per day. If one e-mail appears that requires a quick response, team members should provide an acknowledgment of receipt including the expected response time. Secondly, e-mail should only serve as a tool to share information. So, team members should not use e-mail for discussions and disagreements or emotionally charged messages. Basically, these two remarks apply to all TMC tools. Team members need to be aware of what they want to achieve with the conversation and should choose a TMC tool that aligns these goals.

Another important practical implication is in line with the practical recommendation mentioned before. Emotionally charged messages, for example conflicts, are hard to discuss. Unless this team applies Skype chat as their main tool for talking about emotional topics, Skype chat will not be the best option. The use of voice-related TMC tools, for example phone calls and Skype sessions will be better for addressing those topics. These two TMC tools score high on emotionality because it provides the opportunity to hear tone and intonation.

5.3 Limitations

This research provides managers and team members insight into conflict dynamics in Virtual Teams. However, this research has some limitations which impact the interpretation of the results.

The first limitation of this research is related to the case selection. The research was performed at one company and one team. To be more precise, this research was conducted in one Virtual Team, consisting of eight persons, working on IT-related projects. Therefore, the

small sample size did not allow to generalize the results to other contexts (Symon & Cassel, 2012).

Another major limitation of this research is the use of only one data collection method. Interviews were the main data collection method to gain insights into conflict dynamics in Virtual Teams when TMC is at stake. If various types of data were used, a comparison could be made. Triangulation of data would have been better (Bleijenbergh, 2013).

A third limitation was the online setting of the interviews, via Skype. In other words, the interviews were not conducted in a real-life setting. This created the limitation of missing non-verbal communication such as body posture, gestures or visual emotions (Bleijenbergh, 2013).

A fourth limitation was the language difference of the interviewees. The native language of the international interviewees was Portuguese, Dutch, French, Czech and Serbian. As a result, they all translate the things they want to say from their native language to English. The quotes from Dutch interviews were translated into English in order to integrate them into this thesis. Although these quotes were translated into English by someone with knowledge, it could be possible that a misunderstanding occurred. Baumgartner and Weijters (2017) noticed that literal translations do not always have the same meaning in all different languages.

The fifth and final limitation has to do with the sensitive nature of conflicts. The interviewer asked the participants about their personal experiences with conflicts. This kind of information is private and should be treated with care. However, due to the unfamiliarity of the researcher with the interviewees and vice versa, the researcher got the feeling that some interviewees were not willing to share all their conflict episodes. The use of a peripheral membership should be better. This kind of membership allows close and frequent interaction with the group, with the aim of gaining acceptance as an 'insider' by the members. The aim of this kind of membership is not to get a core role within the group and thus still sufficient distance between the interviewer and interviewee is guaranteed (Adler & Adler, 1987).

5.4 Future research

Considering the results and limitations of this research, recommendations for future research can be provided.

As mentioned by Wall and Callister (1995), the knowledge gained about conflicts is mostly based upon one sample, observed and measured at one specific time, with less-than-perfect instruments, in a limited context. The same holds for this research. The specific context

in this research was Virtual Teams, who work on interdependent tasks, guided by a common purpose across space, time and organization boundaries with links strengthened by webs of communication technologies (Lipnack & Stamps, 1997). The team members in this research operate in the food industry, more specifically, in the ICT department. The Virtual Team members share tips and tops and are most of the time self-responsible for doing the task in a responsible way. As a consequence, there is a smaller need for communication. In further research, other Virtual Teams, for example, more operational related teams, should be studied to get a deeper insight into conflict dynamics in Virtual Teams. Further, different industries and departments can be chosen for research. The observed Virtual Team members work in an ICT department. They view communication technology both as a critical corporate resource and as a product. It is likely that these people prefer to use technology in their private life too, for example by switching the light on and off by use of a mobile phone or by making a shopping list on their phone instead of on paper. However, there are still people that do not like all the technology gadgets and novelties. Further research can give attention to Virtual Team members that do not like TMC, for example in the more sensitive industries such as healthcare or education. Furthermore, it is also interesting to study how women perceive conflicts in contrast to men. Quantitative studies already have been studied gender as a social context mostly in male-dominated organizations (Valentine, 2001). Chiauzzi, Heimberg & Dody (1982) found for example that female participants had more difficulties in expressing negative communications than their male counterparts. Moreover, Halpern and McLean Park (1996) found differences in processes and outcomes around conflicts between women and men. Halpern and McLean Park (1996) also found out that women are more focused on personal concerns and requested information about other people's findings than men. As a consequence, women mention personal information sooner than men do (Halpern & McLean Park, 1996). Another finding is related to the use of confrontational behaviour. Men use confrontational behavior more than females (Halpern & McLean Park, 1996). These different orientations reflect different perspectives on conflict and could be interesting to research qualitatively in practice in relation to Virtual Teams, TMC and conflict dynamics. Further research in this direction will probably highlight more the characteristics of the parties involved as a cause of conflict.

Moreover, a topic that requires future research is the role of power in conflict dynamics. All interviewees agreed about the openness of the organization in terms of communication to all different organizational levels, from an operational, tactic and strategic level. It is interesting to research how TMC influences conflict dynamics in a bureaucratic organization. What are the

causes, core processes, and effects? It is likely to think about a Virtual Team meeting in which one senior manager is talking to lower job positions and in which it is required that everyone is silent during the whole meeting. Or another situation by sending an e-mail to one of the management executives in which a formal letter is desirable. More research on this topic will enrich our understanding of how hierarchies and politics shape conflict situations in Virtual Teams.

6. References

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7. Appendix

7.1 Interview guideline in Dutch

Hallo. Leuk dat je mee wilt werken aan dit onderzoek. Is mijn stem luid genoeg?

Over mezelf vertellen en doel van het interview: Mijn naam is Marloes Swanenberg, masterstudent Bedrijfskunde aan de Radboud Universiteit te Nijmegen. Ik ben momenteel bezig met de afronding van mijn studie. Om dit daadwerkelijk te doen, schrijf ik een master thesis. Hoe doel van dit onderzoek is inzicht verkrijgen in hoe de dynamiek van gesprekken veranderd wanneer op technologie gebaseerde communicatie middelen worden gebruikt.

Inhoud van het interview: Het interview bestaat eigenlijk uit 3 blokken. Het eerste blok is algemene informatie over u. Het tweede blok gaat over een succesvolle gesprekken in virtuele teams. Het derde blok gaat over uitdagingen in die gesprekken bij virtuele samenwerking. Het laatste blok is afsluitend en daarin zal ik u vertellen hoe het verdere onderzoek eruit gaat zien en hoe u daar mogelijk nog aan kan bijdragen.

Anonimiteit en vertrouwelijkheid: De door uw gegeven informatie wordt geanonimiseerd zodat niet te achterhalen valt wie wat gezegd heeft.

Opnemen: Met uw toestemming zal ik het interview opnemen. Dit maakt het op het eind makkelijker om de informatie te interpreteren.

Blok 0: Algemene informatie

1. Kunt u iets over uzelf vertellen?
2. Hoe bent u gestart in dit bedrijf?
3. Kunt u uw huidige baan omschrijven?
4. Welke projecten doet u momenteel?
5. Hoe lang duren deze projecten?

Link naar communicatie

Virtuele teams moeten via TMC met elkaar samenwerken, niet alleen over bepaalde dingen maar alles. Ik heb specifiek voor virtuele teams gekozen omdat de diversiteit in virtuele teams leidt tot meer verschillen in standpunten, meningen en ideeën met betrekking tot een groepstaak

dus communicatie is hierbij van belang. In deze projecten die u net noemde zul je samen tot een overeenstemming moeten komen en dat doe je door communiceren.

Het volgende deel van het interview gaat over een succesvolle conversatie in een project.

Daarna zullen we het hebben over de uitdagingen in deze gesprekken aan de hand van door u gegeven voorbeelden. Ter afsluiting zal ik u vragen hoe u het interview ervaren heeft.

Blok 1: Succesvolle conversatie

Ik ben geïnteresseerd in virtuele teams. Kun je me vertellen over een succesvol gesprek in een virtueel team dat succesvol was en waar alles goed ging.

6. Wat was uw meest succesvolle gesprek in een virtueel team?
7. Welke rol speelde virtuele communicatie hierin?

Maar er zullen vast ook uitdagingen zijn geweest.

Blok 2: Uitdagingen in conversaties

8. Kunt u me een voorbeeld geven van een gesprek dat een uitdaging voor u was?
9. Kunt u me een ander voorbeeld geven van een gesprek dat een uitdaging voor u was?
10. Welke rol speelde virtuele communicatie hierin?
11. Waarom denk je dat een conflict in virtuele communicatie anders is dan een conflict in face-to-face communicatie?

Blok 3: Afsluiting

12. Hoe heeft u het interview ervaren, vond u de vraagstelling en het praten over uitdagingen aangenaam op deze manier?
13. Heeft u nog meer informatie dat ik vergeten ben te vragen?
14. Heeft u mogelijk nog documenten (chat gesprekken, e-mail conversaties, opnames etc.) waarin de uitdaging zichtbaar was.

7.2 Interview guideline in English

Hello. Nice to have you here. Is my voice loud enough?

Introduce myself and the topic: My name is Marloes Swanenberg, master student Business Administration at the Radboud University, Nijmegen. To finish my master, I am writing a master thesis about the dynamics of Virtual Teams when Technology-Mediated Communication is used. The information you share with me has scientific relevance and also is also useful in order to provide practical recommendations for you and your organization. The total interview time is around one hour.

Content of the interview: The interview is divided into three main sections. The first block is to get to know each other. The second block is about a successful conversation in a project. Then we will talk about the challenges in these conversations based on examples provided by you. To conclude, I will ask you how you experienced the interview.

Anonymity and confidentiality: The information you provide is anonymous so that it is not possible to trace who said what. The final version of the master thesis will be shared with you if you want of course.

Asking for recording? With your permission, I will record the interview. This makes it easier to process the information in the end. Is it a problem for you that I recorder this meeting? Please feel free to interrupt me if you have (any) questions. If you do not have questions right now, we can start the interview.

Block 0: General personal information

1. Could you tell me something about yourself? Who are you and what is your position?
2. How did you start at Delta?
3. What are your core tasks?
4. In what kind of projects do you participate at the moment?
5. What is the duration of these projects?

Link to communication

Virtual Teams must work together by Technology-Mediated Communication, not just on certain things but on everything.

I specifically opted for Virtual Teams because the diversity in Virtual Teams leads to more differences in views, opinions, and ideas with regard to a group task, so communication is

important. In these projects that you just mentioned, you will have to come to an agreement together and you do that by communicating. The following part of the interview is about a successful conversation in a project. Then we will talk about the challenges in these conversations based on examples given by you. To conclude, I will ask you how you experienced the interview.

Block 1: Successful conversation

I am very interested in Virtual Teams. Can you tell me about a conversation in a Virtual Team that was successful?

6. What was your most successful conversation in a Virtual Team?
7. Which role did virtual communication play in this?

But there must have been challenges too.

Block 2: Challenges in conversations

8. Can you give me an example of a conversation that was a challenge for you?
9. Can you give me another example of a conversation that was a challenge for you?
10. Which role did virtual communication play in this?
11. why do you think that conflicts in virtual communication are different from a conflict in face-to-face communication?

Blok 3: Closing

12. How did you experience the interview?
13. Do you have any more information that I forgot to ask?
14. Do you possibly still have documents (chat conversations, e-mail conversations, recordings, etc.) in which the challenge was visible?

7.3 First stage of data analysis: Code manual

Code 1	
Label	Causes (Wall & Callister, 1995)
Definition	The causes of conflict are the reason why conflicts occur (Wall & Callister, 1995).
Description	Three groups of causes: causes based on the characteristics of the parties involved, interpersonal relationships and issues.
Code 2	
Label	Core processes (Wall & Callister, 1995)
Definition	The causes are transformed by the core process from the previous state to a future state.
Description	The core process is the dialogue that transforms an issue.
Code 3	
Label	Effects (Wall & Callister, 1995)
Definition	The future state is the effect.
Description	If people talk about the outcomes of a specific situation. Also, if people talk about what they recognize in conversations as unpleasant or pleasant.
Code 4	
Label	Feedback loops (Wall & Callister, 1995)
Definition	The feedback loop is a behavior change that alters the original cause or generates new causes (Wall & Callister, 1995).

Description	A conflict can be seen as a process. Avoidance, accommodation, competition, collaboration, and compromise are five-conflict handling modes that can be seen in a feedback loop (Rahim 1983, 1992; Thomas and Kilmann, 1974).
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7.4 Second stage of data analysis: Summarization of data

Interview x	
Question	Answer
What was your most successful conversation in a Virtual Team?	
Which role did virtual communication play in this?	
Can you give me an example of a conversation that was a challenge for you?	
Which role did virtual communication play in this?	
Why do you think that conflicts in virtual communication are different from a conflict in face-to-face communication?	

7.5 Third stage of data analysis: Matching quote to code

Quote #	Code #

7.6 Fourth stage of data analysis: Connecting the codes and identifying themes

	Interview 1	Interview 2	Interview 3	Interview 4	Interview 5	Interview 6	Interview 7	Interview 8
Cause								
Core process								
Effects								
Feedback loops								
Assumptions								
Stereotypes								
Emotionality								
Velocity								