Action research on Barriers and Success Factors in Leading Virtualisation in a Small Enterprise

by

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THESIS

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Abstract

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The research context is a small private TV station with about fifteen employees in a developing country. The organisation is undergoing virtualisation in that on both the strategic level and on the operational level, communication and working processes increasingly rely on the possibilities the internet offers. The research objective is to arrive at a systematic understanding of the factors that influence virtual teamwork and determine how virtual leaders can act on these factors.

The action research thesis builds on four propositions put forward by Snellman (2014). According to these propositions, leaders who improve trust and cohesion in a virtual team and at the same time mitigate the adverse effects of virtuality and diversity contribute towards team success and organisational value creation. The framework established in this study is based on these four propositions. The framework was used as a guideline for the literature review, for action in the ongoing virtualisation process and finally as the source for the research questions used for the data analysis.

The data on which this study is based stems from chat protocols of communication on both the strategical and operational levels, on interviews done after the analysis of the chat protocols and on personal observations gathered in journal notes and meeting records. The qualitative thematic analysis was done using NVivo, a computer-assisted qualitative data analysis software (CAQDAS).

A narrative of the ongoing business development project immerses the reader is into the context. Elements from the narrative are later analysed against the framework. There is evidence in the data of an increase in trust, cohesion and virtuality following the interventions proposed by Snellman (2014). There is also evidence of actions geared toward mitigating the effects of diversity and their impact on the virtualisation process. However, this research does not yield clear evidence for the causal links between the framework's proposed actions and the expected outcomes. Andriessen's (2002) Dynamic Group Interaction model is more precise than the proposed framework, but it is too complex to be actionable in practice. A weakness of the framework is its failure to address dynamic factors of change and development over time. In the context of this action research project, the framework was deemed to be actionable in simultaneously understanding the context and in leading transformation.

In the thesis, I reflect on how academic literature and trade literature contributed in different ways towards creating actionable knowledge. There is also a reflection on how the action research process extended my understanding and use of theoretical models; moreover, I became aware of myself transferring knowledge on business theories to others involved in the project through analogies.

Declaration

I hereby certify that this dissertation constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions or writings of another.

I declare that the dissertation describes original work that has not previously been presented for the award of any other degree of any institution.

Signed

Immanuel Dah

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Table of Content

49994 Words

List of tables

List of figures

List of abbreviations

AR   Action research

AST   Adaptive structuration theory

BM   Board member

CAQDAS   Computer-assisted qualitative data analysis software

CAS   Complex adaptive systems

CLT   Complexity Leadership Theory

DGI   Dynamic Group Interaction

ICT   Information and communication technologies

IMOI   Input - mediatior - output - input

IPO   Input-Process-Output

SME   Small and medium enterprises

VAM   Virtual Alignment Model

1   Introduction

> *"We live in a trench and it is a mercy it don't rain otherwise we'd be washed away. The fighting just lately has been terrible. Our shells knock the enemy all ways and the sight in the trenches that we take is awful. We wear our respirators because of the awful smell of the dead. I'll never get the sight out of my eyes, and it will be an everlasting nightmare. If I am spared to come home, I'll be able to tell you all about it, but I cannot possibly write as words fail me. I can't describe things."*
> *(Watts, 1915)*

In 1919, 100 years ago, the Treaty of Versailles, which marked the end of World War I, was signed. My knowledge about this war stems from the history classes I attended at school, from inscriptions on war memorials present all across Europe, and from popular media. My sources of information on World War I convey two different undertones.

The history taught at school focussed on events, battles, numbers, dates, treaties, and principal decision-makers' names. While these are neutral facts, the artefacts of war memorials, paintings and sculptures, mostly convey a sentimental undertone that glorifies a heroic sacrifice for the well-being of those back home. My impression is that critical and realistic reports play a minor role in public opinion. The critical voices writing on this topic point out that public perception has been steered in the past. In literature, a mythos of heroism and camaraderie was created around the battles of World War I, which was later used for propaganda purposes (Mosse, 1986; Badsey, 2014). These myths rarely recounted lived experiences. As the citation above shows, those who reported from the front lines found it difficult to express their experiences in words.

The impression I have of business literature, whether in educational literature, trade journals, practitioner-oriented journals or academic journals, is similar. Only a small part of this literature reflects lived experiences. My impression is that there are extreme poles. On the one end, there is academic literature with a focus on details. In this focus on details, the bigger picture is lost. The educational and practitioner literature, with its models and generalisations, offers a bigger picture. Finally, on the other end, trade literature offers stories about heroic success and simple solutions to problems, which are painted in straight lines. None of these different levels of business literature reflects my experience of business practice. I experience it as messy. The problems are never clear cut. As such, they do not allow for an exact diagnosis to which there would be a clear solution.

This thesis offers a report from the front lines. It recounts how we stumbled, were blinded by the fog, how we tried to understand what was going on so as to gain control over the situation, how

we failed and got hurt and what we learnt. In the tradition of action research, this thesis is a dialogue between practice and theory, going forward and backwards between the two poles.

1.1 Setting

The research participants' identity and the exact location of the setting are not of primordial importance to this action research study. They will, therefore, be kept anonymous. The participants will be referred to based on their functions. The geographical settings will be referred to as the Headquarters and the Branch (Figure 1).

Figure 1: Research setting

The setting of my research project is a private TV channel in a developing country. I had invested in a cable TV network in 2007. Over the years, this investment had grown into a private TV channel with about fifteen employees. As co-founder of the organisation, I am a board member of the geographically dispersed organisation. As board members, we work together in a virtual team to develop strategies for the organisation. Only the Director is on-site and in direct contact with the staff, while the other two are based on a different continent. We are linked by the means of communication provided by the internet. However, the contact between the board members was loose, and the working speed was slow. Feedback from the field was hardly palpable. I could observe frequent communication breakdowns and, within myself, a feeling of distance and a lack of commitment.

The Director on the ground is responsible for the implementation and the feedback to those abroad. While he is in direct contact with about twelve journalists and technicians in the headquarters, he also leads the three staff members of the first branch office through WhatsApp

and phone calls. Unfortunately, the communication between the Headquarters and the Branch has not always been smooth. Moreover, the output delivered by these remote staff members did not meet the expectations of the organisation. Here too, I observed regular breakdowns in the communication between the Headquarters and the Branch.

1.1.1 Practical problem

We have positioned ourselves as the number one channel in the regional niche into which we grew. To enable us to broadcast fresh news from the regions we cover, we need well functioning branch offices in these regions. This entailed setting up new structures and new channels of communication. We needed to get its first branch office to operate properly.

The TV channel depends mainly on income from advertisement contracts. To obtain substantial contracts from the country's leading enterprises, we need to prove that we have a solid viewer basis and good geographical coverage. We were the only TV channel that covered daily events in our region. This still is our unique selling proposition, with which we hope to bind our viewers. However, we must broadcast continuously and always be up to date, so as not to lose our viewers once we have won them. If we cannot get the branch office running smoothly, this will reduce the quantity and breadth of our coverage. We might lose viewers, and as a consequence, we might lose advertisement contracts. If we do not want to shut down, we need this regular income to cover our running costs.

In January 2016, we engaged a senior journalist to head the first branch office. Half a year later, we hired a cameraman and sought the partnership of media enterprises in that city. However, we were not getting the expected output from the branch office. The main aim was getting news articles from the branch office regularly. Unfortunately, the material reached the Headquarters late because the leading journalist avoided using an internet platform for data transfer; instead, he sent his work in the form of a DVD per night bus. Thus news from the branch office was aired at least one day too late.

The branch office team did not act independently and missed covering important events if not instructed from the Headquarters. Regularly, senior staff from the Headquarters travelled to the branch office to ensure its functioning. Both the issues of sending produced material to the Headquarters and the control of the Branch's activities from the Headquarters could easily be solved using the means offered by the internet for data transfer and communication. All parties had these means at their disposal anyway.

Having the technical means at our disposal did not automatically lead to adopting new ways of working together. The story above led me to situate the practical problem as being related to the transition toward increased virtual collaboration and our ability as leaders to lead through this transition. The practical problem can be summarised thus:

Although our small enterprise has the technical means for virtual collaboration, we, its leaders, face challenges in leading our teams to adopt this new way of working, which would improve the organisation's ability to create value.

1.1.2 The plot, "Virtualise"

The board set the objective to get the branch office running smoothly to be able to deliver news articles on a daily basis. Beyond solving the issues presented in the story above, with the aim of improving the organisation's efficiency and efficacy and thus the value creation for both stakeholders and shareholders, the broader objective was to make virtual collaboration a cornerstone of the organisation's processes and culture. To achieve this, all the organisation members, the board, the staff in the headquarters, and those in the branch office, needed to adapt to this new way of working together. The operational aim of the business development project "Virtualise" was getting all organisation members to work on Slack, a virtual collaboration platform for communication and data exchange. Consequently, the organisation's processes also needed to be adapted to the virtual collaboration.

The first phase of the project "Virtualise", documented in this thesis, ran from August 2017 to June 2018. During this time, the collaborative action research project, which was executed for the most part online, went through the following phases:

- Project planning by the board members
- Collaborative visioning with all staff members
- Process analysis and process redesign with a focus on virtualised processes by the board and management
- Implementation of the new processes and new communication tools
- Collective debriefing was executed online with all staff members, which allowed them to share their observations and reflections on the project.

1.1.3 The actors

The actors involved in the endeavour were scattered all over the globe (Figure 1). At the head of the organisation, on the strategic level, is the board with three board members. As teenagers, we were classmates. Later, studying abroad at different universities, we maintained contact. I am the principal investor and main owner of the TV channel, and as such, I am the board president. At the same time, I am in the role of researcher. I live in central Europe, and I have a formal education in architecture and business administration. The enterprise's principal founder studied electro-engineering in Europe before returning to the city where we went to school together. As the board member on the ground, he is in the role of the director of the TV channel. The third board member, who joined us later, studied informatics in Europe. After university, he returned to the city in which we grew up and tried to establish himself. Not satisfied with the conditions in a developing

country, he returned to Europe. He is in the role of the IT-Specialist. In this report, these main actors will be referred to as the Researcher, the Director and the IT-Specialist.

In this constellation, I believe that we are in the right position to lead the organisation forward even though we are not all physically present on the ground. According to Abramovitz (1986) and Perez (2001) theories, developing countries do not need to invest in technological innovation. Instead, they need to invest in a knowledge transfer from more advanced economies. All board members studied in Europe. Therefore, we are in a position to transfer knowledge as described above. While my partners transfer technical expertise, I transfer management knowledge.

On the operational level, the staff is headed by an editor-in-chief responsible for the journalistic aspects. In the following, he will be referred to as the Editor. The rest of the team is made up of journalists and technicians. Among the technicians, who operate the cameras and do the video editing, there was also an IT-Technician. He was responsible for the maintenance of the computer network in the Headquarters. In the following, the staff will be referred to based on their roles as journalists or technicians. During the observation period, about eight journalists and four technicians worked in the Headquarters of the TV channel. Because of the high staff turnover, it is not possible to state precise numbers. In the branch office, there were two journalists and one technician.

Besides these staff members, it is worth mentioning some external partners with whom we interacted. During the observation period, there were exchanges with two accountants. One was based in Europe, the other on-site. There were also exchanges with a marketing specialist living in Europe. Finally, one online meeting was held with a web designer living on the Indian sub-continent.

1.2 Motivations

The objectives of this action research project are on three different levels. To describe this systematically, I use Chandler and Torbert's (2003) first-, second- and third-person research framework to classify the three different levels on which this research occurs. On the first-person level are personal objectives. On the second-person level are the objectives of the business development project. Finally, on the third-person level are the research objectives.

1.2.1 First voice

I have invested into this business venture, and therefore, it is in my personal interest as a practitioner not to lose the capital I invested. This business endeavour is not the only one, which I lead from a distance. Therefore, I have an intrinsic motivation in seeking mastery of virtual leadership.

As the principal investor and thus proprietor, I am in a position of power to initiate changes. Time has shown that the strategic inputs I have made so far proved to be successful in the long run. This gives my decisions and inputs credibility. Additionally, compared to my business partners, based on my formal education in business management, I am best positioned to take on a leadership role in organising the enterprise. My partners studied informatics and electronic engineering; their strength lies in finding and implementing adequate technical solutions. While they create the technical structures, my contribution lies in my ability to create organisational structures.

On the level of first-person research, there are two main objectives. One objective is to fulfil the requirements of submitting an action research thesis to obtain a Doctorate in Business Administration. On a personal level, I wish to expand my knowledge of virtual leadership and, at the same time, perfect my skills in virtual leadership. Using journalling and reflection, this part of the research focuses on my personal action, learning and development over time. I am the beneficiary on this level.

1.2.2 Second voice

The second-person research centres around the business development project "Virtualise". On an operational level, the primary objective was to get the organisation's first branch office running smoothly. The lessons learnt from this process would then be used to set up the next branch offices. On a strategic level, the project should serve to make virtual teamwork and virtual leadership cornerstones of the corporate working processes. The organisation and its participants are the beneficiaries of this action and the learning in practice.

1.2.3 Third voice

On the level of third-person research, the aim was to arrive at a systematic understanding of the barriers and success factors of virtualisation from a leadership perspective. The scholar-practitioner dialogue, which simultaneously engages academic theory and practice, should generate actionable knowledge. This knowledge should contribute to navigating the complexity of the process of virtualisation. The audience of this dialogue is the reader of this thesis, who stands outside of the organisation. All three audiences are beneficiaries of the actionable knowledge generated in the course of this research.

1.3 Research

Above I have presented the context, the actors and their different motivations. The collaborative business development project "Virtualise" served as the source of data for the research project. This section describes how the practical problem was developed into a research problem and a research question.

1.3.1 The research problem and the research objective

We have the ICT tools for virtual teamwork both on the strategic and operational levels, yet we do not seem to make the best use of them. Over the past years, I observed breakdowns in communication. We saw a potential to improve data transfer and business processes by making better use of the means, which information and communication technologies (ICT) offer. I assume we never unlocked this potential because, after the organisation's start-up phase, we never reflected on the implications of working together as a dispersed team linked by ICT. We had never researched the implications of virtual teamwork on the organisation. Furthermore, as leaders, we had never studied best practices of leading virtual teamwork; in other words, virtual leadership. The research objective of this thesis is to answer the question: "How should we do virtual leadership?"

The transition from co-located collaboration to virtual teamwork, in one word virtualisation, is given by the organisational context described above. To master virtualisation, we need, on the one hand, to understand what barriers hinder the staff from actively using the tools for virtual teamwork. On the other hand, we need to know which success factors can be leveraged to improve virtual collaboration. Finally, we need to understand the inter-relationships between these factors. Going beyond the technical challenges of ICT to look into social factors, I want to know which actions will improve virtual teamwork.

From the practitioner's perspective, I seek solutions and best practices. From the researcher's perspective, I want to go beyond that, to seek a systematic understanding of the factors which influence virtual teamwork. As a researcher-practitioner, I am in search of actionable knowledge in the form of a management tool, which gets its depth from theory and has proven to be useful in practice. The research problem can be summarised thus:

> *Without a systematic identification and understanding of the success factors and barriers that influence virtual teamwork, we as virtual leaders lack actionable knowledge to successfully exercise virtual leadership in the complex context of the virtualisation of processes and communication in our organisation to improve its value creation.*

The research objective is to draw on literature to identify the factors that hinder or promote virtual teamwork and understand how they relate to each other, with the aim of developing a systematic approach to guide us as leaders to act on the identified factors so that we may improve virtual teamwork in our organisation. Actionable knowledge for virtual leadership in my own practice should be the outcome of this research.

1.3.2 Literature and the research question

Apart from the practical problem, literature was the second entry point in the development of this thesis. In my initial reading through the relevant literature, I looked for solutions in reports on best practices in leading virtual teams. This initial research led me to discover an article written by Lilian Carita Snellman (2014). Based on an extensive literature review, this article succinctly summarises the best practice for virtual leadership in four propositions. The four propositions on how virtual leaders can improve trust and cohesion, meanwhile harnessing virtuality and diversity in virtual teams will be presented in detail in the following chapter. An overarching research question was derived from these four propositions:

> *How can virtual leaders arrive at a systematic understanding of the factors that influence virtual teamwork, and how can they act on these factors?*

The whole thesis builds on Snellman's four propositions. First, they were used in the literature review as scaffolding to identify the factors which determine virtual teamwork and the actions by which they can be influenced. Secondly, the relationships between the factors were established to arrive at a framework. Based on this framework, the overarching research question will be broken down into sub-questions in Chapter 2.

1.3.3 Research instruments

My role as a researcher-practitioner immersed in the context of the research and the collaborative nature of the business development project both offer an ideal setup for the use of action research as a methodological approach. Adams (2012) and Adams (2014) trace the origins of action research back to Dewey, one of the proponents of pragmatism. According to Adams (2012, p. 2), "Dewey proposed five phases of inquiry that parallel several of the most commonly used action research processes, including curiosity, intellectualisation, hypothesising, reasoning, and testing hypotheses through action."

Curiosity and the necessity to improve the organisation's situation led me to inquire into literature and thus intellectualise my problem and then transform Snellman's existing propositions into a framework through reasoning. This framework, in a way, a hypothesis, was then tested in action. The framework served as a scaffold for preparing interviews with participants and also for analysing the data generated by the project "Virtualise". This study confirms that the framework is actionable in practice, and as such, it can serve as a management tool to guide virtual leadership.

The data against which the framework is evaluated stems from three different sources: from transcripts of the online communication on Slack and WhatsApp that went on during the project "Virtualise"; from interviews with some of the participants after the period of observation; and lastly, from my observations, which I noted in a research journal or in notes of online meetings I

held with my research supervisor. Working with data from three different sources served as a validation strategy (Flick, 2004). The data offered a rich longitudinal view over time. Using a CAQDAS (NVivo), the thematic analysis of the data relied on a coding structure derived from the framework.

1.4 Development of the thesis

In this first chapter, I laid out the research context, developed the practical problem and the research problem to arrive at an overarching research question. In the next chapter, I will situate the problem in the literature. In the first part, I will look at the topics virtuality, virtual teams and virtual leadership. In the second part, I will look into the areas on which Snellmann (2014) built her four propositions: trust, cohesion, virtuality and diversity. Backed by literature, the propositions will be expanded into a framework that creates links between the four propositions. From the framework, further research questions will be derived.

The third chapter describes the research methodology. The first part of the chapter deals with the philosophical groundings, while the second part dwells on the research design. This entails the data collection and analysis methods. The fourth chapter presents the data in the form of a rich narrative. Following the chronological narrative fits together anecdotes and quotes and from the data to form a coherent story. In the second part of Chapter 4, the data is analysed using the framework as a scaffold. The analysis compares the four propositions with the data and thus answers the research questions in light of the literature.

In the fifth chapter, the results of the study are discussed. The main insights are presented: a summary of the research outcomes, succinct answers to the research questions in light of practice, and a discussion of the limitations. The chapter closes with a description of the actionable knowledge created in the process and the formulation of recommendations for practice and further research.

The last chapter summarises the study's outcomes on the first, second, and third-person levels. On the third-person level, I look at the outcomes of the scholarly research project. On the second-person level, I evaluate the actionable knowledge that was created for the organisation. Finally, on the first-person level, I reflect on my personal development in this process. In this chapter, I also reflect on the dialogue between theory and practice and in what way different sources of literature have informed and contributed to my practice.

2   Literature

"If one ignores the technology, there is nothing new, conceptually, in the idea of an activity without a building as its home. Where information is the raw material of work, it has never been necessary to have all the people in the same place at the same time."
(Handy, 1995, p.41)

My starting point for the literature review was the search for literature on best practices in leading virtual teams. The first part of this chapter highlights the main concepts: teams and virtuality. Building on that, I then look at communication and leadership pertaining to virtual teams. The last part of this first section offers an overview of the debates around virtual work.

After discovering Snellman's (2014) four propositions, which summarise much of the best practice literature on the leadership of virtual teams, I focus on the themes of her propositions, from which the research questions are derived. The last part of the literature review weighs and synthesises the findings from the review and relates them to my specific research context.

2.1 Virtual teams, virtuality and virtual leadership

As Handy (1995) puts it above, working together over vast distances towards a common goal with information being the primary raw material is nothing new. The Roman Catholic Church is an example of an organisation whose mission over more than a thousand years has been the spreading of the information of the Christian Teachings around the world. What is new today is that the internet, coupled with ICT, makes this possible without significant costs. This new mode of communicating and working together calls for new expressions: virtuality, virtual teams and virtual leadership.

According to Martins, Gilson and Maynard (2004, p. 808), members of virtual teams "use technology to varying degrees in working across locational, temporal, and relational boundaries to accomplish an interdependent task". The leaders of such teams, who lead from afar using ICT, practice virtual leadership. Virtuality as a dimension defines the cooperation between team members in a continuum ranging from working together face-to-face to forms of cooperation, in which members are dispersed across space, time and organisational boundaries. Finally, virtualisation is the transformational process of the workplace towards higher degrees of virtuality. In the following, these constructs will be described in more detail.

2.1.1 Teams

In this section, I will lay out my understanding of the construct "team" before looking at virtual teams. The terms team and group are often used interchangeably in the literature, and the difference is not always clear. In business literature, the commitment to a common goal and the

bond between team members is what differentiates the two terms (Fritz, no date; Mackin, 2007; Buschman, 2012; Schaubroeck and Yu, 2017). This difference in the lack of bonding and common direction becomes evident in daily language when we compare the expressions *teaming up* with *grouping together*.

Like Jarvenpaa and Leidner (1999), Schaubroeck and Yu (2017) argue that the study of virtual teams should not be viewed as an entirely new field. Hence I build on theories about teams that existed before the advent of virtual teams. I will base my understanding of teams on Chidambaram and Bostrom's (1997) description of the adaptive structuration theory for group development, in which groups are synonymous with teams (Ibid., p.184). I will use the word "team" from here on, even when referring to ideas like group development or group dynamics. Further, I will use the Dynamic Group Interaction model developed by Andriessen (2002). This model was developed for the context of virtual teams (Figure 2).
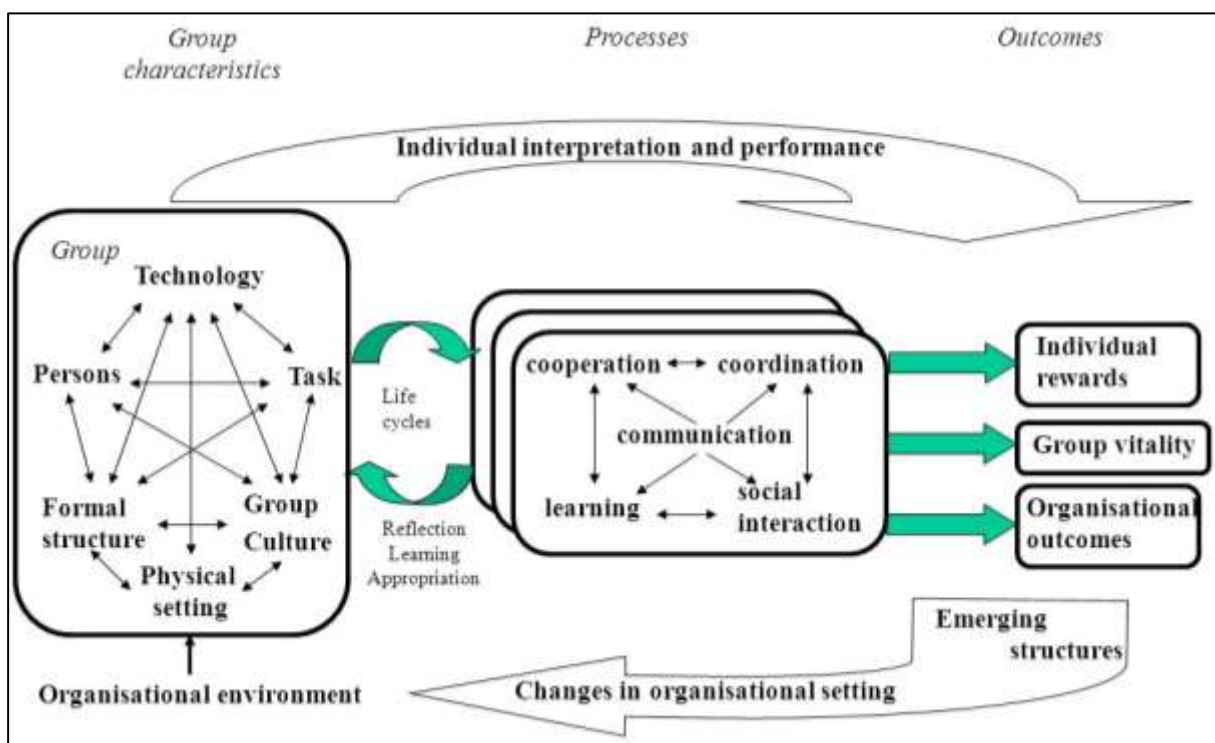
Figure 2: Dynamic Group Interaction model
(Andriessen, 2002)

In their meta-analysis of team development models over 30 years, Chidambaram and Bostrom (1997) describe four general trends in models on team development. Team development is viewed as being either progressively or cyclically sequential or as non-sequential based on time or structure. Chidambaram and Bostrom (1997) posit that in its development, a team's primary goal is the adaptation to situations. This position builds on the adaptive structuration theory (AST) formulated by Giddens (1979) and further developed by DeSanctis and Poole (1994). According to Rains and Bonito (2017, p. 1), "AST focuses on the dynamic relationship between the structures provided by technologies (e.g., document sharing) and the ways in which those structures are

used by organisational members (e.g., collaboratively produced documents)". Jones and Karsten (2008), who reviewed 331 articles on Information Systems that draw on Giddens' theories, suggest that the potential for research, which applies this social theory had at the time of writing not yet been fully exploited. Meanwhile, Schmitz, Teng and Webb (2016) suggest that the application of AST be extended beyond the level of teams to the appropriation of technology on the level of individuals. In my context, the use of AST seems to be a good tool in understanding team dynamics in an organisation that I view as a complex adaptive system.

When using AST to understand team development, the focus lies on the appropriation of structures like task or technology by teams and on their adaptation to the teams' needs. The authors suggest that there is a reciprocal relationship between team performance (outcomes) and the level of team development. According to Chidambaram and Bostrom (1997), successful team development becomes evident in five characteristics: being cohesive, managing conflict effectively, balancing task and socioemotional needs, communicating effectively, and actively participating in team activities.

Andriessen (2002) also builds on AST to develop his Dynamic Group Interaction (DGI) model presented in Figure 2. In his model, he identifies five fundamental team processes: task-oriented cooperation, coordination, learning, reflection and team building. These processes all rely on the communication process, which is the only existing link between members of a virtual team. The five processes are necessary for organisational outcomes. These become evident in the form of products defined by their quantity and quality; maintenance of the team; and financial and non-financial rewards for the individual. The quality of the team processes depends on six characteristics of the context: persons, team culture, formal structure, physical setting, technology and task. The model is not static since processes, outcomes and characteristics continuously influence each other.

In comparing different teams Hollenbeck, Beersma and Schouten (2012) use three dimensions for differentiation: authority differentiation, skill differentiation and temporal stability (Figure 3). To these three dimensions Ortiz de Guinea, Webster and Staples (2012), as well as Schaubroeck and Yu (2017), add the degree of virtuality as differentiation between different teams.
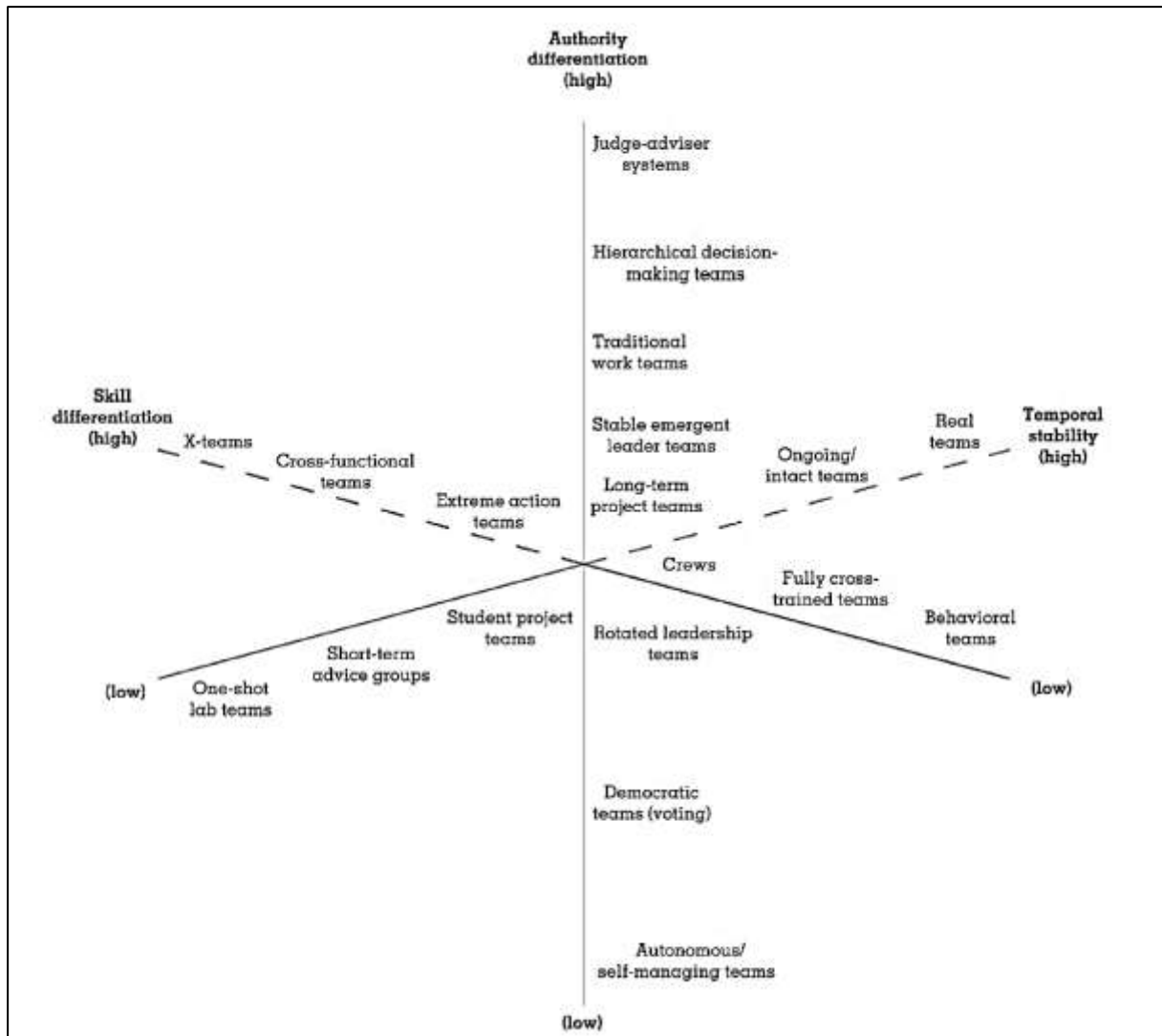
*Figure 3: Dimensional scaling framework for describing teams
(Hollenbeck, Beersma and Schouten, 2012)*

Fifteen years later, independent from Andriessen (2002) and his sources, Dulebohn and Hoch (2017) came up with a model based on Input-Process-Output (IPO) that is nearly identical (Figure 4). What Andriessen terms as group characteristics, Dulebohn and Hoch (2017) term as input. They group the input into organisation factors, team leadership and team composition. Except for task, all group characteristics listed in the DGI-model are reflected as input. Dulebohn and Hoch (2017) enumerate cognition, affection, motivation, and behaviour as team processes and emergent states. This representation does not reflect the actions that result in a tangible outcome as well as the DGI-model. Further, communication as a precursor of any collaborative action does not appear as a process in the IPO-model. The IPO-model omits the organisational outcomes and mentions only outcomes on the team level and on the individual level. The strength of the IPO-model and what differentiates it from the DGI-model is that team context, virtuality, task interdependence and task complexity are considered as moderating factors that influence the team process.
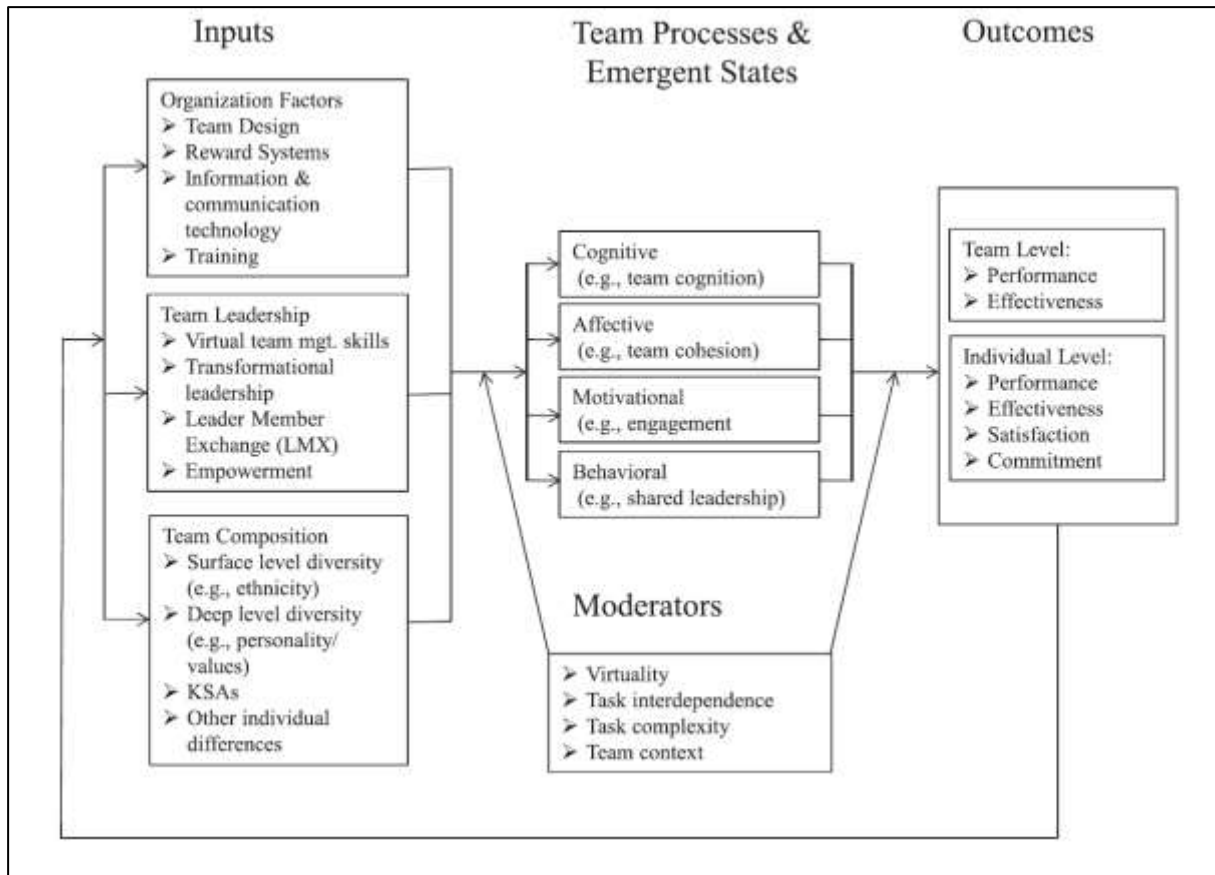
*Figure 4: Input-process-output model for virtual teams
(Dulebohn and Hoch, 2017)*

From a practitioner's perspective, I lean more towards the DGI-model to help me understand my reality. Especially the definition of processes in the DGI-model is better suited to be used in daily business. What I take from the IPO-model is the moderating effect of virtuality.

2.1.2 Virtuality

At the start of this research, I considered measuring the level of virtuality as suggested by Klobas and Jackson (2008) using six virtuality dimensions (proportion of virtual staff, staff dispersal, ICT tool use, virtual processes, staff mindset and innovation in services) and six organisational dimensions (shared values, shared understanding, identity, trust, staff satisfaction and economic effectiveness). This approach was dropped for the use in daily practice because it has too many dimensions. The debate on virtuality as a dimension is ongoing, and there is no unified measurement and treatment of the construct (Gilson *et al.*, 2015; Orhan, 2017; Alaiad, Alnsour and Alsharo, 2019).

For Andriessen and Verburg (2004), the degree of virtuality is based on varying spatial, temporal, cultural and organisational distance between the team members as well as different modes of interaction based on the technology used. In their approach, Gibson and Gibbs (2006) drop the organisational distance. From five down to three, Hoch and Kozlowski (2014) propose geographic dispersion, communication media usage and cultural differences to measure team virtuality.

Finally, Schweitzer and Duxbury (2010), as well as Foster *et al.* (2015), reduce the definition of virtuality to the dichotomy of co-located collaboration versus dispersed collaboration.

Overall, in a systematic literature review Orhan (2017) identifies sixteen dimensions used in literature to describe virtuality. The most relevant are: geographic and organisational dispersion, the use of ICT, little or no face-to-face contact, working on interdependent tasks and cultural diversity.I agree that virtuality depends on just one central dimension: geographical dispersion. Collaboration across distances is enabled by different communication tools, amongst others by ICT. The degree of virtuality depends on the tools used and on time spent working at a distance. I posit that interdependent tasks are not a dimension of virtuality, but an aspect of working in a team, be it dispersed or co-located. The quantity of time spent working at a distance and the ICT used determine the quality and the degree of virtuality.

The challenges arising from virtuality stem from the different sub-dimensions, which are merely consequences of the geographic dispersion or the communication tools chosen. Accordingly, temporal distance can have two sources: either because the spatial distance transcends different time zones or because the technology used allows asynchronous communication. Furthermore, ICT enables collaboration across organisational, national and cultural borders. Hence, challenges stemming from organisational and cultural diversity are side-effects and not inherent to virtuality itself.

Letters and the telephone also enabled distant cooperation. However, shared data storage and video calls have reduced the temporal and emotional distance. To address the challenges assumedly caused by virtuality, the problems ensuing from the sub-dimensions and the choice of communication tools must be addressed.

2.1.3 Virtual communication

Communication as the antecedent of collaboration is the key to transforming thoughts into collaboration, and it is a manager's only means of influencing others (Stacey, 2011). Hence, in addressing challenges in virtual teams as opposed to co-located teams, the challenges ensuing from virtuality become the main challenges to be addressed. Depending on the communication channel used, asynchronicity and media richness are the factors that differentiate virtual communication from face-to-face communication. Asynchronicity refers to the time lag between answer and reply, while media richness refers to the presence or lack of non-verbal cues like tone and facial expression.

Daft and Lengel's (1986) Media Richness Theory best frames this challenge. They hold that organisations process information to overcome uncertainty and equivocality. Equivocality refers to the ambiguity of information that allows different conflicting interpretations. According to Daft and Lengel (1986), increasing the amount of information can counter uncertainty, while the

richness of the information can counter equivocality. To illustrate this, the following is a classification of the media of their time in increasing order of richness: numeric documents; impersonal written documents; personal documents like letters and memos; phone calls; face-to-face interaction. Daft and Lengel (1986) posit that there is little need for media richness where there is structure and little task variety. Opposed to this, where there is a lack of structure and where there is a great task variety and task interdependence, there is a need for media richness. If a problem that has not occurred before needs to be solved, then there is a need for richer and for more information to arrive at a solution. Compared to this, a shopping list is all the information needed to accomplish the recurring weekly shopping.

Building on Daft and Lengel's (1986) theory, Håkonsson *et al.* (2016, p. 4) set up the hypothesis that "employees who interact via media of high richness will behave less opportunistically than employees who interact via media of low richness". In cooperating, employees' self-interest tends to conflict with organisations' achievement common. In this context, less opportunistic behaviour indirectly improves organisational outcomes. In today's context, when comparing media richness, we would compare between an e-mail, an online chat, a phone call and a video call. Håkonsson *et al.* (2016, p. 8) further posit that "employees who interact via media of high richness will have an easier time developing synchrony than employees who interact via media of low richness." With synchrony, they not only refer to temporal synchrony as seamless turn-taking in communication. They also refer to synchrony on an emotional level, like laughing at the same time. Thus, synchrony, they posit, may have a positive influence on cohesive bonding.

In summary, quantity and quality of communication play a key role in virtual teams. Media richness of the channel used influences the quality of the communication. The degree of structure available, the task at hand, economic constraints and the people communicating should determine the choice of the media channel.

2.1.4 Virtual leadership

I started off this research with Snellman's (2014) framework, and I realise that much of the literature on virtual leadership builds on a behavioural approach to leadership. Snellman holds that with the paradigm shift away from an industrial economy, there is a shift from hierarchical towards flat virtual organisation enabled by ICT. She joins other authors in the call for a new kind of leadership that tackles the challenges of the novel context. This leadership, which she calls "e-leadership", will need to adopt specific skills and behaviours that are required for the effective leading of virtual teams (Cascio and Shurygailo, 2003; Malhotra, Majchrzak and Rosen, 2007; Gallenkamp *et al.*, 2011; Eissa *et al.*, 2012; Snellman, 2014). Many researchers conclude, either based on theoretical or empirical research, that there is a best practice. Both reviews and research articles focus narrowly on specific factors or constructs, and thus they lack a holistic approach. From the perspective of a practitioner, these results are too fragmented to serve in daily practice.

In these best practice propositions from articles in popular business magazines (e.g. Meyer, 2010; Ferrazzi, 2014), I miss a holistic view and a more robust conceptual underpinning. After reading different authors write about the four, the five or the seven aspects that define the ideal virtual leadership, I ask myself: are these all aspects, how are they linked to their context, and how are they different from best practice proposals for the leadership of co-located teams?

To avoid looking at virtual leadership as a new field, I build on existing theories of leadership. Addressing the question whether virtual leaders are born or made, Key and Dennis (2011) conclude that virtual leadership is a competency that can be acquired through learning. Looking beyond the debate on whether leadership is a trait or a behaviour, I want to look at leadership in a broader sense. I build on a leadership model that assumes that organisations are complex adaptive systems (CAS) constituted of interacting and interdependent agents working towards a common goal. According to Uhl-Bien, Marion and McKelvey (2007, p. 314), "Complexity Leadership Theory (CLT) recognises that leadership is too complex to be described as only the act of an individual or individuals; rather, it is a complex interplay of many interacting forces". Hence, effective leaders must be able to deal with paradox and contradiction and be able to perform multiple and potentially competing roles simultaneously (Kayworth and Leidner, 2001).

In a mixed-method study that compared thirteen virtual student teams from Mexico, the USA and France, Kayworth, Leidner and MoraTavarez (2001) found that the most effective virtual leaders were at the same time empathic and adapted the available technology to meet the demands of the tasks. These leaders displayed behavioural complexity in being both assertive and understanding. They conclude that effective virtual leaders use their communication skills to address both social and task aspects of their team. They address role clarity, initiate structure and are initiative in adaptively making use of technology. In what they call the "knowledge era", Uhl-Bien, Marion and McKelvey (2007) identify three different types of leadership that go hand in hand. First, there is the traditional administrative leadership that ensures hierarchy and control. Second, there is the enabling leadership that structures and enables creativity, adaptability and learning. Lastly, adaptive leadership, which is emergent and dynamic, links the two types of leadership mentioned above. The authors differentiate between *leadership* as a dynamic act and *leaders* as the individuals performing the act. This view leaves room for the perception of leadership as being emergent and shared amongst members of a virtual team (Ziek and Smulowitz, 2014; Serban *et al.*, 2015; Charlier *et al.*, 2016)

Jawadi *et al.* (2013), based on a survey amongst professionals, confirm the theoretical stand of Uhl-Bien, Marion and McKelvey (2007). Based on empirical data about 176 executives, Denison, Hooijberg and Quinn (1995) identify eight roles, which managers perform simultaneously: mentoring, facilitating, innovating, brokering, coordinating, monitoring, directing and producing. Based on this research, Jawadi *et al.* (2013) identify four different roles, which virtual leaders

perform: mentoring, facilitating, producing and directing. Mentor-leaders encourage individual development, support legitimate requests and develop an awareness of individual needs. Facilitator-leaders show concern for their team members and encourage self-expression and participation. The leader-producer initiates actions that encourage and facilitate the effective completion of work. Finally, the director-leader's concerns are goal definition, task repartition, and clarification and specification of expectations.

Not only formal leaders perform the roles described above. Members of virtual teams performing these roles thus also participate in leadership. This is called emergent leadership, "a collective leadership process, whereby multiple team members step up to take the lead or to participate in team leadership functions" (Hoch and Dulebohn, 2017, p. 681). The fact that the team members take on leadership without being assigned formal leaders makes this emergent leadership (Ibid. 2017, p. 679). From a study of 101 virtual teams in the manufacturing industry, Hoch and Kozlowski (2014, p. 399) conclude that "because the influence of shared leadership on team performance was not affected by degrees of virtuality, shared team leadership appears to have the potential to be a potent leadership approach."

Based on an extensive literature review, Hoch and Dulebohn (2017) suggest that emergent and shared leadership positively relate to virtual team performance. Further, they propose that high levels of team virtuality have a positive moderating effect on emergent and shared leadership. In part, this contradicts the statement made in the last paragraph. This inconsistency must be understood in the light of Hoch and Dulebohn's (2017) call for further research in this area. From an AST perspective, Charlier *et al.* (2016), who look at quantity and quality of ICT enabled communication and at the communication apprehension and text-based communication ability of team members in 84 virtual teams, confirm the conclusion of Hoch and Dulebohn's (2017). They empirically show that dispersion, which is a core dimension of virtuality, has a positive effect on emergent leadership within virtual teams.

Leadership in the context of this study is shared between the members of the board and the Editor. While respecting the existing hierarchical structure, in which the Director leads the operations on the ground, it consciously leaves room for emergent leadership from team members.

2.1.5 Virtual work

Walters (2000) compares the traditional organisation to the virtual organisation based on the management of technology, knowledge and relationships. He concludes that the virtual organisation evolved from antecedent forms of organisations. The creation of stakeholder value as the main organisational goal has remained the same over time. In my opinion, the possibilities new technologies offer are the driver of this evolution. We have moved from storing and sharing data and knowledge on paper to having access to data from anywhere at any time. Relationships

around work moved from a focus on the place of work to a focus on the different electronic channels for communication and collaboration across space and time. Even though technology has enabled virtual work, the goals and the issues we deal with seem to remain unchanged.

In their systematic literature review pertaining to 149 studies on virtual teams of Alaiad, Alnsour and Alsharo (2019) identify fourteen themes (**Fehler! Verweisquelle konnte nicht gefunden werden.**). They classify these themes using the IPO-model. As input themes, they identify research on team characteristics, ICT, culture and training. They separate process into socioemotional process and task process. The socioemotional processes studied include trust, social interaction, knowledge management and awareness for the virtual context. Themes that come up pertaining to task are leadership, communication, conflict and the organisation or engineering of virtual team collaboration. Finally, on the output side, the prevalent themes are team performance and technology adoption. More than 50% of the studies focus on performance, ICT and trust, while adoption and engineering of virtual teams seem to be underrepresented. This presentation of the research themes matches closely with the factors in Andriessen's (2002) DGI model, which also departs from the IPO-model.
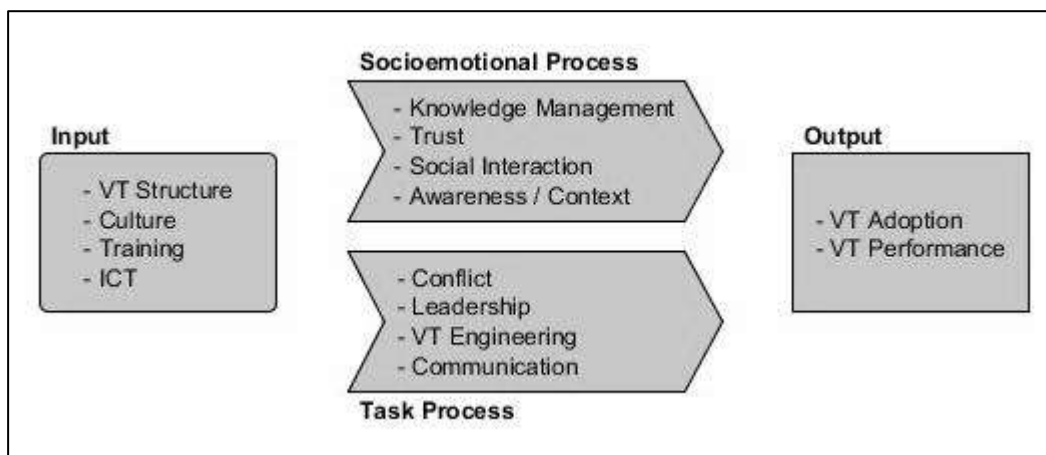
Figure 5: Taxonomy of research on virtual teams (VT)
adapted from Alaiad, Alnsour and Alsharo (2019)

In their bibliometric analysis of literature on virtual teams Abarca, Palos-Sanchez and Rus-Arias (2020) hold that the current debate evolves around the following topics:

1) Spatial and temporal team distribution
2) Virtuality as a moderating variable
3) Cultural diversity
4) Trust
5) Cohesion
6) Communication
7) Empowerment
8) Tasks (characteristics, complexity and interdependence)
9) Leadership

I ordered the themes in this order since virtuality boils down to spatial team distribution enabled by ICT (Schweitzer and Duxbury, 2010; Foster *et al.*, 2015). Except for cultural diversity, which is a consequence of spatial distribution, there is nothing new here, as Handy (1995) and Walters (2000) already remarked. All other topics in the list above would equally be discussed for a co-located context. However, here they are discussed in the light of virtuality.

Development of ICT has enabled virtuality by increasing the speed, quality and quantity of communication and data exchange. Hereby the challenges of of spatial and temporal distance become less relevant for collaboration in teams. From the overview of the literature on virtual teams, I take that there is nothing new about virtual work structures, which developed from existing organisation structures. Further, the issues virtual teams face remain the same as those faced by co-located teams. For this research, the literature informs me on how virtuality influences theses themes in virtual teams and how these themes relate to each other.

2.2 In search of a framework

2.2.1 Best practice

Departing from this overview, as a practitioner, I want to know which actions will lead to the best outcomes. Hence, in the following, I will look at examples of best practice suggestions. First, I will look at articles from the popular business press, which propose measures to be taken without clearly showing how they arrive at their conclusions. Next, I will look at research articles that study approaches in leading virtual teams, which promise an improvement of the outcomes.

Writing for the MIT Sloan Management Review, Siebdrat, Hoegl and Ernst (2009) put forward rather general points to be considered when leading global teams: emphasising teamwork skills, promoting self-leadership, providing for face-to-face meetings and fostering a "global culture". Meyer (2010), writing for Forbes, comes up with points to be considered that are different from leading co-located teams: leading by clearly defining roles and processes; arriving at decisions by taking into account the diverse decision-making process in the cultures of the team members; building trust by replacing it with reliability; and finally, by adapting the communication style to the media used. According to Ferrazzi (2014) in the Harvard Business Review, "getting virtual teams right" means getting the right team (size, people and roles), the right leadership (trust, open dialogue, goals and guidelines), the right touchpoints (kickoff meeting, onboarding and milestones) and finally the right technology (conference calls, direct calls, text messaging and chat forums).

While in the three examples above, the authors limit themselves to lists with four points, Dennis, Overholt and Vickers (2014), writing for the MWorld a quarterly of the American Management Association, come up with seven key leadership practices for virtual teams. To improve the efficiency and effectiveness of virtual teams, they suggest that leaders should remember that

virtual leadership is different from traditional leadership; emphasise more on communication; adjust to the communication mediums used; do more to establish trust; develop robust processes and structures; try to skip the conflictual "storming" phase of team formation; and finally, devote resources to develop virtual teaming and virtual leadership. An underlying assumption in these four suggestions is that virtual teams are diverse global teams set up for a limited duration.

After looking at suggestions from four business magazines, the following paragraphs look at suggestions from seven research articles. Based on observations and interviews of 54 virtual teams in 33 organisations Malhotra, Majchrzak and Rosen (2007) identify the following practices of effective virtual team leader: establishing and maintaining trust through the use of communication technology; ensuring that distributed diversity is understood and appreciated; managing the virtual work-life cycle (meetings); monitoring team progress using technology; enhancing the visibility of virtual members within the team and outside in the organisation; enabling individual members of the virtual team to benefit from the team.

Based on a study of 48 virtual teams in sixteen organisations, DeRosa (2009) identifies six behaviours of effective virtual leaders: effectively managing change, fostering a collaborative atmosphere, communicating clear goals, inviting feedback from team members, empowering team members to make decisions and sharing information in a timely manner. Based on an analysis of qualitative data from 30 project managers, Verburg, Bosch-Sijtsema and Vartiainen (2013) identify trust, clear communication, technical support and overall corporate support as the four most important conditions for successful global dispersed projects.

Based on a meta-analysis of 70 published papers (journal articles and conference proceedings), Gheni *et al.* (2015) identify eight challenges confronting virtual leadership: communication technologies, cultural diversity, language, jargon, religion, time constraints, e-ethics and trust. In a field study in which 103 developers and IT managers responded to a survey, members of the same research team classified the following factors as affecting the performance of global virtual teams: lack of training; diversity in national culture, language and organisational culture; ICT and technical problems; a lack of trust; time-zone difference; an finally the team size (Gheni *et al.*, 2016)

Based on an analysis of 955 articles on best practice in virtual teams in the popular business press, Zimmer (2013, p. 89) identifies communication, community (team building), commitment of the leadership, and coordination (structuring work) as the most important dimensions with a positive impact on virtual team outcomes. Empirical literature backs these dimensions promulgated by the popular business press. In her study, the dimensions mentioned above have different sub-dimensions. For example, the dimension of coordination has as sub-dimensions: expectations, goals, team meetings, processes and workflow. The two-level approach allows Zimmer to better

sort out and regroup the more than 30 sub-dimensions of best practice suggestions under ten different general dimensions.

Liao (2017) also proposes a multilevel framework to study virtual leadership. He differentiates between the influence of virtual leadership on the level of a team and on the level of the individuals who make up the team. He comes up with twelve propositions to be tested, preferably in the field and not in laboratory settings using students samples. Nine propositions would look at the influence of virtual leaders in enhancing team and individual effectiveness by addressing virtual collaboration, shared mental models, trust, relationship and task conflicts, shared leadership, and finally, loyalty. Three propositions would compare the influence of virtual leaders' behaviour in contexts with varying degrees of virtuality, task complexity and task interdependence. Like is the case with Zimmer (2013), no link is established between the different dimensions under study.

Authors	Orientation	Data sources	Themes	Individuals	Teams	Leadership	Technology	Communication	Processes	Structure / Dispersion	Culture	Trust	Diversity	Virtuality	Transparency	Change management	Ethics	Mental models
Siebdrat, Hoegl and Ernst (2009)	Practitioner literature		4	x				x	x		x							
Meyer (2010)	Practitioner literature		4					x	x	x		x						
According to Ferrazzi (2014)	Practitioner literature		4			x	x	x			x							
Dennis, Overholt and Vickers (2014)	Practitioner literature		7	x		x	x	x	x	x		x						
Malhotra, Majchrzak and Rosen (2007)	Study	54 teams	6	x		x			x			x	x		x			
DeRosa (2009)	Study	48 teams	6	x	xx			xx						x				
Verburg, Bosch-Sijtsema and Vartiainen (2013)	Study	30 Project managers	4				x		x	x		x						
Zimmer (2013)	Review	955 articles, business press	4	x	x			x	x									
Gheni et al. (2015)	Review	70 research papers	8				x	x		x	xx	x	x				x	
Gheni et al., (2016)	Study	103 professionals	6	x	x		x			x		x	x					
Liao (2017)	Research proposition		12	x	xx	xx			xxxx			x		x				x

Table 1: Best practice in virtual team leadership

Table 1 summarises the literature presented on best practices in leading virtual teams. In order of their importance, the themes addressed here are communication, processes, trust, teams, structure, technology, leadership, and diversity. Of lesser importance seem to be the role of the individual and of culture, as well as virtuality, transparency, ethics, shared mental models and change management. From this summary, I deduce that practitioner literature focuses more on communication and organisational aspects like processes and structures, while academic

literature focuses on trust and on teams. In the context of my study, I believe transparency and the degree of virtuality deserve more attention.

2.2.2 Snellman's propositions

To gain a systematic understanding of the factors which influence virtual teamwork, I want to know how the areas discussed above relate to each other. The best practice suggestions listed above present a picture of a field lacking unity and a common foundation. Snellman (2014) describes a paradigm shift from an industrial economy with hierarchical structures to a network economy in which organisational boundaries are becoming blurred. In this logic, if organisations are CAS with their sub-units being virtual teams, then the organisations can only achieve their goals if the teams are successful. Looking at virtual teams from a leadership perspective, Snellman (2014) makes four detailed propositions on how leadership can positively influence virtualisation: by building trust, by communicating continuously, by leading proactively and by addressing diversity (original in Appendix A). Like a panacea for successful leadership of virtual teams, Snellman seems to have been able to condense more or less all recommendations listed by the authors above into four phrases. My criticism is that the four phrases could be better structured and that she does not establish links between the four propositions.

In the following, I will reword the propositions into a sentence structure in which specific actions are taken to achieve intermediate goals that will assumedly improve team performance and hence organisational performance. Snellman does not spell out this relationship, and she does not define what she means by"team success". However, in all four propositions, she sets "team success and organisational value creation" as the ultimate goal. This assumption can be matched with the logic of the DGI-model (Figure 2). According to this IPO-model, optimal processes should deliver successful outcomes for the individual, the team and the organisation.

I build on the idea that teams are CAS, which are influenced by their context (see Figure 2 & 4). If I apply this logic to the different characteristics of a team, and assuming that Snellman's propositions address the characteristics of virtual teams, then the importance of the links between the constructs cannot be ignored. Figure 6 is my graphical interpretation of the links between Snellman's constructs. In the following, I will use the literature on virtual teams to supply an underpinning for the links between trust, cohesion, virtuality and diversity.
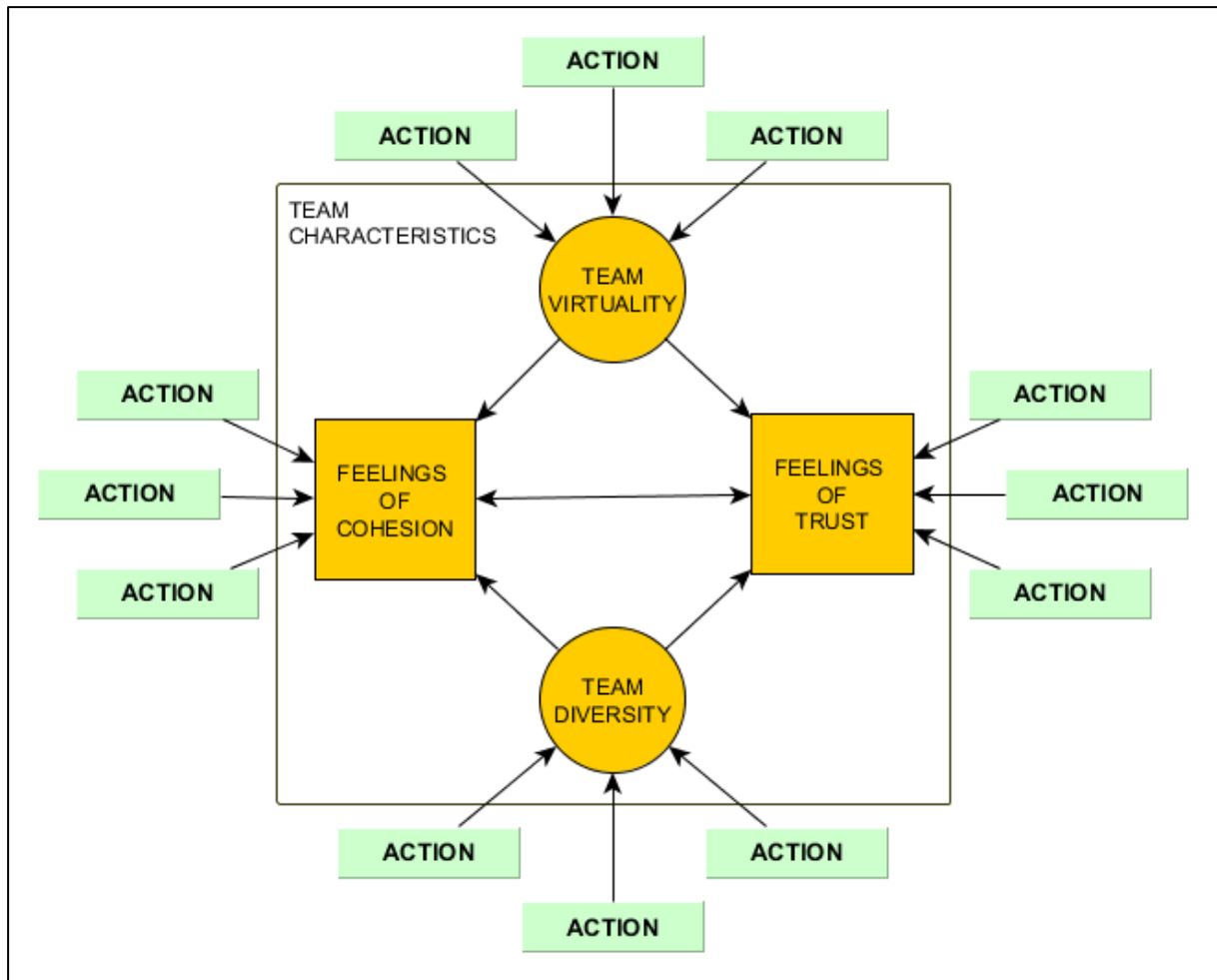
Figure 6: Framework based on an adaptation of Snellman's four propositions

2.2.3 Trust

Snellman's first proposition aims at promoting trust, assuming that this may improve team success and thus organisational value creation. However, it is not specified what kind of trust should be built. It could be trust of team members in the organisation and its leadership, or mutual trust amongst team members, or trust of leaders in their teams. Since trust is used without direction, I will be referring to a general feeling of mutual trust within the organisation. This is in line with the definition of trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectations that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer, Davis and Schoorman, 1995, p. 712). Although only 15% of the popular business press on best practices in virtual teams deal with trust, this topic seems to make up 85% of the empirical research literature (Zimmer, 2013). Ford, Piccolo and Ford (2017) go as far as claiming that trust is the key to building effective virtual teams.

Trust and performance

According to Thomas and Bostrom (2008), there is an ambiguity about the relationship between team trust and team effectiveness. They point to studies in which the relationship between team trust and team effectiveness is positive, non-existent or even negative. They argue that team trust leads to open communication in which there is feedback, critique and sharing of confidential information. According to Jarvenpaa, Shaw and Staples (2004), depending on the degree of structure present, trust can have a direct or a moderating impact on the outcomes for virtual teams. With an increase in structure in the working context, the impact of trust becomes less important. Trust influences the way people interpret virtual communication (Jarvenpaa, Shaw and Staples, 2004). This compensates for the lack of non-verbal cues in virtual communication, which are necessary to enhance communication and collaboration in teams.

Based on a survey in the context of massively multiplayer online gaming in which 14420 players of Travian (www.travian.com) from 26 countries took part, Gallenkamp *et al.* (2011) conclude that the communication behaviour of leaders correlated positively with trust in leaders of virtual teams. This study looked at the repertoire (channels of communication used) and breadth (topics of communication) of communication. Teams were seen to perform better when they trusted their leader. Also, looking at the importance of communication, Breuer, Hüffmeier and Hertel (2016) suggest that the use of communication media that archives past interaction and thus creates transparency decreases the need for trust in virtual teams.

In their literature review on trust in virtual teams, Sarker *et al.* (2011) criticise the existing literature for being centred on a trait and behavioural perspective. In the eighteen articles they analyse, they miss the structural perspective that looks at the relational component. For their study, they adopted a social network approach. This approach that looks at structural relationships matches my CAS approach, in which the relationship between individuals and between constructs is seen as an essential factor. In their study with 111 student participants in virtual teams, using regression, they test three different possible models of relationships between communication, trust and performance. The results of the study suggest that trust and communication do not influence performance independently of each other. The model confirmed by the study suggests that trust plays a key mediating role between communication and performance. Communication as an antecedent leads to trust and subsequently to enhanced performance, while trust plays a negative moderating role on the link between communication and performance where the levels of trust are low. The contrary is true in settings with high levels of trust.

From a meta-analysis of 112 independent studies, De Jong, Dirks and Gillespie (2016) derive that trust has a moderately positive impact on team performance but that this is highly dependent on the structure and organisation of the teams. In summary, there is support for the view that there

is an ambiguity in the relationship between trust and performance, and further, that trust has an impact on performance through its moderating or mediating influence on communication.

With the IMOI model (input - mediatior - output - input) as underpinning, Marlow, Lacerenza and Salas (2017), in their communication process framework (Figure 7), posit that communication is an antecedent to trust, which is a mediator for team performance and satisfaction. They hold that higher degrees of virtuality have a negative moderating effect on communication. These results are supported by Breuer, Hüffmeier and Hertel (2016), who identify a positive impact of team trust on cohesion. Looking more closely at communication, they attribute three characteristics: quantity (frequency), quality (media richness) and content. Marlow, Lacerenza and Salas (2017) define communication content as either task-oriented or interaction oriented. It is the interactional part of communication that contributes to team cohesion. Andriessen's (2002) DGI-model also takes into consideration communication around learning, an element that does not appear in Marlow, Lacerenza and Salas' (2017) communication process framework.
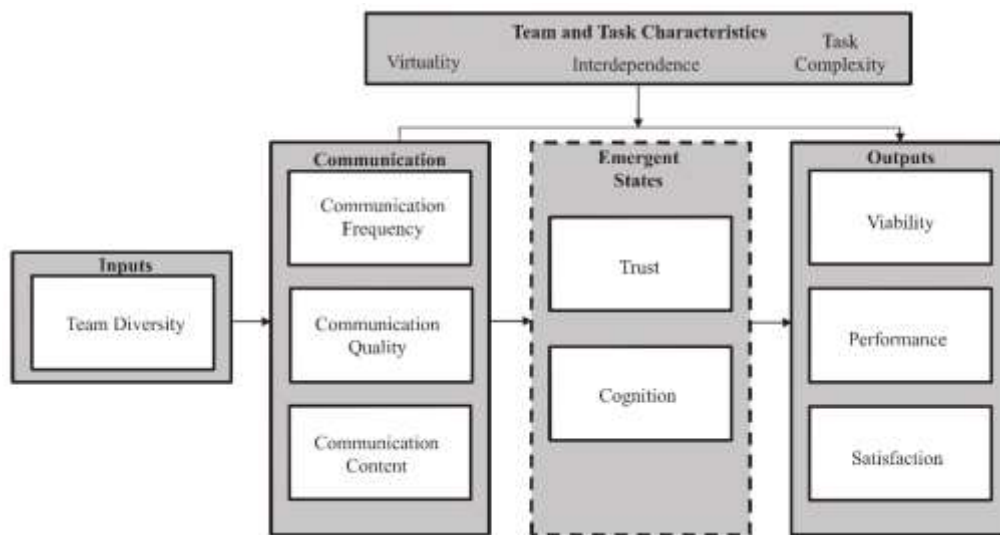
Figure 7: Communication process framework in virtual teams
(Marlow, Lacerenza and Salas, 2017)

Compared to co-located teams, virtual teams run the risk of communication breakdown. In co-located teams, communication cannot be avoided without being outright impolite and hostile. In a virtual setting, it is easier to ignore requests for communication. Thus, in a virtual setting, communication breakdown is a recurrent issue (Daim *et al.*, 2012; Klitmøller and Lauring, 2013; Lockwood, 2015). While Klitmøller and Lauring (2013) and Lockwood (2015) blame communication breakdowns in global virtual teams on language barriers, Daim *et al.* (2012) draw a more nuanced picture. The latter suggests that cultural differences, interpersonal relations, leadership, technology and trust be considered as factors contributing to communication breakdowns. Morgan, Paucar-Caceres and Wright (2014) call for regular communication, also as a measure to avoid communication breakdown.

Building trust

A challenge in building trust in virtual teams is the fact that "members may have no past on which to build, no future to reference, and may never even actually meet face-to-face." (Greenberg, Greenberg and Antonucci, 2007, p. 325). Team building for virtual teams can rely on the same tools used to enhance collaboration and trust in co-located teams. Leaders need to create a shared understanding, create shared goals, set up routines and reliable processes, set up reward systems, resolve conflicts among team members and show empathy (Holton, 2001; Greenberg, Greenberg and Antonucci, 2007; Guinalíu and Jordán, 2016; Ford, Piccolo and Ford, 2017).

The building of trust goes hand in hand with measures that enhance team cohesion. Harell and Daim (2009) suggest that the contribution of individual team members should be valued and that leaders should help team members think "we" and not "us versus them". Creating cohesion and, thereby, trust is also achieved by celebrating milestones together and encouraging non-work-related communication in the team (Greenberg, Greenberg and Antonucci, 2007; Harell and Daim, 2009; Ford, Piccolo and Ford, 2017). Another approach to building trust is by empowerment. Based on an empirical study, Robert and You (2018) suggest that shared leadership enhances trust and satisfaction, which in turn, improves the performance of virtual teams.

In summary, it can be said that empowerment, cohesion, a shared culture and shared goals contribute to building trust, which in turn leads to better communication and team performance. Based on this insight, the project "Virtualise" focussed on enhancing these elements.

Proposition 1

The suggestions above are not much different from team-building measures for co-located teams. The only difference is that intrateam communication relies on ICT. Therefore, it is crucial to abide by the media richness theory and choose the best-suited channel of communication adapted to the circumstances and the content of what is being communicated (Harell and Daim, 2009). In her first proposition, Snellman leaves out the aspect of communication. Moreover, the issue of shared leadership could be interpreted into the expression "*mutual* setting of expectations". The expression "enhancing coherence" leaves room for interpretation. I interpret this as a call to create structure by introducing routines, processes and policies.

Proposition 1(reformulated):

By inspiring, motivating, setting mutual expectations and enhancing coherence in virtual teams, e-leaders promote trust. This may improve team success, which in turn may improve organisational value creation.

In this proposition, the proposed actions lead to the intermediate outcome: trust. This, in turn, improves the ultimate outcomes: team success and, subsequently, organisational value creation. This thought pattern will be repeated in the following three propositions.

2.2.4 Cohesion

Snellman's second proposition aims at creating team cohesion and feelings of togetherness. Cohesion is the bond that keeps team members together and lets them want to collaborate (Casey-Campbell and Martens, 2009). The construct cohesion is complex, and there is a lack of unity in its definition and measurement in literature. Based on a review using 70 articles, Salas *et al.* (2015) identify five sub-dimensions: task cohesion related to team goals and objectives; morale cohesion as loyalty towards a team; social cohesion as closeness in relationships amongst team members; team pride; and the feeling of belongingness. It is generally accepted that besides trust, cohesion is a critical driver of success in virtual teams (Key and Dennis, 2011).

Cohesion and performance

Already before the advent of virtual teams, Keller (1986) showed that cohesion in the context of R&D teams, compared to job satisfaction, physical distance, and an organisation's innovative orientation is the most important predictor for team performance. Besides trust in leadership, cohesion or team spirit has a positive effect on the individual team members' sense of belonging and subsequently on motivation and commitment (Chang and Bordia, 2001).

Based on an extensive literature review, Casey-Campbell and Martens (2009) conclude that social cohesion and task cohesion are positively related to team performance. However, they note that the literature does not establish why cohesion and performance are related. Since they identify a lack of research on antecedents to cohesion, the authors do not provide any recommendations on how cohesion could be increased.

In a quantitative study using 14 virtual teams from India and the USA, Paul, Drake and Liang, (2016) look at the relationship between coordination effectiveness, trust and team cohesion with CAS as theoretical underpinning. Coordination, as defined in this study, "requires a common definition of the work, sharing of information, and synchronisation of activities" (Ibid. 2016, p. 188). The research results suggest that coordination effectiveness has a positive impact on trust and cohesion, which in turn have a positive impact on team performance. In my opinion, there is a flaw in the research setup. Although the research builds on input – mediator – output – input, IMOI model (Ilgen *et al.*, 2005), the hypotheses and the computation suggest that trust and cohesion have a direct and not a mediating influence on team performance. Another significant finding from this study is that its results suggest the existence of a reciprocal relationship between trust and cohesion. Garrison *et al.* (2010) also suggest that trust and cohesion have a positive effect on individual performance. Their study confirms the positive effect of trust on cohesion.

They argue that trust "creates an environment in which the members have the freedom to openly contribute ideas and take advantage of the synergistic effects of creativity that occur." (Ibid. 2010, p. 39)

Building cohesion through communication

From a qualitative study of the behaviour of four virtual team leaders, Sivunen (2006) concludes that they employed four different tactics to enhance the team members identification with the virtual team. The team leaders catered for the individual; they gave positive feedback; they collaboratively developed common goals and working processes; and finally, they sought to create team spirit and a feeling of belonging through team activities and face-to-face meetings. All these actions centre around communication.

Morgan, Paucar-Caceres and Wright (2014) studied the relationship between communication and team effectiveness by comparing teams with varying levels of virtuality within the same corporation. They concluded that communication is the core of virtual teams and argue that "consistent, regular communication and clarification of goals and objectives exercised by both the leaders and members of the team enhance its effectiveness." (Ibid. 2014, p. 623). This is in line with Andriessen's (2002) DGI-model that puts communication at the centre of all team processes.

Proposition 2

There is less literature on cohesion in virtual teams than on trust. The measures the literature suggests for enhancing cohesion are similar to those suggested for building trust: inspiring, motivating and encouraging socialising activities. Since there is evidence of a reciprocal relationship between trust and cohesion (Garrison *et al.*, 2010; Paul, Drake and Liang, 2016), it can be argued that actions and behaviours which have a positive impact on trust will also have a positive impact on cohesion. In enhancing team cohesion, the focus lies on regular communication using appropriate technology and specifically on non-task-related communication.

Proposition 2 (reformulated):

By motivating and inspiring virtual teams to active, mutual and continuous communication and socialising activities adapted to the settings, e-leaders promote team cohesion. This may improve team success, which in turn may improve organisational value creation.

2.2.5 Virtuality

In the next proposition, Snellman addresses distance in time and space, which I summarise as addressing the effects of virtuality. Virtuality was defined above as the geographical dispersal of a team that communicates using ICT. Cultural distance, organisational distance (different work cultures) and distance in time zones are all consequences of distance in space. Distance in time in

the form of asynchronicity in communication is related to the degree of media richness of the communication technology used.

Virtuality and performance

When compared to co-located teamwork, it is assumed that virtuality, directly and indirectly, negatively affects the performance and outcomes of virtual teams (Ortiz de Guinea, Webster and Staples, 2012; Foster *et al.*, 2015; Schaubroeck and Yu, 2017). However, even before the advent of virtual teams, Keller (1986) suggests that physical distance between R&D team members has no negative impact on performance. Based on 80 data sets (representing responses from over a thousand participants), Ortiz de Guinea, Webster and Staples (2012) conclude that virtual teams exhibit a higher task conflict but lower communication frequency, knowledge sharing, performance and satisfaction. Further, in long-term teams, virtuality did not have nearly the same detrimental effects. The authors report that there was no adverse effect on team performance and satisfaction, and team conflict decreased as virtualness increased.

Influence of virtuality on trust, cohesion and communication

In a laboratory experiment with 260 students in virtual teams, Peñarroja *et al.* (2013, p. 272) showed that high levels of virtuality negatively affect team trust. With trust acting as a mediator for team performance, increasing virtuality levels were seen to decrease team coordination, team cooperation and information exchange. The authors use media richness theory to justify the results they measured. Based on a meta-analysis of 52 studies, Breuer, Hüffmeier and Hertel (2016) arrive at similar conclusions. They identify a positive relationship between team performance information processing and team attitudes. In this study, "cohesiveness," in other words, team cohesion, is listed as a dimension of team attitude. Virtuality is seen to act as a moderator with a negative effect on the relationship between trust and performance. In their meta-analysis of 112 independent studies, De Jong, Dirks and Gillespie (2016) consider the results for this relationship to be inconsistent, blaming it on the fact that the construct of virtuality is not unified across different studies. According to Breuer, Hüffmeier and Hertel (2016), documentation of process and communication are seen to reduce the negative effect of virtuality.

With the media richness theory in mind, the choice of the right ICT tools has an impact on team performance on different levels. Weimann *et al.* (2013) set up a study in which student participants in virtual teams used different communication tools, ranging from SMS to Skype. The choice of communication tools is seen to have a direct influence on the quality of communication, which in turn influences the level of trust. The right choice of software may also increase the visibility of the contributions of the individual team members. In turn, this may contribute to transparency and subsequently to an increase in trust.

Proposition 3

Snellman refers to the problem of virtual teams working in different time zones. This does not apply to the setting of my research. Therefore, I will consider the issue of temporal asynchronicity in communication when working with this proposition.

While trust, and subsequently, cohesion are affects, virtuality and diversity are team characteristics. Snellman's third proposition is written in two parts, of which one addresses spatial distance and the other temporal distance. Again the measures proposed focus on communication. Frequent communication, with a focus on the choice of the right tools, should reduce the feeling of distance in space. Task coordination should reduce the negative impact of distance in time.

Proposition 3:

By responding promptly with diversified use of ICT to address issues arising in virtual teams due to distance in space and subsequent operational and organisational distance, e-leaders enhance a feeling of closeness.

By effectively coordinating virtual members' tasks to promptly address issues arising in virtual teams due to distance in time of virtual teams working in different times zones, as well as to mitigate stress-related to tight schedules and deadlines inherent to virtual projects, e-leaders will fully harness the team members' expertise, talent and competence.

These measures may both improve success in virtual teams, which in turn may improve organisational value creation.

2.2.6 Diversity

The previous proposition addressed distance in space and in time. The last proposition looks at cultural distance and relates to the positive effects of diversity. Garrison *et al.* (2010, p. 29) define diversity as "the degree to which an individual is dissimilar to his or her team members on individual-level attributes that may be demographic or skill-related in nature."

Looking at diversity in relation to geographical distance, cultural distance based on language, religion and national or ethnic culture come to mind. What comes to mind first is the simplistic way of seeing diversity by looking at demographic variables: race, ethnicity, gender, age, and status. The popular view propagated in politics, by business consultants and present in business magazines advocates for diversity as an inclusion of gender and ethnic minorities. There is evidence that organisations with ethnic and gender diversity are financially successful. Based on this, in business magazines by Ernst&Young or McKinsey & Company, it is assumed that this is enough evidence to prove a positive effect of diversity on financial performance. Furthermore, it is assumed that the advantage of having people with different backgrounds will bring different

perspectives that lead to innovation (Hunt, Layton and Prince, 2015; McEvoy, 2017). This argument could be dismantled by attributing diversity to the size and the international presence of successful organisations. Succinctly, because successful organisations expand and become globally present, there is diversity in their workforce.

There is a more nuanced way of looking at diversity. Besides the demographic variables of race and gender, Harrison and Klein (2007) come up with additional variables of diversity that are skill and task-related: educational background and level, functional background, organisational and team tenure.

Diversity and performance

In their meta-analysis of literature on the relationship between diversity and team performance, which builds on Harrison and Klein's (2007) variables, Bell *et al.* (2011) warn against making general statements on this relationship without clearly specifying what variables are being considered. Surprisingly, the results of the study suggest that "education-level diversity, team tenure diversity, and organisational tenure diversity were consistently unrelated to team performance." (Ibid. 2011, p. 715). However, diversity of educational background was seen to have a positive influence on team creativity and innovation. Further, the results did not support the relationship between age diversity and team performance.

Contrary to what is propagated in popular literature, diversity does not necessarily have a positive impact on virtual team performance. Diversity can be seen as a source of conflict stemming from different interpretations of task or communication based on different cultural backgrounds (Chidambaram and Bostrom, 1997). Looking at interpersonal conflict and task conflict, Hinds and Mortensen (2005) compare 21 co-located with 22 virtual teams. The results show that there is more conflict in virtual teams than in co-located teams. The results also suggest that shared identity and shared context have a positive moderating effect on the level of conflict. Hinds and Mortensen's (2005) constructs can be compared to the sub-dimensions of cohesion described by Salas *et al.* (2015) above. Shared context could be equated to task cohesion, while shared identity could mirror social cohesion, team pride and the feeling of belonging. Hinds and Mortensen (2005) attribute the reasons for a lack of shared identity to demographic diversity and skill or task diversity.

In a study using 18 globally distributed student teams, Garrison *et al.* (2010) look at the relationship between diversity, trust, cohesion and performance. In this study, diversity was operationalised as "the degree to which individuals perceive other team members as consistent with their own self-image" (Ibid. 2010, p. 37). The results indicate that diversity has a significant negative effect on individual performance.

Influence of Diversity on Trust Cohesion and communication

In their study, Garrison *et al.* (2010) concluded that diversity has a significant negative effect on trust. The assumed negative effect of diversity on cohesion was not supported by this study. Nevertheless, the authors argue that although a direct effect was not measured, cohesion is indirectly affected by diversity through trust, which is positively related to cohesion.

The results of Hinds and Mortensen's (2005) study suggest that shared identity, shared communication, and spontaneous communication as moderators contribute to reducing interpersonal conflict and task conflict in virtual teams. The results indicate that spontaneous communication contributes to the building of a shared identity and a shared context. Using the vocabulary of cohesion, this implies that informal, spontaneous communication help build social cohesion as well as task cohesion. Over time, where identity and context are not shared, spontaneous communication can positively compensate for the negative effects of skill and task-related diversity. In even simpler terms, with time, given that there is room for spontaneous communication, the initial barriers between individuals with different backgrounds will be overcome. Over time, given that they communicate and collaborate towards the same organisational goal, they will develop a shared identity and a shared context.

Proposition 4

In my context of a small enterprise, with team members who have a similar national cultural background, I will relate diversity to skill differentiation, a concept introduced above in Hollenbeck, Beersma and Schouten's (2012) framework (see Figure 3). Looking at diversity primarily as skill differentiation means cultural distance is related to two variables: educational background or organisational tenure. From their educational background, journalists, for example, will have a stronger literary orientation when compared to camera operators, who have a technical background. Their different ways of thinking, it is assumed, will initially create a cultural distance.

As elaborated above, time together (physically or virtually) and room for communication are needed to reduce cultural distance. Despite the negative effects, diversity in skills and background are an advantage because they bring along a pool of diverse knowledge necessary for innovation and the ability to look at problems from different perspectives.

Proposition 4 (reformulated):

By learning how to deal with people from different cultures, by responding to specific needs of team members, by promoting team building and by applying the right user-friendly technology to enhance closeness in virtual teams, e-leaders reduce the negative effects of cultural distance and make use of the opportunities that diversity offers. This may both improve team success, which in turn may improve organisational value creation.

2.3 Research questions derived from the framework

The overarching research question presented in Chapter 1 was:

How can virtual leaders arrive at a systematic understanding of the factors that influence
virtual teamwork, and how can they act on these factors?

Based on the four propositions presented as a framework in Figure 6, the research question is broken down into four sub-questions:

Research Question 1:
How can leaders build trust in virtual teams and
how does this influence virtualisation in an organisation?

Research Question 2:
How can leaders build cohesion in virtual teams and
how does this influence virtualisation in an organisation?

Research Question 3:
How can leaders mitigate the negative impacts of virtuality on virtual teams and
how does this influence virtualisation in an organisation?

Research Question 4:
How can leaders harness diversity of virtual teams and
how does this influence virtualisation in an organisation?

I assume that not all factors, which influence virtual teamwork and its leadership will be identified using the four questions above. Therefore, the last question creates room for factors that may emerge beyond the framework.

Research Question5:
What factors and actions apart from those addressed by the four propositions have an
influence on virtualisation in an organisation, and how can leaders act on them?

2.4 Insights from the literature

The findings from the literature cannot be directly applied in the context I am researching. First, the research context is not that of a globally acting multinational organisation but that of small and medium enterprises (SME) (Ebrahim, Ahmed and Taha, 2009; Yu, 2015). Second, the team does not work together temporarily, as assumed by Snellman (2014) amongst others. Third, much

research is based on the use of student teams and not on field research (Gibbs, Sivunen and Boyraz, 2017)

Not many authors seemed to consider the impact of context, structure and technology on virtual leadership (Schmidt, 2014; Van Wart *et al.*, 2017). In practice, I am confronted with the primacy of communication. I am occupied with finding the right quality and quantity of communication (Morgan, Paucar-Caceres and Wright, 2014; Lockwood, 2015; Yu, 2015; Marlow, Lacerenza and Salas, 2017). I am also confronted with frequent communication breakdowns (Daim *et al.*, 2012; Lockwood, 2015).

My practice is best visualised in the DGI-model (Andriessen, 2002) and the IPO-model (Dulebohn and Hoch, 2017). Consequently, my understanding of virtual leadership builds on the CLT (Uhl-Bien, Marion and McKelvey, 2007). Applying this theory in practice means, leaders of virtual teams should display leadership behavioural complexity (Kayworth and Leidner, 2001). Relating to this, Jawadi *et al.* (2013) point to four behaviours to be adopted by leaders of virtual teams: innovating, producing, coordinating and facilitating. For a CAS to be self-adapting, leaders' behaviours need to allow room for emergent leadership (Hoch and Kozlowski, 2014; Charlier *et al.*, 2016; Hoch and Dulebohn, 2017). Kayworth, Leidner and MoraTavarez (2001) suggest that virtual leadership could be viewed as being less complex than co-located leadership since it leaves leaders to focus on the right choice, adaptation and use of ICT.

This approach led me to re-interpret Snellman's (2014) propositions and establish links between the four propositions, as shown in Figure 6. There is evidence from literature for the links that I have established. First, there is evidence for a reciprocal influence of trust on cohesion in virtual teams. Second, there is evidence that team virtuality and team diversity have a negative influence on both trust and cohesion. The actions proposed by Snellman to counter the negative effects of team virtuality and team diversity, as well as the actions proposed to improve the feelings of trust and cohesion in virtual teams, were confirmed in the literature review.

Research in these areas is still fragmented (Liao, 2017) and a majority of studies are based on laboratory settings using students as participants (Gilson *et al.*, 2015; Marlow, Lacerenza and Salas, 2017). Researchers suggest that field studies in these areas would deliver more reliable results than those based on lab settings (Purvanova, 2014; Marlow, Lacerenza and Salas, 2017; Alaiad, Alnsour and Alsharo, 2019). Others suggest that further research on virtual teams should focus on classifying the terms and concepts and focus on model-based approaches to establish the relationships between the constructs (Alaiad, Alnsour and Alsharo, 2019; Abarca, Palos-Sanchez and Rus-Arias, 2020).

3   Methodology

"If the first question of sense-making is "what's going on here?," the second, equally important question is "what do I do next?" This second question is directly about action[...]." (Weick, Sutcliffe and Obstfeld, 2005, p. 412)

5   The literature review shows that much research on virtual teams and their leadership is done in laboratory settings using university students as participants. Also, Research from the field is done in the context of globally operating multinational companies. Hence, there is a need for research into virtual teams and virtual leadership in small and medium enterprises.

In this chapter, the first section looks at the philosophical underpinnings of the research, while
10   the second section looks at the methods used. The last section briefly describes the presentation of the data and the analysis.

3.1 Methodological groundings

In this thesis, I seek an understanding of the factors that influence virtual teamwork and their interrelationship. The aim is to develop actionable knowledge for virtual leadership in the form of
15   a framework. The backdrop of the ongoing business development project "Virtualise" served as a field case in which the framework was evaluated.

3.1.1 Philosphophical groundings

I situate my research within a relativist ontology (Easterby-Smith, Thorpe and Jackson, 2012, p. 19), which accepts many 'truths' depending on the observer's perspective. In the process of sense-
20   making (Weick, Sutcliffe and Obstfeld, 2005), a shared understanding of 'truth' is negotiated and collaboratively constructed in the given context. Sense-making connects the abstract with the concrete, in other words, theory with lived experience and vice versa (ibid.). With its limited number of participants and my initially limited understanding of the complexity of the 'whole' situation, the research context led me to adapt an epistemology nearer to constructionism; one
25   based on an interpretation of social constructs, and not within positivism, which is based on statistcally measurable measurable concepts (Easterby-Smith, Thorpe and Jackson, 2012).

This research's approach to theory building, which oscillates from theory to data and from data to theory, is abductive (Kennedy, 2018). Here, theory is not verified or falsified like in the positivist deduction, nor is new theory generated by purely constructionist induction; instead,
30   existing theory is modified and contextually evaluated within a qualitative research design (Saunders, Lewis and Thornhill, 2019, pp. 155–156).

Pragmatism as philosophical approach best suits the my abductive approach, which in the intersection between theory and practice, seeks a systematic understanding to guide my actions.

Unlike the positivist stance, in which ideal knowledge is generalisable, axiomatic and infallible.

35   Pragmatism can be defined as the fallibilistic position, in which knowledge is created in a process of inquiry, which oscillates between experience, abstract conceptualisation, experimental action and reflective observation (Brandi and Elkjaer, 2008, p. 169; Easterby-Smith, Thorpe and Jackson, 2012, p. 32). Referring to Dewey, "when we face a problem, our first task is to understand it through describing its elements and identifying their relations" (Legg and Christopher, 2019, p.

40   7). The models and theories, "the 'logical forms' we use in the course of inquiry are understood as ideal instruments, tools that help us to transform things and resolve our problem" (ibid. 2019, p. 7). My research builds on this pragmatic approach. To systematically identify and describe the elements that influence my practice and to resolve the problems I identify, I use the framework I developed as a tool. This tool simultaneously helps me understand the context and guides my

45   choice of actions in the ongoing virtualisation process.

I agree with Alaiad, Alnsour and Alsharo (2019), who in their literature review criticise the body of research on virtual teams for its lack of the following: longitudinal studies, use of tested models, intrateam investigation and field studies. The nature of the ongoing project "Virtualise" allowed for an approach, which in its methodology addresses these points. The research uses a

50   longitudinal multi-method qualitative approach to develop and verify a model in the field using action research within a virtual team.

3.1.2 The action research approach

To Coghlan and Brannick (2014, p. 61) action research (AR) as a "form of scholarship" is a "careful observation and study of the effects of behaviour on human systems as their members manage

55   change." More straightforward, Greenwood and Levin's (2007) define AR as a balance between action, research and participation. It is not AR, should one of the elements be absent. Using the words "process", "practice" and "approach", they state that AR is not a methodology or discipline. Thus, AR is considered as a form of scholarship rather than methodology or discipline. AR is the right approach for my study because I participate and act to drive change in the organisation,

60   which is the object of my research. At the same time, my research aims at generating new knowledge for practice (Eden and Huxham, 1996, p. 80).

The participative action occurred in the business transformation project "Virtualise", where I was more involved in Board than in the daily operations. The research and the action cannot be separated because they had the same goal: the organisation's transformation. The research aim

65   goes beyond this one instance of transformation, to generating understanding and actionable knowledge to be applied in similar transformations in future. This corresponds with Reason and Torbert's epistemological basis for AR: "the purpose of academic research and discourse is not just to describe, understand and explain the world, but also to change it" (Reason and Torbert, 2001, in Coghlan and Teresa, 2014, p. 50)
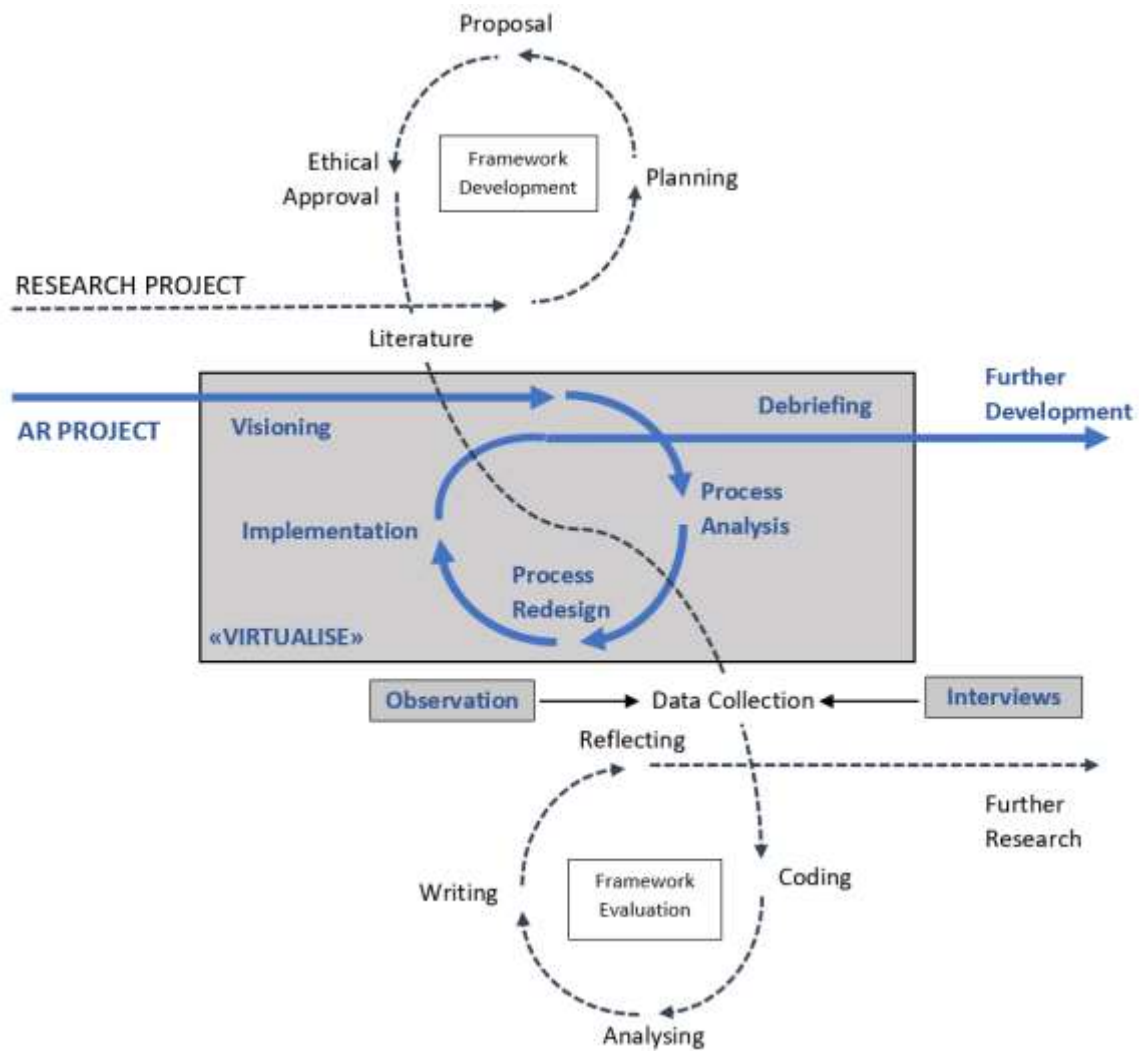
Figure 8: Relationship between the research project and the action research

The illustration in Figure 8, inspired by Perry and Zuber-Skerrit (1992, p. 204 in Zuber-Skerritt and Perry, 2002), shows the intricate relationship between the AR project and the research project. The research project uses the ongoing business development project "Virtualise" as a case for which a framework was developed and within which it is then evaluated. The four phases of an action research cycle typically involve: constructing, planning action, taking action and, in the end, evaluating action (Coghlan and Teresa, 2014). In contrast, the business development project and the research are presented as parallel linear processes in Figure 9.

The project "Virtualise" followed this logic. After collaboratively constructing the objectives in a visioning process, the business processes were redesigned based on a process analysis. Alongside the redesign went the planning and preparation of the implementation of the new processes. Finally, a virtual debriefing session with all staff members followed the implementation phase. Insights from this collaborative evaluation form the basis for further improvement of business processes and aspects of the organisation's culture.

	Research Project			Business Development Project	
	Research	**Reflection**	**Data gathering**	**Board**	**Staff**
Aug 16	Choice of Topic		Observation		
Sep 16					
Okt 16					
Nov 16					
Dez 16	Proposal	Setting up the Framework			
Jan 17					
Feb 17					
Mär 17					
Apr 17					
Mai 17					
Jun 17					
Jul 17					
Aug 17	Ethics Approval	Conflicts with the dual role	Action Cycle "Virtualise"	Visioning	Visioning
Sep 17				Process analysis	
Okt 17				Accounting	Implementation "Virtualise"
Nov 17					
Dez 17				Internet Site	
Jan 18	Literature Review	Refining the Framework		Marketing	
Feb 18				Publication App	
Mär 18					
Apr 18				Website	
Mai 18					Debriefing
Jun 18	Methods			Debriefing	
Jul 18					
Aug 18	Cleaning Data		Observation		
Sep 18					
Okt 18	Coding & Analysis	Interpreting data and observation			
Nov 18					
Dez 18					
Jan 19					
Feb 19					
Mär 19	Interviews				
Apr 19		Validating my interpretation	Interviews		
Mai 19	Analysis				
Jun 19					
Jul 19					
Aug 19	Write-up				
Sep 19					
Okt 19		Emergent insights: Transparency Role of change			
Nov 19					
Dez 19					
Jan 20					
Feb 20					
Mär 20		Validating the Framework			
Apr 20					

Figure 9: Timeline of the research project and the project "Virtualise"

Drawing on theory and practice, the project "Virtualise" served as a backdrop to answer the research question. In the first research cycle, the research project was planned based on initial

insights from the literature. The study officially started after approval of the proposal and after approval by the university's ethics commission. At this point of reflection, I returned to the literature I had initially explored to develop the systematic framework presented in Chapter 2. The first cycle answers the question: "How could the factors that influence virtual teamwork and its leadership be systematically understood of and how should leaders act on these factors?"

While the first research cycle centred around literature, "theory which informed the intervention and research intent" (Eden and Huxham, 1996, p. 80), the second research cycle focussed on the data and insights "which emerge[s] from the use in practice of the body of theory" (ibid.). The actionability of the theoretical framework in understanding and simultaneously leading virtual teamwork was evaluated using the data collected from the project "Virtualise". The data gives a contextual answer to the second part of the research question: "Did we act on the factors that influence virtual teamwork according to the framework and how did we do this?" After collecting, coding and analysing the data, the write-up, not only served to report on the research but also to discuss, reflect on and weigh the contributions from theory and practice against each other. Actionable knowledge on which others can build is the result of this research.

In AR there are three audiences with three voices (Chandler and Torbert, 2003; Coghlan and Teresa, 2014): the first person (me), the second person (we) and the third person (they). I act and do research as an observer in the first person. The practice happens by the second person for the second person. The third person, the broader community of research and practice, finds its voice in the body of literature, which I consulted and to which I contribute. In my role as researcher-practitioner, I inform my practice with knowledge from the literature. In turn, the research outcomes should eventually inform the community of research and practice.

The last paragraph points to a central issue which the action researcher faces: the problem of the dual role as practitioner and researcher. This position has both advantages and disadvantages. As a researcher-practitioner, I am an informant of the academic community. My insider status gives me access to information and insights that would otherwise not be accessible to an outsider. As a practitioner-researcher, I transfer knowledge from theory to daily practice. I am aware that my position in this dual role could be a source of bias. My inputs could be accepted uncritically because of my position of power and my formal training in management. Another bias, challenge and at the same time opportunity is that, from my geographically distant position, I was not immersed in the organisation. I was cut off from aspects like gesture, facial expression and tone, which are all present in face-to-face communication. It is an opportunity for me to personally experience, study and understand the difficulty of this mode of collaboration and, based on personal reflection, directly put to use the insights I gain.

3.2 Research design and methods

The research context is a small enterprise with roughly fifteen staff members: Its headquarters
125 and branch office are in Subsaharan Africa (Figure 1**Fehler! Verweisquelle konnte nicht gefunden werden.**). Two board members live in Europe, while the third board member, the director, is on-site (**Fehler! Verweisquelle konnte nicht gefunden werden.**). The business development project "Virtualise" lasted from August 2017 to June 2018. The interviews with the participants were done in April 2019 (Figure 9**Fehler! Verweisquelle konnte nicht gefunden**
130 **werden.**).

The framework developed in the literature review (Figure 6) was further expanded to include the actions and outcomes, which Snellman (2014) proposes in her four propositions. The actions lead to the intermediate outcomes: improved trust and cohesion and harnessing of virtuality and diversity. This, in turn, improves the ultimate outcomes: team success and, subsequently,
135 organisational value creation. This expanded framework, which served as a template for coding the data, is presented in Figure 10. **Fehler! Verweisquelle konnte nicht gefunden werden.** presents the factors and the codes derived from the framework.

3 Methodology
—

	Person	Role	Affiliation	Gender	Location
1	Accountant A	Accountant	Staff (part-time)	Female	Headquarters
2	Accountant E	Accountant	External *	Female	Europe
8	External Blogger	Other	External *	Male	Headquarters
9	External Presenter	Other	External *	Female	Headquarters
3	BM Director	Board Member (BM)	Board	Male	Headquarters
4	BM IT-Specialist	Board Member (BM)	Board	Male	Europe
5	BM Researcher	Board Member (BM)	Board	Male	Europe
6	Editor	Editor	Staff	Male	Headquarters
7	Editor 2	Editor	Staff	Male	Headquarters
10	IT-Technician	Technician	Staff	Male	Headquarters
11	Journalist 01	Journalist	Staff	Female	Headquarters
12	Journalist 02	Journalist	Staff	Male	Headquarters
13	Journalist 03	Journalist	Staff	Female	Headquarters
14	Journalist 04	Journalist	Staff	Male	Headquarters
15	Journalist 05	Journalist	Staff	Male	Headquarters
16	Journalist 06	Journalist	Staff	Female	Headquarters
17	Journalist 07	Journalist	Staff	Female	Headquarters
18	Journalist 08	Journalist	Staff	Male	Headquarters
19	Journalist 09	Journalist	Staff	Male	Headquarters
20	Journalist 10	Journalist	Staff	Male	Headquarters
21	Journalist 11	Journalist	Staff	Male	Headquarters
22	Journalist B1	Journalist	Staff	Male	Branch
23	Journalist B2	Journalist	Staff	Female	Branch
24	Journalist B3	Journalist	Staff	Female	Branch
25	Technician 01	Technician	Staff	Female	Headquarters
26	Technician 02	Technician	Staff	Female	Headquarters
27	Technician 03	Technician	Staff	Male	Headquarters
28	Technician 04	Technician	Staff	Male	Headquarters
29	Technician B1	Technician	Staff	Male	Branch

Table 2: Participant classification sheet

140 ** The consent of externals was not collected and their contributions were not used in the study*
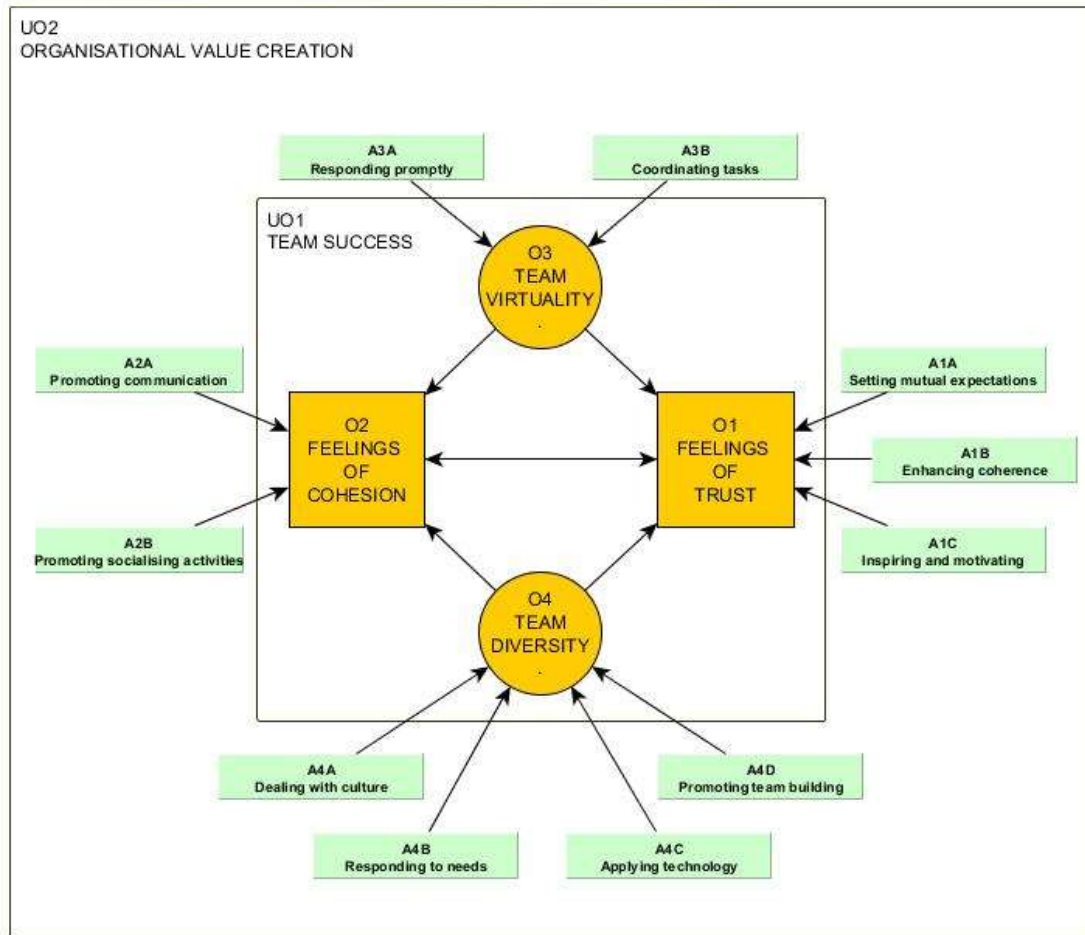
Figure 10: Research framework with factors

Code	Factor
A	**Actions:**
A1A:	Setting mutual expectations
A1B:	Enhancing coherence
A1C:	Inspiring and motivating
A2A:	Promoting communication
A2B:	Promoting socialising activities
A3A:	Responding promptly
A3B:	Coordinating tasks
A4A:	Dealing with culture
A4B:	Responding to needs
A4C:	Applying technology
A4D:	Promoting team building
O	**Intermediate outcomes:**
O1:	Feelings of trust
O2:	Feelings of cohesion
O3:	Feelings of closeness and harnessing of talent
O4:	Feelings of closeness and harnessing of diversity
U	**Ultimate outcomes:**
UO1:	Team success
UO2:	Organisational value creation

Table 3: Themes derived from the framework for coding the data

145 **3.2.2 Research methods**

The business development project is used to answer the research questions, thereby verifying the framework (Figure 10). The outcome of the research is specific to the context and not necessarily generalisable. Instead, using this approach emphasises richness rather than the generalisation of the insights. The business development project "Virtualise" is studied from three different

150 perspectives: from the data generated in the exchange online between the participants; from my observations and reflections as an immersed action researcher; and finally, from the perspective of selected participants obtained in interviews. This triangulation of data sources increases the trustworthiness of the research (Flick, 2004).

Given the context of the study, the online protocols offered the best accessible source of data. The

155 journalling served to document my observation of the action present in the online data and as self-observation of my reflections in action. In the dual role of researcher-participant, this self-observation was important, as it helped me identify the impact of my action on the context. The interviews at the end should serve to confirm the presence of the participants' subjective feelings as postulated by the framework. They should also confirm that my observations and the

160 interpretation of the online data matched with the way in which the participants experienced the events.

The data was analysed using the generic thematic analysis approach (Clarke and Braun, 2014; King, Brooks and Tabari, 2018). I derive a part of the themes I use to code my data from the thesis' framework. As such, the framework serves as a template for the analysis of the data. Yet, I am

165 hesitant to call this approach template analysis (King, Brooks and Tabari, 2018) because I am not following any established research methodology with predefined analysis procedures. Rather, I am applying different methods of thematic analysis in an eclectic manner.

Saldaña (2016, pp. 212–213) refers to the combination of first cycle coding methods as eclectic coding. The three exploratory first cycle coding methods I used to code the data were holistic

170 coding, provisional coding and hypothesis coding (ibid. 2016, p. 165). This first cycle coding was not followed by a second cycle of coding in which the first cycle coding would have undergone a coding of codes. As described by Saldaña, hypothesis coding derives its coding scheme in advance of the analysis from theory (Figure 10, **Fehler! Verweisquelle konnte nicht gefunden werden.**). For the storage of the research data and for its analysis, I used NVivo, a computer-assisted

175 qualitative data analysis software (CAQDAS).

3.2.3 Data collection

The data for this study was collected from three different sources: online exchange, interviews and journalling. Before collecting data, the approval of the university's ethics commission was obtained. Then, the Participant Information Sheet (Appendix A) describing the research project

180   and its goals and the Participant Consent Form (Appendix C) were sent by e-mail to the participants. Finally, the signed forms were returned by e-mail.

Online exchange

The bulk of the data stems from the exchange that took place online using Slack and WhatsApp. During the observation period, from August 2017 to June 2018, the exchange between the board

185   members and between the staff took place in different chat groups. In all, the contributions of 29 participants were recorded.

There were two chat groups used by the management, one on Slack and one on WhatsApp. While the Slack group "Board" was reserved only for the board members, the Editor and the Accountant had access to the WhatsApp group "Management". The staff communicated in two WhatsApp

190   groups: "Staff" and "News Room". The transcripts from these four channels were analysed. The transcripts of other groups (marketing, accounts, website and sitcom production) were excluded from the analysis. They were excluded because these chat groups were used for communication with persons outside of the organisation.

The four transcripts were downloaded and then prepared for analysis using MS-Word. This

195   preparation included three main steps: cleaning up the layout; reformatting images and replacing video files with still images; and finally, anonymisation. The anonymisation entailed replacing all names of persons by their function and replacing names of places and organisations with expressions like "Headquarters" or "Branch". In addition, names of places or organisations which were not relevant for the analysis were blackened. Contributions of external staff members, who

200   had not given their written consent, were also blackened. Table 4 offers an impression of the data quantity.

Source	Signs	Words
Board	371'474	65'170
Management	154'480	27'101
Staff	46'507	8'159
News Room	141'045	24'744

Table 4: Data from the online exchange

Interviews

205   The ongoing civil war dissuaded me from travelling to meet the staff members in person. Therefore, the interviews were conducted online nine months after the debriefing and after the coding and preliminary analysis of the data from the online exchange. The questions used for the semistructured interviews were derived from the framework. Four sets of questions covered the different factors around feelings of trust and cohesion and team virtuality and diversity. At the

210   end of each set were open-ended questions, which were not geared at any particular factor.

Finally, the last set of questions let the participants talk about a conflict they had observed — this aimed at opening a conversation by departing from critical incidents.

The design of the interview was inspired by Rubin and Rubin's (2012) responsive interviewing. This style of qualitative interviewing "emphasises the importance of building a relationship of trust between the interviewer and the interviewee" (ibid. 2012, p. 36). Besides the main question, follow-up questions and probes were noted in the interview guide, which the participants received at the start of the interview (see Appendix D). The questions around virtuality and diversity were brought up in the beginning. Questions around the personally sensitive issues of cohesion and trust came last. Placing the sensitive questions around cohesion and trust at the end, gave me the possibility of slowly building up the comfortable atmosphere of a conversation. I took hand-notes during the interviews.

The interview design was accompanied by reflection on the dual role as researcher-practitioner and the bias that could ensue from this role. In my role as proprietor of the organisation, I was aware that the participants might not express themselves freely but instead give answers they thought I might want to hear. In my role as researcher, with little experience in qualitative interviews, I was conscious that the way I pose my questions would have an influence on the answers I receive.

The choice of interview participants presented in Table 5 was designed to cover the whole spectrum of the organisation's members. All board members were interviewed. The editor-in-chief, as the second member of the management, was also interviewed. All staff members of the Branch were interviewed. From the Headquarters, a male and a female journalist, who had been with the organisation for long, were selected. A female technician was selected from the Headquarters to get both a female and a male technician to speak.

	Person	Role	Location	Affiliation	Gender	Duration
1	BM IT	Board member	Europe	Board	male	59 minutes
2	BM Director	Board member	Headquarters	Board (management)	male	93 minutes
3	Editor 2	Editor	Headquarters	Staff (management)	male	60 minutes
4	Journalist 1	Journalist	Headquarters	Staff	female	59 minutes
5	Journalist 4	Journalist	Headquarters	Staff	male	42 minutes
6	Techician 2	Technician	Headquarters	Staff	female	54 minutes
7	Journalist B1	Journalist	Branch	Staff	male	46 minutes
8	Journalist B3	Journalist	Branch	Staff	female	34 minutes
9	Techician B1	Technician	Branch	Staff	male	55 minutes

Table 5: List of interview participants

The interviews were done in the evening after work when the participants were at home. The technical setup for the recording was a bit complicated and unstable. The interviews were done using an android smartphone and the video function of WhatsApp. The App AirDroid was used to

mirror the smartphone's screen onto the laptop. The game bar function on the computer running on Windows 10 was then used to record the video from the laptop's screen. Simultaneously the laptop's microphone recorded the sounds coming from the smartphone's loudspeakers and me as the interviewer. After the interviews, I transferred the amount of roughly £6.50 to the staff members' phone accounts as a recompensation for the airtime they had consumed during the interview. The result from the nine interviews, which lasted between 34 and 93 minutes, was a total of 8 hours and 22 minutes of video footage.

Journalling and meeting records

I noted my observations and reflections using Evernote. Most of the observations were made following the weekly board meetings. In all, there were 26 journal entries during the observation period. To put some order into my thoughts and to have the same structure in all journal entries, I came up with the acronym ROAPS:

- **R**ecording facts
- **O**bserving self: introspection, filtering out emotions and assumptions
- **A**nalysing: reasoning, reflecting, putting things together
- **P**roblematizing: formulation of the problem, based on analysis
- **S**olving: drawing conclusions and formulating the next steps

I made notes of the online meetings I held with my thesis supervisor. Because they contained many reflections which were not recorded in the research journal, I included these 30 meeting records in the material I drew upon for the write-up of this thesis. These notes also contained valuable information on discussions about the methodology and structure of this thesis. While the journal entries were coded, the meeting notes were not, since they were not directly linked to the project "Virtualise".

3.2.4 Data analysis

The data was analysed in successive stages. These steps were iterative and not necessarily as linear as they are presented in the following paragraphs. The preliminary steps consisted of introducing the data into NVivo and getting a feeling for the data. Next, the data was coded for analysis. The actual process of analysis was done in the write-up and not in NVivo.

Preliminary steps

Figure 11: Word clouds generated from the data of the chat groups "Board" and "Staff"

270   After the clean MS-Word files of the online exchange were imported into NVivo, the production of word clouds helped me get a first impression of the data (Figure 11). At this level, it became visible that the discussions in the board meeting focussed on issues around business and projects. Meanwhile, with a "happy" "hahahahabahah" there was more socialising in the staff's chat group.

After the videos of the interviews were imported into NVivo, I also imported the interview
275   questions and copied my hand-notes from the interview to NVivo. By placing time markers in the videos, I matched the interview questions and hand-notes to the proper position within the video. This made it possible to jump to the right spot within the video quickly.

It was possible to import the journal entries from Evernote, and the meeting notes MS-Word directly to NVivo. Thus, no further steps were needed to prepare these documents for coding.

280   **Setting up the coding structure**

Before coding the data in NVivo, I set up the coding structure. Again, this was not a purely linear process. As I worked with the data and gained new insights, I continuously adapted the coding. The final coding structure, the codebook, is presented in Appendix D. NVivo works with nodes for cases, themes and relationships (QSR International, no date). Case nodes classify the data into
285   units of observation to which different attributes can be assigned. Theme nodes organise the data into themes, topics or concepts. Lastly, relationship nodes are used to regroup evidence for relationships between nodes, like relationships between concepts. In NVivo, I regrouped extracts from my different data sources under cases, themes and relationships, despite their different data formats (text files with embedded images and video files),

290   Besides creating case nodes to regroup events and projects, I created case nodes to classify the research participants. The case nodes under "events and projects" (Figure 12) listed the different contexts in which the data was generated. The case nodes under "participants" listed all

participants who contributed to the data pool (Figure 13). The participants were further classified based on the attributes, role, location and affiliation (**Fehler! Verweisquelle konnte nicht gefunden werden.**). To protect the anonymity of the participants, the attribute of gender was not used for classification, even though this attribute played a role in the choice of interview participants.

295

Name	Files	References
Events & Projects	0	0
1 Board Meeting	0	0
2 Visioning	3	7
3 Process Analysis	3	23
4 Projects	0	0
41 Accountancy	2	5
41 Internet Page	2	21
41 Slack	1	6
42 Marketing	1	8
44 PubHub	1	3
45 Expansion	1	7
Archiving	1	2
HR	1	3
Partnerships	1	2
Social Media	1	2
5 Debriefing	1	1
6 Interviews	16	100
7 Research	4	5
8 Online Staff Meetings	3	10
9 Social Events	2	18
Contextual Events	2	5
11 The Fight	2	4
Participants	0	0

Figure 12: Case nodes for events and projects

Name	Files	References
Events & Projects	0	0
Participants	0	0
Accountant A	2	88
Accountant E	0	0
BM Director	6	1242
BM IT-Specialist	7	934
BM Researcher	4	2193
Editor	3	250
Editor 2	4	32
External Blogger	0	0
External Presenter	0	0
IT-Technician	2	18
Journalist 01	3	71
Journalist 02	0	0
Journalist 03	2	154
Journalist 04	3	114
Journalist 05	1	170
Journalist 06	1	43
Journalist 07	1	19
Journalist 08	1	3
Journalist 09	1	23
Journalist 10	1	1
Journalist 11	1	31
Journalist B1	2	100
Journalist B2	1	62
Journalist B3	2	2
Technician 01	2	74
Technician 02	3	61
Technician 03	2	10
Technician 04	1	22
Technician B1	3	4

300

Figure 13: Case nodes for participants

The coding to theme nodes replicated the structure of the framework in NVivo. Theme nodes were also created for anticipated themes and for themes that emerged while coding. The nodes grouped to "Propositions" served to replicate the framework in NVivo (Figure 14). The theme nodes grouped under "Actions" (Figure 15) and "Outcomes" (Figure 16) were primarily used for the coding of the data. Besides the nodes for actions proposed in the framework, I created nodes to mark actions that were evidence of my dual role as researcher-participant. Emergent topics were regrouped under three headings: "R1 Virtual teamwork", "R2 Team dynamics", and "R3 Spamming". "R1 Virtual teamwork" highlighted work-related communication between staff members. "R2 Team dynamics" regrouped evidence of team development. Lastly, "R3 Spamming"

was used to label material (funny video clips, jokes, inspirational bible verses) from external sources, which staff members forwarded to the chat groups.

The last set of theme nodes looked beyond the framework for evidence of leadership roles within the data (Figure 17). Four leadership roles are derived from Jawadi *et al.* (2013). The last node in this set covers the theme of my role duality as a researcher-practitioner. Finally, I introduced the relationships between the different nodes (Table 6) to replicate the framework in NVivo. Figure 18 shows the graphical representation of the coding structure in NVivo.

Name	Files	References
1 Propositions	0	0
P1 Feelings of Trust	3	6
P2 Feelings of Cohesion	4	5
P3 Team Virtuality	4	10
P4 Team Diversity	4	5
2 Actions	0	0
3 Outcomes	0	0
4 Leader Roles	0	0

Figure 14: Theme nodes for the four propositions

Name	Files	References
1 Propositions	0	0
2 Actions	0	0
2.1 Proposed Action	0	0
A1A Setting mutual expectations	7	38
A1B Enhancing coherence	7	34
A1C Inspiring and motivating	4	12
A2A Promoting communication	7	24
A2B Promoting socialising activities	3	8
A3A Responding promptly	5	14
A3B Coordinating tasks	6	34
A4A Dealing with culture	2	4
A4B Responding to members' needs	6	16
A4C Applying technology	6	26
A4D Promoting team building	5	8
2.2 Recorded Action	0	0
Practice to theory	1	2
Theory to practice	2	3
3 Outcomes	0	0
4 Leader Roles	0	0

Figure 15: Theme nodes for actions

Name	Files	References
1 Propositions	0	0
2 Actions	0	0
3 Outcomes	0	0
3.1 Outcomes Expected	0	0
O1 Feelings of Trust	0	0
O2 Feeling of closeness	4	56
O3 Harnessing the team	2	7
O4 Profiting from diversity	2	2
UO1 Team success	2	7
UO2 Organisational value creation	2	6
3.2 Outcomes recorded	0	0
R1 Virtual team work	1	1
Data transfer	1	15
Technical problems	2	26
Work related communication	1	35
R2 Team dynamics	0	0
Contributing ideas	2	27
Self coordination	1	4
Team adaptation	5	30
R3 Spamming	2	21
4 Leader Roles	0	0

Figure 16: Theme nodes for outcomes

Name	Files	References
1 Propositions	0	0
2 Actions	0	0
3 Outcomes	0	0
4 Leader Roles	0	0
4.1 Mentoring	2	8
4.2 Facilitating	2	9
4.3 Producing	2	3
4.4 Directing	4	11
4.5 Role duality Researcher - Practitioner	4	4

Figure 17: Theme nodes for leadership role

From Name	Type	Direction	To Name
1 Propositions\P2 Feelings of Cohesion	Positive influence	←——→	1 Propositions\P1 Feelings of Trust
1 Propositions\P3 Team Virtuality	Negative influence	——→	1 Propositions\P1 Feelings of Trust
1 Propositions\P3 Team Virtuality	Negative influence	——→	1 Propositions\P2 Feelings of Cohesion
1 Propositions\P4 Team Diversity	Negative influence	——→	1 Propositions\P1 Feelings of Trust
1 Propositions\P4 Team Diversity	Negative influence	——→	1 Propositions\P2 Feelings of Cohesion
2 Actions\2.1 Proposed Action\A1A Setting mutual expectations	Action	——→	1 Propositions\P1 Feelings of Trust
2 Actions\2.1 Proposed Action\A1B Enhancing coherence	Action	——→	1 Propositions\P1 Feelings of Trust
2 Actions\2.1 Proposed Action\A1C Inspiring and motivating	Action	——→	1 Propositions\P1 Feelings of Trust
2 Actions\2.1 Proposed Action\A2A Promoting communication	Action	——→	1 Propositions\P2 Feelings of Cohesion
2 Actions\2.1 Proposed Action\A2B Promoting socialising activities	Action	——→	1 Propositions\P2 Feelings of Cohesion
2 Actions\2.1 Proposed Action\A3A Responding promptly	Action	——→	1 Propositions\P3 Team Virtuality
2 Actions\2.1 Proposed Action\A3B Coordinating tasks	Action	——→	1 Propositions\P3 Team Virtuality
2 Actions\2.1 Proposed Action\A4A Dealing with culture	Action	——→	1 Propositions\P4 Team Diversity
2 Actions\2.1 Proposed Action\A4B Responding to members' needs	Action	——→	1 Propositions\P4 Team Diversity
2 Actions\2.1 Proposed Action\A4C Promoting team building	Action	——→	1 Propositions\P4 Team Diversity
2 Actions\2.1 Proposed Action\A4D Applying technology	Action	——→	1 Propositions\P4 Team Diversity

Table 6: Establishing relationships between theme codes

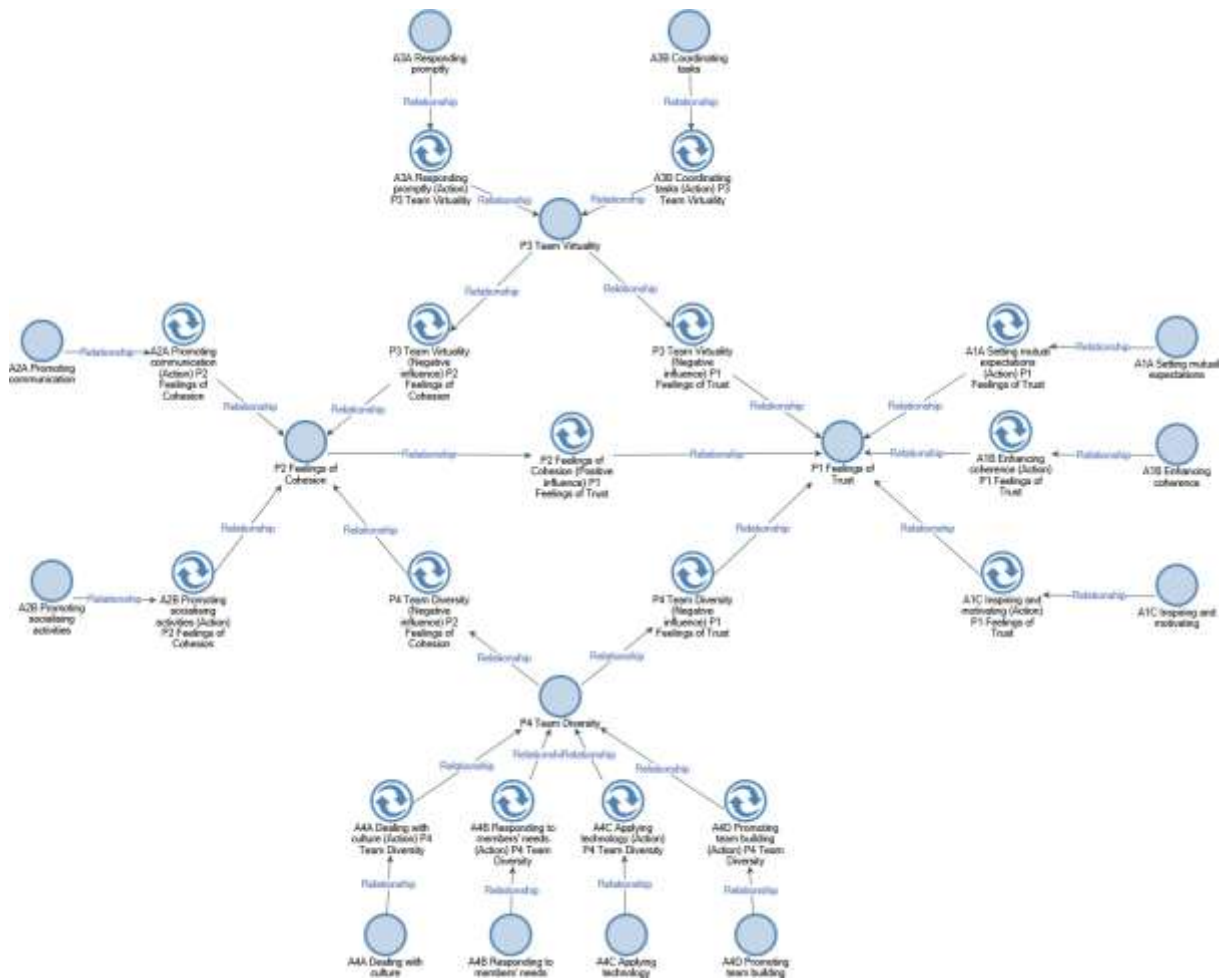*Figure 18: Map of theme nodes and relationship nodes derived from the theses' framework*

Coding and annotation

The data from three different sources demanded different methods for their coding. Although the description of this process might seem linear, it was iterative, and the different coding methods were sometimes applied simultaneously. This applies especially to the provisional coding

(Saldaña, 2016, p. 168) outside the framework. This applied especially to the coding of the emergent topics grouped under "Recorded Outcomes" (Figure 16), where the codes were continuously reworked and regrouped.

In the first round of holistic coding (Saldaña, 2016, p. 166) of the data from the online exchange, the data was coded in a semi-automatic manner to the different participants (Figure 13) using the search function of NVivo. In the second round of holistic coding, the data was coded in big chunks to the different events and projects (Figure 12). The last round of coding consisted in the hypothesis coding (Saldaña, 2016, p. 171) of the data to actions and outputs of the framework (Figure 15 and Figure 16) and beyond the framework to emergent topics and topics around leadership roles (Figure 17).

By placing time markers in the videos of the interviews, they were coded to the interview questions and, with that, directly to the themes of the framework from which the questions were derived. One question in the interview aimed at the role duality of the researcher-practitioner. At the end of the interview, two questions looked for relationships between the intermediate outcomes.

The journal entries and the meeting records were not coded. Nevertheless, it was helpful to have them stored in NVivo since this allowed me to search for topics across all these documents at once.

Analysing

While coding was more a mechanical regrouping of data, a first step in analysing, in the sense of reflecting on the data, was writing annotations. These annotations helped me record the thoughts that went through my mind while I looked at the data. This is where I started interpreting the data beyond the framework to form arguments.

After the annotation of the data, the next step was reading through the data from the different sources now regrouped by themes or events to get a better feeling for the data. This process led to the write-up. As Clarke and Braun (2014, p. 6627) state, the process of writing was the last step in the process of the analysis. The reformulation and the regrouping of the themes, arguments and thoughts on paper were a crucial part of the analysis.

The regrouping to the themes of different leadership roles (Figure 17) was not used in the write-up. After looking at the data through the lens of this coding, I discarded the idea of using these themes further. I had attributed leadership styles to sections of the exchanges between members of the board or management and staff members, based on the choice of their words or the intentions I interpreted into the exchange. Upon reflection, I found that I might be interpreting too much into the data and that I might be misinterpreting the intentions of others based on their utterances in the chat group. This approach seemed to be too subjective. Hence it was dropped.

3.3 Presenting the research

The deeper analysis, in the sense of understanding and explaining the data, happened in the process of writing up the thesis. Two approaches to a deeper analysis were chosen: looking at the data as a chronological narrative and explaining what happened based on the thesis' framework.

3.3.1 Narrating

Based on the coding to events and projects, I created a rich chronological narrative of the project. In this narrative, direct quotations from the data are woven into the fabric of the chronological story of the research project. This narrative tells the story not only of the observed action cycle but also of what happened before and after the observation period. The presentation of the data as a narrative follows in the first part of Chapter 4.

3.3.2 Arguing

To analyse the four themes of the framework in the second part of Chapter 4, I use the structure of an argument. According to Toulmin claim, data and warrant constitute the core structure of an argument (Healy and Grootendorst, 1987). The graphical representation in Figure 19 of an argument structure that departs from a claim uses the word "proof" instead of data.
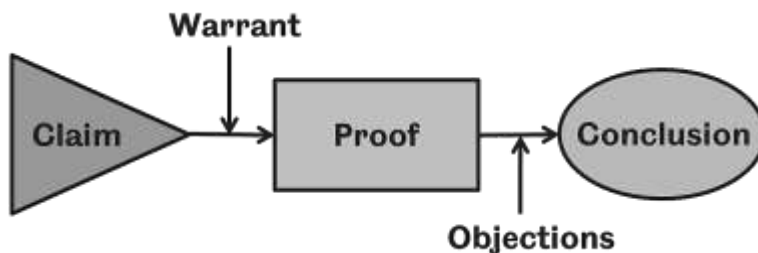
Figure 19: Structure of an argument
        (University of Sheffield, no date)

The four propositions serve as claims, and excerpts drawn from the data deliver the claims' proof or rebuttals (objections). From this, a conclusion can be drawn as an answer to the research question. In this argument, the literature on which the framework builds serves as the warrant. To argue the claim that the framework was actionable in the context of the research, I compared it to another model, the DGI-model. Areas, which the framework did not cover are rebuttals to the claim that the framework is all-encompassing.

4 Findings and analysis

"Narrative imagining — story — is the fundamental instrument of thought. Rational capacities depend on it. It is our chief means of looking into the future, of predicting, of planning, and of explaining. It is a literary capacity indispensable to human cognition generally." (Turner, 1998, p. 4)

The following chapter presents the findings. In the first part, a chronological narrative of the events immerses the reader into the story. In the second part, the findings are subjected to a thematic analysis using the framework elaborated in the previous chapters. The third part of the chapter looks at emergent themes, which the framework did not foresee. Finally, the last part summarises the findings, once more based on the elements and factors of the framework.

4.1 Narrative

I report the story from my perspective as a researcher-practitioner. The narrative follows the logic of the AR cycle, which goes through the phases of planning, acting, observing and reflecting (Townsend, 2013). Although the narrative concentrates on the first action cycle of the business development programme "Virtualise", the story began before the project kickoff and continued after the debriefing. Besides the action, the research is also a part of the story. This report is a retrospective of what I lived, observed and think.

I am a part of the narrative; I took influence on the action. I am not in the role of the observer, like a camouflaged photographer taking pictures of wildlife, or a silent theatre critique taking down notes. In retrospect, I try to highlight the assumptions that drove my decisions or my interpretation of the actions of other participants.

The sources for this narrative are: the exchange on WhatsApp and Slack I had with the board members, the exchange amongst staff members in two WhatsApp group chats, Slack and WhatsApp protocols of online meetings with external partners or consultants, my journal entries, the meeting records of the exchange I had with my research supervisor and finally my memory of the lived experiences. Figure 9 offers a graphical summary of the narrative.

4.1.1 What happened before

4.1.1.1 DBA Module 5

The ideas that led to the project "Virtualise" started ripening in 2015. In Spring 2015, in my fifth module of the DBA programme (Dah, 2015a), I had looked at the issue of empowerment of the organisation's staff. I had identified a lack of *Eigenverantwortung* as a problem that was hindering the development of the organisation. *Eigenverantwortung* in German is defined as the possibility, ability, willingness and duty to take responsibility for one's actions, inactions, speech and silence.

The research into this topic was later shifted to the issue of the entrepreneurial mindset, defined by Haynie *et al.* (2010, p. 218) as the "ability to be dynamic, flexible, and self-regulating".

These reflections led to plans for restructuring the organisation, reshaping the organisational culture, providing a vision and expanding to other cities. Since then, the organisational structures and especially the roles have slowly shifted towards what was then designed. This is where I obtained the theoretical knowledge on how to construct a vision and shape organisational culture. It was then that the core of our present vision was developed. As a result of this research, we set ourselves the goal to become the country's first anglophone TV channel and be leaders in the quality of both the content we broadcast and the quality of sound and image of our presentation.

4.1.1.2 DBA Module 7

Worldwide, TV broadcasting passed from analogue to digital. In autumn 2015, we were forced to change a part of our hardware and software to adapt to this technical evolution. This change led me to reflect on the question of dealing with technological evolution aimed at:

> *"Developing the dynamic capacities of a multimedia enterprise to allow the*
> *organisation as a whole to identify the right trends and be able to efficiently*
> *adapt its technological disposition to the anticipated changes."*
> *(Dah, 2015b)*

Two subjects I dealt with while researching adaptability to technical evolution have influenced the project "Virtualise" because they shaped my way of thinking. Here, I adopted the catch-up approach as a strategy in dealing with technological evolution. Moreover, I espoused the understanding of the organisation as a complex adaptive system.

The "catch-up hypothesis" coined by Abramovitz (1986) posits that underdeveloped countries have the potential for a technological leap forward. Compared to more developed countries, they are not held back by their investments in older technologies. On a structural level, the effort to change from existing technologies to newer ones is more significant than introducing more recent and more efficient technologies. Perez (Perez, 2001) describes this figuratively. According to her, "opportunities for development are a moving target" (ibid. p. 110). Disruptive technological innovations present "discontinuities which become windows through which latecomers can leap forward" (ibid. p.113). A fitting example of this assertion is the leap forward which mobile communication took in the setting of this business development project. Here, large parts of the population never came in contact with landline phones. For long-distance communication, they started off straight away with mobile phones. For the telecommunication providers setting up a mobile network was faster and cheaper than setting up a wired telephone network.

What I retained from the "catch-up hypothesis" for my strategic thinking, is that our strategy for adapting to technological changes must consist in anticipating changes by observing the developments in more advanced markets and then adapting them to our organisational context and the market in which we find ourselves. Thus, we do not need to invest time and effort into coming up with disruptive innovations. Instead, we need to copy and adapt technologies from developed markets to our context.

Besides the "catch-up hypothesis", thinking of the organisation as a complex adaptive system was the second subject that influenced this research. During this research, I came in contact with the CLT to establish a balance between administrative leadership with its focus on bureaucracy and adaptive leadership with its focus on the interactive dynamics on the informal social level (Uhl-Bien, Marion and McKelvey, 2007). It is on this level where emergence produces adaptive outcomes. Influenced by Stacey's (2011) theory on complex responsive processes, I became aware that the only tool I wield as a leader is communication. It is the only way in which I can transmit my vision and convince others to act. This becomes even more obvious in our virtual setup where, compared to face-to-face interaction, the communication channels are limited. These concepts and models have influenced my way of thinking and hence my choice of literature for this AR project.

4.1.1.3 Setting up the research project

The first step in writing the thesis was the proposal. This step served to plan the business development project and mould it to serve as a source of data for the research project. For this, I set the milestones of the research project: setting a vision, planning the transformation, implementing it and at the end of a first cycle analysing the outcome in view of applying the insights to further cycles.

I used the preliminary literature review to find best practices for leading virtual teams. Here I came across the article of Snellman (2014), which succinctly summarises the best practice proposals of other authors, making them applicable in practice. It led me to focus on trust, togetherness, closeness and timeliness in communication and on the diversity within a virtual team. I presented my proposal to my peers and discussed it with them.

After approval of the proposal, the next stage in the research project was getting the approval of the university's ethic's commission. The first application was not accepted. The critique was that I could misuse my role to coerce the organisation's employees into participating in the research project. The research setup had to be revised to avoid such a situation. The participant information sheets were revised to align with the critique from the university's ethic's commission. Measures were implemented to ensure that participation would be unsolicitous. By the time the ethics approval was granted, the business development project had already started.

The first research plan foresaw interviews with the staff at the beginning and the end of the business development project. The research plan was subsequently changed to do interviews after the debriefing.

4.1.2 Project: "Virtualise"

Even before the start of the project, the board was already functioning as a virtual team. The first board meeting that officially marked the beginning of the project "Virtualise" and the accompanying research project was held on the 27th of August 2017. We used Slack as the communication tool linking the three board members sitting. The BM Director was on the ground in Africa, while the IT-Specialist and myself were in Europe. Since the start of the research project, we have never come face-to-face.

The first meetings, including the two preliminary meetings held on WhatsApp, circled around the following topics: organising regular online meetings on Mondays and the choice of communication technology for meetings. We opted for Slack, a cloud-based application because it offers possibilities for data storage and transfer. Further, it provides for plugins to integrate other web applications like accountancy, human resource management and project management.

My objectives for the project "Virtualise" were to get the first branch office of the organisation running smoothly so that we could use the lessons learnt from this process to set up other branch offices eventually. My objective was to use this business development project to make virtual teamwork a cornerstone of the corporate working processes. In the first meetings, we identified topics we needed to work on: IT infrastructure and processes; expansion; marketing; media; and finances. These topics evolved into different projects. We lacked a clear sense of direction and needed to set priorities. In the third meeting, we started working on an overarching vision to guide our business development.

4.1.3 Visioning

Based on Gioia and Chittipeddi (1991), who describe the process of envisioning as an iterative cycle of sense-giving and sense-making and on Nutt and Backoff (1997), I presented the process of visioning to the fellow board members as a three-step process, which entails:

> 1. establishing identity by determining our shared values and where we stand.

> 2. establishing a vision that defines for the organisation what is possible, what is desirable and what is achievable with the means at our disposal.

> 3. implementing the vision by formulating it in writing and then diffusing it within the organisation and keeping it alive by talking about it.

To develop a vision, we first had to agree upon shared values to which we aspire. After a short search on Google, I found a list of 144 values, which I found suitable for the exercise. First, I asked the board members to choose three to five values they felt should guide us.

We discussed the individual choice of values in the board meeting and decided to include the staff in the process of visioning. The Director asked each staff member to choose three to five values that they deemed appropriate for the organisation. Nine persons communicated their choice of values per WhatsApp. Later, a staff meeting was held during which everyone presented the reasons for their choice. The answers from the staff meeting can be summarised with the following posts:

> *2017-09-18T19:06:30Z BM Researcher:*
>
> *What caught my eye in the contributions was that values around integrity came up repeatedly: Loyalty, Devotion, Accountability, Consistency, Commitment*
>
> *2017-09-18T19:08:06Z BM Researcher:*
>
> *Then as you [the board members] said: professionalism, hard work, continuous improvement, creativity and innovation.*

The goal of being the number one channel in the niche we had chosen had already been set years prior to this visioning process. It had never been defined in this depth, and the underlying values were never explicitly discussed. I did a simple word count and regrouped similar values together. In the next board meetings based on the values chosen by both the staff and the board, we formulated a vision statement in one sentence:

> *"XTV,* *[the country's] best digital infotainment in English, stands for a great society centred on a progressive culture, driven by professionalism teamwork and integrity."*

We went on to explain how we want the vision statement to be understood. This explanation states what we are doing and what we intend to do; what aim we pursue with our doing; and based on our shared values, how we want to work together to achieve our goal:

> *We offer infotainment, information (news, debates, documentaries) and entertainment (shows, serials, music, devotion), in English for Cameroon's Anglophone [our] community both within and outside the country. In this niche, we aim at being the best. This digital offer reaches the audience through different channels: satellite TV and internet. The TV-format reaches our viewers by satellite*

and through cable networks that distribute the satellite signal. On the internet, XTV is present with a website, on Twitter, on Facebook and YouTube.

XTV sees it as its mission to contribute to the building of a sustainable society by offering a platform for debate on social issues and by broadcasting content with educational and cultural value. Our output and our way of working should be characterised by a progressive culture that builds the future on our cultural heritage and identity. We do not see culture as static but as progressive. With our work, we contribute to forming Cameroon's [our] culture.

To be the best, the following values guide our work: professionalism, teamwork and integrity. Professionalism means that we apply our skills and talents to the best of our knowledge and that we continuously work to improve ourselves. In teamwork, we help each other to improve on ourselves in a respectful atmosphere. To be the best, we must work together and not against each other. We must work hand in hand to deliver the best output. To be able to rely on each other and also for our customers to rely on us, integrity is a value that we must hold high.

Once completed, the Director presented the vision statement to the staff in a weekly staff meeting. Although not visible at first glance, the project "Virtualise" is embedded in the vision statement: professional teamwork in a digital setting. In our setup that spans across different continents and branch offices, this inevitably means virtual teamwork.

4.1.4 The core process

Having defined the overarching vision to guide the organisation, the next step we tackled in the board meetings was dealing with the main process: producing and distributing media content. First, the board members abroad had to understand how work was being done on the ground. Next, we defined what we expect the workflow to look like in a virtualised setting, considering the expansion of our output on social media platforms.

21.08.17, 21:14 - BM Researcher:

I see workflow like it is done in manufacturing industry, car factories. Shooting out in the field or the studio is the raw material. It is put in the raw material archive. From there it is picked up and someone does the editing (voice-over, sound, music, text), When the product is complete it goes into the product archive, from where it is picked up and assembled on the timeline for broadcasting.

The post above from a board meeting was my first assumption about the ideal process. To understand the core work processes in detail, we, abroad, posed numerous questions. The Director and the Editor, who was also invited to a virtual board meeting, answered our questions. It seemed that the staff had never thought of looking at their work as a process; they just did it "as they always do". We learnt that every staff member adopted a personal way of doing things. We learnt that the storage of data was chaotic. The IT-Technician on the ground reported that part of his weekly routine was deleting files to create space on the computers' hard-drives. Data was being stored on numerous portable external hard-drives. Recordings of talk shows were usually deleted to create storage space. There was no systematic way of naming the files, let alone categorising them.

At the time, we were working on the process definition, a website, different Facebook pages and a YouTube account already existed. However, there seemed to be a lack of communication between the Editor, the journalists and the IT-Technician in charge of the website. Without their input, he was unable to keep the website updated. We had to make sure superfluous Facebook pages created for past shows were deleted. The YouTube channel, just like the internet site, was not being updated regularly. To all, it was unclear who had access to the social media platforms and who was responsible for keeping them up to date.

Based on the answers we received and from what we deemed to be the most logical process setup, we, abroad, developed the ideal processes for the organisation and presented it in a visualisation (**Fehler! Verweisquelle konnte nicht gefunden werden.**). This visualisation was printed out, presented to the staff in the Headquarters and then put on display in the studio. The ideal process aimed at addressing the ills identified in the preceding paragraphs. The process should be simple, straightforward and fast. Nothing should be published online or broadcasted without the approval of the Editor. The storage of files should be standardised to make sure nothing is last and to make sure the files can, later on, be found for reuse.

All the links between the single steps in the process presented in **Fehler! Verweisquelle konnte nicht gefunden werden.** are electronic data transmissions. The bulk of the output consists of articles for news broadcasts and talk shows. Together with the IT-Specialist, we looked at how we could best automate the steps from raw data, editing, approval by the Editor to storage and automated output to social media platforms. We decided to write a computer programme that would automate these steps and enable us to be faster than other TV houses in churning out content. We named the programme "PubHub", derived from the publication hub.

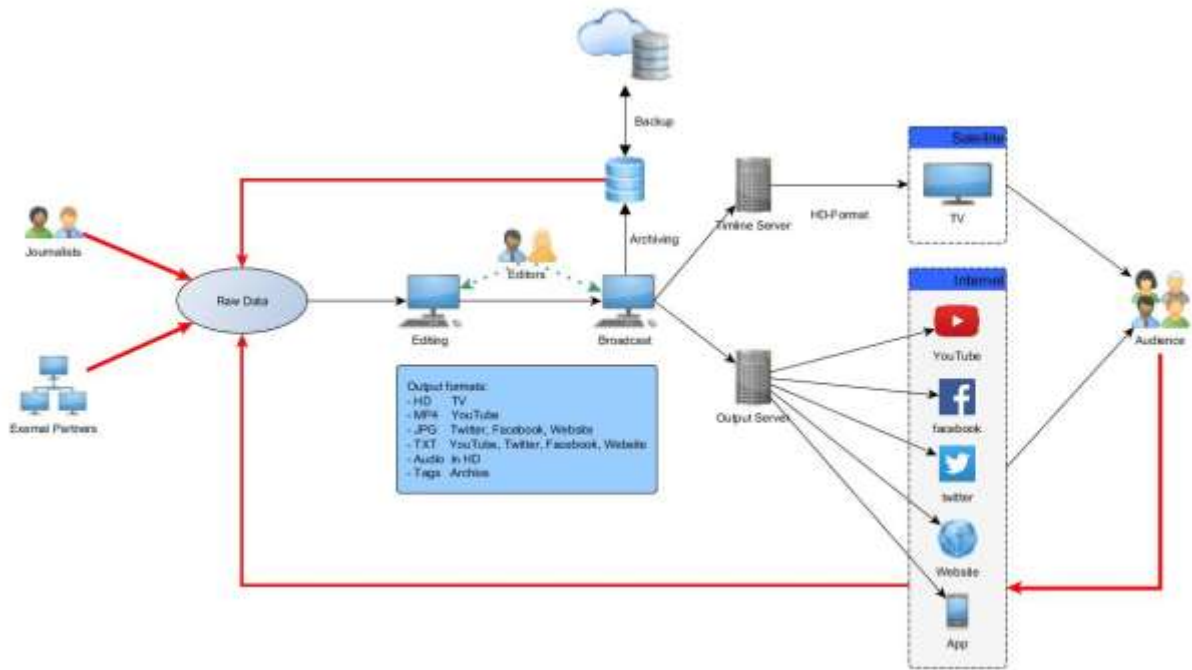*Figure 20: Core production process*

Figure 21: Template of the entry mask for uploads by journalists

The starting point in designing this computer program was the entry mask for uploads of content by a journalist (**Fehler! Verweisquelle konnte nicht gefunden werden.**). We assume that an entry mask for data and behind it a software that processes the data should assure the standardisation of numerous points in the production process.

First, it should ensure that all elements of a produced item, be it a news article or the recording of a talk show, be recorded in the same manner by all, and that nothing be forgotten. Thus journalists have to enter the following for each upload: the names of crewmembers who participated in the production; a title; a headline; a short text of 240 characters adapted for Twitter; if need be a longer text; a representative still image; and finally the video file. For classification, the journalist can choose categories and tags from drop-down menus. New tags can always be added. By activating buttons, the journalist can choose on which channels the uploaded item should be broadcasted. The channels for broadcast are: TV, internet site, YouTube, Twitter and Facebook. The programme automatically generates a date and a file identification number that serves as the file's storage name.

Second, PubHub would standardise the storage of the data. The user does not need to create file names and does not need to determine where the data will be stored. This happens automatically in the background. The storage of data would be done externally, in the "cloud". The categorising and tagging of files should make it possible to easily retrieve files through a search by tags, categories or titles. Third, the software channels all files to the Editor for approval before they are published online or set on a timeline for broadcast. In case the Editor refuses approval, the item is returned to the sender with comments for correction. Fourth, after approval, the publication to multimedia platforms should happen automatically. This entails automatically reformating image and video files to fit the specifications of the social media platforms. This means, for example, converting the video files destined for high definition TV broadcast to a format with lower definition and hence smaller file size, which is more suited for the internet. We have to keep in mind that our audience on social media platforms connects to the internet using smartphones and that they usually buy small data packages.

Despite the automation of the core process, there is still a need for communication between the staff members parallel to the process. For example, there will still be communication between the journalist and technician at the editing desk, who cuts the raw footage and adds text overlays. Likewise, there will still be communication between the journalist and the Editor, who assigns the tasks and approves them once executed. We abroad foresaw that this communication between the Headquarters and the Branch should be done online using Slack or per phonecall.

Even though we have not reached the goal we set, we have taken one step forward. When we started the business development project, the correspondent from the Branch stored his work for broadcasting on a DVD and sent them to the Headquarters by night bus. Now, we have a technician

in the Branch who uploads the work to WeTransfer, an online file sharing platform. He then posts a link for download in the WhatsApp group named "News Room". Parallel to that, the journalist sends a news lead and a summon to the Headquarters to download the file. The news lead is, in the meantime, standardised to summarise the story by offering answers to the questions who, what, why, when, where and how. As a WhatsApp group member, the Editor can see the lead text and later verify the files and approve or have them modified before their broadcast on TV. He can also get them published on multimedia platforms.

4.1.5 Parallel lines

While the section above describes the organisation's core process, I will briefly highlight other projects that went on in parallel during the observation period. They show virtual teamwork going on with external partners. Excepting the issue of communication within the organisation, these projects had no direct impact on the daily work of the staff at the Headquarters. The smaller projects we worked on were our internal communication, developing the Branch, improving our website, marketing, and managing finances. The last three projects were done in global virtual teams.

4.1.5.1 Internal communication

We had chosen Slack as our communication platform, and we held the weekly board meetings successfully on this platform. We assumed that having all staff members communicating on the same platform would contribute to transparency across the organisation. Everyone would be informed about what is going on in the organisation despite any geographical distances.

> *29.09.17, 12:44 - Journalist 1:*
>
> *Wipe everything about* Southern Cameroons *[the crisis] you have in your Phone now. You can be arrested* as an anglophone *anywhere in* Cameroun *[in the country] today. Share and delete immediately after. Send To all round you. Very important.*

We also considered the aspect of our staff's security to which the quote above alludes. In the politically unstable climate, law enforcement officers arbitrarily seize cell-phones from citizens to go through their messages. Any messages touching on politics could lead to the imprisonment of the smartphone's owner. By using a little known App, we hoped to reduce the risk of our staff members being imprisoned because of the work-related communication on their smartphones.

The IT-Specialist went on to create different channels or chat rooms on this Slack. The IT-Technician on the ground set up e-mail addresses and accounts for all staff members. The onboarding was a failure. A few staff members did log in to Slack, but there was no communication

between staff members on this platform. Upon inquiry, I received two reasons why staff members were unwilling to use the software. First, the staff saw no reason for using Slack since they hold regular meetings, and second, they said they did not have enough memory on their smartphones. The cheap smartphones available on the local market for less than £50 have a storage capacity of less than 1GB.

At the beginning of the project, the Director had set up the WhatsApp group "XTV Staff" for the visioning process. The staff continued using this chat group all through the observation period for informal communication among staff members. Half a year later, specifying that it should be used only for work-related communication, the Editor set up a new WhatsApp group, "XTV News Room". Despite stating the purpose of the WhatsApp group, there was a lot of "spamming" in this group. I use the term spamming for posts that were not directly work-related, like jokes, political debates, invitations to leisure events, motivational messages like bible quotations or birthday greetings. Glancing through the coded data, these posts easily made up 10% of the communication. Many of these messages were not written by the senders; they were merely forwarded to the WhatsApp group.

4.1.5.2 Developing the Branch

That our branch office was not performing as we expected it to was the main trigger of this research project. When I was setting up the research proposal, the operative business objective was already to get the first branch office running smoothly. We had one journalist in the Branch who was equipped with a computer and a camera. As described in the introduction, he lacked technical skills in video editing and in using the internet to forward his work to the Headquarters. The quantity of output he delivered did not meet our expectations. In the board meetings, in which we included the Editor, we spent some time planning the relaunch of the Branch. For a start, we set ourselves the objective to have a team that would send at least one new article per day to the Headquarters.

Setting up a team meant recruiting new staff and equipping them with cameras and computers. A female journalist and a technician responsible for filming and editing were recruited through the Editor's contacts. The. The Director and the Editor used the occasion of the yearly convention of the country's main opposition in the city of the Branch to cover this event and introduce the newly recruited personnel to our way of working. No offices were rented for the team of three persons.

> *12.02.18, 20:44 - Editor:*
>
> *[…] they can function from their homes, all we need is that they cover enough*
> *news and other content, edit them and forward to Headquarters for broadcasting.*

In the preparatory meetings, the board members agreed that Slack would be used to communicate with the Branch. This never happened. Instead, Headquarters communicated with the Branch using WhatsApp.

4.1.5.3 Improving our website

When we started the project "Virtualise", a website already existed. However, as mentioned earlier, it was poorly updated. The IT-Technician, under the supervision of the IT-Specialist, maintained the internet site. In the board meetings, we concluded that the IT-Technician lacked the technical and creative skills necessary for web page design. Therefore, we decided to employ a freelancer to redesign our internet site.

We published our request on an online platform for freelancers. We immediately received applications from all around the world. Since we had little income at our disposal, we chose a candidate from Bangladesh who demanded little for the job. We set up a channel on Slack on which, together with the IT-Specialist, we held a virtual meeting with the candidate from Bangladesh.

It was a disappointment. First, we found out that the applicant's skill set was not broad enough. He would not be able to do the preliminary conceptual work before moving on to actually designing the website. Second, in the discussion, which followed the meeting, we became aware that our specifications were not precise enough to transfer the task to an external service provider. We would need first to define our expectations. After the meeting, we put together some ideas and tried to get the IT-Technician to acquire the skills he lacked, namely using WordPress for web design. We thought we could work with ready-made website templates instead of designing a website from scratch. This project eventually died down.

As a result of this failed project start, we focussed our energy on publishing to social media platforms and getting the PubHub software to work. Besides that, the staff members seemed to be most keen on developing our presence on Facebook and doing live streams on this platform. This was later voiced during the debriefing:

> *22.06.18, 10:55 - Journalist 3:*
>
> *[...] I strongly agree on the live streaming of a thing and a powerful online presence. If not all but most of us would agree that it is a great form of advertising and it is a plus for anyone who wants to come and advertise to be seen on TV and on Facebook as well. It's like shooting several birds with one stone*

Another reason to prioritise the development of our presence on Facebook over the development of a website was that we assumed it would bring us closer to the public than we could expect of a

website. The likes and comments would surely give us a better understanding of the interests of a part of our audience. We assumed that it would be of greater use for marketing than a website.

4.1.5.4 Marketing and finances

This leads us on to the next project we started. The IT-Specialist set up a channel on Slack for marketing. He invited a friend based in Great Britain, a professional in marketing, who was willing to contribute her ideas to help us improve this area of our organisation. We only had one online meeting with the marketing specialist. In this meeting, she posed many questions. She was trying to find out what market segment we address and what we offer to our customers. She wanted to develop a marketing concept and eventually develop and position our products based on a market analysis. This project was short-lived. It all felt very theoretical and too far from practice. The data for a market analysis was not available, and the effort to gather it was not made. The project was abandoned.

Setting up a financial reporting system was another project on which we worked with external partners. From the start, our goal was to create transparency by granting all board members insight into the finances. Therefore, the goal was to virtualise the management of the finances. Unfortunately, no one within the organisation, reporting to the BM Director, was able to assume the task of setting up the management of the finances. The choice of the best accountancy structure and software solution was discussed with the two accountants in a separate WhatsApp group. One accountant was on-site, while the other was based in Europe.

Like the marketing project, this project died down. With an ongoing civil war and an economy not far from a standstill, the staff saw no use for financial reporting. Between the lines, the message was that if there is nothing in the coffers, then there is nothing to count and report.

4.1.6 Anecdotes

Unlike the above, some events were not planned. They just happened. To give the reader an impression of the context, the following sections describe the informal and emotional part of what happened during the observation period.

4.1.6.1 Joys

Prior to the board meetings, the members would usually propose topics for discussion. The board meetings often started small talk about family, weather or the political situation on the ground. It was not unusual to find photos in the exchange. The IT-Specialist, for example, sent pictures of his newly born son. I imagine that he must have been sitting in the hospital, contributing to the meeting on his smartphone. From my side, I sent pictures of sunsets that I could see from my terrace while we were holding our meeting; alternatively, sometimes of landscapes, if I was sitting

on a train while participating in the meeting. For me, taking part in the daily life of the other board members by this means created a sense of closeness.

*Figure 22: The staff members in the studio
        (blurred image to protect the anonymity of participants)*

About two weeks after we had asked the staff to choose values for the visioning process, the Director posted a picture of the entire crew assembled in the studio (Figure 22). Most of them seemed to be in a happy mood, and some were even laughing. No comment from his side accompanied the image. I had never seen some of the faces, and even if I had seen them earlier, I could not attach any names to the faces. This was not the first image of the staff at work to be posted to this WhatsApp group. Yet, it is the first image that provoked a strong emotional reaction:

27.09.17, 22:50 - Journalist 1:	*Cute picture*
27.09.17, 22:50 - Journalist 1:	*Technician 2, c where ur buddy is* 🙈🙈🙈
27.09.17, 22:53 - Technician 2:	🙇🙇🙇🙇 *I don die* *[I am dead]*
27.09.17, 22:53 - Journalist 1:	*Hahahahabahah*
27.09.17, 22:53 - Journalist 1:	*U no c how Journalist 8 hang?....one side* *[Don't you see how Journalist 8 leans over?]*
27.09.17, 22:56 - Technician 2:	*I beg leavam so, how I wish I didn't take those pics* *[Please, let it be…]*
27.09.17, 22:57 - Journalist 3:	🤣🤣🤣🤣🤣🤣
27.09.17, 22:57 - Journalist 3:	*Abeg I no wan laugh ya* *[Please, don't make me laugh, will you?]*
27.09.17, 22:57 - Journalist 1:	*Hahahahabahah*
27.09.17, 22:57 - Technician 2:	*I wonder how I managed to bend like that,*
27.09.17, 22:57 - Journalist 1:	*No Mami, d picture is cutr*
27.09.17, 22:57 - Journalist 1:	*Cute*
27.09.17, 22:58 - Journalist 1:	*Hahahahabahah*
27.09.17, 22:58 - Technician 2:	*Lie*
27.09.17, 22:59 - Technician 2:	*The madness that day eh, na God* *[na God = God knows]*

67

27.09.17, 22:59 - IT-Technician:	😳😳😳
27.09.17, 22:59 - Journalist 1:	*Hahahahabahah, no b lie. Na posteur nor*
	[Haha, I won't lie. It was posing, wasn't it?]
27.09.17, 22:59 - Technician 2:	*I see Journalist 8 Curving...*
27.09.17, 23:00 - Journalist 1:	*Yes ooo sis, I seem life*
27.09.17, 23:00 - Journalist 1:	*See am**
	[Yes, Sister, I saw it live.]
27.09.17, 23:01 - Technician 2:	🙁🙁🙁
27.09.17, 23:02 - Journalist 1:	*Hahahahahahahahahha, it's ok na, don't cry*
	[na = now]
27.09.17, 23:02 - Journalist 4:	*Hmmmm*
27.09.17, 23:03 - Technician 2:	*Dear, I can't take it anymore, av gone🏃🏃🏃🏃*
	[av gone = I am leaving]
27.09.17, 23:03 - Journalist 1:	*Hahahahabahah*
27.09.17, 23:04 - Journalist 4:	*Lol*
28.09.17, 08:13 - Journalist 3:	*There was no space remember*
28.09.17, 08:14 - Journalist 3:	*We were trying to make sure everyone gets in*

The image provoked a flood of jovial comments interspersed with numerous emojis. These happy emotional outbursts made me realise that there was a team spirit within the team. Furthermore, the use of slang shows that the exchange was very informal and unrestrained. Even from a distance, this all made me feel like being part of the team. At that moment, I could feel how this exchange in a chat forum, with all the emojis, the onomatopoeias, and the use of spoken language, was able to transport emotions.

Later on, the staff members posted more pictures of this sort to the WhatsApp groups. These pictures of the staff members celebrating were posted of birthdays celebrated in the studio and of outings on holidays. Images shared by staff members celebrating holidays together were taken at Christmas and Easter, on the International Women's Day and on the International Labour Day. Besides pictures, the discussions usually centred around the venue for celebrations and who would be paying for drinks.

4.1.6.2 Sorrows

During the observation period, there were also less joyous exchanges online. I will briefly recount the story of a conflict carried out online and paint a picture of the socio-economic situation. The cooperation between the older journalist in the Branch and the newly recruited journalist was not a smooth one. This became visible when they openly carried out their conflict in the WhatsApp group. The older journalist, a man, felt that his work was not being valued.

> *27.03.18, 21:12 - Journalist B1:*
>
> *Good evening the house. [The Branch] is surprise despite all efforts, no report on [our] events. What's the problem?*

> *27.03.18, 21:17 - Journalist B1:*
>
> *Is it normal for stories from [the Branch] to take two days be 4 been broadcast? Journalist B1 is not happy despite all efforts. Let the house think about this. [The Branch] the Second home.*

The material from the Branch had not gone on air. The simple reason behind this was that the Headquarters had not been able to work the whole day due to an electricity outage. A few days, later there was another outburst.

The Director criticised the audio quality of material that the Branch had sent for broadcasting. The journalist in question seemed to accept the criticism but immediately placed the blame on the "image sender", a colleague in the Branch.

> *04.04.18, 18:02 - Journalist B1:*
>
> *Accepted. But like said. Tell my image sender to be frank. Camera or audio always OK! not to talk of images. But each time there is a complain. I take the blame b4 verification. What do I do? When doing all effort?*

The younger journalist in the Branch picks up on this and does not accept to carry the blame. She speaks up. Her answer shows that there had been a pent-up conflict.

> *04.04.18, 23:11 - Journalist B2:*
>
> *Like seriously??????. Is this supposed to be an excuse? Since we are putting things straight, I have a lot to say*
>
> *04.04.18, 23:32 - Journalist B2:*
>
> *In fact, for crying out loud, it's as if you are insinuating, I am messing with your images before sending them*
>
> *Yeush* 🤦‍♀️🤦‍♀️

The open onslaught did not go unnoticed. Others in the WhatsApp group dropped in their comments.

> *05.04.18, 07:46 - Journalist 6:*
>
> *Are u both at gun point?* 🙊 .

On another channel, I contacted the Director and Editor and asked them to look into the conflict and mediate between the two journalists. I also sent them some literature on how to deal with such disputes. Early on the next day, I could read that the Editor intervened. The journalist who

had been attacked was grateful for the intervention. She took the rest of the exchange with Editor "backstage", meaning they did not continue the discussion in the WhatsApp group but took it to where no one else could follow the conversation.

> *05.04.18, 07:57 - Journalist B2:*   *Thanks for your intervention,*
>
> *05.04.18, 07:58 - Journalist B2:*   *May I propose something??*
>
> *05.04.18, 07:58 - Journalist B2:*   *Anyways backstage*

We discussed the case in the next board meeting and concluded that Journalist B1, the older journalist who leads the Branch, must have difficulties dealing with women who are more competent than himself. His ego seemed to stand in his way.

Throughout the observation period, a civil war was going on. The staff members experienced it from close quarters:

> *01.10.17, 12:43 - Editor:*   *Good morning IT-Technician*
>
> *01.10.17, 12:43 - Editor:*   *How is Mile 16 [a part of the city]*
>
> *01.10.17, 12:43 - IT-Technician:*   *Good morning Sir*
>
> *01.10.17, 12:46 - IT-Technician:*   *Two groups of about 200 each passed through the quarters heading towards Mile 17 [another part of the city] about 2 hours ago.*
> *Unconfirmed military activity says one young man was shot around the Mile sixteen market. His condition is unknown to me at the moment.*
>
> *01.10.17, 12:51 - IT-Technician:*   *Getting several gunshots just now*
>
> *01.10.17, 12:51 - IT-Technician:*   *...quite close to where I live*
>
> *01.10.17, 12:52 - Editor:*   *Stay safe*
>
> *01.10.17, 12:52 - IT-Technician:*   *Thanks. You too*

The civil war had a significant impact on the organisation's income. Employees left the organisation and moved out of the zone of conflict. The entire income in eleven months of the crisis was equal to the income of a good month before the crisis:

> *06.11.17, 19:00 - BM Director:*   *Consider the monthly income for this year thus far*

06.11.17, 19:01 - BM Director: *It amounts to the income of August last year alone*

06.11.17, 19:01 - BM Director: *The crisis is bearing heavy on businesses*

06.11.17, 19:02 - BM Director: *With the current income rate we have not been [able] to pay our bills and salaries*

4.1.7 Debriefing

Settling the conflict between the two journalists in the Branch made us realise that we had reached the main objective we had set, which was getting the Branch running smoothly. Despite the squabbles, we had attained our goal. In the board meetings, we then worked on setting up an online meeting with the staff members that would mark the debriefing of the project "Virtualise".

In preparation of the debriefing, we defined where we stood and where we wanted to go next. We listed our main achievements and the points that still needed improvement. And, we decided on the next major projects we wanted to tackle: improving the internet site and shooting a sitcom series. Finally, we set down some questions to throw at the staff members to get a feeling for their emotional situation.

2018-05-14T19:48:55Z BM Researcher:

We achieved the following:

- We collaboratively formulated a vision

- We defined our core processes and we're automating them

- We initiated some routine (but failed to pull through)

- We restarted the Branch (we still need some improvement)

- We have become more regular in our publishing online.

We still need to improve on the following:

- Professionalism - what do we even mean with that?

- Regularity - in daily, weekly and monthly structure; in meetings and reports - Transparent communication, that involves everyone and uses professional software

- Marketing strategy – how do we tap from different income sources

- Increase monthly revenue to at least cover fixed costs (rents, salaries,...)

- Continue digitalisation

What our our next projects:

- ███████ *[Sitcom], the next season*

- Internet site

Are you satisfied?

- "If you were not at XTV, what would you be doing?"

- "What were you dreams, as a child? What part of this dream were you able to achieve so far at XTV? What is necessary to achieve that part of your dreams you've not yet been able to achieve so far?"

- "Despite the harsh economic situation, why are you still at XTV?"

A few days before the debriefing with the staff members, we, the board members, agreed to remain in the background during the discussions. Being aware of our authority, we did not want this to influence the online discussion.

2018-05-28T19:16:41Z BM IT:

BM Director If necessary, we should send private messages to you or Editor but we should really try to come in last always after everyone has spoken. I even prefer to just observe from the sidelines so that we get more open discussion (especially with the charged atmosphere)

To date, together with the IT-Specialist, I have made it a point not to interfere in the operative business and not to issue orders directly to staff members. On the one hand, this would undermine the Director's authority. But, on the other hand, staff members could misuse this to play off the board members against each other by using our ignorance of what is going on on the ground against us. I based my decision on my understanding of one of Max Weber's six principles of bureaucracy (Weber, 1978), the one on hierarchy. To my knowledge, an employee should have only one superior from whom he receives orders.

The debriefing meeting took place in the meeting room in the Headquarters and simultaneously on WhatsApp. Present in this meeting were the Director, the Editor, the staff at the Headquarters, the journalists in the Branch, journalists in two other cities targeted to open branch offices, and the two board members abroad. The Editor moderated the meeting. The questions on the emotional state of the staff were not treated. The Editor posted the vision statement and recalled to mind the goals of the organisation. He then focussed on the possible points of improvement. We, the staff members abroad, sent our comments "backstage" directly to the Editor, thus helping to steer the conversation. The meeting lasted more than two hours, during which the Editor continuously added the participants' inputs to a list of proposals.

31.05.18, 12:33 - Editor:

Proposals

1. Technician 2: 24 Hrs internet connection in all branches. Seconded by Technician 4.

2. Technician 4: Specialist persons should be assigned with IT savvy, to follow up information flow within branches.

3. Journalist B2: Issues or problems among Branch members should be talked out among members and the issue resolved. Outsiders should not be told house problems.

4. XTV needs addition in other existing cable networks in Bamenda [city where we have the first Branch] for better visibility and coverage.

5. Journalist 5: [The second Branch] needs an additional Journalist.

6. Technician 1: XTV needs a signboard.

7. Technician 4: Professionalism should be seen across the board in all we do.

8. Journalist 4: Need for coordination.

9. Technician 4: Need for the sharing of responsibilities.

10. Journalist 3: XTV should stick to resolutions and not dance bafia dance. Two steps ahead, six steps behind.

11. Journalist 4: The need for financial motivation.

12. Technician 4: Repair all malfunctioning equipment.

13. All programmes be should streamed live.

14. Journalist 3: Individuals should make efforts to promote their programmes.

15. Technician 4: To improve the quality of our production at the broadcasting bench we need professional mouse, a real-time feedback system at the prediction room to guide the presenters, an air conditioning system and additional microphones and cables.

In the subsequent board meetings, we discussed the outcome of the debriefing and organised a second online meeting in which the board's response was disclosed to the staff members. This meeting marked the end of the first action cycle of the project "Virtualise". The position of the board outlined the attitude with which we expected the staff to move on. Further, it listed the projects that would be tackled in the second action cycle.

22.06.18, 10:36 - BM Researcher:

Attitude - No Bafia Dance:

1.   Professionalism. What do we define as professionalism? Can we agree on five words to describe what we mean?

To begin with, regularity and punctuality are elements of professionalism and at the same time elements that create stability and thus a form of security.

We will launch a training programme to fill up gaps we identify both in skills and knowledge.

2.   Responsibility. You are not children. As adults, you are all expected to carry your share. If you see a problem name it and solve it. If it's too big then call others to help you.

3.   Coordination. As a team we are working together, it is not accepted, that some should be dribbling alone. There are procedures in place which must be respected by everyone (e.g. nothing goes on air without the consent of the editor-in-chief). Should anyone see potential for improving the processes, the suggestion should be put forward for discussion.

*Big Tasks for task forces: *

1.   Internet connection: Luis did the work of comparing. Who will do the implementation for all branches?

2.   Branding: We need a uniform look all through. This will be discussed by the board. Corporate Design was done two years ago by a guy in London. The guidelines will be redistributed. […], along with the launching of PubHub, the guidelines for Social Media presence will be set up.

3.   Marketing: picking up the debate, where it last died down. Identifying sources of income, how to treat them and naming people responsible for these tasks.

4.   Promoting Programmes: This topic will be treated together with branding and social media presence. […], A task force responsible for equipment should be put together. We have an inventory of all material. They will monitor what needs to be repaired, replaced or acquired. Remember our financial means have limits, therefore there will be two lists: "must have" and "nice to have".

5.   Setting up a regular transparent financial accountancy.

*Minor tasks, lone stars: *

1.   Signboard: Who will volunteer for this task. It will mean submitting a design proposal and then getting three comparable offers, so that a decision can be felled based on looks and costs.

2.   Repairing malfunctioning equipment: The task force "equipment" will start their work here. Volunteers to the front.

3.   Live streaming: How does this improve XTV's income?

4.1.8 What happened after

After the debriefing, the story continued. The civil war is still ongoing as I write, and the region's economy is further deteriorating. This weighed down on the organisation and its staff. The income has been too low to cover the running costs and still offer decent salaries. This led to a slow down in the business development endeavour. Many of the projects listed to be tackled after the debriefing are on hold. Despite the unfavourable context, one project was executed more or less successfully. Together with external partners, the TV house produced a sitcom with thirteen episodes. The planning for a second season with another thirteen episodes is ongoing as I write. The last meeting for this project was a genuinely global virtual meeting. The film director and our

Director were on the ground in Africa, the distributor joined us from London, while the IT-Specialist and myself contributed from central Europe.

We failed to introduce Slack as our communication platform. After the debriefing, there were slight shifts in the mode of communication. The board meetings are being held as conference calls using WhatsApp. The advantage is that the responses are faster. Background noises during the meetings, like crying children, or discussions between staff members and talk show guests, create a greater feeling of closeness than written communication. The disadvantage is that the meetings are less structured, and they leave no records to which we can later refer.

The staff has adopted the use of WhatsApp groups for work-related communication. I was told that WhatsApp groups are springing up for each show. There is less "spamming" in the WhatsApp groups dedicated to work-related issues compared to the beginning. However, the amount of communication that serves for socialising has decreased in these WhatsApp groups. When the staff members set up the discussion channels, the disadvantage is that the management is excluded and has no insight into what is going on. In the interviews, even the Editor, who sees a significant part of the staff every day, pointed out that even for him, this is problematic. We repeatedly dissuaded the team from using WhatsApp for data transfer because it reduces the video quality. In the meantime, all data transfer happens through WeTransfer.

There were more conflicts carried out openly on WhatsApp. One even led to a fistfight in the studio. Some disputes between journalists led to their departure. Since the debriefing, there was quite some staff turnover. Those who left had different reasons for leaving. I will relate to three cases, which are essential for this narrative. First, journalist B2 left the organisation. Her husband had been transferred out of the war zone, and she accompanied him. The civil war, the months without salary and maybe the tension between her and Journalist B1 must have made it easier for her to make this decision. Second, the IT-Specialist, whose salary was assured from abroad, also left. Despite the regular income, he feared for his life since he lived in the city that experienced most gun battles. Finally, the Editor left. He was wooed away by another TV house outside the war zone. For the Director, this came as a shock. The Editor was a founding member of the TV house.

On leaving, the Editor recommended a successor, who replaced him in the role of editor-in-chief. The change had a positive effect. The new editor, I will call him Editor 2, brought fresh ideas and a new drive. Moreover, being younger and more versed with social media than the old editor, he boosted our online presence within two months after arrival. With the IT-Technician, working on the internet site, we concentrated our efforts on Facebook as an outlet channel for our content. In the meantime, our presence on Facebook compared to that of other TV houses in the country was ranked fifth, based on the number of subscribers and online traffic we generated.

Surprisingly, the interviews, which ended the data collection, showed me that the staff members had assimilated the vision statement. I asked the interviewees what they saw as the goals of the TV house. Both Editor 2 and Journalist B3, who replaced Journalist B2, joined the organisation after the debriefing. They had not participated in the visioning process, and they were not aware of the existence of a vision statement. Nevertheless, what they personally saw as the goals of the TV house matched with the vision statement. Here is an answer given by Editor 2 in the interviews:

> *" Theirs is one goal: to produce content, that would educate, edify and educate the common man. [...] It is a goal I set up myself."*

What the interviews also showed was that most participants felt as being part of the team. There seems to be a team spirit and a feeling of belonging. The answers from the Branch to questions on team cohesion were ambivalent. On the one hand, they felt left out from meetings and celebrations. Yet, through their contributions aired on TV and by working together with those in the Headquarters, they confess that they do feel like a part of the team. The sharing of pictures of outings seems to have had the same effect on the staff members in the Branch as it had on me.

Here is an example of the ambivalent answers. During the interview, Journalist B2 first says everyone is a team member but later goes on to say she does not feel like a member of the team. Journalist B2 felt left out during the celebration of International Women's Day. She did follow the preparations at the Headquarters but did not look at the pictures. She says:

> *"During the last Women's Day celebration, I could have been given more consideration. [...] Even just a bottle of juice as acknowledgement would have made me feel better."*

My interpretation is that, even if the answers are ambivalent and seem negative, they do show that there is a virtual team spirit. A prerequisite to feeling excluded is knowing that a functioning team exists into which one would like to be integrated.

4.1.9 How I experienced the story

For most of the time, I was unhappy with the slow progress of the virtualisation project. Most of the smaller projects were not completed and were put on hold. With the ongoing war, the economy was down, and there was very little income. The staff's salaries were drastically reduced. Hence, their mood was depressed, and there seemed to be tension in the air.

Despite the gloomy mood, to my surprise, I realised that we did actually attain our goals. In retrospect, the main objectives we set were achieved, albeit not how we foresaw them. The Branch was running with three persons, and they delivered content to the Headquarters, even if it was

less than what the board set as a goal. The main production processes were being followed, and they were continuously being standardised. Yet, they were not automated, and the systematic archiving of the produced files was not instituted. Although we had planned the use of Slack for communication with a high degree of transparency, communication and data transfer took place online on WhatsApp and WeTransfer. We even held online meetings on a globe-spanning level. The interviews showed that a feeling of cohesion amongst staff members existed; they felt like a team, even if some had never met face-to-face.

We had made a step forward in the process of virtualisation. But, we know we still have many more steps to take. Once the war is over and the economy permits a decent income level, we hope to move on faster in this process. To make use of the lessons learnt in setting up new branches, the actionable knowledge must be distilled from the experiences we made.

4.2 Analysis based on the framework

For the data analysis, I use an argument structure in which the four propositions serve as claims; the data as evidence; and the literature as a warrant. The single propositions are presented at the beginning of each of the four sections. The themes (**Fehler! Verweisquelle konnte nicht gefunden werden.**) and relationships on which each framework builds are presented in a graphic derived from the graphical presentation of the whole framework (Figure 10). The evidence for actions comes mainly from the exchange online, while the evidence for outcomes was gathered mostly from observation and interviews. At the end of each sub-section, I compare the evidence with the literature. Chapter 5 will revisit the research questions to reflect on the actionable knowledge created in this study.

4.2.1 Creating feelings of trust
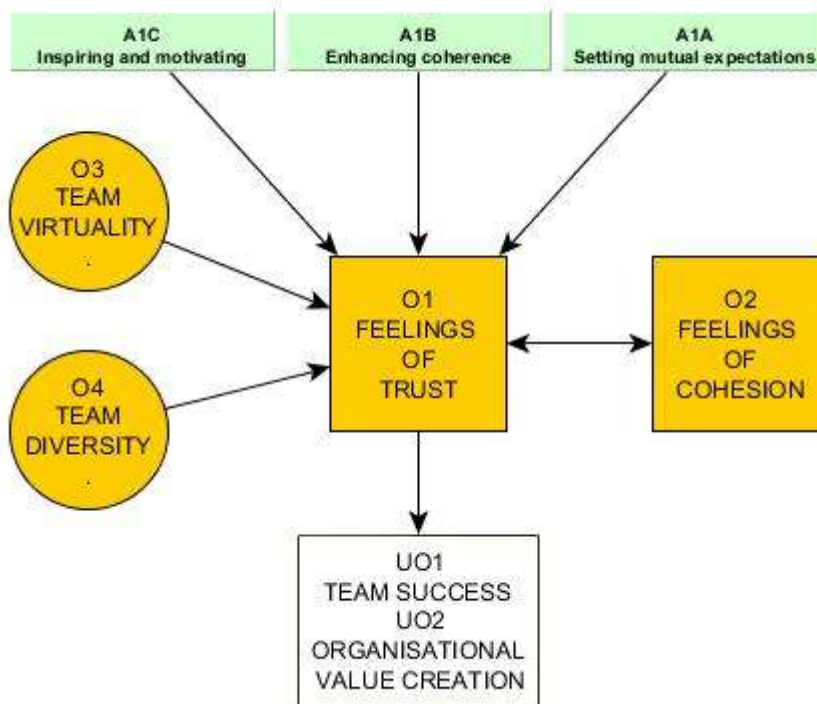
Figure 23: Proposition 1 – creating feelings of trust

Proposition 1 claims that by setting mutual objectives, enhancing coherence, inspiring and motivating, virtual leaders promote trust in the team members, which leads to team and organisational success. As presented in Figure 23, the inputs are actions that set mutual expectations, enhance coherence, inspire and motivate. The intermediate outcome that can be expected as a result of these actions are feelings of trust within the team, as well as between the team and its management. The ultimate outcomes to be expected are team success and organisational value creation. Team virtuality and diversity influence feelings of trust. Feelings of trust and feelings of cohesion exert mutual influence on each other.

As a reminder, trust in this context, as defined by Mayer, Davis and Schoorman (1995, p. 712), is "the willingness of a party to be vulnerable to the actions of another party based on the expectations that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party".

4.2.1.1 Evidence in the data of actions that promote feelings of trust

I found evidence for actions that set mutual expectations, enhance coherence, inspire and motivate in the data.

Setting mutual expectations (A1A)

There is ample evidence in the narrative that on a normative level, the board invested time into collaboratively, hence mutually setting up a vision statement together with the staff members. The board defined the core processes together with the Editor, thus setting expectations on an operational level. The board set up measurable goals: the production of six hours of original content per day, setting up a daily news broadcast, with one article per day coming from the Branch. After the debriefing, the goals were collaboratively set and reiterated by the Editor:

> *15.06.18, 11:28 - Editor:*
>
> *Good morning house. Back from burying my foster father. Today we had a great meeting with all* ▮▮▮ *based workers. The Morning Show was focus for today.*
>
> *Henceforth, a control sheet will direct all slots which must respect specified durations.*
>
> *A producer will direct activities from start to end of the program who shall take responsibilities over content and other aspects.*
>
> *News shall henceforth be presented Live twice a week for now with the hope to go daily in the months ahead. First presentation is today 8 pm.*

Enhancing coherence (A1B)

For me, enhancing coherence means getting the staff to easily understand the "why" behind the daily actions. Defining the core process and representing it graphically was one way in which we sought to enhance coherence. As a daily reminder, the graphic representation was printed and hung in the studio. During the elaboration of the core process, the staff was consulted since we assume that, by having them participate in the process definition, they would have a better understanding of the process and be more committed to it.

> *2017-08-28T18:15:01Z BM IT:*
>
> *Visualising the processes can quite often reveal more quite easily. Also, it communicates structures better.*

Besides using graphical representations, I often used analogies to explain abstract concepts. I tried to conjure images in the minds of others to make my point understood. A mental image I often used to illustrate the success of clear and straightforward processes, as well as clear marketing, was McDonald's. For the employee, the processes are standardised and simplified to the point that they do not need to know how to cook, yet they can prepare the menus the restaurant offers. For the customers, the choice is made simple. The choice is limited, and it is presented with illustrations. The customer does not need to read to make his choice. Moreover, if he has visited any other MacDonalds, the customer knows precisely what quality can be expected. To describe my vision for a transparent pricing scheme, I used the example of McDonald's menu card. I also tried to get others, both the board members and the staff, to get the bigger picture of what we are doing.

Inspiring and motivating (A1C)

Motivating through words is not my strength. Instead, I tend to be critical and correct mistakes I see. I consciously tried to inspire by leading as an example to follow. I started the board meetings punctually, and I tried to be clear and transparent in my messages. I consciously tried not to let it show much in my written messages if I was in a bad mood because I was irritated by errors that could have been avoided. Those on the ground, who had more contact with the staff, took over the role of motivating through praise. The following quote is just one of numerous examples in which praise is followed by pointing to issues that could be improved.

> *28.03.18, 21:09 - BM Director:*
> *Journalist B1 and Journalist B2 hope you guys had a nice trip*

> *28.03.18, 21:10 - BM Director:*
> *Journalist 4 I watched Xsport tonight. Excellent analysis!*

> *28.03.18, 21:11 - BM Director:*
> *You guys spoke at length about Young Sport* ██████████.

> *28.03.18, 21:12 - BM Director:*
> *It would have been nice if we had some images also*

In the interviews, when asked who or what motivated them, there were two patterns in the response. From the staff's perspective, there seems to be a great intrinsic motivation and a passion for the journalistic work and seeing the results broadcasted on TV. The other motivating element

mentioned was the inspiration gained from seeing the Editor and others in the teamwork hard and not wanting to be left behind. Journalist4 summarised this well in his answer:

> *"Passion is the driver. And teamwork. If others work hard, you will also put in your*
> *best. This is motivating."*

Motivation from somewhere above in the hierarchy was never mentioned. As board members, we saw the organisation of a Christmas Party as a form of motivation. However, it was not mentioned in the interviews. Therefore, my interpretation is that team spirit and intrinsic motivation seem to be the most influential drivers in this context.

On a side-line, the word motivation in the participants' language use is narrowly linked to financial recompensation. Labourers on building sites typically ask for a "motivation" or an "encouragement" before starting a job. With this, they ask for an advance payment. During the interviews with staff, who had gone for months on reduced salaries, I could sense the tacit reproach that there was no financial "motivation".

4.2.1.2 Evidence in the data of the intermediate outcome: feelings of trust (O1)

In the WhatsApp communication of the staff, I did not identify anything that could be interpreted as indicative of feelings of trust. In the interviews, I probed for the feeling of trust. None felt that there was an atmosphere of complete trust. Journalist 1 best summarised this:

> *"I would give trust 80%, then mistrust 20%."*

From the answers, I can summarise that three issues seem to weigh down on the level of trust. For one, there were cases of theft within the Headquarters. Then, there were fights over the sharing of income among journalists. The journalists receive recompensation from organisations that invite them to cover and broadcast public events. There were cases of journalists not declaring how much they had received and not wanting to share the income with the technicians. Furthermore, there is clear evidence for the impact of virtuality. The level of trust between those who are co-located was reported as being higher than the level of trust towards those with whom there was no face-to-face contact. This was stated more than once both by interviewees in the Headquarters, as well as in the Branch.

The answers in the interviews to the delicate question of trust within the organisation were not at all overwhelmingly positive. There were critical answers that pointed out to lack of trust in certain areas. From the openly critical answers, I conclude that my position as president of the board did not bias the answers I received.

4.2.1.3 Evidence in data of ultimate outcome that can be linked to feelings of trust (UO)

In all four propositions, the ultimate outcomes expected are the improvement of team success and value creation for the organisation. Snellman (2014), Andriessen (2002) as well as Andriessen and Verburg (2004) do not clearly define what is meant by team success and organisational value creation. Dulebohne and Hoch (2017) relate the success of a team to performance and effectiveness (Figure 4).

Team success (UO1)

According to Andriessen's (2002) DGI-model (Figure 2), there needs to be cooperation, coordination, communication, learning and social interaction within the team for it to work effectively and create outcomes for the organisation. The narrative shows that these elements are all available in the daily work in the Headquarters, in the branch and also between the two entities. On the individual level, there was evidence of attainment of fame and social status. For example, Journalist 3 received an award as the region's best TV host during the observation period. Without a functioning team behind the cameras and the computers of the editing desk, this would not have been possible. On a team level, it can be concluded that the purpose was accomplished, and team success was achieved.

Organisational value creation (UO2)

On the level of the organisation, an award for courage in journalism was awarded to the TV house for a political TV show hosted by the Editor. This external recognition contributed to the strengthening of the brand, and as such, the organisation's value was increased. As mentioned in the narrative, we attained the two main objectives we set for production. We attained a steady production of six hours of original content per day, as well as the relaunch of the Branch. Another external recognition of improvement of the organisation were the statistics on Facebook. At the time I was doing the interviews, compared to its competitors in the country, the TV channel was ranked fifth, based on the "likes" it had received and on the number of visitors on the Facebook page. Based on an analysis of the data from Facebook, we were surprised to find out that we were reaching out to an audience in the diaspora. We received more than 1000 "likes" from abroad, from people whose names clearly identified them as members of the diaspora. This is evidence that the organisation was able to create value for its audience. Unfortunately, due to the ongoing socio-economic crisis caused by the civil war, organisational success could not be transformed into financial value.

Based on Andriessen's (2002) DGI-model and referring to the business development project "Virtualise" as an ongoing process of virtualisation, there have been improvements on the level of processes. Compared to when the project was launched, there is an evident increase in virtual communication that serves coordination and social interaction within the organisation. There is also an evident increase in virtual cooperation in the sense that data from the Branch is forwarded

to the Headquarters using ICT. There was a constant push from the IT-Specialist to make use of online learning platforms to increase the level of the staff's technical skills. However, there was little evidence that the staff has made any use of this possibility to increase learning in the organisation.

4.2.1.4 Research Question 1

> *Research Question 1:*
> *How can leaders build trust in virtual teams and*
> *how does this influence virtualisation in an organisation?*

We, as leaders, engaged in actions designed to set mutual expectations and enhance coherence. In comparison, less conscious effort was put into inspiring and motivating the staff. According to the framework's first proposition, the intermediate outcome of these actions is the establishment of a feeling of trust. In the interviews, the participants acknowledged the existence of a limited feeling of trust within the organisation but that there is less trust towards those who are not co-located. There was evidence for the ultimate outcome, which was the improvement of team success and organisational value creation. There was also evidence that there were improvements in the virtualisation process.

There was no evidence in the data for a causal link between the actions mentioned above and the establishment of trust. There was also no evidence in the data for a causal link between the feelings of trust and the ultimate outcome. To argue that there may be a link, I need to resort to the literature review.

Snellmann sees virtual teams as being "typically formed for a time-limited mission or task" (Snellman, 2014, p. 1256). This lets me assume that her idea of trust is near to the "swift" or initial trust described by (Jarvenpaa and Leidner, 1999). Referring to my literature review (2.2.3 Trust and performance), the evidence for a direct relationship between trust and performance is ambiguous. According to Sarker *et al.* (2011), communication is the antecedent to trust. In this framework, it would mean the communication of goals; communication to enhance coherence by pointing out structure; and communication to inspire and motivate.

My personal interpretation is that there needs to be a feeling of trust to create a productive work atmosphere. Clear structures and processes create predictability and thus trust in the future. Good interpersonal relationships and knowing each other well also creates predictability and trust. Interpersonal communication is necessary to get to this point. Hence, the trust that is built might not necessarily be attached to the leader's personality but to his role as the one who increases predictability by setting goals and providing structure. This interpretation is backed by the assertion that the importance of interpersonal trust in relation to team performance decreases

with the increase of structure as well as the increase of quality and quantity of communication (Jarvenpaa, Shaw and Staples, 2004; Sarker *et al.*, 2011; Breuer, Hüffmeier and Hertel, 2016; De Jong, Dirks and Gillespie, 2016).

Upon reflection, I believe there could have been more continuity and direction in the communication from the board to the staff. In preparation of a strategy for 2020, the board is contemplating to address the staff using a newsletter posted at regular intervals. This would be an institutionalised channel of communication between the board and staff. In addition, the communication between the Headquarters and the branches will need to be institutionalised through the organisation of regular staff online.

4.2.2 Creating feelings of cohesion
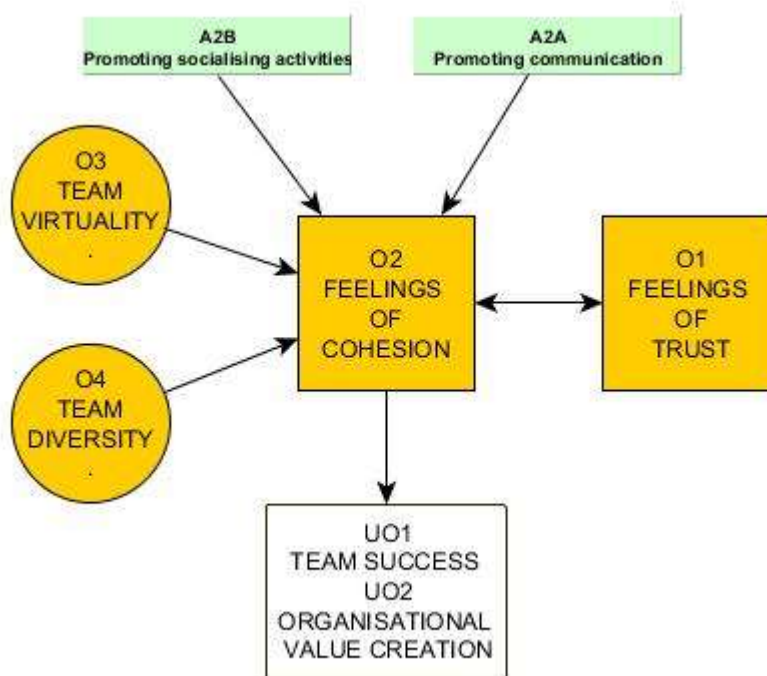
Figure 24: Proposition 2 – creating feelings of cohesion

Proposition 2 claims that by motivating and inspiring virtual teams to active, mutual and continuous communication and socialising activities adapted to the settings, virtual leaders promote team cohesion. As presented in Figure 24, the inputs are actions that promote communication and socialising activities. The intermediate outcome that can be expected as a result of these actions are feelings of cohesion within the team, as well as between the team and its management. The ultimate outcomes to be expected are team success and organisational success. Team virtuality and diversity influence the feelings of cohesion. Feelings of cohesion and feelings of trust exert mutual influence on each other.

4 Findings

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4.2.2.1 Evidence in the data of actions that promote feelings of cohesion

Promoting communication (A2A)

There is evidence that the leaders made efforts to promote and encourage communication. Setting up the infrastructure for communication will be discussed further on. Because I view myself as a bad communicator, I consciously encouraged those on the ground to communicate. There was a clear endeavour from my side to create structure using communication:

> *06.11.17, 19:32 - BM Researcher:*
>
> *We need to apply a bit of psychology. Armies and schools work on strict regularity. Many religions too. People will quickly get used to it and as long as the leaders keep up the rhythm, then the staff members have no excuse to fall out of line. Next step: you praise those who are in line. Everyone looks for praise. If it works out, it will be staff members sanctioning the late comers and the lazy ones.*

Since we could not get the staff to use Slack as our communication tool, the Editor created the WhatsApp group NewsRoom for work-related communication. However, I noticed that there was a lack of inclusion of the Branch. Therefore, to create inclusion and transparency, I often encouraged the Director and the Editor to include the staff from the Branch.

The efforts to institutionalise online communication did not bear fruit. The only institutionalised forum with regular online meetings remained the board meeting every Monday evening. This was admonished during the debriefing:

> *31.05.18, 10:50 - Technician 4:*
>
> *I say so because the flow of information in its totality is very poor both in house and out. And no one is in position receive the blame because there is the absence of post of responsibility.*

After the debriefing, the staff created different WhatsApp groups to coordinate their activities in relation to the different TV shows. In some of these communication channels, the management was not included. There was a lack of transparency here and also a lack of continuity and regularity.

Promoting socialising activities (A2B)

The conscious push for socialising activities was evident around religious and national holidays. Interesting is to observe the evolution over time. The first recorded call for socialising came from the Director when he raised the topic of a Christmas Party or a trip to the beach with all staff

members. It is interesting to observe the difference in tone, which is evident in the different exchanges. While the Director was casual, the Editor was formal, and the staff was very informal.

> *11.12.17, 22:54 - BM Director:*
>
> *Hi all How would you want to us celebrate the Christmas together; a party at XTV on Christmas day or a Trip to the beach before Christmas?*

From the Editor the invitation for the International Labour Day sounds formal:

> *30.04.18, 21:59 - Editor:*
>
> *We all are called upon to meet tomorrow 3 pm at the ICE Cream Section of Las Vegas Snack* ▮▮▮ *to share as a family in commemoration of the International Labour Day*

The event organisation amongst staff members was done in a very informal tone:

> *08.03.18, 08:27 - Journalist 1:*   *Woman heeeeeeeeeeeeey*
>
> *08.03.18, 08:28 - Journalist 4:*   *today women should take us out*
>
> *08.03.18, 08:30 - Journalist 1:*   *You don't hv anything to worry about, we are up to the task.*

The staff started organising outings for lunch or for a drink after work independently. Although those in the Branch have done the same, the Branch is left out from activities in the Headquarters. The idea of organising a meeting for all staff members, which includes those who are far away, was never realised. The lack of income and the insecurity caused by the ongoing civil war were the main reasons why this idea was never realised.

4.2.2.2 Evidence in the data of the intermediate outcome: feelings of cohesion (O2)

The focus above was on work-related communication. As shown in the narrative, there was much informal communication in the board meetings, like the questions about the health of family members. Likewise, there is the example of Journalist B1 from the Branch, whose Easter greetings included pictures of his family. In the different WhatsApp groups used by the staff, there were activities, which I term spamming, that could be interpreted as emergent socialising. Besides talking about one's family at work, this, for me, is evidence of a feeling of cohesion. I believe that these would not happen in a purely formal environment in which there is no interpersonal cohesion.

As mentioned above, and in the narrative, over time, there was increasing evidence in the WhatsApp groups that the staff was autonomously organising socialising events like birthdays and the celebration of religious and national holidays. I believe this would not be found in the absence of cohesion between the team members.

In the interviews, I got the impression that, in general, there is a feeling of togetherness. Togetherness is the word I used in the interviews since it is easier to grasp than cohesion. The BM Director, who does counselling and consoling, went as far as saying it is like family.

In the interviews, there were two extreme positions. Journalist B3 from the Branch saw herself as belonging to the team only *"to a limited extent"*, she did not think virtual contacts could create togetherness. On the other hand, Technician 2 saw diversity as an obstacle. Although she said: *"We are all in this together"*, she felt that *"we don't really have anything in common"* since, as a technician, she does not link to the others because she is not a journalist. From the interviews, I got the impression that those in the Headquarters sense a stronger feeling of cohesion towards those in the Branch than is the case vice versa.

Journalist 1 said cohesion had grown more robust over time. Based on the regular work-related contact, Technician B1 from the Branch saw himself as part of the team. Journalist 2 expressed the same feeling:

> *"WhatsApp has closed the gap to other colleagues. We receive the same assignments; we do the same work. This creates a sense of belonging."*

The BM IT-Specialist sitting in Europe was also brought nearer to the staff through WhatsApp:

> *"WhatsApp was the first time that I even saw the names of the people. Before that, I had visited the offices twice, seen a couple of people, but usually, you don't even know a lot of the names. WhatsApp enabled me to […] somehow know them from the content, […] a little bit of their character."*

For Editor 2, virtual interaction caused "*no breach in communication"*. A discussion which he started off face-to-face easily continued on WhatsApp or vice versa:

> *"We feel a lot together. In fact, when we meet, we can only continue discussing what we've been discussing online. We're not starting afresh. So, we tend to be so close at this point on WhatsApp, as though we are seeing each other physically. "*

4.2.2.3 Evidence in data of ultimate outcome that can be linked to feelings of cohesion (UO)

Saying that cohesion leads to team success is almost a tautology. The strong bond between team members is what differentiates it from a group (Sisson, 2013). For a team to function and be

successful, it needs cohesion between its members. There is evidence for cohesion, based on which the team can be deemed as successful in its functioning as a team, without implying that it is successful in regards to its output.

The evidence of the ultimate outcomes was discussed above under 4.2.1.3 Evidence in data of ultimate outcome that can be linked to feelings of trust (UO)above. However, here once more, there is no evidence in the data of a causal link between cohesion and the improvement of organisational value creation.

4.2.2.4 Evidence for the mutual influence between cohesion and trust (O1 ↔ O2)

There is some evidence in the data of the mutual influence between cohesion and trust. According to the answers from the interviews, there is a direct correlation between the levels of trust and the levels of cohesion when they are compared between the Branch and the Headquarters. In both cases, there is more trust and more cohesion towards those who are co-located in comparison to those who are at a distance. The causal link can be argued thus: cohesion leads to trust, and trust leads to cohesion. An increase in one would lead to an increase in the other. It is the level of virtuality that seems to have a negative influence on both. This evidence is anecdotal; hence I back it with the findings from the literature. Drake and Liang (2016) show the two-way influence between trust and cohesion in conjunction with task coordination.

4.2.2.5 Research Question 2

> *Research Question 2:*
> *How can leaders build cohesion in virtual teams and*
> *how does this influence virtualisation in an organisation?*

There is evidence that as leaders, we promoted communication and socialising activities, which, according to Proposition 2, leads to cohesion. In the data, there is evidence that there is a feeling of cohesion in the team. In the answers from the interviews, there is evidence that the men acknowledged task cohesion, while the women were a bit vaguer and tended towards an interpretation of social cohesion (Casey-Campbell and Martens, 2009). In the data, there is no direct evidence for a causal link between cohesion and organisational value creation, as well as between the actions we as leaders took and the rise in feelings of cohesion within the team. For this piece of evidence, I rely on the studies of Sivunen (2006) and Morgan, Paucar-Caceres and Wright (2014), who both show that communication is central to creating cohesion and enhancing team effectiveness.

Making virtual teamwork a cornerstone of the corporate working process was a goal we had set. There is evidence of improvement of virtualisation through the actions listed in Proposition 1, in the sense that over time there was an increase in the use of online communication. The operative

goal can be seen as achieved. Over time, virtual communication was adopted by the team; the staff members set up WhatsApp groups independently. The goal was not achieved with Slack, as it was foreseen by the board. The consequence was that we did not achieve the wanted degree of transparency in communication. The formation of sub-groups led to a decreased influence on coordination, and in extremis, this could lead to a reduction in levels of trust and cohesion (Paul, Drake and Liang, 2016).

4.2.3 Dealing with team virtuality
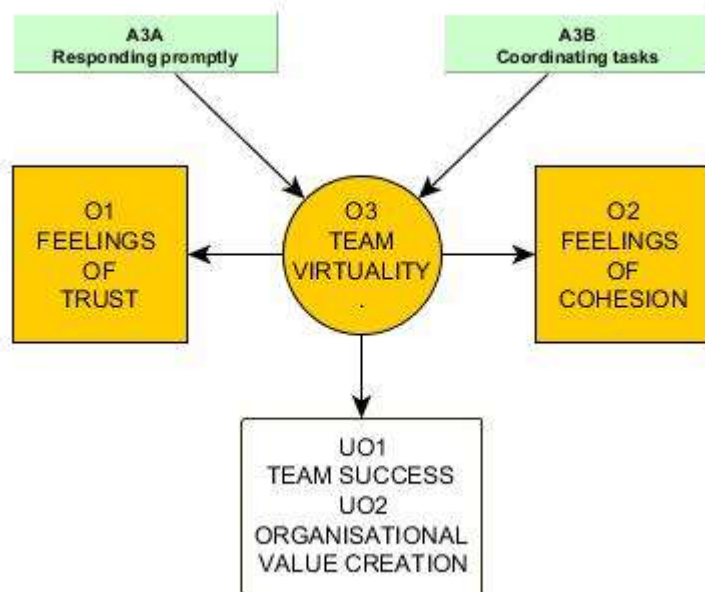
Figure 25: Proposition 3 - team virtuality

Proposition 3 claims that by responding promptly with diversified use of ICT to address issues arising in virtual teams due to distance in space, and subsequent operational and organisational distance, virtual leaders enhance a feeling of closeness. Furthermore, by effectively coordinating virtual members' tasks to promptly address issues arising in virtual teams due to the distance in time of virtual teams working in different times zones, as well as to mitigate stress-related to tight schedules and deadlines inherent to virtual projects, virtual leaders will fully harness the team members' expertise, talent and competence. Both measures address issues that arise due to the team's virtuality. Team virtuality influences both feelings of trust and cohesion.

In this proposition, as shown in Figure 25, the inputs are actions that counter the negative effects of virtuality, which are a distance in space and in time. The intermediate outcomes that can be expected as a result of these actions are a feeling of closeness and the harnessing of the team members' expertise, talent and competence. The ultimate outcomes to be expected are team success and organisational success.

Virtuality, as I understand it, is defined by geographical distance and enabled by the use of ICT. The geographical distance can vary from co-located to a global level. The degree of ICT usage can vary in quality and quantity, in frequency and amount of communication and in its media richness.

4.2.3.1 Evidence in the data of actions that mitigate the negative effects of virtuality

Responding promptly (A3A)

In general, reactions to messages during the observation period were prompt. A good example is a case where Journalist B1 from the Branch, which is 300 km away from the Headquarters, got angry that his material had not been broadcasted. This dispute was described in 4.1.6.2 Sorrows. Sitting in Europe, I asked the Director on the ground to intervene, and the case was cleared within 30 minutes. I tried to make it clear why a prompt reaction is important:

> *27.03.18, 22:55 - BM Researcher:*
>
> *Thanks for reacting promptly. The reason provided is very clear.*
>
> *It is important to react quickly with objective arguments to counter negative feelings before they spread.*
>
> *The learning I take from this is that when reports come in, the HQ needs to state that the material was received and to mention when it will go on air. In that way people will get the feeling that their work is being appreciated and they are being respected as a person.*

In the interviews, the participants were generally satisfied with the speed of response. However, both the board members and the staff members agree that they could improve on this aspect. The reason the participants gave for the delay in response was that some people were not available online all through because they lacked an internet connection or their smartphones were switched off.

The replies above pertain to the speed of response. There seems to be potential for improvement in the quality of responses. Journalist 1 said she sometimes gets the reply *"Yes, I will do …"*, but then no action follows. Editor 2 saw the most room for improvement. He states that replies to online messages are often given orally *"behind the scenes"*. Technician 2 attributes this to a lack of writing skills of some participants. For all others, this leads to a reduction in transparency in communication.

The journal entry below points to communication breakdown. Withdrawl from communication in a virtual setting is easily done, leading to a communication breakdown, which would not happen in co-located interaction. I found it more difficult to re-engage in virtual communication after a

breakdown than it would be to walk over to the office of someone from whom one needs an answer.

> *R[ecording facts]*
>
> *This was our shortest board meeting so far. We planned to discuss two topics: accounting and* ▉ *Branch opening. The Director was not present to report on the progress around the Branch. We ended up discussing only accountancy. It was decided to implement wave accounting. [a software]*
>
> *O[bserving self]*
>
> *I felt disappointed that for two weeks in a row, the Director had not shown up at the meeting, not even giving an excuse. I nearly picked up the phone to call, but then I didn't because I was preoccupied with other issues.*
>
> *A[nalysing]*
>
> *I have the impression that the Director believes solely in action and not in reflection before action.*
> *I think I need to remind the Director about the importance of strategic and not purely operational mindset in his position.*
>
> *P[roblematising]*
>
> *There is a communication breakdown.*
> *There is an erosion of trust*
>
> *S[olving]*
>
> *I think a phone call is necessary to rebuild trust and to restate objectives and try to bring back into focus the strategic outlook.*

Coordinating tasks (A3B)

There is evidence for attempts to coordinate tasks. From the start, the IT-Specialist pushed for the use of software to issue and track tasks. Unfortunately, his proposal was never implemented.

> *21.08.17, 21:09 - BM IT:*
>
> *JIRA will help us with planning tasks, assigning them to people and tracking how well they are being executed.*
>
> *At a glance, it gives us an idea, how well or badly things are going (reports)*
>
> *Workflows can be defined. For example, after editing, to have a quality control step.*

During the observation period, Editor 1 tried to implement regular online meetings. After the observation period, Editor 2 tried to assign tasks to the different journalists at the beginning of the week. Both attempts were short-lived, and they failed. According to the Director and from the interview with Editor 2, I gathered that there was resistance from the staff. They did not respect his orders. The Director believed that as long as salaries cannot be paid regularly, the organisation has no authority over the staff and cannot sanction the lack of performance.

There was a severe relapse in relation to doing task coordination online. After Editor 2's failed attempt to do task coordination using WhatsApp, I was informed in a phone call from the Director, informing me that task coordination would be done in a ledger. Going from online coordination to pen and paper is a step backwards in the project "Virtualise".

After the online debriefing meeting, I personally set up a task list based on the issues the staff members raised during the meeting. They were asked to execute the tasks they themselves saw necessary. From what I could see in the online communications, none of the tasks were executed to satisfaction. Broadcasting regularly on Facebook using live streams of shows seems to be the only task that was followed through.

4.2.3.2 Evidence in the data of the intermediate outcome: feelings of closeness and the harnessing of talent (O3)

Feelings of closeness

In the data, it is difficult to identify evidence for feelings of closeness and to differentiate them from the evidence for feelings of cohesion. Here I repeat, based on the answers from the interviews, that the staff in the Headquarters felt closer to those from the Branch than vice versa. To make the point, I will cite two answers from the interviews. On the one hand, Journalist 1 from the Headquarters expressed her satisfaction with online communication. On the other hand, Journalist B3 from the Branch said responses were often not timely. Further, she felt management cares only about getting the work done, implying that she felt management did not care about her as an individual.

Another answer that clearly relates to virtuality and the choice of ICT is the answer from Technician B1 from the Branch. In the interview, he expressed dissatisfaction with online communication because he missed the visual cues and referring to the promptness of response, he said of other staff members: *"they don't take it seriously".* One of the problems he faced:

> *"We need to see our colleagues. I've been communicating with a lady. I never knew*
> *that she was a lady. And she's a technician. I thought it was a male technician. So*
> *we need to see each other. [...] Video conferences would be good. But you see with*
> *the nature of our internet, [...] I don't think the bandwidth here will carry us to*
> *the end."*

Using WhatsApp as a working tool to be taken seriously was discussed in the board meetings. We found that everyone seemed to associate WhatsApp with leisure chatting amongst friends and not with a professional working atmosphere. Although its use creates closeness, it also creates an informal atmosphere. I see the considerable amount of spamming early in the project as evidence for this claim.

Harnessing of talent

To harness talent means to control it and make the best use of it. This figurative expression comes from riding and agriculture. It is the horse's leather harness that enables control over an animal while riding or ploughing fields. The proposition posits that task coordination is the harness that permits leaders to make use of their staff's talent. In the data, there is evidence for failed attempts at systematic task coordination. During the debriefing, this issue was addressed by Journalist 3:

> *31.05.18, 11:32 - Journalist 3:*
>
> *If we are here pinpointing what needs to be done and what shouldn't be done we should all realise that it is a collective effort and no one is supposed to be struggling alone. We have tried times without number to make XTV respected and considered different but we keep dancing Bafia dance. One step in front and a million steps behind*

The first quote is quite figurative; it shows that the harnessed team (of horses) is not pulling in the right direction. We seem to be dealing with a team of rebellious horses, which the Editor cannot control in the day to day business. The staff were aware of the potential for improvement, but this could only be unleashed if all talents pull in the same direction in a coordinated manner. Technician 2 made a suggestion to solve the problem:

> *31.05.18, 11:50 - Technician 2:*
>
> *Organise XTV and set up organs with specialised functions, it will improve overall quality of output. I think some skills are wasting here*

4.2.3.3 Evidence in data of ultimate outcome that can be linked to dealing with team virtuality (UO)

There is evidence for success relating to actions undertaken to mitigate the effects of virtuality. It is not easy to differentiate between evidence for feelings of cohesion and evidence for feelings of closeness in the data. However, based on the argument that the feeling of closeness is a necessary characteristic of a well functioning team, it can be argued like under 5.3.3, that this achievement constitutes success on the team level.

On the organisational level, we set the goal to make virtual teamwork a cornerstone of the corporate working process. There were attempts to coordinate tasks online. Even though both the old and the new editors acknowledged the advantages of transparent online task coordination, they failed in the implementation. We had taken a step forward and one backwards. The success pertaining to the project "Virtualise" is that we have gained experience. We know we need to approach the topic differently and do research to find out where exactly we encountered resistance.

4.2.3.4 Evidence for the influence of virtuality on feelings of trust and cohesion (O3 → O1, O2)

In the last part of the interviews, I let the participants talk freely about conflicts they had noticed or about other topics they found worth mentioning. From this part of the interview, I was able o extract some insight pertaining to the influence of virtuality within the organisation.

In general, the participants said the conflicts carried out on WhatsApp would have evolved differently in a face-to-face situation. One issue that surfaced is that in the short messages, the tone is rougher than in face-to-face communication. According to Journalist B3, more attention needs to be paid to the choice of words since this could lead to misunderstandings. Editor 2 identified a lack of netiquette; in other words, politeness in online communication. In his words,

> *"The virtual communication has come to give quiet people a voice. […] If you cannot express yourself very well in the presence of people, you can always use insults, or you can use issues to hide behind […]Some of the people have taken this opportunity to become cyber-brutes, and all of that, to make their points known. This aspect of netiquette has to be enforced to bring people back to the real. […] Some people have decided to go offline because their personalities are rubbed to the mud."*

According to him, the threshold when it comes to respect is lowered. People who seemed to be shy spoke up under cover of virtuality. He says the insults written online would not have been uttered in a face-to-face situation. For him, this destroys bonds of trust. There are repercussions from online interaction on interpersonal relations.

Technician 2 related to an incident involving a journalist who was disgruntled because his contribution to Valentine's Day did not go on air. It came in too late, and she decided not to work on it. Because of curfews and the air of insecurity, she wanted to get home before nightfall. In a general manner, she said such conflicts need to be addressed and resolved. In the interview, Journalist 1 mentioned a case in which a technician's errors was exposed to the management and the board. She saw the advantage of virtuality in this situation, which she termed "wake-up call".

She thought the issues might not have been tackled, had it not come to light in this manner. Here virtuality improves transparency:

> *"Bringing it on WhatsApp will make each and every one of us to wake up; not to be careless. Because that was pure carelessness. […] So when they saw that in the group, it drew the attention of everybody. So, if I met him one on one, […] we would have just discussed what we were discussing and go. […] He would not even take it serious. […] It has helped us because everybody is sitting up."*

Journalist 4 recounted the case of a colleague not performing a task assigned to him. He thought this conflict might have been resolved differently in a face-to-face situation. In Technician B1's response, the ambiguity towards the transparency the WhatsApp groups created was most evident. Relating to a fight between two journalists over money, he thought it was not good for them to become exposed in this light. However, for him, it was an advantage. Being in the Branch, he had never met them face-to-face, but the conflict revealed their characters to him. This, he said, changed his level of trust.

There is clear evidence here that virtuality has a negative influence on trust. Trust, in turn, influences cohesion. Since cohesion is influenced by trust, I am led to believe that the negative influence of virtuality on trust indirectly also has a negative influence on cohesion. I found no evidence in the data for a direct influence of virtuality on cohesion. If the levels of trust towards co-located team members is higher than it is towards virtual team members, then this can be attributed to virtuality. Therefore, I am led to assume that the negative influence of virtuality on cohesion is mediated by trust.

4.2.3.5 Research Question 3

> *Research Question 3:*
> *How can leaders mitigate the negative impacts of virtuality on virtual teams and how does this influence virtualisation in an organisation?*

As leaders, we took actions, which, according to Proposition 3, would mitigate the effects of virtuality. There is evidence for reacting promptly and for attempting to coordinate tasks virtually. Proposition 3 suggests the active application of diversified ICT. Both task coordination and ICT application met with resistance. We failed to meet the goals we set. Our goal was to implement ICT tools for communication and coordination that would enhance transparency and make communication and task coordination visible to all within the organisation.

I assume that we failed here because we met with resistance to change, which manifested itself on the level of technology acceptance and adaptation. First, there are technical and financial reasons

why the staff did not accept the ICT tools we aimed for. As shown above, in conflicts carried out online, some staff members were unfavourably exposed. I posit that the second reason for resistance towards the implementation of the ICT tools chosen by the board was the staff's fear of too much transparency. This contradicts Weimann *et al.* (2013), who, based on an experimental setup using students on campus, posits the contrary. Thus, there is evidence in the data from the interviews that virtuality has a negative impact on trust, and through trust indirectly on cohesion. This is backed by literature.

In looking at virtuality, I came across a flaw in the framework. The framework is static and does not address issues of changes over time and resistance to change within a team. The framework makes mention of applying diversified and user-friendly technology. In our case, we met resistance from the staff when it came to accepting and adapting to new technologies. The staff opted for WhatsApp, a software they know for its user-friendliness, while the board opted for effectivity and transparency in its choice of ICT tools.

Reflections on the topic of virtuality suggest that in the next cycle, there is a need for more focus on structure. As proposed in the literature, more structure through processes of coordination would not necessarily increase trust and cohesion but would give it less weight in collaboration and communication. In addition, structured processes would replace negotiations around coordination and task assignment and thus increase team effectivity.

On an operational level, there is a need to address the topic of internet access in the following action cycles. Different staff members raised this topic during the debriefing:

> *31.05.18, 10:36 - Technician 2:*
>
> *I think we need an ever present and reliable internet connection to facilitate communication between the existing branches*
>
> *31.05.18, 10:39 - Technician 4:*
>
> *I share in Technician 2 view of providing internet connection on a 24-hour basis at all the branches*

The organisation does not pay for smartphones and online access. Lack of financial resources is a hindrance to improve upon this point, which in part led to the failure of implementation of Slack as the organisation's ICT tool.

4.2.4 Dealing with team diversity
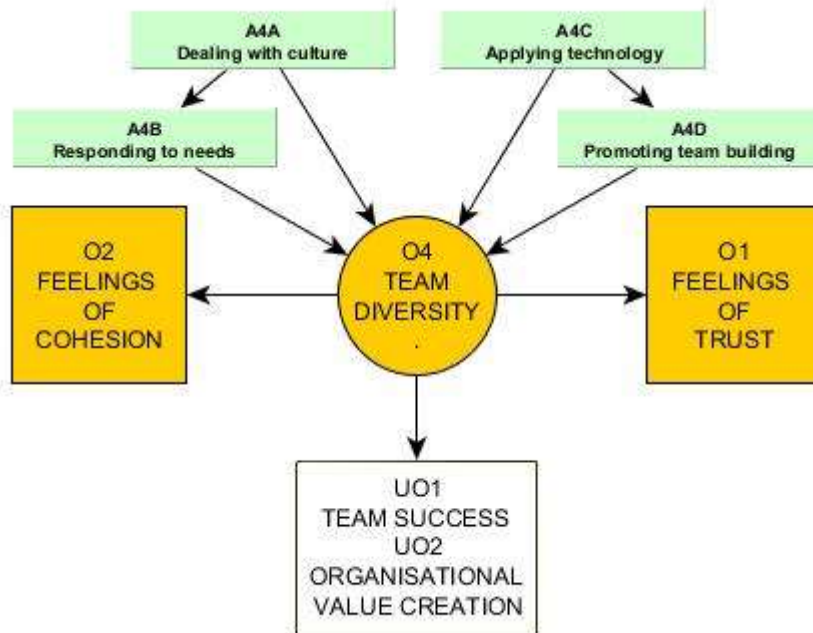
Figure 26: Proposition 4 - team diversity

Proposition 4 claims that by learning how to deal with people from different cultures, by responding to specific needs of team members, by promoting team building and by applying the right user-friendly technology to enhance closeness in virtual teams, e-leaders reduce the negative effects of cultural distance and make use of the opportunities that diversity offers.

As shown in Figure 26, in this proposition, the input operates in two stages. First, by learning how to handle people with different cultural backgrounds and by applying the right technology to create the best conditions for the second stage. Then, in a second stage, taking action. The first action is responding to members' individual needs based on an understanding of the cultural context. The second action is promoting team building using appropriate technology to promote team building.

The intermediate outcome that can be expected as a result of these actions is an enhancement of closeness and the harnessing of diversity, which in other words is mitigating the negative effects of diversity to make use of its positive effects. Again, the ultimate outcomes to be expected are team success and organisational success.

For the definition of diversity in the context of this research, I use the definition put forward by Garrison *et al.* (2010, p. 29) define diversity as "the degree to which an individual is dissimilar to his or her team members on individual-level attributes that may be demographic or skill-related in nature." Within the team, diversity is on the level of skills and gender. The diversity pertaining to religion or national culture is negligible in the context of this research.

4.2.4.1 Evidence in the data of actions that deal with diversity

Dealing with culture (A4A)

Keeping in mind the literature upon which Snellman (2014) bases her four propositions, the image of virtual teams she paints is that of global, international and multicultural teams. The tacit implication is that in this context, the role of a virtual leader is to mediate between different national and linguistic cultures, world-views and religions. This view is congruent with Hofstede's definition of culture as the "collective programming of the mind that distinguishes the members of one group or category of people from others" (Hofstede, 2011, p. 3). Thus, the action in dealing with a culture based on this premise means first gaining awareness of differences between cultures and then, in action, heeding to these differences.

In the context of this research, diversity stemming from differences in religion, language, or national culture is non-existent. In the data, there is no direct evidence for dealing with culture. The evidence for this is in the observations and in the reflection upon the observations. I was expecting to see problems related to diversity that would be based on tribalism, an issue that often occurs in this area of the world. Two interviewees brought up the topic, but they said it had no influence on working together. On diversity at work, Journalist B3 found that:

> *"It shows everyone is included. No one is left out. And it shows there is no bias and stuff like that. It also makes even the viewers … they like the fact that it's not gender-sensitive, or, it doesn't operate under a tribalistic or nepotism kind of way."*

I did not see any evidence for tribalism in any data. Instead, the differences I could observe were based on professional background, gender stereotypes, hierarchy and values.

Two types of situations lead me to class them as problems that stem from diversity. These were situations of conflict, ranging from a mere expression of a feeling of unease to open conflict, and situations where I felt emotionally irritated because the values of the team members did not match with my values.

- Different backgrounds

In the interviews, only two technicians made mention of feeling diversity at all. Technician 2 said, *"because I am not a journalist"* and having different job responsibilities, she does not link up to the others. Similarly, Technician B1 saw diversity between the different staff members because they had studied at different schools and universities, which, according to him, leads to different mentalities and different mindsets. In the interview, Editor 2 confessed having a prejudice against another staff member based on this staff member's linguistic and cultural background. However, he admitted that he later found out that this was a misjudgement.

- Hierarchy, gender stereotypes, inclusion and exclusion

> *"Men have their way of reasoning, women have theirs, yet diversity is not a problem."*

While Journalist 1, quoted above, did not see any problems with gender diversity, Technician 2 confessed during the interview that she had acted on prejudice:

> *"There was a time when I had a subordinate, and I wanted him to do things in a particular way, [...] I think I was harsh on him. [...] At first, I thought he was disrespectful because I was a woman."*

In the case of the open conflict between Journalist B1 and Journalist B2 described under 4.6.2 Sorrows, I assume that the differences that led to the conflict are to be found in different understandings of gender roles and hierarchy. It was a conflict between a middle-aged man, who saw himself hierarchically above the woman; and a woman, who refused to be blamed for the man's shortcomings. He might have assumed that he as a man, older and higher up in the hierarchy, would receive more respect than the woman, despite his shortcomings in dealing with technology and getting the job done correctly.

Editor 2 reported a similar conflict in the interview. As editor-in-chief, he felt that he was not getting the respect he deserved in this office, which is the second-highest position in the hierarchy on the operational side after that of the Director. Moreover, from discussions with the board members, I learnt that some journalists were unwilling to accept the new editor-in-chief as an authority because he was younger than them and had not been in the organisation as long as them.

- Different Values

On several occasions, I felt irritated during exchanges with the staff or when I observed conflicts between staff members. Upon reflection, I noticed that the reason for this irritation was a difference between my values and theirs. To me, it seems, where their values differ most from mine is their greater need for status and status symbols to boost their ego. This often seemed to be a tacit underlying motivation in the exchanges. I interpret the fights over hierarchy described above as evidence for my assumption.

Another instance when I noticed that the staff put status above rational and economic reasoning, was during the debriefing session and in the interviews. There was a demand to invest in making the offices more representative. During the debriefing, the staff repeatedly stressed the importance of having a signboard by the roadside.

31.05.18, 11:20 - Technician 1:

Put the signboard first to indicate where XTV is located.

31.05.18, 11:27 - Journalist 3:

The signboard is very important. Facebook too isn't bad.by the way XTV programmes are going live

In the interview, more than a year after the start of the business development project virtualise, Journalist B1 stated that for teamwork to function, the three members of the Branch needed a solid and well-furnished office. This would increase his and the organisation's credibility. Further, having a good smartphone would increase credibility. I was very irritated during this interview. My goal for the organisation was to attain the best possible output on TV and social media by making the best use of the meagre resources available. In my eyes, the staff were seeking a higher status, not through the recognition of the quality of their work, but through status symbols like buildings, furnishing, and electronic gadgets to be supplied by the organisation. They seemed not to want to understand that they first needed to generate the necessary income to enable the organisation acquire these status symbols.

Responding to team members' needs (A4B)

To respond to the team members' needs, these must be known and understood. It is simple if the needs are clearly spelt out. If not, they can be deduced from hints, like the absence of a staff member from work. After an inquiry by management, the staff members gave reasons for their absence in the chat group and explained what problems they were facing. In the data, such cases, in which personal concern as a form of responding to team members' needs, occur repeatedly.

Similarly, the Director mentioned assisting staff members in hard times. From observation, help was given to staff members in the Headquarters, where there was physical contact. This was not as evident in the virtual contact as in the interviews. The staff in the Branch seemed to express a sense of being abandoned and not assisted. In the open dispute between Journalist B1 and Journalist B3, the leadership took a mentoring approach in trying to resolve the conflict.

05.04.18, 07:50 - Editor:

I said last week that this forum should not be used to expose colleagues. Bad blood should not spread on this forum. This forum is to discuss new ideas and angles.

05.04.18, 07:51 - Editor:

We can create a different forum to talk problems. But not this one.

05.04.18, 07:52 - Editor:

Branch take note and I call for calm between you two pls.

05.04.18, 07:54 - Editor:

We can always talk problems out differently. You both have our numbers Mr. BM
Director and myself.

According to the framework, the needs of team members that need to be addressed arise from issues of diversity. However, responding to members' needs does not always mean that they will be fulfilled. During the debriefing, the IT-Specialist tried to make the staff members understand that their tacit need for status symbols did not align with the goals that were earlier set up together. Relating to the case of the signboard mentioned above, he asked questions like: *"How does this[signboard] contribute directly to income generation?"* After the debriefing, tasks were shared between the staff. Amongst others, the task of coming up with a proposal for a signboard and an invoice for the costs. The staff did not solve the issue, and the topic was never brought up again. On the other hand, expanding from TV broadcast to social media, which was also discussed in the debriefing, was implemented and became a success.

Applying the right user-friendly technology (A4C)

At the start of the project, the board spent at least three months evaluating what software solutions would be the best to achieve transparent communication and automation of the business processes. The IT-Specialist worked on programming a new software from scratch to automate the core business processes. By the end of the observation period, the automation software was still a prototype that was not yet ready to be used by the staff.

The board chose Slack, an existing software, as communication platform because it offers the possibility of integrating many different applications. For example, modules for accountancy, data storage and the distribution and tracking of tasks could easily be integrated into this system.

17.01.18, 20:17 - BM IT:

I would like us to double efforts to get everyone on Slack by the end of February.

17.01.18, 20:18 - BM IT:

It is really important to get the work-related communication in as few tools
and places as possible and streamlined.
The communication contains a huge amount of business knowledge and
information that is very easily overlooked.

By concentrating all communication on one platform, the aim was to create transparency for all involved. This could be compared to a virtual workspace where most of the chat rooms are open to everyone. In this virtual workplace, the separation in chat rooms for formal and informal communication was implemented. The hope was that the board and the management would be able to see what the staff is working on and thus be able to steer the work output and be closer to the staff despite the geographical distance.

The staff seemed to have other concerns. For example, in the interview, Technician B1 mentioned the need to see each other for better communication.

> *"You don't see the person's face, the reaction, how the person feels […] whether the person is angry or not".*

However, he added that the quality of the internet connection and the additional cost were discouraging. With that, he summarised why the option of video conferencing was not used, even though the addition of audio-visual cues would have added more depth to the exchanges. It was decided to use written communication in the board meetings because this would also serve as documentation.

Even though the board used Slack regularly for communication and the exchange of files, the virtual workplace on Slack with its different chat rooms and data storage possibilities never became populated by the staff. Even though Slack is not much different from WhatsApp, the transition from WhatsApp to Slack never took place. Communication amongst the staff members continued to take place in different chat groups on WhatsApp. The transition from WhatApp to WeTransfer for data transfer was successful. Both Slack and WhatsApp can be accessed either by using a computer or a smartphone. Most of the time, the board members accessed Slack using computers. The staff accessed WhatsApp using their smartphones.

Promoting team building (A4D)

There is evidence that the application of technology contributed to team building. Without the improvements through the use of WhatsApp and WeTransfer, communication and data transfer between the Branch and the Headquarters would have continued to be difficult and expensive. As a result of the application of technology, working together as a team to record a news item 300 km away from the Headquarters and broadcast it in the evening news n the same day became possible.

As already shown above, the focus when it comes to team building was on the social aspects of team building, like promoting communication (A2A) and socialising activities (A2B). Efforts were made to address the more functional aspect of team building by trying to coordinate tasks (A3B) through the application of technology. The aspect of team composition as part of team building

was addressed only in one instance: putting together a team for the Branch. While recruiting the new team members, Journalist B1's lack of technical skills was taken into consideration. Their strengths should compensate for the weaknesses of Journalist B1.

4.2.4.2 Evidence in the data of the intermediate outcome: closeness and harnessing of diversity (O4)

Evidence for closeness as an intermediate outcome was discussed above under 5.4.2 as an outcome of dealing with the negative effects of virtuality. It is difficult to differentiate the causal connections of actions that aim at promoting communication and socialising activities described under 5.3.2, which should lead to cohesion from the actions aimed at mitigating the adverse effects of diversity that should result in closeness.

> *31.05.18, 11:45 - Technician 4:*
>
> *This responsibility goes then to the bosses do not just watch us make mistakes and u go on shouting put us down as a team and point out our errors with the objective of strengthening an encouraging us to produce better output. We are like ur children and it is your responsibility to groom us towards what u expect us to be*

The unfiltered quotation above is from the debriefing. Especially the last sentence shows a lot about the culture we are dealing with. Is this a call for strong leadership? Throughout the process of virtualisation, there was a constant exchange, which finally created enough closeness for a staff member to see himself as a child of leaders with whom the contact was purely virtual. Invoking the image of a family shows that the distance, which diversity might have created, had been overcome. What is still evident in this phrase is the notion of the hierarchical distance that exists between parents and children, despite their closeness.

Conflicts were discussed in the board meetings. Having a profound knowledge of the culture, the board members understood the needs and pain points of the staff members. This understanding was of use in harnessing the potential of the team in the Branch by recruiting staff members who would complement Journalist B1. This seems to be the only documented instance in which the leadership actively and consciously harnessed the potential of diversity.

4.2.4.3 Evidence in data of ultimate outcome that can be linked to dealing with diversity (UO)

Following the debriefing in which the staff expressed the wish for more output of media content on Facebook, there was a distinct rise in the organisation's visibility on social media. At its peak, based on the number of online followers, the organisation ranked on the fifth position nationwide. Looking at the statistics from Facebook, it became visible that our goal to cater to the diaspora

had been achieved. We expected a viewership in the USA and European countries like England and Germany. However, to our surprise, the viewership in the Gulf Region was more significant than the one in Europe. The board aimed at this expansion for economic reasons, while the staff also wanted the online presence for their personal popularity.

Editor 2 came in at the right moment; he was willing to push towards a social media presence. The board members attributed this to the fact that he was of the younger generation compared to Editor 1, whom he replaced. This could be seen as an instance in which the diversity in age brought an advantage.

Addressing the debate of diversity that focuses on gender, it can be noted that during the observation period, of three awards won by the organisation members, two were won by women. Furthermore, during observation period, half of the journalists and a third of the technicians were female.

4.2.4.4 Evidence in data of the influence of diversity on feelings of trust and cohesion (O4 → O1, O2)

Although no one saw diversity as a problem in the interviews, there are two instances in which conflicts led to a loss of trust. The source of these conflicts is in part to be found in diversity. The differences that led to conflicts were differences in gender, seniority, skill and team membership. Although the conflicts impacted interpersonal trust, they seemed not to have a noticeable impact on cohesion within the team.

In the conflict in the Branch between Journalist B1 and Journalist B2, there was an open display of distrust and animosity. I attribute this conflict to the diversity between the two team members: the difference in age, technical skill and gender.

> *"Once someone shows more than one head, you start doubting them."*

With these words, Editor 2 expressed his perception that there was a loss of trust between him and the team members. There were conflicts between the new editor and other staff members. He did not automatically benefit from the same level of trust and authority, which the former editor enjoyed. His integration into the team was difficult. From the interviews and discussions in board meetings, I gathered that he was not accepted because he was new and, in addition, younger than some staff members he was supposed to lead. Certain staff members saw their seniority in age and in time spent in the organisation challenged.

4.2.4.5 Research Question 4

> *Research Question:*
> *How can leaders harness diversity in virtual teams and*
> *how does this influence virtualisation in an organisation?*

In the interview, Journalist 4 summarises the general impression on diversity well: other than complementing each other in the team, diversity also leads to ideas clashing and contradicting each other. Nevertheless, overall, having different perspectives is good. The first impression gained was that diversity is not a problem.

The data shows evidence that action was taken to mitigate the adverse effects of diversity and make use of the potential that diversity offers. In the literature on virtual teams from which Snellmann (2014) derives her four propositions, we are led to assume that virtual teams are global virtual teams. Diversity in this context is on the superficial level of national culture, language, religious background and gender. During the analysis, I came to realise that in dealing with culture, I had to look at the underlying value systems that define a culture.

I was irritated by differences between my value system and that of the staff members. A look at Hofstede's cultural dimensions for Nigeria (Hofstede, no date), a country in the same region with a similar culture, can help explain certain behaviours. Nigeria has a high score of 80%for power distance, which means "subordinates expect to be told what to do, and the ideal boss is a benevolent autocrat" (ibid). This sheds light on certain quotations above, according to which the employees see themselves as the leaders' children. A very low score of 13% for the dimension of long-term orientation is interpreted as "great respect for traditions, a relatively small propensity to save for the future, and a focus on achieving quick results" (ibid.). Lastly, this region has a very high score of 84% for indulgence, which Hofstede interprets as a "willingness to realise [...] impulses and desires with regard to enjoying life and having fun" (ibid.). I observed that much importance was attributed to status symbols, hierarchy, the principle of seniority, principles which the staff put before the economic sustainability of the organisation. Hofstede's dimensions help understand why these values are essential in the culture of the study's context.

As leaders, we were able to deal well with the national culture and thus understand the needs of the staff members. This was possible because we, as leaders, know the culture and especially because we use the same language. Although the communication happened in English, the staff members think in a creolised English language variation, and when they write, they use local idioms. Without an understanding of the language and the culture, the understanding of the needs of the staff would not have been as profound as it was.

There is evidence in the data that using the right technology created a feeling of closeness within the team, despite the different backgrounds of its members. As the evidence shows, the use of WhatsApp as a platform for socialising across geographical distances was instrumental in creating feelings of trust and cohesion between the organisation's members. Nonetheless, the interviews showed that the staff in the Branch felt cut off, which means that the response to members needs to be improved. Although the software is user-friendly because it is simple to use, compared to Slack, which offers more functionalities, it is not the best suited to be used in a professional setting. Because it is very user-friendly, we could not implement software that is better adapted for use in a professional setting.

There is evidence for team building that was made possible by user-friendly technology and because we dealt with the culture. The focus was on the social aspects of team building. In future, there needs to be more focus on the functional aspects of the team, on bringing out strengths that could compensate weaknesses. More effort could be invested in making use of the potential of the diversity of the organisation's members' hard and soft skills by getting the right people to work together both offline and online.

It can be argued, based on the correlation between trust and cohesion that were drawn from the literature, that the mitigation of the adverse effects of diversity on the team had a positive effect on both trust and cohesion. It was shown above that dealing with culture, responding to the team members needs, applying user-friendly technology and promoting team building contributed to creating closeness. Following Hinds and Mortensen (2005), spontaneous and shared communication helps build both social and task cohesion. A precursor for this communication that enables cohesion, I posit, are the actions (A4A, A4B, A4C and A4D), which according to the model, led to closeness. Hence, the actions to mitigate the adverse effects of diversity also contributed to creating cohesion within the team. Interestingly, the choice of the right user-friendly technology plays a significant role here since it determines to what degree spontaneous communication is possible in the virtual workplace.

According to Holton (2001, p. 45), regular communication and team-building interventions create a shared understanding and mutual trust within a virtual team. To create a shared understanding, dealing with culture is a prerequisite to assessing the starting point from which a shared understanding should be created. Based on this argument, dealing with culture not only reduces the adverse effects of diversity but is needed in the process of building trust.

Upon analysis, the assumption that the issues around diversity were not relevant in the context of the research proved to be wrong. This assumption was based on the underlying assumption that virtual teams are automatically transcultural global teams in which the problems around diversity would be about issues like race, gender, religion, language and national culture.

4.3 Analysis from a different perspective

As a rebuttal to the framework on which the analysis builds, this section looks at themes that were not included in the model. This section briefly analyses the data using Anderson's (2013) DGI-model (Figure 2). Looking beyond the model's scope should reveal its weaknesses and point out where it needs to be improved or complemented.

4.3.1 Taking another perspective with the DGI-model,

An alternative tool for analysing the process of virtualisation within the organisation is to use Andriesson's (Andriessen, 2002; Andriessen and Verburg, 2004) DGI-model. Compared to the model derived from Snellman's (2014) propositions, the DGI-model lends itself to a preciser "reading" of the organisation and its teams. In this analysis, the developments in the study during the period of observation will be briefly sketched out using the elements of the DGI-model. The focus of the analysis lies in the process of virtualisation.

4.3.1.1 Group characteristics

Before looking at the group characteristics, the organisational environment needs to be considered. The environment in which the study took place was strongly influenced by a civil war that got more intense over time. The insecurity had a negative influence on the economy. The organisation's income had dropped to about a tenth of what it had been in the year before the crisis started

1. Physical setting: There were no changes in the physical setting throughout the observation period. The Branch did not have a physical venue. Instead, the members of the Branch met in public spaces or their individual homes from where they worked.

2. Formal structure: There were no changes in the formal structure of the organisation.

3. Group culture: At the beginning of the virtualisation project, a vision was collaboratively established. This was a formal process to define and document the group culture. The analysis of the WhatsApp protocols showed an improvement in social cohesion in the virtual workplace. This observation was confirmed in the interviews.

4. Persons: Here, there were many changes. The insecurity and economic decline made staff members leave. The departure of the editor-in-chief and the IT-Technician had the most significant impact. A replacement was found for the Editor but not for the IT-Technician.

5. Tasks: Although the tasks remained the same, they were discussed intensely in the process definition phase in view of a virtual automation of the processes.

6. Technology: There was a clear shift towards virtualisation of communication and working processes through the introduction of Slack, WhatsApp and WeTransfer as working tools. A project to start the automation of processes was started.

4.3.1.2 Processes

The link between the different processes is communication, which, over time, became more and more virtual.

1. Coordination: There were different attempts to establish a transparent coordination of tasks on an online platform accessible to all. On the level of the board, we were able to keep up regular weekly online meetings. However, on the operational level, the goal of distributing tasks and holding meetings online was not attained despite numerous attempts.

2. Cooperation: The cooperation between the Branch and the Headquarters was intensified, thanks to the virtualisation. Virtual collaboration, which had not existed before the start of the business development project, was introduced. The next step will be the automation of the most recurrent processes.

3. Social interaction: At the start of the project, the virtual communication between the staff members centred around informal socialising. Over time, communication online increasingly started to be about tasks. I posit that communication was less task-oriented than I would have expected it to be because, in the participants' minds, WhatsApp is a platform for informal communication among friends.

4. Learning: There was learning during the observation period. The staff learnt to use WeTransfer for data transmission. They learnt how to collaborate in a virtual workplace. However, there was no formalised learning. The least progress was made in learning on the levels of the organisation, the teams and the individual. The reason might lie in the fact that the notion of learning is transformational and, therefore, does not fit into the relatively static model that was derived from Snellman's (2014) propositions.

4.3.1.2 Outcomes

1. On the individual level, beyond just earning their livelihood, there were rewards in the form of awards accorded to certain team members. In the interviews, participants stated that the intrinsic motivation of reaching out to a big audience was strong enough to keep them going despite the economic hardships.

2. On the level of the team vitality, the different actions geared towards the social aspects helped improve cohesion and, with that, also trust. As shown above, this also applies when viewing the team as a virtual team.

3. On an organisational level, the quality and quantity of output were improved, despite the difficulties caused by an ongoing civil war and the subsequent decrease in income. In addition, the social media presence was greatly improved thanks to the new editor.

This succinct analysis shows that the DGI-model is better suited to offer a holistic overview of the study than the model based on Snellman's (2014) propositions. This analysis serves as a summary of the study. For more depth, it could also be used to analyse the causal links between the different elements. However, since this research is not about an in-depth comparison and analysis of causal links, using this model would go beyond the scope of the research.

4.3.2 Transparency

> *2018-03-15T08:52:21Z BM Researcher:*
> *The NewsRoom on WhatsApp has brought much transparency. Let's plan the*
> *transfer to Slack or to the free copy of Slack. […]*

Breuer, Hüffmeier and Hertel (2016) suggest that the creation of transparency in communication contributes to improving trust in virtual teams. Therefore, in designing the processes and choosing software for communication, this aspect was taken into consideration in the discussions in the board meeting.

The framework does not single out transparency, which I see as a factor that mitigates the negative impacts of virtuality. That virtuality may improve transparency was shown in the case of the "wake-up call" described under 4.2.3.4. In coding the data against the framework, this aspect was missed.

4.3.3 Leadership style

Snellman (2014, p. 1252) departs from the assumption that hierarchies in virtual teams follow the general trend in organisations towards flat hierarchies. This trend and the dispersion in virtual teams promotes emergent leadership (Charlier *et al.*, 2016)*.* Further, Hoch and Dulebohn (2017) suggest that emergent and shared leadership are positively related to virtual team performance.

During the observation period, no instances were recorded in which the staff members autonomously contributed to building the organisational structure or organisational processes. The only instance worth mentioning here is when Editor 1 opened a new WhatsApp chat group. The issue of empowerment, which should lead to self-management within the teams, was discussed in the board meetings. The Director's position was: *"they are professionals"*, implying that the leadership style should not be directive. The IT-Specialist had the same opinion. He was against *"micromanaging"*.

Few processes being set up, the staff did enjoy a significant amount of autonomy. In the debriefing, however, there was a call for stronger leadership. This is backed up by Hofstede's verdict of the regional culture as one in which subordinates expect to be told what to do. Moving forward, the board would need to reflect upon where to situate itself on the continuum between flat and tall hierarchies and what leadership style would be the best to adopt.

4.3.4 Change and resistance

The goal of getting all organisation members to work on a transparent virtual platform was not reached. It met with resistance. Two models help understand why there was resistance and why we were unable to get past this resistance.

By the definition of Porras and Silvers (1991), the ongoing virtualisation is a change process on the level of organisation transformation, which entails a paradigmatic change to adapt to ongoing changes in the organisation's environment. The DGI-model is dynamic, and it takes into account that teams and their environment interact and are continuously submitted to change. A weakness of the framework of this thesis is that it is static in that the aspect of organisational change is not taken into consideration.
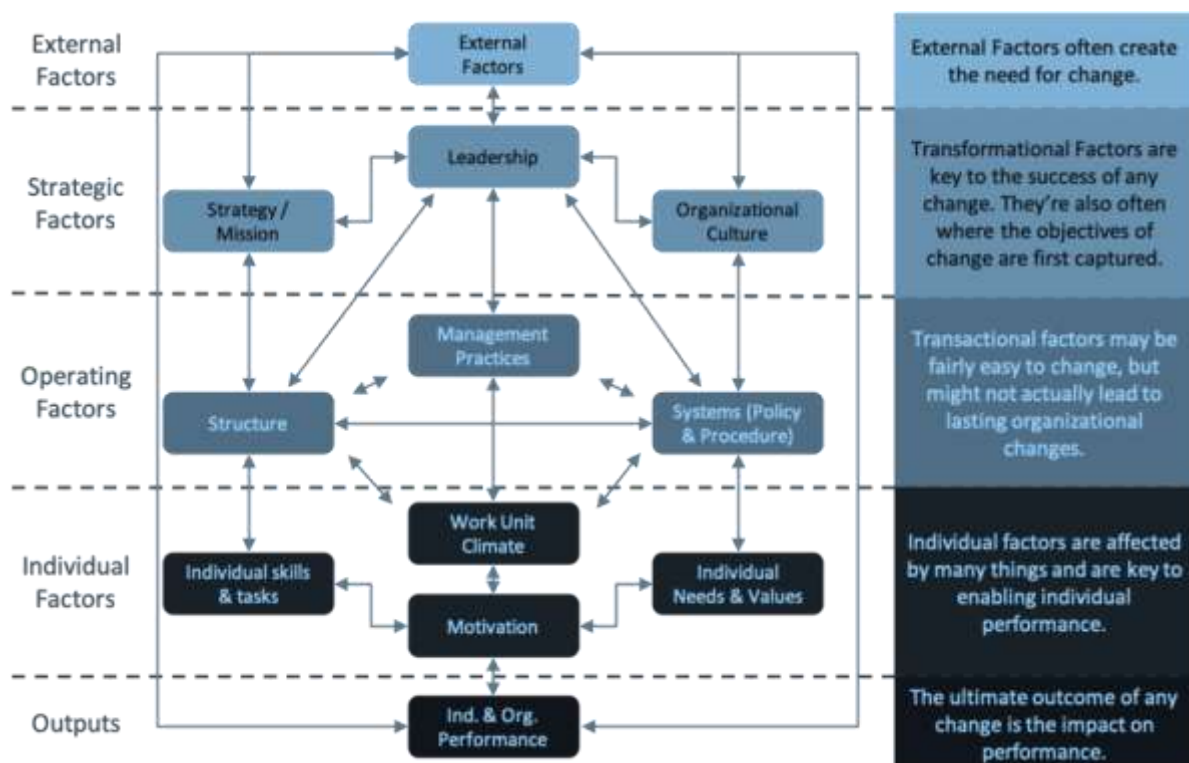

*Figure 27: The Burke-Litwin model of organisational performance and change
(The World of Work Project, no date)*

The Burke-Litwin model of organisational performance and change (Burke, 2018) helps view the project "Virtualise" as a case of organisation change (see **Fehler! Verweisquelle konnte nicht gefunden werden.**). External factors led to a need for change. Expansion and more efficiency were necessary for the organisation's survival. Expanding our output into social media was necessary because the organisation needs to follow its audience. On a strategic level, the organisation's leadership, together with the staff, collaboratively developed a vision to define the organisation's mission and its culture. On an operational level, the structures and processes were clarified, and new technological systems were introduced. The leadership was able to influence these two levels directly.

In this model, the influence of leadership on the level of individual factors is limited. The individual skills and tasks can be influenced by putting the right person on the right job and providing the necessary training. The leadership has no influence on the individual needs and values of the organisation members. However, these are crucial since they determine the level of motivation of the individuals who make up the team. The level of motivation, in turn, determines the individual and hence the organisational performance. According to the model, individual needs and values have an influence not only on motivation but also on the acceptance of changes in the system in general and on changes in technology in particular.

I assume that in the staff members' eyes, WhatsApp was perceived as being more convenient to use than Slack. They all were already using WhatsApp on their smartphones and were familiar with it. Using Slack would have required freeing storage space on their smartphones and learning how to use it. The perceived usefulness being influenced by individual needs and values, which are beyond our control, our influence as leaders was not convincing enough to bring about an immediate acceptance of the new technology and, with that, a swift change.

4.3.5 Research Question 5

> *Research Question:*
> *What factors and actions apart from those addressed by the four propositions*
> *have an influence on virtualisation in an organisation, and how can leaders act*
> *on them?*

Analysing the data using DGI, and comparing this with the analysis based on the framework, shows that the framework omits certain organisational aspects. The framework addresses social aspects, processes and technology. However, it omits addressing team characteristics that can be influenced, characteristics that would contribute to the process of virtualisation.

The issues not addressed in the framework are team composition, formal team structure and the physical setting. The issue of team composition was only addressed when a lack of skills in the

Branch led the board to reflect on this issue. Formal team structure was discussed in this context, and when the integration of the new editor proved to be problematic. Without these problems, I posit that the framework would not have led us to address team composition and formal structure. Likewise, the issue of the physical setting was raised in the debriefing and in the interviews. The framework had led us to focus on the virtual setting.

Transparency is also an issue which the framework does not address explicitly, despite its influence on improving trust and its mitigating impact on team virtuality. Creating transparency was an underlying thought in our choice of ICT and process architecture. According to Snellman (2014, p. 1257), establishing standard procedures and applying ICT, which matches the right tasks with the right electronic communication channel, diminishes uncertainty and enhances coherence. This citation does not explicitly mention transparency, but it conveys our idea that the choice of ICT should make actions visible in the virtual workspace and thus transparent to all organisation members.

Finally, the framework derived from Snellman's (2014) propositions does not address how to deal with leadership style and change management directly. Especially the aspect of transformational change is not contained in the framework. It may incite incremental improvement, but it does not highlight the fact that "the initiation of organisation change begins with a vision of the future" (Burke, 2018, p. 163).

4.4 Summary of the analysis

Building on the elements established in **Fehler! Verweisquelle konnte nicht gefunden werden.**, **Fehler! Verweisquelle konnte nicht gefunden werden.** presents a summary of the results of the analysis. The table offers an overview of the main data sources for the evidence of actions, outcomes and their relationships. The pieces of evidence are linked to the research question for which they answered.

With some exceptions, the table shows that evidence for the different actions stems mainly from the protocols of the online exchange and from my observations as a participant. The expected ultimate outcomes were mainly confirmed in the interviews or by observable facts like the growth in public recognition. Surprisingly, the interviews confirmed some of the relationships between the intermediate outcomes trust, cohesion, virtuality and diversity. However, the evidence for the relationships postulated by literature remains weak. Therefore, it is backed by reflection and deductive argumentation. The evidence for the emergent factors is based on personal observation and reflection.

4 Findings

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Code	Factor	Summary of evidence	Data sources	RQ
Actions, outcomes, relationships				
A1A:	Setting mutual expectations	Visioning on the strategic level, task management on the operational level.	Protocols	Q1
A1B:	Enhancing coherence	Collaborative process analysis and reengineering.	Protocols	Q1
A1C:	Inspiring and motivating	Words of encouragement. Intrisnic motivation in the team. Expectation of financial motivation.	Protocols Interviews	Q1
O1:	Feelings of trust	The particiants say there is trust in the team. F2F higher than virtual.	Interviews	Q1
A2A:	Promoting communication	Setting up communication channels, encouraging interaction.	Protocols	Q2
A2B:	Promoting socialising activities	Celebrating birthday parties and national and religious holidays together.	Protocols	Q2
O2:	Feelings of cohesion	Feeling like one team, evidence in informal communication and replies in interviews.	Interviews	Q2
TC<>CT	Mutual impact between trust and	Correlation between trust and cohesion based on literature.	Interviews	Q1,Q2
A3A:	Responding promptly	In general a satisfaction with the response speed. Acknowledgment of a room for improvement in the speed and quality of content of the responses. An emergent issue was the issue of communication breakdown.	Interviews Oservation	Q3
A3B:	Coordinating tasks	Unsuccessful introduction of task management tools.	Observation	Q3
O3:	Feelings of closeness and harnessing of talent	Feeling closer than before intervention. Little evidence of harnessing talent through use of IT-tools.	Interview BM-IT, Observation	Q3
V>T	Negative impact of virtuality on trust	Trust higher in F2F than in virtual collaboration. There were misunderstandings from which conflicts ensued, whcih can clearly be attributed to virtual communication.	Interview	Q3
V>C	Negative impact of virtuality on cohesion	No clear evidence, but since trust and cohesion are correlated, an indirect influence can be deducted.	None, Deduction	Q3
A4A:	Dealing with culture	Knowing the culture. Reflection on how culture influenced action.	Reflection	Q4
A4B:	Responding to needs	Responding and challenging needs based on knowledge of culture. Based on the replies in the interviews, the staff was expecting more from the management. On the other hand the staff did not asume responsibility for tasks assigned after the debriefing.	Protocols Reflection	Q4
A4C:	Applying the right user friendly technology	IT tools were evaluated by the BM-IT Specialist and then introduced by the IT-Technician. Not all tools were adopted. WeTransfer was adopted. Slack was not adopted, the staff stayed with WhatsApp as communication tool.	Protocols Observation	Q4
A4D:	Promoting team building	Socialising events mentioned under A2B. Strategic team composition. Reunion of all not possible.	Protocols	Q4
O4:	Feelings of closeness and harnessing of diversity	Diversity (gender, ethnical) generally not an issue. 2 Cases of prejudice.	Protocols Observation	Q4
D>T	Negative impact of diversity on trust	Cases of prejudice. The fight.	Protocols Interviews	Q4
D>C	Negative impact of diversity on cohesion	No clear evidence, but since trust and cohesion are correlated, an indirect influence can be deducted.	None, Deduction	Q4
Emergent factors				
E1	Action: Creating transparency, not only coherence	Focus on transparency in task management an element of corporat culture. Not adressed based on DGI model: team composition, formal team structure, physical setting. Leadership style. (Virtual leadership in itself is not a style)	Observation	Q5
E2	Outcome: Change and resistance to change	Reflection on leading change and on TAM Reflection on factors that were not considered: physical setting, team composition, leadership style.	Reflection	Q5
Ultimate outcomes:				
UO1:	Team success	Increased performance and effectiveness.	Virtualisation of data exchange and	ALL
UO2:	Organisational value creation	Little increase in economic value becaue of war. Increase of output quanitity and quality. Increase in brand awareness on a global scale.	Big advertisment contract. Daily news with content from branch office. More shows.	ALL

		Actions
		Outcomes
		Relationships between trust (T), cohesion (C) , virtuality (V) and diversity (D)
RQ		Research questions 1 to 5 (Q1 - Q5)

Table 7: Summary of the analysis

5   Discussion

"[…] By far the most important for cultural beginnings is the impact of founders. Founders […] choose the basic mission and the environmental context in which the new group will operate" (Schein, 2010, p. 219)*.*

5.1 Results

This thesis is a report on two intertwined projects: on the ongoing business development project "Virtualise", which in turn is the object of the research project into virtual leadership in the process of virtualisation. In this section follows a summary of the results of the business development project, of the research project and at the end, a condensed answer to the research questions.

5.1.1 Results of the business project "Virtualise"

The goals the board members set for the first phase of the project "virtualise" were to get the first branch office running and to make virtual teamwork and virtual leadership cornerstones of the organisation's culture. The following steps were undertaken during the period of observation to attain this goal. First, a vision was collaboratively established and noted in a mission statement. Then, based on an analysis of the organisation's processes, these were redesigned to run in a virtualised environment. New software and new ways of working together were introduced. After nine months, there was a debriefing with the staff members, to determine together what had been achieved and moving forward, what needed to be improved upon.

At first, I thought, the project had been a failure because we were not able to implement Slack, the communication software, which the board had chosen. But then I realised that, although we had not met my expectations, we had reached the goal we had set. The Branch was running with three persons, and their link to the Headquarters was communication through WhatsApp and data transfer using WeTransfer. After the debriefing, under a new editor-in-chief, the output of content on social media, especially on Facebook, became regular. The use of WhatsApp for communication and WeTransfer for data transfer had become a daily routine.

On the level of the board, the weekly online meetings on Monday evenings at 8 PM across two continents have been maintained. They have moved from written communication on Slack to mixed written and oral communication on WhatsApp.

5.1.2 Results of the research project

Parallel to the business development project "Virtualise", the research project also moved through different phases. The two projects had different intersection points. As FiguresFigure 8andFigure 9show, being an AR study, the flow of information and knowledge was bi-directional. The research

115

was not a detached observation to gather data. The research shaped and influenced the transformational intervention, which the organisation underwent.

Although the temporal distinction between the phases was blurry, and there was often overlap, the research project went through the following phases. The first phases were the planning and exploratory phases. While planning the study by choosing the topic, writing the proposal and going through the processes of ethical approval of the study, I explored the literature. The discovery of Snellmans's four proposals permitted me to set up a framework that guided me through this phase. The result of this phase was the literature review chapter and the first graphical representation of the framework. Even if I did not apply the knowledge acquired from literature systematically, it influenced my actions as a practitioner, both consciously and subconsciously. This was the first intersection point between theory and practice.

Next came a phase of observation of the other participants and of myself in action. Except for the noting down of my observations, the recording of the data from the online exchanges on Slack and WhatsApp happened automatically. At the end of this phase came the interviews with the participants. There was an overlap between the phase of observation and the succeeding phase of analysis, which culminated in the write-up of Chapter 4 of this thesis. The last phase was that of reflection. This went hand in hand with the final write-up of the thesis. Based on the two intertwined projects, the reflection goes beyond the reflection on the study's analysis to a broader reflection on the link between practice and theory in the context of AR.

5.1.3 Answering the research questions

In Chapter 4 the findings were used to answer the research questions in relation to theory. In the following, the research questions are revisited and succinctly answered. Here the focus is on gaining actionable knowledge from the study's insights. The main research question of the thesis was:

> *How can virtual leaders arrive at systematic understanding of the factors that influence virtual teamwork and how can they act on these factors?*

According to the thesis' framework which is derived from Snellman's (2014) four propositions, if actions are taken to improve the factors trust and cohesion, and if actions are taken to mitigate the negative effects of the factors virtuality and diversity, then improvement in team success and organisational value creation can be expected. Although relationships between the different factors of the framework were established based on theory, it was not the objective of this study to verify these relationships.

There is evidence in the data for positive outcomes on both the organisational and on the team level. On the team level, the use of ICT for data exchange and communication led to an increase in

effectiveness and performance. Pertaining to team vitality, there was a slight improvement in self-management during the period of observation. Meanwhile, skill differentiation remained unchanged, and due to the external circumstances, there was much fluctuation in the team composition. On an organisational level, the increase in effectiveness and performance led to an increase in the quantity and quality of the output. There was a documented increase in brand awareness on a global scale, beyond the region and beyond the national borders. Due to the external circumstances, an ongoing civil war, these increases in value creation did not lead to an increase in financial value creation.

Research Question 1: Feelings of trust

> *How can leaders build trust in virtual teams and*
> *how does this influence virtualisation in an organisation?*

As leaders, we engaged in actions geared at building up feelings of trust by inspiring and motivating; by enhancing coherence; and by setting mutual expectations. Mutual expectations were set on the strategic level by collaboratively establishing a vision. On the operational level, there was an attempt to introduce virtual task management. This attempt failed. Coherence was improved by analysing and re-engineering the main working process collaboratively.

In the interviews, the participants acknowledged that there was an atmosphere of trust within the organisation. But the data also indicates that the level of trust is higher in face-to-face interactions than in virtual interactions. Based on the positive outcomes presented above and based on the framework, it can be assumed that trust had a positive impact on the process of virtualisation. There is evidence in the literature of positive mutual correlation between trust and cohesion in teams (Greenberg, Greenberg and Antonucci, 2007; Harell and Daim, 2009; Ford, Piccolo and Ford, 2017). Although the framework incorporates this correlation, there was no evidence for this correlation in the data. It was not the aim of this study to find proof for correlations between the factors.

Research Question 2: Feelings of cohesion

> *How can leaders build cohesion in virtual teams and*
> *how does this influence virtualisation in an organisation?*

As leaders, we engaged in actions geared at building feelings of cohesion by promoting communication and socialising activities. This was done by setting up virtual communication channels and encouraging interaction on these channels. The leadership actively encouraged the joint celebration of religious and national holidays. This initiative was picked up by the staff, and it was extended to birthdays.

In my eyes, the informal communication that could be observed on the ICT channels that were set up are evidence for a feeling of cohesion. In the interviews, the participants confirmed that they felt like one team despite geographical distances. The members of the Branch said they felt more attached to their co-located team members than to those far away. Based on the positive outcomes presented above and based on the framework, it can be assumed that cohesion had a positive impact on the process of virtualisation.

Research Question 3: Team virtuality

> *How can leaders mitigate the negative impacts of virtuality on virtual teams and*
> *how does this influence virtualisation in an organisation?*

As leaders, we engaged in actions geared at mitigating the negative effects of virtuality by responding promptly and by coordinating tasks. According to the thesis' framework, these actions would lead to feelings of closeness and harnessing of talent.

In the interviews, the participants said, they were generally satisfied with the speed of response. Nevertheless, they agreed that there was still room for improvement in the speed of response and especially in the quality of the content of the responses. An emergent issue was the danger of communication breakdown in a virtual setup. The participants also acknowledged a feeling of closeness, which, for some increased as the project advanced. The attempt to introduce virtual task management tools was not successful, and there was no evidence of any harnessing of talent in connection with the use of ICT.

Without virtuality, the process of virtualisation across geographical distances would not have been possible. Nonetheless, some negative impacts on the other factors could be observed. Trust in face-to-face interaction was reported to be higher than in interactions online. Some conflicts arose, which were based on misunderstandings and a lack of trust in those situations. The cause of the conflicts could clearly be attributed to shortcomings of virtual communication: the time lag between the responses and the lack of non-verbal communication cues like facial expression and vocal tone. This is evidence that the degree of virtuality and the communication tools used had a negative impact on trust. Based on the positive mutual correlation between trust and cohesion, it can be deducted, that the degree of virtuality had an indirect impact on cohesion.

Research Question 4: Team diversity

> *How can leaders harness diversity virtual teams and*
> *how does this influence virtualisation in an organisation?*

As leaders, we engaged in actions geared at mitigating the negative effects of diversity by dealing with culture and applying user-friendly technology to be able to promote team building and

respond to the team members needs. According to the thesis' framework, these actions lead to feelings of closeness and harnessing of diversity.

The culture prevalent in the context of the study was not foreign to us the leaders. Thus, we were able to understand and respond to the needs of the team. There were instances in which we challenged the needs expressed by the team members. Together with the IT-Technician, the board members evaluated ICT tools, which were later introduced to the staff by the IT-Technician. Not all tools were adopted by the staff as planned. Besides promoting socialising activities to promote team building, the board in setting up a new team paid special attention to harnessing diversity. In this specific instance, the new team for the Branch was assembled such that the strengths (the technical skills) of the younger team members would compensate for the weakness of the older team leader.

While the interviews showed that the participants did not view the diversity in the team as a problem, there was no strong evidence for a direct positive impact on the outcome. The origin of some interpersonal conflicts which erupted between staff members could be attributed to gender diversity. But, these conflicts had no lasting effects on the organisation as a whole. Thus, the interviews brought to light, that diversity had an impact on interpersonal trust. As deducted above, diversity thus also had an indirect impact on cohesion.

Research Question 5: Emergent factors

> *What other factors and actions apart from those addressed by the four*
> *propositions have an influence on virtualisation in an organisation and how can*
> *leaders act on them?*

In the re-engineering of the business processes, the board members went beyond enhancing coherence to create feelings of trust, to creating structures and processes that enhance transparency. This endeavour is supported by Weimann *et al.* (2013) who suggest that transparency increases trust within teams; and by Breuer, Hüffmeier and Hertel (2016) who even suggest that transparency replaces trust. Transparency is a factor which the framework does not address directly.

Virtual leadership is not a leadership style. Snellman's (2014) four propositions depart from flat hierarchies within virtual teams. In the context of the study, there were three teams: the board, the Headquarters, and the Branch. Depending on the task, the boundaries between the team were not always clear. The integration of virtual teams into existing hierarchies was not addressed by the framework. Subsequently, the influence of leadership roles and leadership style were not addressed. The board members recognised that there was a need to reflect more on the leadership style. I suggest that moving forward, the leaders should find an adequate leadership style within

the continuum situational leadership (Hersey, Blanchard and Johnson, 2013), which ranges from directing, through coaching and supporting to delegating. And also, to gain awareness of their roles as mentors, facilitators, producers and directors (Jawadi *et al.*, 2013).

Resistance to change and more precisely, the failure to adopt new technology was an emergent factor in the study, which was not explicitly covered by the framework. The framework which focuses on the virtual team fails to address the dynamic aspect of organisational change, which might run alongside the team building. The setting of mutual expectations accompanied by inspiration and motivation might suffice when dealing with short-lived teams, in a context where virtual teamwork is not a novelty. In the context of the research, more attention should have been paid to managing change, and also to detect and deal with resistance to change.

5.2 Limitations and insights

5.2.1 Limitations of the study

The focus of this study was on a single organisation with three teams: the board, the Headquarters and a branch office. The board worked purely as a virtual team, while the teams in the Headquarters and in the Branch did not operate purely as a virtual team. The collaboration between the board, the Headquarters and the Branch was a virtual collaboration. The varying degrees of virtuality and the implication this may have were not studied. The interaction in the virtual teams that were formed with external partners to work on accountancy, marketing, a new web site and the production of a sitcom were not analysed.

During the period of observation, a civil war led to insecurity and a drop in the economic activity in the region. This led to a dramatic drop in the organisation's income and in turn, to high staff turnover. The influence of these factors on the process of virtualisation were not analysed.

Over the period of study, digitalisation in society continuously increased. Evidence for this is the term "Android Generation" (Smith, 2018, p. 47), which was coined in this period to designate the younger generation that is growing up with smartphones. At the same time, other media organisations in the region expanded their activities into the realm of social media. In communication with the staff, we referred to other media houses as examples and role models. The analysis did not take into consideration the influence of these external developments.

Because of my background in engineering, I am biased towards positivism. In an attempt to prove the validity of the framework, I was hoping to find evidence in the data for links between the four constructs, trust, cohesion, virtuality and diversity. This personal bias was in conflict with the epistemology of social constructionism on which the whole study builds. The aim of the study was to use the framework to understand the context and not to use the context to validate the framework.

5.2.2 Insights from the analysis

The analysis shows that in the virtualisation of an organisation, the most difficult part does not lie in the technical aspects but in transforming the organisation's culture. The organisational culture is defined by underlying assumptions, espoused beliefs and values. The culture is visible and palpable in its artefacts, which are organisational structures, processes and behaviours. The narrative and the analysis tell the story of an organisational transformation that was initiated to accommodate new technologies and new processes. As we, the founders of the organisation lead on further towards virtualisation, the new technologies and the new processes with which they come, will become artefacts of the modified organisational culture. Schein and Schein point out that "founders usually have a major impact on how the group initially defines and solves its external adaptation and internal integration problems." (Schein and Schein, 2016, p. 131).

Based on the model developed from Snellman's (2014) four propositions, the analysis highlights mostly social and cultural aspects. Meanwhile, technology plays a minor role. The insight from the analysis is that the process of virtualisation is not just an implementation of new technologies, but beyond that, a transformation of the organisation's culture.

5.3 Actionable knowledge

The research objective was to develop a systematic approach to give us as leaders the necessary understanding to guide us to act on the factors which according to literature, influence virtual teamwork. In literature, I identified the factors that hinder or promote virtual teamwork and established their relationships in a framework. Using the framework to analyse the leaders' actions and their outcomes within my practice showed that the actions and outcomes postulated by the framework were present in my practice. I rely on literature as a warrant for the causal relationships between the different factors, since the data provided weak evidence for the relationships the framework postulated. How are these insights relevant to practice and research?

5.3.1 Actionable knowledge in practice

The framework not only gave me a systematic understanding of the factors which shape virtual teamwork. The framework simultaneously guided me in acting on these factors to steer the organisation in its processes towards increased virtuality. Seen as a management tool, the framework is simple enough for use in everyday situations. The list of actions and their outcomes (Table 3) combined into a framework (Figure 28) is the actionable knowledge created and verified in this research. Being backed by literature and thus by the experience and research of others, I know it is knowledge on which I can rely for my practice.
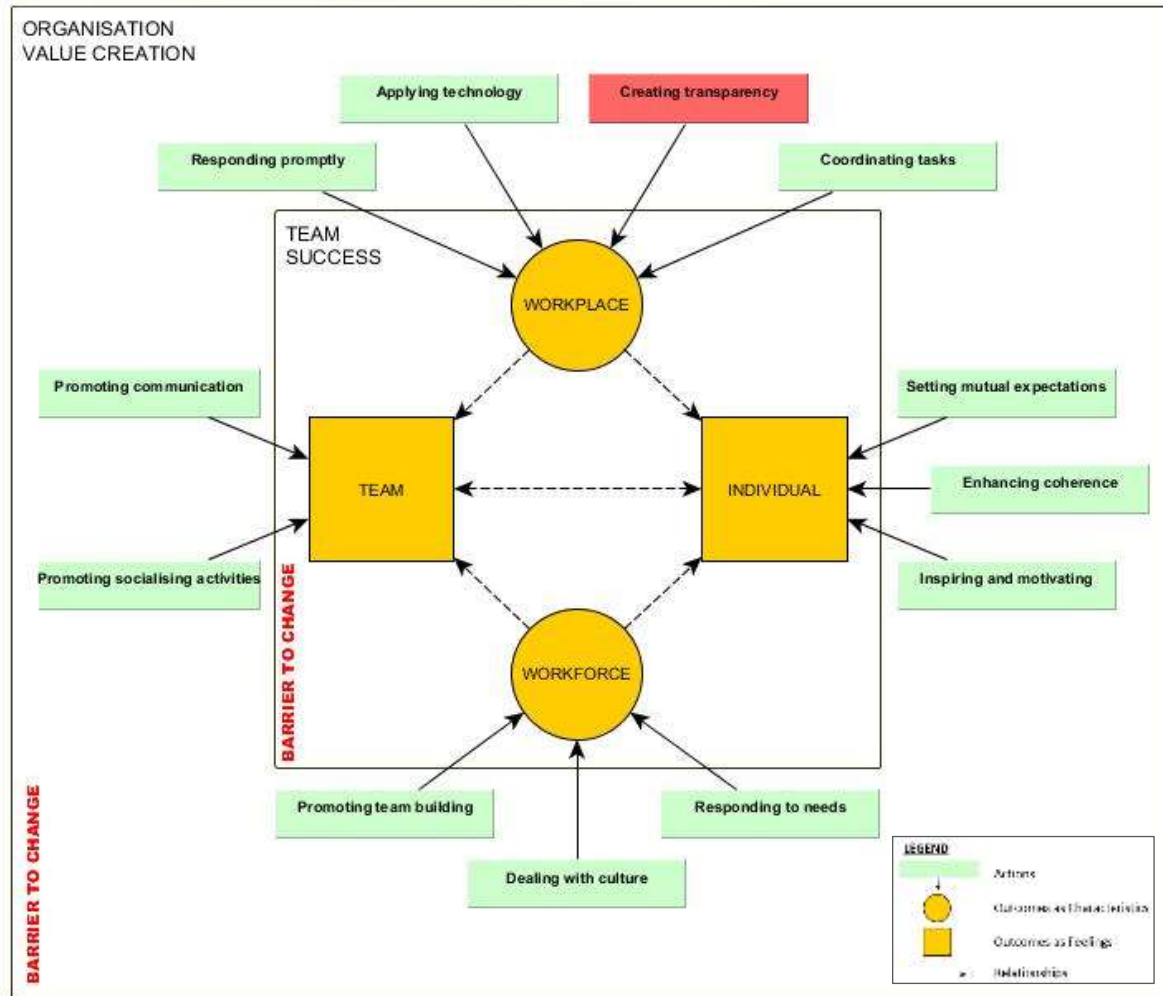
Figure 28: Simplified framework in use
      Elements in red constitute adaptations of the original framework

In my mind, the mental model has become broader to cover situations in the workplace that range from physical contact to purely virtual interaction. Upon reflection, I note that in my everyday use, the framework has evolved. Figure 28 shows this simplified framework. The two emotional factors, trust and cohesion, have been replaced by concerns for the individual and the team. The factors virtuality and diversity have been replaced by concerns about the characteristics of the workplace and the workforce, which makes up the teams. The workplace's degree of virtuality is a characteristic amongst others. In a hybrid setting, I am concerned not only about the technical infrastructure necessary for a virtual workplace but also about the comfort of the furnishing of the physical workplace. In setting up teams, I am concerned about how the workforce, different people with diverse backgrounds, will constitute functioning teams and how I need to interact with them individually. In action, I am aware of the barriers to change.

In everyday situations, the catalogue of actions the framework proposes are less present in my mind. It is the objectives I have for the four factors that determine my actions. To improve the team's or the individual's well-being, I reflect on how I can act on this directly or indirectly by

making adaptations to the workplace or the workforce. In action, I take into consideration the diversity of the workforce and the virtuality of the workplace.

5.3.2 Recommendations for practice and research

The framework's list of recommended actions has been instrumental in understanding my context and in leading transformation. As shown above, the framework as a management tool has the potential to evolve and be adapted to different contexts. I believe leaders in similar situations can make use of the actionable knowledge, which results from this study to understand and address the process of virtualisation.

I see two ways in which the results of the thesis can be applied in practice. The simpler approach would be to focus on applying the list of actions presented in Table 3 in different contexts**Fehler! Verweisquelle konnte nicht gefunden werden.**. I do not favour this approach of a formulaic application of a set of best practice recommendations. The approach I recommend would be to use not just the list of actions but the whole framework (Figure 8) to understand the context and its problems. Simultaneously the framework should guide leaders' actions to improve trust and cohesion while mitigating the negative effects of diversity and virtuality. I do not regard the framework as set in stone. On the contrary, I believe it should be adapted to the situation at hand. This could happen, as shown in (Figure 28).

With the framework and its application being the focus of future research, it would be interesting to take another methodological approach, which has a stronger focus on arriving at solutions and creating tools. A possible methodological approach could be that of design science research, which aims at developing artefacts, models like this thesis' framework, which offer satisfactory solutions to practical problems. It could also be a combination of action research and design science research as proposed by different researchers who advocate for action design research (Collatto *et al.*, 2018; Haj-Bolouri *et al.*, 2018; Cronholm and Göbel, 2019).

6   Recapitulation

"Today, armed with little more than a smartphone, anyone — regardless of where they were born or how much they earn — can start a business, record a music video, crowdfund an invention, take courses with Nobel Prize-winning professors, or even launch a successful campaign for office."

(World Wide Web Foundation, Jellema et al., 2015, p. 4)

The last chapter reflects the transformations, which this AR project has brought about on different levels. And finally, a reflection on the relationship between theory and practice, as I experienced it during the research.

6.1 Reflection on transformation and learning through action

On a personal level and on an organisational level, the two intertwined projects led to transformations and learning that impact the future. The research was a small contribution from practice to building academic theory in the field of virtual teams and virtual leadership.

6.1.1 First Person, the researcher-practitioner

On a personal level, the thesis was a journey, which has changed my way of thinking. Despite the dual role I had as a researcher-practitioner, this has not led to a split personality. Yet, I can observe two changes in my thinking and my behaviour. My thinking has become more analytical. In the interactions with others, I engage more often in sense-making than before.

In the process of the study, I worked with different constructs and models. In line with pragmatism, I used them as tools to make sense of the reality I was researching. Consciously using mental models has become a habit in my daily life. I do not believe that they represent reality. They remain tools that help me make sense of the reality around me by breaking down and simplifying the complexity of reality. I am aware that the simplified view of reality filters out the complexity and subtle nuances of reality. In the meantime, I have no difficulties accepting different mental models side by side. Even if they might seem incommensurate, different perspectives allow me to see different facets of the same reality.

Looking back at my interactions in the business development project, I noticed that early on in the board meetings, I had the tendency to try to underpin the points I was making by quotations and citations from theory. I did not take the time to break them down and adapt them to the context of the discussions because I assumed that the others would be able to follow my train of thought. This approach slowly changed over time.

Now, at the end of the study, I often find myself in the process of sense-giving, in which I relate abstract concepts from theory to the lived reality of those with whom I interact. I use analogies, everyday examples to which everyone can relate, to bring concepts and constructs from their abstract sphere back to the ground.

6.1.2 Second Person, the organisation

Looking back, the organisation took a step forward in the process of virtualisation. Moving towards more virtual communication was a significant transformation of working processes. I felt this change in the way the board members now work together. The interview participants reported that they too observed this change. In general terms, the transformation went in the direction the board had intended.

By not accepting Slack as the platform for communication, data exchange and data storage, the staff did not fully accept the direction which the board had foreseen. Upon reflection, my understanding of both the national and organisational culture prevalent in the context helped me understand why we were not able to attain this aspect of our initial aims. We still regard the introduction of Slack or a similar platform as a potential for improvement. A generalisable insight from this failure is that in transformations, which include the introduction of new IT-tools, adapting organisational culture is a bigger problem than solving technical issues.

Moving on, I will continue using the framework I developed from Snellman's four propositions to drive the process of virtualisation. I will use the simplified version (Figure 28) in the same manner as the balanced scorecard (Kaplan and Norton, 1996, 2007) serves in translating vision and strategy into action. In regular intervals, I can check if the measures the framework proposes are being undertaken and if an improvement of the expected outcomes can be observed.

6.1.3 Third person, the academic audience

On the academic level, the transformation consisted of developing Snellman's four propositions into a framework. Based on the literature research, I established links within this framework between the different constructs that underpin the four propositions. The framework, at the same time, guided action and served to analyse action. Thus, the framework guided my decisions and actions in the business development project "Virtualise". But I never went as far as using it as a recipe or checklist on which I based my decisions and actions. In the analysis phase, I used the framework as an analysis template to examine and make sense of what had happened.

In the context of this AR study, the framework proved to be actionable. It is important to repeat that the project "Virtualise" was far more than the implementation of new technology or software; it was an organisational transformation. In the analysis of the data, the thematic breadth of the framework permitted me to cover the various social factors that accompanied this organisational

transformation towards the virtualisation of the organisation's work processes and internal communication.

The analysis beyond the framework showed that it has some flaws. Compared to Andriessen's DGI-model (Figure 2), it is static and does not take into account the dynamic aspect of a virtual team that develops over time. The analysis beyond the framework revealed that it does not cover the aspect of managing organisational change and the resistance to change. To compensate for this flaw, as described above, the framework should be used at regular intervals to check for changes and potential for improvement within the organisation. Yet, compared to the DGI-model, the thesis' framework is actionable in that it is simpler to use in practice. Like the balanced scorecard, it can serve as a tool for both guidance and control. The DGI-model takes into account the complexity of team development. Furthermore, as a tool for analysis, it is more precise than the thesis' framework. However, for use in daily practice, it is too complex.

Using the DGI-model as an alternative tool to analyse my context and arriving at similar conclusions dissipated my doubts that my methodological approach had produced a self-fulling prophecy. Nonetheless, I am curious what a study of a similar context of similar issues with action design research as methodology would yield.

While working on the literature review, I gained the impression that Snellman's four propositions aptly incorporate a cross-section of the recommendations the literature offers on the leadership of virtual teams. However, the analysis showed that the dynamic aspect of managing organisational change and dealing with resistance to change was not well addressed. Using the Burke-Litwin model of organisational performance and change (**Fehler! Verweisquelle konnte nicht gefunden werden.**) to understand the dynamic side of virtualisation revealed a mismatch between the context of my study and the assumptions in the literature from which the framework was derived. From the literature, I was led to assume that differences in national culture would be at the root of problems stemming from diversity. However, a reflection on managing organisational change and resistance to adopting new technologies revealed that differences in the individuals' needs and values needed to be considered when trying to understand the impact of diversity on virtualisation. Thus, the discussion on diversity moved from differences in national culture to a discussion about the individuals' needs and values within an organisational culture.

6.2 Reflection on models, literature sources and their actionability

As a practitioner, I was in search of best practice solutions. At the start of this AR study, I planned to use Klobas and Jackson's (2007) approach to improve the organisation's degree of virtuality. This approach builds on the Virtual Alignment Model (VAM), which uses information about the envisioned form of virtualisation, the current state of virtuality and the organisation's capabilities for operating virtually to evaluate the organisation's progress towards higher levels of virtuality.

However, this approach demanded too much definition and measurement, whereas I was trying to understand where our problems lie, what goals we should set, and what actions we needed to take to reach them. As a result, I preferred not to work with this approach in the collaborative setting of my study.

The literature research on teams in general, and virtual teams in particular, led me to discover Andriessen's (2002) DGI-model. From the practitioner's perspective and for the context of the business development project, this model helped me understand all I needed to know about the factors, which influence team development. The model proved to be a good tool for analysis and for gaining a holistic understanding. But again, like with the VAM-approach, the DGI-model did not help in finding an actionable to our problem. We had the technology necessary for virtualisation, yet we could not get the teams to work together as virtual teams to attain the organisation's goals.

As a researcher-practitioner in an AR study, I was torn between theory and practice. In my literature research, I was equally torn between these two poles: the quest for understanding on the one hand and the search for actionable knowledge on the other. As a researcher, my curiosity and thirst for knowledge drew me towards literature with academic depth about the different constructs like trust and cohesion with which I worked. However, although articles from academic journals offered depth, they lacked the breadth and the holistic approach I desired as a practitioner. Moreover, the evidence they provided as underpinning for their claims sometimes came from experiments done within the setting of university campuses with students as participants. As a practitioner in the field, can I build on studies with data that is based on the opinions of young students with little practical life experience?

In practice, I was faced with a multi-faceted problem, which I was trying to understand and for which I was searching best practice solutions. Articles in trade journals offered the five, the seven or the ten best actionable solutions to tackle my problem. But then, although they offered a broader approach and ready-made solutions, this literature lacked depth. In the articles, I often missed the evidence as an underpinning to the claims put forward. The authors claim that the right actions would lead to the desired outputs without arguing for the causal link between the input and the output. From an academic perspective, can I trust the naked claim alone when the warrant and evidence needed for a complete argument are missing?

Snellman's (2014) four propositions, which were derived from a thorough literature review, offered a good middle-ground and a starting point between the two poles described above. They had both the breadth and the depth I was looking for. I expanded the four propositions into a framework with causal links between its constituting elements. As a practitioner, the framework guided my actions towards the goals I had set. As a researcher, the framework structured my analysis and helped me understand the reality of the context I was studying.

At the end of the write-up of this thesis, I consulted the newest literature on the topic. I came across a literature review in the form of a thematic analysis by Alaiad, Alnsour and Alsharo (2019). In this review, they criticise the existing body of knowledge on virtual teams. They criticise the artificiality and lack of external validity of most studies because their sample is from university campuses and not from the field. These samples, they hold, are too far away from reality and not diverse enough. "This lack of realism may affect the reliability and generalizability of the results" (ibid. 2019, p. 231). Further, they criticise that most researchers use cross-sectional studies, which cannot pin down causal relationships as compared to longitudinal research designs. Based on their critique of the body of knowledge on virtual teams, the authors propose that future research address amongst others the following topics: model-based research, which explores the relationships between constructs; socialising in teams; the effect of virtualisation on organisational process re-engineering; best practice and challenges of the context of virtual teams; and finally, leadership in virtual settings. I hope my study was able to throw some light on these topics and thus, from practice, contributes to the debate.

6.3 Conclusion

"The reflection-in-action of managers is distinctive, in that they operate in an organisational context and deal with organisational phenomena. They draw on repertoires of cumulatively developed organisational knowledge, which they transform in the context of some unique situation." (Schön, 1992, p. 265)

6.3.1 Reflection-in-action

The quote from Schön (1992) succinctly describes the AR of this thesis, which adapted existing theoretical and organisational knowledge to reflect on the phenomena in my unique context and, based on this, take informed action. This reflective process of transforming knowledge is, at the same time, a process of learning.

The reality of my practice was not a linear process from planning to implementation. It also entailed a continuous reaction and adaptation to feedback. The order of reflection and action depended on the role in which I was. As a practitioner, in general, reflection came before and during action. In the role of the researcher, reflection on action came after action. Enacting this role duality in a simultaneous dialogue with practitioners and academics is my understanding of AR.

Personally, the theoretical knowledge, which I can best make use of in this dual role, is knowledge expressed in the form of a model that can be visualised graphically. Likewise, I can best make sense of organisational processes by representing them in a graphical model. The models do not

fully represent reality, yet they serve to make sense of my context and to structure my thinking, which guides my actions.

6.3.2 The research objective: virtual leadership

The research objective of this thesis was to draw on theory to gain a systematic understanding of the factors that influence the functioning of virtual teams, to guide us as leaders in acting to improve virtual teamwork. Using the framework derived from literature showed that the postulations from theory matched with my practice. Therefore, I argue that the framework, which as a management tool simultaneously helps in understanding, evaluating and steering actions and outcomes, constitutes actionable knowledge for virtual leadership in my context.

I do not entirely agree with Snellman's underlying assumption that virtual leadership, which she terms e-leadership, is inherently different from conventional leadership. However, I agree that the challenges that come with virtuality call for a shift in the behaviour of leaders. Based on my experience in this study done in a hybrid context in which direct contact between the management and the staff existed side by side with virtual contact, the main focus must lie on the choice and use of communication tools.

As mentioned at the beginning and end of Chapter 5, the role of leaders is to set the goals towards which they want the organisation to develop (Schein, 2010; Schein and Schein, 2016). I retained from Stacey (2011) that communication is the only link between the leaders and the organisation members through which goals and structure are conveyed. The members of the organisation then transform the visions into action.

On this basis, I posit that virtual leadership is not much different from conventional leadership. The difference lies only in the communication channels. Besides setting up the physical workplace, we need to pay attention to the ICT based virtual workspace. In communication, the outgoing messages need to be adapted to the ICT channels. The feedback we get in virtual communication is not less rich than in face-to-face communication. However, it is different, and therefore we need to develop a sensitivity for these new communication channels. We need to pay attention to the non-verbal cues in chat communication. They are found in the emojis, the tone of the language used (slang or formal language), the frequency and the volume of communication, and in the topics raised or avoided.

6.3.3 Final chord

The entry quote to this chapter, which claims that all it needs is a smartphone to create a business and be successful, was not true in the context of my research. This claim is a fad from a foundation's glossy report. Just like a pen and a piece of paper do not make a writer, technology alone does not make a business. The organisation of people and processes within the context of

their culture is what makes a business. Even when technology is available, the task of organising processes and people in teams in a virtual workplace to create value together requires leadership.

I close this thesis in self-isolation, hiding away from the Coronavirus. There are parallels to the "Spanish flu" pandemic, which ravaged the world 100 years ago. As a civil servant, I am now working from home. I am in daily contact online with my colleagues from work. On the same computer screen I use to write my thesis at night, I conduct online meetings during the day for the different projects I lead. The transition from working face-to-face in an office building to working online from home took one week. In the project "Virtualise", we strived to achieve this turnaround for more than a year and made only a few tiny steps. This raises the question: what can we learn from this? The entry quote to this chapter suggests that technology is a driver for social change. The rapid turnaround from a physical work environment to a virtual workspace happening right now seems to suggest the contrary. Are social factors the stronger drive for changes in how we work together than is the mere availability of new technology?

I started this thesis with a depressing quote from WW1, which ended 100 years ago, and I end it with an unresolved chord. The last chapter opens with a heroic quote from the internet, which does not hold true in my context. Today like a hundred years ago, media paints a heroic picture of the battles at the front, a picture that diverts the eye away from the struggle in the trenches. Likewise, there is a discrepancy between the reality in the field and how literature presents it in clean theories and neat models. I hope that I was able to give the reader a vivid and structured insight in my report from the trenches, where reality is not as straightforward as models and literature make us believe, where there is not only success but also fear, uncertainty and failure.

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Appendix

Appendix A   Original propositions (Snellman, 2014)

Proposition 1.

E-leaders that with their behavior and actions promote trust through setting mutual expectations, through enhancing coherence, and through inspiring and motivating team members, may improve team success and organizational value creation.

Proposition 2.

E-leaders that adapt their behavior and communication to the requirements of virtual team setting by motivating and inspiring globally dispersed team members to active, mutual and continuous communication through socializing activities, which are known to enhance team cohesion and feelings of togetherness, may improve team success and organizational value creation.

Proposition 3a.

E-leaders that address the physical, operational as well as the cultural distance by reacting and responding quickly to the specific distance-related needs of the geographically dispersed team members, by enhancing feelings of closeness, and by actively applying diversified information and communication technologies, may contribute to successful virtual teams.

Proposition 3b.

E-leaders who actively mitigate time-related stress, caused by strict schedules and deadlines inherent to virtual projects, who address arising issues quickly, and who effectively coordinate team members' tasks over different time zones so that the team members' expertise, talent and competence will be fully harnessed, may improve team success and organizational value creation.

Proposition 4.

E-leaders who take into account and enact diversity in virtual teams by promoting team-building, responding to the specific needs of the different team members, by learning how to handle people from different cultures, and by applying right user-friendly technology to enhance closeness between the diversified team members, and above all, convert the diversity-related challenges into opportunities, may improve team success and organizational value creation

Appendix B   Participant Information Sheets

Committee on Research Ethics

MANAGEMENT

Participant Information Sheet

E-leadership in the virtualisation of business processes in a small enterprise: Action research on challenges and success factors

Introduction

The business development project "Virtualize" has as objective the improvement of working processes at HiTV. We are in the internet age. We want to take advantage of the possibilities of the WorldWideWeb to work more efficiently. Improving on processes and virtualising them as far as possible, should enable us to work together no matter where we find ourselves geographically. This mode of working together aims at creating a better link between the board members and at the same time integrating those working in the branch offices into the working processes at the headquarters.

At the beginning of this business development project, we did some brainstorming sessions in which we elaborated a vision an the objectives and strategies for the project. Based on these discussions, on input from staff members and on input from existing literature on this topic, we are elaborating and introducing some changes as you have noticed. At the end of the project, we will do a debriefing to find out what went well and what still needs to be improved.

Part of the management board is based in Europe and interacts with HiTV virtually using the communication means the internet offers. Likewise, the interaction between the headquarters and the branch office relies mostly on web-based communication. The leaders are not physically present at the job site. This context calls for a new form of leadership called e-leadership. Based on the data and my observations, my research studies the challenges and success factors of this new form of leadership.

In my research project toward obtaining a Doctorate in Business Administration, I look at leadership in the context of virtualisation. The project "Virtualize" serves as a source of data for my research. The data I gather and later on analyse are the protocols of our exchanges on Slack and WhatsApp, personal observations of and reflections based my participation in the ongoing business development project noted down in a research journal and finally interviews with those involved in the business development project. The interviews will take place after the debriefing of the first cycle of the project "Virtualize". I gather data in which I hope to be able to identify success-factors for leadership in a virtual context. I am looking at factors like trust, timeliness, togetherness and diversity in the new way of working together.

As proprietor and researcher, I will be in the dual role of contributing to business development and at the same time to academic research. In the role of proprietor and board member, I contribute to the strategic management of the organisation through the weekly online meetings with the other members of the board. In the role of the researcher, I seek to understand the social aspects of leadership and working together in a virtual context. The dual role leads to conflicts of interest. I could misuse my position as proprietor to force staff members to participate in the research project or I could use the research project as an excuse to obtain information that will be used for business purposes. Participating in the interviews is voluntary, and the questions asked will seek to inform me on your perception of the factors mentioned above: trust, timeliness, togetherness and diversity in virtualisation.

The findings should help HiTV improve its business processes and be more efficient, most especially when it comes to working together across geographical distances. The knowledge created will be set to use in the opening of further branch offices. The results of the research might one day help others around the globe who face the challenges of e-leaderships. All management and staff members are invited to take part in the interviews at the end of the project "Virtualize".

1. Why are you being asked to take part in the research?

Besides my personal observations and my interpretation of the exchange that has been going on through Slack and WhatsApp, I wish to get the opinion of everyone in the organisation. I would like you to participate in two ways: by giving your consent for the use of your contributions on Slack and WhatsApp, and by taking part in an interview

2. What will you have to do if you agree to take part in the research?

Your participation is voluntary. If you agree to take part in the research, then reply to this e-mail and return the completed the attached Participant Consent Form, in which you indicate your consent by ticking the boxes and signing the document.

As participant, you will later on receive the interview questions per e-mail. You have the option of replying in written form per e-mail or by taking participating in an interview on Skype.

As leaders within the organisation, you also practice e-leadership. After the analysis of the data, I would like to discuss my interpretation of the results with you and get your opinion on this.

3. How much of your time will participation involve?

Answering the interview questions should take about an hour. Discussing the results of the research within one of our weekly board meetings should also take about an hour.

4. Will your participation in the project remain confidential?

I observe and will analyse the communication that takes place during the business project "Virtualize" using chat protocols generated by Slack and Whatsapp as source of data. The only other person who will see get to see this data after it is anonymised is my research supervisor. You can be assured that if you take part in the project, it will not be possible to identify you from the data. The name of the organisation, as well as your name will not be mentioned in any publication.

5. What are the advantages of taking part?

There is no direct compensation for the participation in the research. Taking part in the interview offers you the opportunity to reflect on the new way of working together that has been introduced.

6. Are there any discomforts, risks or disadvantages of taking part?

Maybe you are not always comfortable talking about your personal views, especially when they conflict with those of others. To avoid conflict and minimise discomforts, the interview will be based on a questionnaire with open questions carefully chosen to focus on your perceptions of virtualisation.

You are free to choose between answering the questions orally on Skype or to answer them anonymously in written form. You are free to skip questions that make you uncomfortable.

7. What happens to my contributions?

Your name will be removed from all contributions to Slack or WhatsApp as well as from the interview transcripts. This data will then be analysed using computer software. The analysis aims at filtering out elements that pertain to virtual leadership.

8. What happens if there are conflicts?

Should there be conflicts which cannot be solved in dialogue between me in the role as researcher and you in the role as a research participant, then you can resort to the help of the university's Participant Advocate. (001-612-312-1210 or liverpoolethics@ohecampus.com) or the Research Supervisor whose address is indicated below.

9. What happens now?

You can now decide on how you want to participate in the research and communicate this decision by filling out and returning the Participant Consent Form.

10. What happens in the end?

At the end of the project, all the members of HiTV will be informed about the results of the research.

Researcher:	Research Supervisor:
Candidate DBA Immanuel Dah, University of Liverpool, U.K.	Prof. Dr. Jane E. Klobas, University of Liverpool, U.K.
immanuel.dah@online.liverpool.ac.uk	jane.klobas@online.liverpool.ac.uk

Committee on Research Ethics

STAFF

Participant Information Sheet

E-leadership in the virtualisation of business processes in a small enterprise: Action research on challenges and success factors

Introduction

The business development project "Virtualize" has as objective the improvement of working processes at HiTV. We are in the internet age. We want to take advantage of the possibilities of the WorldWideWeb to work more efficiently. Improving on processes and virtualising them as far as possible, should enable us to work together no matter where we find ourselves geographically. This mode of working together aims at creating a better link between the board members and at the same time integrating those working in the branch offices into the working processes at the headquarters.

At the beginning of this business development project, we did some brainstorming sessions in which we elaborated a vision an the objectives and strategies for the project. Based on these discussions, on input from staff members and on input from existing literature on this topic, we are elaborating and introducing some changes as you have noticed. At the end of the project, we will do a debriefing to find out what went well and what still needs to be improved.

Part of the management board is based in Europe and interacts with HiTV virtually using the communication means the internet offers. Likewise, the interaction between the headquarters and the branch office relies mostly on web-based communication. The leaders are not physically present at the job site. This context calls for a new form of leadership called e-leadership. Based on the data and my observations, my research studies the challenges and success factors of this new form of leadership.

In my research project toward obtaining a Doctorate in Business Administration, I look at leadership in the context of virtualisation. The project "Virtualize" serves as a source of data for my research. The data I gather and later on analyse are the protocols of our exchanges on Slack and WhatsApp, personal observations of and reflections based my participation in the ongoing business development project noted down in a research journal and finally interviews with those involved in the business development project. The interviews will take place after the debriefing of the first cycle of the project "Virtualize". I gather data in which I hope to be able to identify success-factors for leadership in a virtual context. I am looking at factors like trust, timeliness, togetherness and diversity in the new way of working together.

As proprietor and researcher, I will be in the dual role of contributing to business development and at the same time to academic research. In the role of proprietor and board member, I contribute to the strategic management of the organisation through the weekly online meetings with the other members of the board. In the role of the researcher, I seek to understand the social aspects of leadership and working together in a virtual context. The dual role leads to conflicts of interest. I could misuse my position as proprietor to force staff members to participate in the research project or I could use the research project as an excuse to obtain information that will be used for business purposes. Participating in the interviews is voluntary, and the questions asked will seek to inform me on your perception of the factors mentioned above: trust, timeliness, togetherness and diversity in virtualisation.

The findings should help HiTV improve its business processes and be more efficient, most especially when it comes to working together across geographical distances. The knowledge created will be set to use in the opening of further branch offices. The results of the research might one day help others around the globe who face the challenges of e-leaderships. All management and staff members are invited to take part in the interviews at the end of the project "Virtualize".

1. **Why are you being asked to take part in the research?**

Besides personal observations and my interpretation of the exchange that has been going on through Slack and WhatsApp, I wish to get the opinion of everyone in the organisation. I would like you to participate in two ways: by giving your consent for the use of your contributions on Slack and WhatsApp and by taking part in an interview

2. **What will you have to do if you agree to take part in the research?**

Your participation is voluntary. If you agree to take part in the research, then reply to this e-mail and return the completed the attached Participant Consent Form, in which you indicate your consent by ticking the boxes and signing the document.

As participant, you will, later on, receive the interview questions per e-mail. You have the option of replying in written form per e-mail or by taking participating in an interview on Skype.

3. **How much of your time will participation involve?**

Answering the interview questions should take about an hour.

4. **Will your participation in the project remain confidential?**

I observe and will analyse the communication that takes place during the business project "Virtualize" using chat protocols generated by Slack and Whatsapp as source of data. The only other person who will see get to see this data after it is anonymised is my research supervisor. You can be assured that if you take part in the project, it will not be possible to identify you from the data. The name of the organisation, as well as your name will not be mentioned in any publication.

5. **What are the advantages of taking part?**

There is no direct compensation for the participation in the research. Taking part in the interview offers you the opportunity to reflect on the new way of working together that has been introduced.

6. **Are there any discomforts, risks or disadvantages of taking part?**

Maybe you are not always comfortable talking about your personal views, especially when they conflict with those of others. Maybe you are not always comfortable critiquing others. To avoid conflict and minimise discomforts, the interview will be based on a questionnaire with open questions carefully chosen to focus on your perceptions of virtualization.

You are free to choose between answering the questions orally on Skype or to answer them anonymously in written form. You are free to skip questions that make you uncomfortable.

7. **What happens to my contributions?**

Your name will be removed from all contributions to Slack or WhatsApp as well as from the interview transcripts. This data will then be analysed using a computer software. The aim of the analysis is to filter out elements that pertain to virtual leadership.

8. **What happens if there are conflicts?**

Should there be conflicts which cannot be solved in dialogue between me in the role as researcher and you in the role as a research participant, then you can resort to the help of the university's Participant Advocate. (001-612-312-1210 or liverpoolethics@ohecampus.com) or the Research Supervisor whose address is indicated below.

9. **What happens now?**

You can now decide on how you want to participate in the research and communicate this decision by filling out and returning the Participant Consent Form.

10. **What happens in the end?**

At the end of the project, all the members of HiTV will be informed about the results of the research.

Researcher:
Candidate DBA Immanuel Dah, University of Liverpool, U.K.
immanuel.dah@online.liverpool.ac.uk

Research Supervisor:
Prof. Dr. Jane E. Klobas, University of Liverpool, U.K.
jane.klobas@online.liverpool.ac.uk

Appendix C   Participant Consent Form

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Committee on Research Ethics

Participant Consent Form

E-leadership in the virtualisation of business processes in a small enterprise: Action research on challenges and success factors

This form works in MS Word 2010 or newer. Click on boxes for consent.
Use the drop-down calendar to enter a date. Then, fill in your name.

1. I confirm that I have read and have understood the participant information sheet dated 10-Mar-18 for the above research. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to skip them. ☐

3. I agree that my anonymised contributions on Slack and WhatsApp may be used as part of this study. I understand that this data will be used uniquely for the research and will neither be shared with third parties nor with the organisation's management. ☐

4. I agree that my anonymised answers to the interview questions may be used as part of this study. I understand that this data will be used uniquely for the research and will neither be shared with third parties nor with the organisation's management. ☐

5. I understand that all research data will be anonymised, meaning that my name will be removed from all protocols (Slack, WhatsApp, interviews) before data analysis. ☐

6. I understand that reports, publications and other research outputs will be anonymised, meaning that neither my name nor the name of my organisation will be mentioned. ☐

7. I agree that my contributions on Slack and WhatsApp be used for the research. ☐

8. I agree to take part in an interview. ☐

_X_ _____   _X_ _____

Date   Name

Researcher:
Candidate DBA Immanuel Dah
University of Liverpool, U.K.
immanuel.dah@online.liverpool.ac.uk

Supervisor:
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University of Liverpool, U.K.
jane.klobas@online.liverpool.ac.uk

Participant Consent Form rev   10-March-18   1

Appendix D   Interview Questions

Doctorate in Business Administration

Interviews

Immanuel Dah, H00036437

Working Title:

Challenges and Obstacles in Leading

Virtualisation in a Small Enterprise

Introduction

The business development project "Virtualize" has as objective the improvement of working processes at HiTV. We are in the internet age. We want to take advantage of the possibilities of the WorldWideWeb to work more efficiently. Improving on processes and virtualising them as far as possible, should enable us to work together no matter where we find ourselves geographically. This mode of working together aims at creating a better link between the board members and at the same time integrating those working in the branch offices into the working processes at the headquarters.

At the beginning of this business development project, we did some brainstorming sessions in which we elaborated a vision, as well as the objectives and strategies for the project. Based on these discussions, on input from staff members and input from existing literature on this topic, we are elaborating and introducing some changes as you have noticed. Last year in June, we did a do a debriefing session to find out what went well and what still needs to be improved. We are still working on improvements.

The findings should help HiTV improve its business processes and be more efficient, most especially when it comes to working together across geographical distances. The knowledge created will be set to use in the opening of further branch offices. The results of the research might one day help others around the globe who face similar challenges when working together through the internet.

Thank you for agreeing to take part in the interview. The interview we will be doing has five parts:

1. Virtual communication
2. Being different
3. Sticking together
4. Trusting each other
5. Conflicts

You have read the consent form, and given your consent. I will be recording this interview since I cannot write as fast as you speak. Are you comfortable with that?

Should you feel uncomfortable about answering certain questions, then please make this known, and we will skip them.

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1. Virtual communication

Increasingly we work together without actually being face to face in the same room. We work together through the means the internet has to offer. In the first part, we will talk about how this virtual communication affects the job site.

Question	Theme
1. Comparing with the way you worked before, what in your eyes, are the advantages of working together using the internet as we are doing?	General question on team virtuality.
2. Comparing with the way you worked before, what in your eyes, are the disadvantages of working together using the internet as we are doing?	General question on team virtuality.
3. What adjustment where necessary for you to use WhatsApp, for work-related communication?	Coordinating tasks
4. How does the new way of communication help you in organising the work you need to do together with others?	Coordinating tasks
5. Are you satisfied with the quality of the responses you get from your colleagues? Follow-up: How? Why? Give an Example? Relate to an Event?	Responding promptly
6. Are you satisfied with the promptness of responses you get from your colleagues? Follow-up: How? Why? Give an Example? Relate to an Event?	Responding promptly
7. Do you think your responses to others are timely?	Responding promptly
8. Is there anything else you want to say about the new way of working together?	Open question on team virtuality

2. Being different

At the job site, we have diversity: we have men and women, people from different tribes, with different educational backgrounds, etc. In the next part of the interview, we will discuss how this diversity affects the job site.

Question	Theme
9. What advantages do you see in diversity at the job site? (diversity: the fact that your co-workers have a different background).	General question on team diversity.
10. What disadvantages do you see in diversity at the job site?	General question on team diversity.
11. Can you recall occasions where others took into account that you are different from them? Please describe this.	Dealing with culture and responding to members' needs
12. Now, the other way round. Can you recall occasions where you took into account that others at work are different from you? Please describe this.	Dealing with culture and responding to members' needs
13. Despite the distance to other co-workers in other branches and despite the diversity, do you view them as members of the same team? Follow-up: What makes you say so?	Promoting team building.
14. What has made you feel less different from team members from other branches? Where or how can technology be used to improve these feelings?	Applying technology
15. Between us two there are also differences. I am at the same time a member of the board and a researcher. I am curious, in what role do you see me?	Role duality of the researcher / practitioner

3. Sticking together

The next questions are about working together as a team

Question	Theme
16. Which events have made you feel like a team member and made you feel close to the other staff members? Follow-up: What about members from other branches?	Promoting socialising activities
17. Has communication through WhatsApp, as we have been practising, give you the feeling of being closer to staff in branch offices? Follow-up: How? Why? Event?	Promoting communication
18. What are your thoughts on team-work and togetherness in the house?	Open question on cohesion

4. Trusting each other

The questions in this part of the interview deal with the issue of trust in our virtual job site.

Question	Theme
19. How is the level of trust different towards other team members you see on a daily basis as compared to those from branch offices, whom you rarely meet?	General question on trust
20. Who or what at the job site inspires or motivates you? Follow-up: How? Why? Event? Does that build trust?	Inspiring / Motivating
21. What according to you are the goals of the TV house? Follow-up: Where does this come from? Your idea? Someone else's? Vision statement?	Setting mutual expectations
22. How do you contribute to achieving these goals?	Enhancing coherence
23. Do we have an atmosphere of trust in the house? Follow-up: How? Why? Give an Example? Relate to an Event?	Open question on trust

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5. Conflicts

Where many people work together, people with different opinions are bound to meet. This can result in conflicts. That is a normal thing. It shows that people have a passion for what they are doing. In this last part of the interview, I want to look at how the new way of working relates to the conflicts.

Question	Theme
24. In what situation have you experienced difference and conflicts at work? Follow-up: Tell me more. How? Why? Give an Example? Relate to an Event?	Identifying critical events
25. According to you, what was the reason for the conflict?	Identifying critical events
26. Where do you spot the difference between the persons who had a conflict? Follow-up: - How did these differences influence the level of trust towards the team? - How did these differences influence your feeling of being part of the team?	- Relationship between diversity and trust. - Relationship between diversity and cohesion.
27. Would the conflict you just identified have evolved differently had it been carried out face to face? Follow-up: - How did the fact that the conflict was carried out through WhatsApp influence trust between you and XY? - How did the fact that the conflict was carried out through WhatsApp influence the team-spirit?	- Relationship between virtuality and trust. - Relationship between virtuality and cohesion.
28. We have reached the end of the interview. Is there anything you would like to add from your side?	Open question.

Thank you for taking time to participate in this interview. It is much appreciated.

Appendix E   NVivo Codebook

Name	Description
1 Propositions	
P1 Feelings of Trust	Proposition 1: By inspiring, motivating, setting mutual expectations and enhancing coherence in virtual teams, e-leaders promote trust. This may improve team success, which in turn may improve organisational value creation.
P2 Feelings of Cohesion	Proposition 2: By motivating and inspiring virtual teams to active, mutual and continuous communication and socialising activities adapted to the settings, e-leaders promote team cohesion. This may improve team success, which in turn may improve organisational value creation.
P3 Team Virtuality	Proposition 3: By responding promptly with diversified use of ICT to address issues arising in virtual teams due to distance in space, and subsequent operational and organisational distance, e-leaders enhance a feeling of closeness. By effectively coordinating virtual members' tasks to promptly address issues arising in virtual teams due to distance in time of virtual teams working in different times zones, as well as to mitigate stress related to tight schedules and deadlines inherent to virtual project
P4 Team Diversity	Proposition 4: By learning how to deal with people from different cultures, by responding to specific needs of team members, by promoting team building and by applying the right user-friendly technology to enhance closeness in virtual teams, e-leaders reduce the negative effects of cultural distance and make use of the opportunities that diversity offers. This may both improve team success, which in turn may improve organisational value creation.
2 Actions	
2.1 Proposed Action	Actions described in Snellmann's Framework
A1A Setting mutual expectations	Proposition 1 (reformulated): By setting mutual expectations [„„] in virual teams e-leaders promote trust. This may improve team success, which in turn may improve organisational value creation.

Appendix
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Name	Description
A1B Enhancing coherence	Proposition 1 (reformulated): By setting [...] enhancing coherence [...] in virtual teams, e-leaders promote trust. This may improve team success, which in turn may improve organisational value creation.
A1C Inspiring and motivating	Proposition 1(reformulated): By [...] inspiring and motivating, in virtual teams, e-leaders promote trust. This may improve team success, which in turn may improve organisational value creation.
A2A Promoting communication	Proposition 2 (reformulated): By motivating and inspiring virtual teams to active, mutual and continuous communication [...], e-leaders promote team cohesion. This may improve team success, which in turn may improve organisational value creation.
A2B Promoting socialising activities	Proposition 2 (reformulated): By motivating and inspiring virtual teams to [...] socialising activities adapted to the settings; e-leaders promote team cohesion. This may improve team success, which in turn may improve organisational value creation.
A3A Responding promptly	Proposition 3 (reformulated): By responding promptly with diversified use of ICT to address issues arising in virtual teams due to distance in space, and subsequent operational and organisational distance, e-leaders enhance a feeling of closeness. These measures may both improve success in virtual teams, which in turn may improve organisational value creation.
A3B Coordinating tasks	Proposition 3 (reformulated): By effectively coordinating virtual members' tasks to promptly address issues arising in virtual teams due to distance in time of virtual teams working in different times zones, as well as to mitigate stress related to tight schedules and deadlines inherent to virtual projects, e-leaders will fully harness the team members' expertise, talent and competence. These measures may both improve success in virtual teams, which in turn may improve organisational value creation.
A4A Dealing with culture	Proposition 4 (reformulated): By learning how to deal with people from different cultures [...] e-leaders reduce the negative effects of cultural distance and make use of the opportunities that diversity offers. This may both improve team success, which in turn may improve organisational value creation.

Name	Description
A4B Responding to members' needs	Proposition 4 (reformulated): By [...] responding to specific needs of team members [...] e-leaders reduce the negative effects of cultural distance and make use of the opportunities that diversity offers. This may both improve team success, which in turn may improve organisational value creation.
A4C Promoting team building	Proposition 4 (reformulated): By [...] promoting team building [...] e-leaders reduce the negative effects of cultural distance and make use of the opportunities that diversity offers. This may both improve team success, which in turn may improve organisational value creation.
A4D Applying technology	Proposition 4 (reformulated): By [...] applying the right user-friendly technology to enhance closeness in virtual teams, e-leaders reduce the negative effects of cultural distance and make use of the opportunities that diversity offers. This may both improve team success, which in turn may improve organisational value creation.
2.2 Recorded Action	Actions that are not mentioned in the propositions.
Practice to theory	Working on the thesis
Theory to practice	Literature informing practice. This point relates to the role duality of the researcher-practioner.
3 Outcomes	
3.1 Outcomes Expected	Outcomes described in the propositions.
O1 Feelings of Trust	
O2 Feeling of closeness	In Proposition 2 this is the ultimate objective that should result from taking the actions proposed. In Propositions 3 and 4 this is an intermediate objective that should result from taking the actions proposed.
O4 Harnessing the team	In Proposition 3, fully harnessing the team members' expertise, talent and competence is described as an intermediate result of task coordination.
O5 Profiting from diversity	In Proposition 4 converting the diversity related challenged into opportunities is an intermediate objective.

Appendix

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Name	Description
UO1 Team success	All propositions expect an improvement of team success as outcome from the actions taken.
UO2 Organisational value creation	All propositions expect an improvement of the organisational value creation as outcome from the actions taken.
3.2 Outcomes recorded	Outcomes and actions that were recorded and observed, which do not clearly match what is described in the four propositions.
R1 Virtual team work	Work related communication amongst the staff.
Data transfer	Issues arising around data transfer from the branch to the headquarters.
Technical problems	Issues arisiong around technical problems
Work related communication	Staff members communicating amongst each other on work related issues
R2 Team dynamics	Evidence of the team growing mature
Contributing ideas	This outcomes can be linked to the harnessing of the team's competence and talent, which is and expected as outcome (O4).
Self coordination	Work related self coordination within the team.
Team adaptation	Adapting to change with the team.
R3 Spamming	Communication that is not related to work. In this catgory fall posts like jokes, funny videos and religious messages. Compared to posts coded under "Feeling of closeness" (O3), these posts are merely forwarded by the sender,
4 Leader Roles	Jawadi et al., (2013) identify four different roles which virtual leaders perform: mentoring, facilitating, producing and directing.
4.1 Mentoring	Mentor-leaders encourage individual development, support legitimate requests and develop awareness of individual needs.

Appendix
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Name	Description
4.2 Facilitating	Facilitator-leaders show concern for their team members and encourage self-expression and participation.
4.3 Producing	The leader-producer initiates actions that encourage and facilitate the effective completion of work.
4.4 Directing	The director-leader's concerns are goal definition, task repartition, and clarification and specification of expectations.
4.5 Role duality Researcher - Practitioner	Evidence of role duality Researcher - Practitioner.