AN ANALYSIS OF VIRTUAL TEAMS WORKING IN HIGHER EDUCATION ONLINE PROGRAMME MANAGEMENT PROJECTS IN SOUTH AFRICA

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DECLARATION

"I declare that the field study hereby submitted for the Magister in Business Administration at the UFS Business School, University of the Free State, is my own independent work and that I have not previously submitted this work, either as a whole or in part, for a qualification at another university or at another faculty at this university.

I also hereby cede copyright of this work to the University of the Free State"

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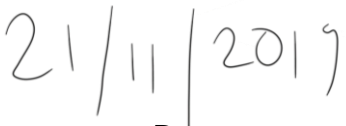

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This was a long, hard journey with many challenges and changes along the way. The focus of this study being “team” is so appropriate to describe my experience, for I have many team members to thank.

My team leader: I am blessed and have my team leader, God, to thank for bringing along just the right people at the right time to lift me up and encourage me.

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To my HEPSA colleagues and the participants from universities across South Africa who took part in this study, thank you! May we daily achieve more because of the way we work as a team.

“Coming together is a beginning. Keeping together is progress. Working together is a success.” - Henry Ford

LIST OF ABBREVIATIONS

HE	Higher Education
HEI	Higher Education Institution
HEP	Higher Education Partners
HEPSA	Higher Education Partners South Africa
ICT	Information Communication Technology
IPO	Input Process Output
IT	Information Technology
KSA	Knowledge, skills and abilities
OMP	Online Programme Management
SA	South Africa
UFS	University of the Free State
VT	Virtual Team

ABSTRACT

Virtual teams (VTs) achieve shared goals despite not being co-located, by relying on electronic communication media. The use of VTs transpires into higher education (HE), allowing them to participate and compete in an ever-changing world. In this study, the focus is on VTs that work on higher education projects in partnership with an online programme management (OPM) company in South Africa (SA). It provides the opportunity to study VTs not only in a single organisation, but between different organisations and at different levels between organisations. The study aims to investigate VTs, in particular the advantages, challenges and success factors that contribute towards the performance of VTs. The study was an explorative qualitative case study, making use of nine semi-structured interviews followed by a thematic analysis of the data. The experience and opinions of participants in this study were, in general, not surprising, and aligned with those documented in previous research studies. The participants did, however, confirm that VTs in combination with working virtually across two different organisations (Higher Ed Partners SA and HE institutions) present unique challenges and advantages. The interviewees shared challenges that all VTs face, e.g. the absence of face-to-face contact, challenges caused by technology due to bandwidth issues and unstable internet connections, and barriers to communication and the building of trust. However, circumstances beyond their control such as load shedding and on-campus student riots added to a more complex work environment. The participants did, despite the challenges, indicate that these challenges are not insurmountable and that they would prefer to continue working as VTs due to the advantages offered.

Keywords:

Teams, virtual teams, advantages, challenges, success criteria, qualitative study, semi-structured interviews, thematic analysis, OPM, higher education, South Africa

CHAPTER 1 – Introduction and Problem Statement

1.1 Introduction and background

Teams are a universal part of most organisations (Hackman, 2002; Marlow, Lacerenza & Salas, 2017). Generally, teams are groups of individuals who are brought together to achieve specific outcomes or accomplish certain tasks. The combination of globalisation and the rapid development in information and communication technologies (ICTs) and more specifically, electronic communication media, encourages the growth of virtual teams to become commonplace in contemporary organisations (Berry, 2011; Boudreau, 2012; Gilson *et al.*, 2015; Penarroja *et al.*, 2015).

Although the term "virtual teams", hereafter referred to as VTs, has been widely used, Jimenez *et al.* (2017) state that neither researchers nor practitioners have reached a consistent understanding of VTs, with different authors applying their own criteria for defining VTs. White (2014:111) states: "All virtual teams exist where one or more members of the team make some or all of their contributions from a different location and/or a different time zone and/or a different national culture than other members of the team." VTs have specific elements in common, namely the team members are geographically dispersed, have limited or no face-to-face contact and work interdependently through the use of electronic communication media.

VTs as a global trend (RW3 CultureWizard, 2016) also transpire into higher education institutions (HEI) that wish to participate and compete in the ever-changing world (Jimenez *et al.*, 2017). Studies have been conducted that highlight the value of VTs for teaching and learning and how they have changed the face of traditional education (Çakiroğlu, 2014; Sangrà & González-Sanmamed, 2016). Little is known about how universities use VTs to support project teams that are focused on increasing access and revenue. In this study, the focus will not be on VTs used for teaching and learning, but on VTs that work on higher education projects driving access to quality online learning.

Global and South African universities, keen to drive access and expand their ability to offer online programmes, require additional capacity and investment. Capacity building can include the expansion of in-house resources or it can be done by partnering with a private company that specialises in supporting universities to develop, market and manage their online programmes. Companies providing such services and partnerships are known as online programme management (OPM) companies (Czerniewicz & Walji, 2019; Hill, 2018; Kronk, 2019).

Higher Ed Partners (HEP), operating in Canada, Morocco, South Africa (SA) and the United Kingdom (UK), and its sister companies, Academic Partnerships and Ilumno Holdings, together are among the leaders in OPM for higher education globally (Hill, 2018; McKenzie, 2018). The aim of the partnership between HEP and partner universities is to increase enrolments and maintain positive student outcomes for programmes that are delivered online. The Higher Ed Partners SA (HEPSA) team works in collaboration with SA universities to develop customised plans for successful programme implementation and launch. HEPSA's integrated mixed model functions across six vertical teams working interdependently, namely partner enablement, marketing, enrolment, retention, information technology (IT) and academic services. Table 1.1 highlights the primary functions of each of the vertical teams.

Table 1.1 HEPSA verticals and their primary functions

Vertical	**Primary function**
Partner Enablement	Collaborates with university partners to prepare their systems, processes and teams for online enrolment growth and to ensure the best student experience.
Academic Services	Supports partner university faculty and instructional design teams with best practices in the design, development and optimisation of their online courses to deliver a rigorous, engaging and high-quality student experience.

Marketing Services	Develops and executes proprietary, data-driven targeting strategies to attract qualified students through a combination of integrated digital, traditional and field-based marketing activities.
Enrolment Services	Guides prospective students from initial programme inquiry through the application process to programme enrolment on behalf of each university partner.
Retention Services	Supports enrolled students from course to course through graduation, as an extension of the university.
IT Services	Supports all HEPSA services with critical evidence-based insights that drive strategies and daily tactics related to the student experience, performance and efficiency.

Source: HEPSA (2018)

The six teams are co-dependent in guiding the university to support large-scale enrolments, strong student outcomes, and a positive experience for students and academic staff. HEPSA has been partnering with SA universities since 2016 and when this study was conducted, it was in partnership with seven universities (HEPSA, 2018).

Selected teams are strategically established across the six verticals (Refer to Fig. 1.1) for each of the individual universities according to their specific needs. These teams consist of both HEPSA and university staff. Given that HEPSA and its partner universities are geographically dispersed, these teams operate primarily as VTs using electronic communication media, while face-to-face meetings are minimal. It is therefore essential to consider the factors that contribute towards the success of these VTs and to avoid factors that contribute to VT challenges.

VTs are often treated in the same ways as traditional teams, but there are vital differences that need to be understood and managed (Morris, 2008). Hosseini *et al*. (2015) are of the opinion that the requirements of a team operating virtually do differ from those of face-to-face teams. The assumption can therefore not be made that

because HEPSA and its partner universities have been successful in the past with teamwork, they will be successful in working collaboratively as VTs. It is critical for HEPSA or any organisation dependent on VTs to better understand the factors that contribute to or hinder their successful functioning. A better understanding of these factors will provide the different teams the opportunity to reflect on and potentially improve their performance and ultimately assist HEPSA and its partner universities to broaden access to quality online learning and revenue.

The work of HEPSA and its partner universities provides a unique context for the research, because the VTs involved combine the following attributes:

- Teams consist of members from a higher education institution and a private company working collaboratively towards a shared goal.
- Teams consist of members from entities across the university, e.g. Student Enrolment, Academic Staff, Marketing, Information and Communication Services, Finances, Student Academic Services, etc.
- VT members, who cannot always meet face-to-face, create online learning solutions for students who cannot attend class on campus or meet their lecturer(s) face-to-face. VTs provide insight into what an online student might experience and provide an opportunity for lecturers to gain experience in being virtual.
- The universities that partnered with HEPSA and which participated in the research are geographically dispersed across SA.
- The HEPSA team is geographically dispersed with an international footprint.

Using HEPSA as a case study of an OPM company and its partnership with SA universities, this study aims to investigate VTs, and, in particular, the advantages, challenges and success factors that contribute towards the effective performance of VTs associated with working in higher education OPM projects in SA. The following figure is a graphic representation of the research study and its objectives. This framework will be presented in more detail towards the end of Chapter 2.

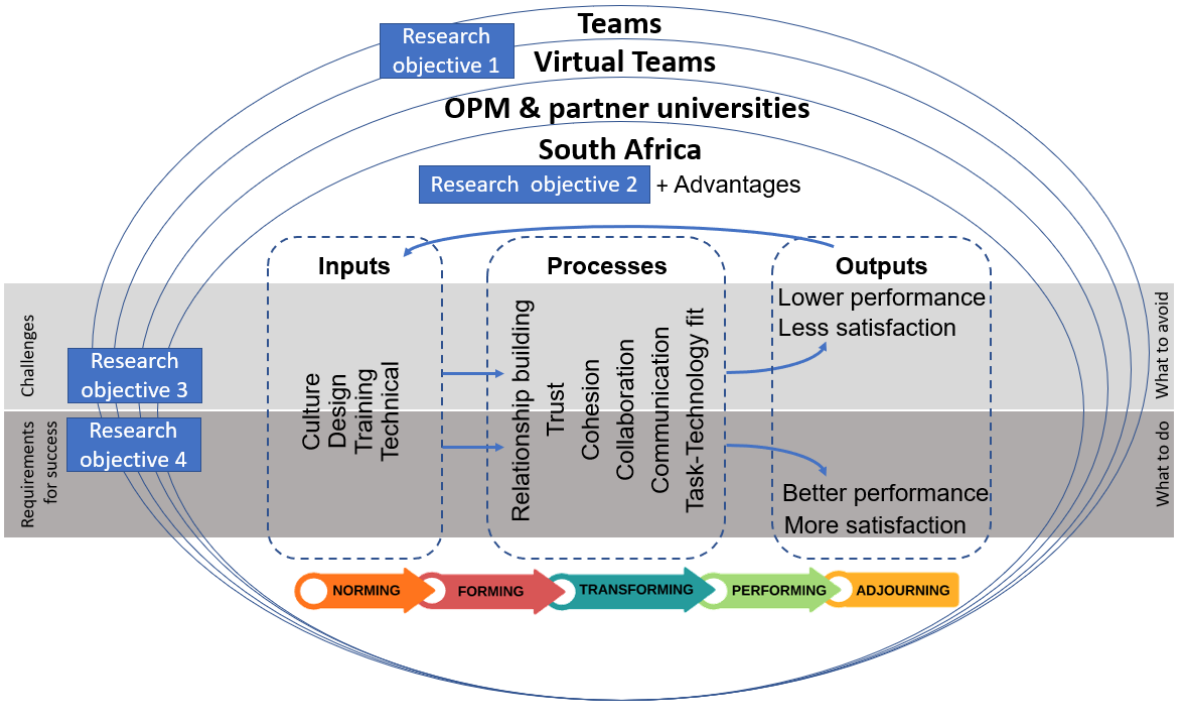

Figure 1.1 Graphical presentation of the research study

1.2 Problem statement

Ineffective teams could delay project implementation, leading to a financial and reputational risk for both HEPSA and the partner university. An example of the impact of an ineffective team in the context of the research could be: If all vertical teams except the marketing team function effectively, then all teams can be ready for the launch of a new programme while the marketing team is not, which could result in low enrolment numbers for the programme. The ratio between lecturer and students may then not be optimal, leading to a financial loss for the institution. Any of these verticals not operating optimally could have an impact on the success of the programmes being delivered.

1.3 Research objectives

The following primary and secondary objectives are set for this study.

1.3.1 Primary research objective

The primary objective of the study is to analyse virtual teams working in higher education OPM projects in South Africa.

1.3.2 Secondary research objectives

The secondary objectives of this study are to:

- Explore the terms and concepts related to teams and VTs.
- Examine the advantages that may be experienced by VT members working on higher education OPM projects
- Examine the challenges that may be experienced by VT members working on higher education OPM projects.
- Analyse the factors that can contribute to the effectiveness and satisfaction of VTs and their members working on higher education OPM projects.

1.4 Research methodology and design

Business research as described by Sekaran and Bougie (2013:2), is “a systematic and organised effort to investigate a specific problem encountered in the work setting, which needs a solution”, while research methodology refers to the overall approach to the effort of investigation (Collis & Hussey, 2003). This study is conducted from a phenomenological or qualitative, subjective position, founded on the belief that human behaviour influences events. This study allows the researcher the opportunity to seek to understand the phenomena from the participants' point of view.

A study can be classified as qualitative, quantitative or as a mixed-method study (Yin, 2014). A quantitative study is helpful to test a specific hypothesis or collect descriptive data (Marshall & Rossman, 2016; Yin, 2014), while a qualitative study allows the researcher to understand and explore individuals and their experiences in

a natural setting, thereby gaining insights and discovering concepts and concerns. The mixed method involves collecting, analysing and integrating quantitative and qualitative research (Yin, 2014). The qualitative research approach was considered to be most appropriate for this study, because the purpose was to discover new insights into the function and use of VTs within a naturalistic setting (Gilson *et al*., 2015; Marshall & Rossman, 2016).

The research design can be described as either descriptive, casual or exploratory, depending on the stage at which the knowledge about the topic has been obtained and the goal of the study (Sekaran & Bougie, 2013). A descriptive study is used to provide an accurate and valid presentation or description of the characteristics or variables relevant to the research hypothesis or research question (Rahi, 2017; Yin, 2014). The causal study is used to determine cause and effect relationships; it involves the manipulation of one or more independent variables and takes longer to complete in comparison to the two other studies, often resulting in higher costs (Sekaran & Bougie, 2013). The exploratory study allows one to discover ideas and insights when little is known about the problem at hand, or as in the case of this study, when the researcher has little knowledge or experience of the particular field. The nature and purpose of this study was to explore a field that is not well represented in the literature and of which the author has limited experience in terms of research. This study is considered to be an exploratory qualitative study.

Various approaches to this qualitative study were considered, some of these being a case study, action research, social action research and ethnography. Case studies give the researcher the opportunity to study a particular subject, e.g. a group of people or an organisation in its existing context (Hancock & Algozinne, 2017) and is a well-recognised approach in the field of business management and science. Case studies also fit the goal of the study and the context of VTs well.

1.4.1 Data collection

Personal interviews, as primary, qualitative data collection method, are frequently

used (Hancock & Algozinne, 2017) to explore participants' experiences. Semi-structured interviews (data in the form of words generated from the broad answers to questions in interviews) provided a rich set of data (Yin, 2014) and are presented in Chapter 4. The secondary data, presented in Chapter 2, was sourced from academic journals, books, articles and other available sources. The secondary data was analysed to construct a theoretical model used as a departure point for the data collected by conducting interviews.

1.4.2 Population and sample design

The population of the study included participants who were members of VTs working for either HEPSA or a partner university in SA on the OMP project. All the participants were required to work from locations within SA.

The researcher used purposeful sampling to non-randomly identify 12 potential participants with at least two participants from each vertical stream (Refer to Table 1.1), as well as representation from OPM and at least three universities to participate in the interviews. The selection of the appropriate number of interviews in qualitative research is always a decision based on the specific study and the nature of the topic. Twelve participants were selected, because the total number of team members from which the sample could be taken was 42, with some team members being part of more than one team. All 12 selected participants were invited to participate in the interviews and eight responded positively. The researcher contacted an additional four VT members who fit the criteria and one more participant expressed willingness to participate. Theoretical saturation was reached after seven interviews (Porte, 2013; Yin, 2014) and all participants were capable of addressing the following interview questions (Robinson, 2014):

- What are the advantages, if any, of working as a VT instead of a team always meeting face-to-face?
- What challenges, if any, have you or your team faced because your team operates primarily virtually?

- Teams exist because, as a group, you want to achieve certain goals successfully. What do you consider to be the requirements or criteria for your team(s) to be successful, despite being virtual?
- Do you have any preference between working for a VT or a team that meets face-to-face?

1.4.3 Data collection

The nine interviews were conducted using an audio-video web conferencing tool, Zoom[1], familiar to all participants who used it frequently for their VT meetings. Seven interviews were conducted in English and two in Afrikaans. The interviews were recorded with the permission of the interviewees, and transcribed. The transcripts were made available to the individual participants to confirm the intended meaning of their responses (Morse, 2015).

1.4.4 Data analysis

A slight modification of Braun and Clarke's (2006) six basic steps for a thematic analysis, a trusted and reliable method of data analysis, was used and is presented in Chapter 4.

1.4.5 Demarcation of the field of study

The field of this study is a convergence of Social and Management Sciences with a specific focus on Human Behavioural Sciences. The study focuses mainly on the VTs and the advantages, challenges and success factors as experienced by team members. Traditional teams, also described as co-located teams, are not part of the main scope of the study, although a brief analysis of teams, in general, is presented

[1]www.zoom.us

as part of the literature review to provide context.

The research scope of the study is limited to the higher education sector within SA, and more specifically to VTs directly associated with an OPM project, in particular HEPSA and any of its seven partner universities. Team members who participated in the study are not classified as leaders or as regular team members of teams, as the main focus is on general aspects, which can be acknowledged by an individual team member regardless of his/her organisational position or role and responsibility within the team.

1.5 Ethical considerations

This study involved individuals associated with HEPSA or any of the seven partner universities, and all of these had elements of confidentiality. The researcher had to ensure that the study was conducted in such a way that the Ethics Committee of the of the University of the Free State (UFS), as well as each of the partner universities and HEPSA as a company, would give consent prior to the study being undertaken. Prior to undertaking the study, the Chief Operations Officer of HEPSA gave written permission for the study to be conducted (see Appendix 1). All participants in this study did so voluntarily. The purpose and benefits of the research were explained to prospective participants. The rights of the participants, including non-disclosure without consent, were explained and an interview did not continue without obtaining the informed consent of the participant (Cooper & Schindler, 2011:32).

The right of participants to benefit from the study was acknowledged and feedback was given on request. The research, as well as the implications of the research, will be conveyed to and shared with HEPSA and the various HEIs that can benefit directly from the research. The ethical considerations for this study are further discussed in Chapter 3, section 5.

1.6 Chapter layout of study

The chapter layout of this study is as follows:

Chapter 1 – Introduction and problem statement

Chapter 2 – Literature review

Chapter 3 – Research methodology

Chapter 4 – Discussion of findings

Chapter 5 – Recommendations and conclusion

1.7 Conclusion

This chapter provides the background to the study, including a brief background to VTs and their use in higher education, as well as the problem statement. The research methods are briefly presented, along with the rationale behind the study. Chapter 2 contains an overview of the current literature with regard to teams and VTs.

CHAPTER 2 – Literature Review

2.1. Introduction

The term “virtual teams”, consisting of two words, has potentially two separate topics contained within it. The latter word, teams, will be introduced in the first section of the chapter. This section introduces the concept of teams, the types of teams and how teams are developed into high-performance teams. In the second section, the focus shifts to VTs and more specifically the virtuality thereof, their organisation, what the differences are between virtual and co-located teams, the technology used to facilitate communication and collaboration, and the advantages, challenges and success factors involved in deploying VTs for organisations. In the last section of the chapter, the reader is presented with a framework that will be used to present and analyse the challenges and success factors of VTs represented in this study. Throughout the chapter, reference will be made to the relevance of the presented information to the specific VTs represented in the study.

2.2. Teams

A team, formed and based in the needs of the organisation (Schwalbe, 2014), is a group of people with complementary skills and ideas, who work collaboratively and interdependently to achieve specific outcomes (Isenberg, Fisher, & Paul, 2012). Team members hold themselves mutually responsible and accountable for solving problems and accomplishing tasks (Kirkman & Mathieu, 2004). According to Higgs, Plewnia and Ploch (2005), teams can manage their relationships across organisational boundaries. Teams are therefore not bound to work within a single organisation, but can, as is the case in this study, consist of members from one or more organisations, working at different levels.

2.3. Types of teams

Workplace teams can be categorised based on their overall purpose, mode of functioning and structure. Studies in the field of business and administration indicate that there are three common types of teams, namely project teams, ongoing or functional work teams, and VTs (Grutterink *et al.*, 2012; Scholtes, Joiner & Streibel, 2018; Van der Linde, Boessenskool & Jooste, 2006).

2.3.1 Project teams

Project teams are temporary teams and have both core and affiliated members. The core team members have complementary skills needed to accomplish the goals of the project and participate throughout the project, while the affiliated members become critical for some phases of the project and move in and out of the team (Scholtes *et al.*, 2018).

2.3.2 Functional teams

The functional teams are long standing. These teams meet regularly and their main purpose is to share ideas on how processes can be improved and organisational problems can be solved (Grutterink *et al.*, 2012). There are four different types of functional teams, namely natural work teams, self-managing teams, process teams and management teams (Isenberg *et al.*, 2012). Natural work teams consist of members from the same work area who share responsibility for completing a piece of work. Natural work teams can, for example, consist of team members from two different organisations, but they all focus on, for example, (in the case of this context) the retention of students within a specific online programme. Self-managing teams are responsible for determining their specific work tasks, schedules, progress, quality controls and reward structure. Self-managed teams are also an example of a natural work team, but they have control over the pace of work undertaken, their

tasks are more complex, and they require members to have a variety of skills to perform their assigned tasks (Van der Linde *et al.*, 2006). Process management teams share responsibility for monitoring and controlling work processes (Clements & Gido, 2012), while management teams are made up of members from various departments that are most often on the same hierarchical level. They represent interdependent functions or processes that must be co-ordinated for an overall system to operate efficiently and effectively (Grutterink *et al*., 2012; Scholtes *et al.*, 2018).

2.3.3 Virtual teams

VTs use electronic communication media more frequently than face-to-face interactions to accomplish their tasks. Both project and functional teams can be virtual (Scholtes *et al.*, 2018).

VTs share many differences and similarities with project or functional teams. Like all teams, members of VTs rely on one another for results and are mutually accountable and/or responsible for reaching the goals of the team (Ludden, Ledwith & Lee-Kelly, 2012). The major difference between VTs and the other types of teams is that VTs depend on technology rather than face-to-face contact. The following section of the chapter explores how VTs are formed and the factors that contribute to the challenges or success of VTs.

2.4 Virtual teams defined

VTs forms part of the structure of many modern successful organisations and continue to play an important role in the era of globalisation (Jimenez *et al.*, 2017). While traditional teams are referred to as conventional or co-located teams, VTs are also called cyberteams, dispersed teams, distributed teams and online teams (DuFrene & Lehman, 2012). Co-located teams consist of individuals working in physical proximity, while VTs refer to groups of individuals who are separated by

physical distance but are united by a shared goal (Ludden *et al.*, 2012). Powell, Piccoli and Ives (2004:7) define VTs as “groups of geographically, organizationally and/or time dispersed workers brought together by information and telecommunication technologies to accomplish one or more organizational tasks”.

The actual space between VT members is irrelevant as members may be located across the office, on different floors of the same building, across different buildings of the same organisation, or just as easily across the country or across countries or continents, but they may only interact face-to-face occasionally (Ludden *et al.*, 2012; Wise, 2013).

Connections between VT members are critical, and although these connections are usually made through electronic interactions, the use of technology alone does not make a team virtual (Kirkman & Mathieu, 2004). VT members may often prefer face-to-face interaction, but do not have a choice except to communicate via electronic communication media (Gibson & Gibbs, 2006). Virtuality can be defined as the magnitude to which members of a team use virtual tools to organise and implement their team goals and processes (Kirkman & Mathieu, 2004). Virtuality increases as the degree of reliance on electronic communication media increases (Berry, 2011).

For purposes of this study, a combination of these definitions will serve best, being that a VT can be defined as group of individuals who are, despite being separated by physical, time and/or organisational distance, enabled through the affordances of ICT to work towards and achieve specific tasks and shared goals.

2.5 Types of virtual teams

There are many different types of VTs. Snow (2017) lists two main types of Vts: distributed VTs and cross-organisational VTs.

Distributed VTs consist of individuals from the same organisation who work in different geographical locations, either interdependently or separately. These types

of teams are formed to perform a specific task or solve a problem (Snow, 2017). When the task is completed or the objective achieved, the VTs are dissolved and team members go back to their normal routine duties.

There are two variants of cross-organisational teams, namely co-located cross-organisational VTs and distributed cross-organisational VTs. Co-located cross-organisational VTs consist of individuals from different organisations who work together in the same location, while distributed cross-organisational VTs consist of individuals from different organisations who work in different locations (Snow, 2017). Team members who participated in this study worked for either the OPM company or one of the partner universities and can be in different locations, making the teams in this study primarily distributed cross-organisational teams.

2.6 Advantages and disadvantages of virtual teams

The advantages of VTs are well documented (Bergiel, Bergiel, & Balsmeier, 2008; DeRosa & Lepsinger, 2010; Jimenez *et al.*, 2017). For many organisations, the primary advantage of a VT stems from an economic benefit, in that the organisation can hire or unite highly qualified individuals without location restrictions while reducing travel, relocation and office overhead costs (Pangil & Chan, 2014). For others, the main advantage is that members of VTs can take advantage of the electronic infrastructure (Stahl *et al.*, 2010), which not only enables continuous 24/7 productivity, allowing teams to work across different time zones, but it also affords teams the opportunity to capture their collective work electronically, often in real time (Berry, 2011). In addition, because most interactions and outcomes are electronic and automatically archived, it allows for easier performance (Gibson & Cohen, 2003). Another advantage for organisations is that VTs allow the organisation to continuously bring on board the right experts or new members, regardless of their geographical position. A diverse team of experts working virtually can positively impact the team's level of knowledge sharing and their ability to solve problems (Jimenez *et al.*, 2017).

Despite the advantages listed above, it is essential to note that VTs also come with their own challenges. VTs have a lower frequency of meeting face-to-face and this has proven to present several challenges when compared to co-located teams (Kirkman, Rosen, Gibson, Tesluk, & McPherson, 2002). Among the challenges identified by Cascio (2000) and Greenberg, and Greenberg and Antonucci (2007) are an increase in time and resources to set up VTs in comparison to the co-located teams, and lower levels of productivity and engagement due to communication and collaboration difficulties. Other challenges identified by Greenberg and Antonucci (2007) are that team members find it difficult to build relationships and to establish trust and have a shared responsibility; team members might experience a sense of isolation because of the geographical distance between members.

Despite the challenges, it is possible for VTs to significantly outperform traditional teams by understanding and applying the appropriate processes and requirements to allow a VT to be successful (Greenberg and Antonucci, 2007). In this study, the above-mentioned advantages and challenges are correlated to those identified by the team members of the OPM company and participating universities in an SA context in Chapter 4, with the aim to make recommendations on how the VTs can be steered towards success in Chapter 5.

2.7 Stages of team development

All teams, regardless of the type, go through various stages of development. These stages or phases of development could be important in evaluating and understanding how teams, including VTs, function. Tuckman and Jensen's model, published in 1965 and adjusted in 1977 (Tuckman & Jensen, 1977), identified and detailed five stages of team development, as seen in Figure 2.1.

Forming: Team members meet and become oriented to one another and the task at hand. Team members tend to be uninformed and they behave independently. Their discussions centre around the scope of work and how to approach it. For the team to progress to the next stage, each member must feel willing and comfortable to not

only discuss non-threatening topics, but also able to discuss more complex and perhaps dividing ideas, risking the possibility of conflict (Tuckman, 1965; Clements & Gido, 2012).

Storming: At this stage of the team's development, team members start to learn more about the individual working styles of other team members. Although there is initially still a polite atmosphere and members are pleasant to one another, members can experience feelings of positiveness and excitement, anxiety, fear and suspicion. As members start to voice their opinions, conflict may arise, which can be upsetting (Tuckman, 1965). For this reason, some teams may avoid this "storming" phase or never develop past this phase (Clements & Gido, 2012). During this phase it is important to emphasise tolerance so that potential disagreements within the team can make the team stronger and more versatile, allowing the team to work more effectively.

Norming: During the norming stage, the team members share a goal and begin to work more effectively, collaborate, and respect one another's opinions and differences (Clements & Gido, 2012; Schwalbe, 2014). Trust is developed as members accept one another as they are and support one another to work towards reaching the team's goals. Although the team makes progress, the danger sets in when members are so focused on preventing conflict that they are reluctant to share controversial ideas (Tuckman, 1965). In this phase, team members have to agree to the values of the team and how conflict is dealt with. Once this has been established and team members feel secure in this environment, the level of group functioning will improve.

Performing: During the performing stage the team is functioning at a high level. The team is loyal, motivated and knowledgeable, and able to handle the decision-making process without supervision (Schwalbe, 2014). Disagreements are expected and allowed but should be handled through a channel expectable to the team. The team may, for example when there is a change in leadership, revert to the storming stage.

Adjourning: The adjourning stage, or in some texts referred to as the mourning

stage, was added to the model in 1977 by Tuckman and Jensen. During this stage, the team has completed its task or exhausted its resources and the project comes to an end. The members celebrate their successes and move in different directions, causing some members to feel insecure and experience a sense of loss (Clements & Gido, 2012).

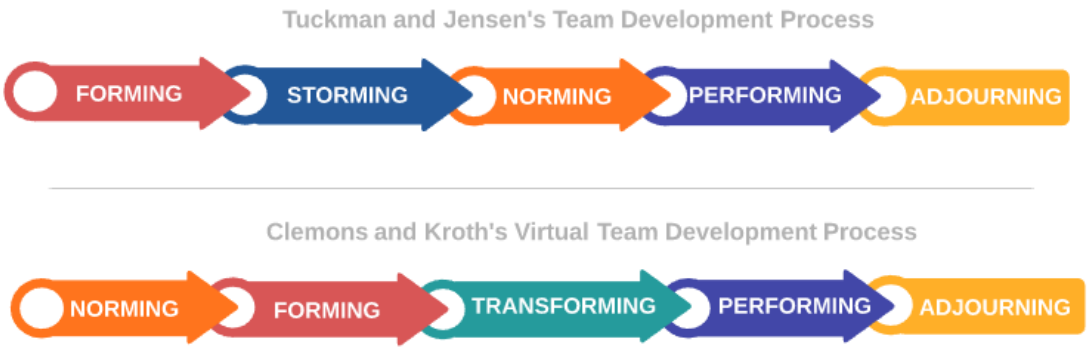

Figure 2.1 Tuckman and Jensen's Stages of Team Development and Clemons and Kroth's stages of Virtual Team Development

Although Tuckman and Jensen's model has been accepted for some time to describe the phases of group development, it was written before the concept of virtual groups was introduced. Crosta and McConnell (2010), as well as Clemons and Kroth (2011) explored the differences between group formation in face-to-face teams and VTs.

2.8 Virtual team development process

In Clemons and Kroth's (2011) VT development process (see Figure 2.1), they suggested that, whereas Tuckman and Jensen's process starts with forming and proceeds through adjournment, a reconfirmation for the successful development of VTs is needed. Their process starts with norming, followed by forming. Next, they added the transforming stage, which is not included in Tuckman and Jensen's model, followed by the performing and adjourning stages. Clemons and Kroth (2011) argued that the norming stage is critical for VTs and starts even before the team is

formed. Team performance, expectations and reparations of how the team will collaborate and communicate, including the types of tools such as email, video conferencing, etc., should be established early on. During the forming stage, team members are selected based on the contribution they can make towards accomplishing the team goals. For VTs, this selection process is critical and the skills of the individual, such as the ability to work effectively with people who may speak a different language, their ability to be dependable, and collaboration skills, need to be considered.

During the transforming stage, team members move from being a team of individuals to a team working collaboratively. Critical to the transforming stage is having challenges that the team can only achieve through strong relationships, effective communication, the ability to solve problems, and working effectively as a team while building a team identity (Clemons & Kroth, 2011). During the transforming stage, VTs can learn together, something which, according to Clemons and Kroth (2011:236), “virtual teams can sometimes do much better than co-located teams”. The reason for this statement is that, by using virtual offices, knowledge management tools and virtual problem-solving tools, VTs can “communicate better; align themselves more quickly; be more transparent; and track, build upon, and save knowledge more effectively than people on the same floor are likely to do” (Clemons & Kroth, 2011:236). This stands in contrast to Greenberg *et al.* (2007) who believe that VTs find it more difficult to communicate, leading to a lower level of productivity.

Groups often have different phases in their development, and the broader systemic context within which these groups develop needs to be taken into consideration, such as the relationships with other agencies, the technology used and the management style in the different organisations (Rollinson, 2008); one can argue on an even broader scale, the socio-political and economic climate within which the group or company operates. The factors outside of the group are just as important as the events within the confines of the group, leaving the linear model of group development suggested by Tuckman and Jensen (1977), as well as Clemons and Kroth (2011) open to critique and highlighting the importance of a systemic

approach to group development (Tubbs, 2004).

2.9 Effective virtual teams

When a team works together, team members are more productive and motivated, and perform better than as a set of individuals working alone (Clements & Gido, 2012; Schwalbe, 2014). Despite significant investments, including technology and the frameworks to support them, a surprisingly high number of VTs are not performing optimally and can be considered to be ineffective and may never reach their full potential. Several studies highlight the requirements for a team to be effective, including a focus on team performance, good communication, strong interpersonal relationships, and whatever allows the team to achieve its desired results (Clements & Gido, 2012; Powell *et al.*, 2004; Scholtes *et al.*, 2018; Schwalbe, 2014). The aforementioned studies highlight the purpose and goal of the groups (helping members to understand what the team needs to accomplish and why within clearly defined boundaries) and the context within which they work (the intra-organisational factors such as organisational structure, management practises, infrastructure and organisational culture) and the structure and process of the group (the organisation of the team, such as processes, procedures, operating methods and functional tasks of the team). They also highlight values and norms (expectations shared by team members of appropriate behaviour in a specific context, of the value of each team member and the free flow of information), communication (allowing team members to share their ideas and feelings accurately and clearly and knowing with whom to communicate) and access to the right fit of resources, including technology.

Other authors have added a number of equally important practical considerations that are of particular importance to VTs, namely that members should be part of fewer teams as membership of a variety of different teams can impinge on performance (Kearney, 2006), that team members with longer tenure and experience provide stability to teams and help their teams with better performance, and the role of clear leadership and guidance for and within the team. Bekkers

(2003), Kearney (2006) and Kofi (2011) highlight that even for VTs, a face-to-face kick-off meeting is important to achieve better performance and thereafter the importance of regular meetings. These comments again highlight the importance of a systemic understanding of team functioning, where elements such as a clear goal and understanding of the function and values of the team are equally important for face-to-face and virtual teams, but arguably, even more important for VTs.

When team members come together to achieve a common goal, many factors play a role in whether the team will be successful or not. Some teams work well together and succeed at anything they attempt, while other teams, regardless of the support and resources available, seem to fail. In the next section, the challenges leading to team failure will be discussed.

2.10 Challenges in virtual teams

The processes for the establishment and functioning of VTs are not simple. Bigelow (2016) comments that organisations "create VTs with almost no understanding of the unique implications for that decision". Unreal expectations of what can and cannot be done, cultural differences, as well as challenges to co-ordinate the functions of VT members, add to the complexity of VTs. Nydegger and Nydegger (2010:75) stated that "it does appear that the major difficulties with virtual teams have to do with the fact that being distributed and not co-located may lead to difficulties with things like relational communication and trust, but also with outcome problems like decreased productivity and work quality".

In section 2.7 of this chapter, the different stages of team development were discussed. Although these stages were mainly developed from the perspective of co-located teams as presented by Tuckman in 1965, and Tuckman and Jenkens in 1977, O'Keefe and Chen (2011) used the research done by Furst, et al. (2004) and Meredith and Mantel (2009) to combine the challenges faced by VTs and present it against Tuckman's stages. O'Keefe and Chen (2011) highlight in particular some of the organisational, structural and systemic challenges that have to be considered

and overcome in each of Tuckman's phases. For example, they highlight the impact that a lack of verbal cues available in face-to-face contact can have in the storming and norming phase and how the co-ordination of tasks can be more complex in VTs.

In a more recent study by Pearlson, Saunders and Galletta (2016), the challenges of VTs are grouped into three different types. The first type, communication, is not only challenged when members communicate across different time zones, but also by misinterpretations in communication caused by a lack of face-to-face contact and as such missing critical facial expressions and gestures. It could also stem from different cultural backgrounds and having different levels of language skills (Bigelow, 2016). The second type, namely team diversity, relates to challenges with the building of trust, the setting of norms, building a team identity and having a shared purpose. The third and final type addresses the challenges caused by technology. Teams can experience technological challenges with different software versions being used, bandwidth issues and unstable internet connections. These factors again highlight some of the challenges to a linear model, emphasising some of the factors that were perhaps not always present when Tuckman's (1977) model was developed.

More important to VTs is the use and impact of information communication technology in the functioning of VTs. Brewer (2015) collected data from 128 VT respondents and highlighted common technological problems experienced during communication. These include e-mails, which he describes as the most commonly used tool but causing the most problems, as well as connection and audio problems when using platforms such as Skype [2] and Zoom, and even mobile phone conversations that sometimes lack a clear record of decisions. These teams also have to cope with the various forms and layers of communication, such as online spaces and emails, with the goal and function of the various tools not always being clear (Brewer, 2015).

The discussion above indicates a wide range of challenges related to the use of technology. Nydegger and Nydegger (2010) warn, however, that too often

[2] https://www.skype.com/en/business/

technology-related issues are blamed when VTs underperform, despite the fact that the root causes for problems are more often related to individual and social factors. This is confirmed by a study done by DeRosa and Lepsinger (2010). In their study, all teams, regardless of their level of effectiveness, identified the same top challenges of VTs as being: (1) Team members lack face-to-face contact with one another; (2) members lack the necessary resources; (3) differences in time zones hinder collaboration among team members; (4) team members who are part of more than one team cannot devote enough time to each individual team; (5) team members do not share relevant information with one another; and lastly (6) the lack of skills training. The challenges as identified in this literature review will be compared to the challenges identified by participants in the interview in Chapter 4 of this research report.

Organisations are not always knowledgeable about the challenges faced by VTs, nor are they aware that the teams in their organisations consider themselves to be ineffective (DeRosa & Lepsinger, 2010). In a study conducted by the Massachusetts Institute of Technology and referenced in the work of DeRosa and Lepsinger (2010), only 18 percent of 70 VTs assessed were found to be highly successful. Organisations, whether they are businesses or HEIs, which are proactive in taking the steps to avoid potential challenges and support VTs, will see a better return on investment. In Chapter 5 of this study, several recommendations of challenges to address will be presented for VT members and their organisations that aim to improve their return on investment.

The adoption and widespread use of VTs highlights the need to enhance theory and better understand the requirements of establishing and maintaining effective VTs. The next section presents two dominant theoretical frameworks when studying VTs.

2.11 Theoretical models

Theoretical frameworks used to understand the functioning of VTs, which are influenced by an increase in research and understanding, have undergone several

paradigm shifts over the years. Ludden *et al.* (2012) identified three main clusters of ideas, namely typology, people-technology-process and input-process-output. The first grouping, typology, classifies teams based on specific characteristics. Examples include the classification of VTs based on their virtuality (Fiol & O'Connor, 2005), the team's structure (Dube, Bourhis & Jacob, 2006) or the communication specifics (Gerda *et al.*, 2009). The second grouping, people-technology-process, lists team characteristics under the categories of people, technology, and processes. Examples include the frameworks developed by Lipnack and Stamps (2000), as well as Chudoba *et al.* (2003). The third grouping, input-process-output (IPO), measures the impact of various factors on the effectiveness of teams and includes the research of Andriessen and Verburg (2004), as well as Staples and Cameron (2005). Given that this specific research project analyses the challenges and success factors of VTs across organisational teams, it is useful to describe and evaluate the outcomes through the IPO lens. The IPO framework will be presented in the section that follows and will conclude with the research framework presented for this study.

2.11.1 The input-process-output (IPO) model

The IPO model, originally developed to study team effectiveness (Hackman, 1987; McGrath, 1984) was adopted not only by researchers such as Powell *et al.* (2004) for VTs, but also by Hoch and Kozlowski (2014), and later Dulebohn and Hoch (2017) to identify key inputs, team emergent states, processes, moderators, and outcomes relevant to VT effectiveness. The model assumes that team inputs (e.g. knowledge, skills, and attitudes) lead to processes (e.g. communication and collaboration) which then lead to outcomes (such as performance or satisfaction) (Ilgen *et al.*, 2005).

In 2004, Powell *et al.* published a meta-analysis of 44 papers on VTs. The analysis they presented was based on Saunders' (2000) lifecycle model for VTs; they divided the IPO model into four categories, namely input, socio-economic processes, task processes and outputs. Under each category Powell *et al.* (2004) identified the factors which impact the functioning of VTs during the lifecycle of a project.

The input of VTs presents the composition and design characteristics of the VT, including the resources, skills and abilities of the team at the team's formation. Four input sub-categories were identified, namely design, culture, technical expertise and training (Powell *et al.*, 2004). The design of the team includes different levels of face-to-face interaction, physical dispersion, the setting of goals, norms, structures and values, and the selection and use of communication technologies (Powell *et al.*, 2004). Design emphasises the structuring of the team's interactions in such a way that a shared language and understanding among team members is developed. Cultural differences are common in VTs and can create problems for effective communication (Kayworth & Leidner, 2000). Minor differences among team members from different areas of the same country may also negatively impact a VT (Robey, Khoo & Powers, 2000). The level or lack of technical expertise, and the failure to manage the situation when technical problems occur, can negatively affect an individual team member's experience and satisfaction with the VT's performance (Kayworth & Leidner, 2000). Carefully planned and well-implemented training for all team members advances team performance (Van Ryssen & Godar, 2000). Training at the beginning of the project to ensure all members are familiar with the tools and processes tends to enhance the overall efficiency of the team (Powell *et al.*, 2004).

The processes category represents the ongoing interdependent interaction among team members of a VT, which transforms inputs into outputs (Gaudes, Hamilton-Bogart & Marsh, 2007). There are two process categories of the lifecycle, namely socio-emotional and task processes. The socio-emotional process deals with the social dimension of the interaction among team members and is subdivided into relations, cohesion and trust.

For the building of relationships among VT members who reply predominantly on computer-mediated communication, all members should feel part of the team and that their contributions are valued. As mentioned by O'Keefe and Chen (2011), Powell *et al.* (2004) highlight how a face-to-face kick-off meeting at the beginning of the team's interactions, followed up with friendly virtual interactions among team members, will positively impact the relationship among VT members. Ratcheva and

Vyakarnam (2001) recommend that a “third way” should be developed among team members, which implies that a new micro-culture is developed where the team is not dominated by one team member’s idea, location, culture or function. Cohesion is defined as “the tendency of a group to stick together and remain united in the pursuit of instrumental objectives and the satisfaction of members’ affective needs” (Forrester & Tashchian, 2006) and is a leading factor in the establishment of trust within a team. Although the use of technology in VTs can be an obstacle in the development of cohesion (Warkentin, Sayeed & Hightower, 1997), studies have found that despite starting with lesser cohesion, VTs can, over time, exchange enough communal information to develop strong cohesion (Chidambaram, 1996). Trust is based on actual deeds and not social perceptions (Clayden, 2007). These actions include on-time delivery of assignments, being proactive and having the ability to perform and complete assigned tasks and participating in the activities of the team work. Breuer, Hüffmeier and Hertel (2016) found that trust matters more to VT members than to co-located teams due to the challenges of relying predominantly on electronic communication technologies.

The third category in the circular model of Powell *et al.* (2004) is the task process category that focuses on processes that occur when the members of VTs work together, and this category is subdivided into communication, collaboration and task-technology fit. This third category clearly links in with the final category, namely communication, which is described as a process in which team members create and share information to attain a shared understanding (Rogers, 1986), which can be more challenging for VTs partially due to the lack of nonverbal cues. Establishing clear communication guidelines and selecting the right technology is critical for successful communication among VT members (Sarker *et al.*, 2011). Collaboration is the extent to which the effort and activities of the team are well co-ordinated and logically consistent (Chen, Casper & Cortina, 2001), and is linked to virtual performance (Maznevski & Chudoba, 2001). VTs find it challenging to collaborate across time, cultural differences and communication barriers (Sarker *et al.*, 2011). It is important to evaluate the fit between the needs of the VT and the available technology tools. The selection of technology should be based on the ease of use and the individuals’ experience and preference (Gilson *et al.*, 2015).

2.11.2 An adaptation of the IPO for virtual teams

Dulebohn and Hoch (2017) adapted the IPO model to accommodate particular inputs, processes and moderating factors that may determine the outcomes and effectiveness of VTs. In their model they divided the input category into three subcategories: Firstly, the organisational levels representing the design (i.e. creating, sizing and structuring) of VTs and factors such as the physical work environments in which VT members function, the technology used to support the function of the team, and reward systems (Hoch & Kozlowski, 2014). The second input category is team leadership. Initially it was assumed that leaders need the same skills to manage VTs as those needed to lead co-located teams (Meyer, 2010), but the opinion that VT leaders also need relevant skills to deal with the lack of face-to-face contact among VT members is well supported today (Hoch & Kozlowski, 2014). Meyer (2010) states that the skills needed to lead VTs are not simply different to those needed to manage the co-located team, but often the exact opposite. VT leaders are required to understand collaborative technology, have the ability to facilitate and influence the engagement of team members that are not co-located, and build trust and relationships with their VT members. The third category of input factors is team composition, characterised by both surface-level (e.g. ethnicity, culture and language) and deep-level (e.g. personality and values) diversity, individual differences, and the knowledge, skills and abilities (KSAs) of the individual team members. This category includes vital predictors of VT processes and effectiveness. Schulze and Krumm (2017) outlined six different KSAs relevant to VTs, including knowing how to use technology for communication; communicating effectively; creating trust with other team members; working with people from diverse cultural backgrounds; and managing oneself and to be constructive when handling conflicts. Ferrazzi (2014:120) noted: “Team composition should be your starting point. You won't get anywhere without hiring (or developing) people suited to virtual team work …”

The second category is defined by team processes and emergent states. Team

processes refer to the interdependent performances of team members that convert inputs into outcomes, while the emergent states " characterise properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes, and outcomes" (Marks, Mathieu & Zaccaro, 2001). This includes cognitive processes (e.g. cognition and cognitive climate), affective processes (e.g. cohesion), motivational processes (e.g. engagement) and behavioural processes (e.g. shared leadership, communication and technology usage).

Dulebohn and Hoch's (2017) model includes factors that may moderate the direction and/or strength of the pathways that exist between the inputs, process and outcomes. These moderator factors include virtuality, interdependence, and task complexity and context.

The last category of Dulebohn and Hoch's (2017) framework represents the effect of the processes which transform the team's inputs into outcomes. The team-level outcomes represent the degree to which the team's objectives were achieved, while the individual-level outcomes represent outcomes such as satisfaction and commitment of the individual members. This approach supports the idea of a non-linear approach, where factors easily measured, such as interdependency and task complexity, are focused upon.

Ilgen *et al.* (2005) suggest that, because a team is a learning entity that adjusts to environmental changes and does not progress through the VT lifecycle only once, a feedback loop should be included in the IPO model. The feedback loop illustrates the ongoing effect of team outcomes on team inputs, as well as process and emergent states common in VTs.

2.11.3 Framework for this study

The framework as presented in Figure 2.2 indicates that the VTs working on higher education projects for the SA OPM company and its partner universities are a subset of VTs in general, which is an example of a specific type of team as

presented in section 2.3 of this chapter. It is therefore anticipated that many of the advantages, challenges and requirements for success presented in this chapter will correlate to the data that will be presented in Chapter 4. Based on the IPO model, the framework for this study also assumes that team inputs lead to processes which then lead to outcomes. Whether an input leads to processes that will lead to outcomes depends on factors such as virtuality and task complexity. One can therefore not assume that all inputs will have the intended outcomes.

Challenges (or what to avoid) and requirements for success (what to do) can be identified throughout the lifecycle of the VT, also those participating in this study. A feedback loop is added to indicate that a team operates in an emergent state. All of these elements happen within the context of the broader systemic developments in the organisations where teams operate, their immediate environment and the broader socio-political context. This study aims to present the reader with a set of recommendations on what VTs, and more specifically those working in the OPM space, can do to continuously improve their performance. These recommendations will be presented in Chapter 5.

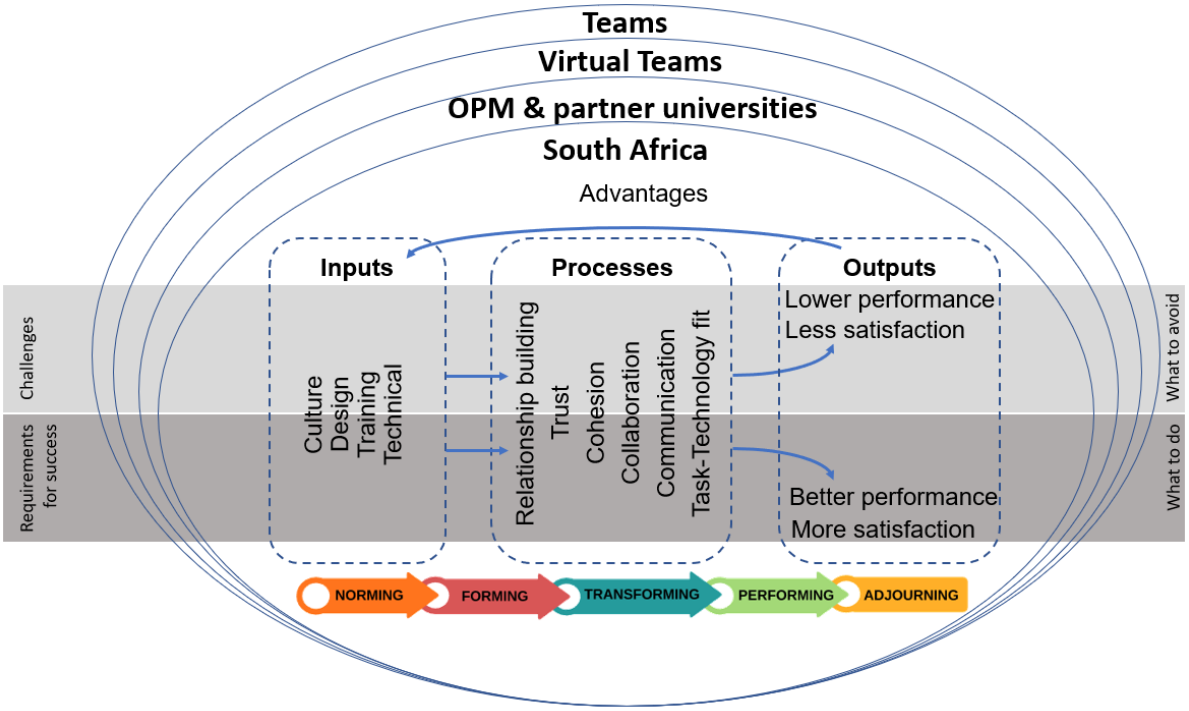

Figure 2.2 Theoretical framework for this study

2.12 Conclusion

In this chapter, two main topics, being teams and VTs as a subset of teams, were introduced. The chapter firstly analysed the concept of teams, the types of teams and how teams are developed into high-performance teams. Secondly, the chapter investigated VTs and their organisation, the differences between virtual and co-located teams, and the advantages, challenges and success factors of deploying VTs for organisations. Lastly, the chapter presented frameworks that can be used to study the effectiveness of VTs and also presented a framework to present and analyse the challenges and success factors of VTs represented in this study. In the following chapter the research design and methodology will be presented.

CHAPTER 3 – Research Methodology

3.1. Introduction

The literature review in chapter two provided an overview of the organisation of teams and more specifically virtual teams. It presented the advantages and challenges as well as the characteristics of effective VTs. An analysis of two frameworks followed, allowing the researcher to conclude the chapter with a framework that can be applied to the study at hand.

A need for information motivates the need for research in order to better understand certain phenomena and to ultimately make sound decisions (Sekaran & Bougie, 2013). The use of VTs by HEPSA and its partner universities is a given, but ensuring that these teams function best to achieve optimal return on investment is most likely based on well-informed choices and mindful decisions. This research intends to identify and know what to adopt and what to avoid in order to ensure that VTs operate effectively and achieve their goals. These requirements provide the context for this research opportunity, expressed in the research objectives as stated in section 3.1.

This chapter includes an overview of the specific research methodology for this study, and a discussion on the research design as well as the population and sample used. This is followed by a discussion on the data-gathering and analysis processes used. The chapter concludes with the ethical considerations for the study.

3.2. Introduction to research design and methodology

The research design and methodology provide a framework against which the research objectives are achieved. The research design focuses on the end product and provides a “blueprint” (Mouton, 2001; Sekaran & Bougie, 2013) for a reliable research inquiry, while the methodology focuses on the process and provides

appropriate instruments and tools, such as the sampling strategies to ensure scientifically suitable and reliable results (Collis & Hussey, 2003). Research should follow a logical, systematic process of gathering, designing, analysing and reporting data and information in order to address the research question (Mouton, 2001).

Some authors seem to use “research method” and “methodology” either interchangeably or meaning different things. For Collis and Hussey (2003), the term methodology refers to the overall approach to the research process as a whole, while the research method refers to the specific tool or ways of collecting and analysing data, or for the purposes of this research, to collect data to make better business decisions. For the purposes of this study, the term research design refers to the overall design or plan for the study, while research methodology refers to the specific instruments or tools used to implement the design.

The philosophical position of the researcher can impact the methodology used during the study. Before considering the overall design of the study, the epistemological and ontological perspectives need to be clarified. From an ontological perspective, this study considers those who experienced at being members of VTs first-hand as being best positioned to provide data about being part of these groups. Therefore, the information presented by participants in the interviews is regarded as true, or a reflection of their truth. Knowledge and truth (epistemology) cannot only be discovered through a process of quantitative research (Weich, 2006).

There are two main philosophical orientations, namely positivistic and phenomenological (Collis & Hussey, 2003). A positivistic position, also referred to as quantitative or objectivist, is based on the belief that human behaviour can be studied in the same way as studies conducted in the natural sciences, and seeks to find, measure and assess the facts and causes of the phenomena systematically.

A phenomenological position approach, on the other hand, is founded on the belief that human behaviour cannot be measured as effortlessly as phenomena in the natural sciences, because humans will influence outcomes and act in unpredictable

ways – referred to as qualitative and subjectivist. This approach seeks to understand the phenomena from the participants' personal point of view (Collis & Hussey, 2003). Research can, however, contain both positivistic and phenomenological approaches (Collis & Hussey, 2003). This study, although primarily informed by a phenomenological world view, on a small scale, makes use of some of the attributes of a qualitative world view.

Some authors have, however, questioned the distinction between studies being qualitative or quantitative. Quite often, researchers in the field of so-called hard sciences and some of the social sciences have preferred a positivist approach to research, often contrasted with more qualitative studies. Clark (2002) questioned this binary distinction between qualitative and quantitative studies. As in so many other fields, it can be argued that economics and the understanding of human interaction are often based on a positivist world view, ignoring the intricacies of human interactions and emotions.

The purpose of a study such as this is primarily to understand and describe a situation, phenomenon, problem or event (Kumar, 2014; Patton, 2002). A qualitative study, flexible in nature, provides an opportunity for the participants to share their points of view in a natural setting, allowing the researcher to collect real-life information (Denzin & Lincoln, 2018). On the other hand, during a quantitative or positivist study, the purpose of the study is to quantify the phenomena, and the process is predetermined and often extensive in scale (Kumar, 2014). When the attributes of a qualitative and a quantitative study are combined, it is referred to as a mixed method (Kumar, 2014; Patton, 2002). This study, in line with many other qualitative studies, is emergent rather than predetermined in nature (Yilmaz, 2013).
In summary, this study is an exploratory, qualitative study that allows the researcher the opportunity to discover new insights into the function and use of VTs within a naturalistic setting.

3.3. Research design and methodology for this study

The research methodology describes the process which is followed to collect,

analyse and interpret the information needed to answer the research objectives (Kumar, 2014). Before data can be collected to address the research objectives, a structure or design is required, as outlined in section 3.2. The purpose of this design is to articulate and ensure that the type of data and information obtained through the research process accurately describe the phenomenon being investigated, allowing one to address the research objectives as unambiguously as possible (Mouton, 2001). Issues of sampling, the method of data collection (e.g. surveys, interviews) and the design of questions are all a subset of the type of data that needs to be collected (Hancock & Algozinne, 2017).

3.3.1 The nature of the overall goal of the study

Depending on the purpose of the inquiry, a research goal can be described as either exploratory, explanatory, descriptive or casual, depending on the stage to which the knowledge about the topic has been obtained and the goal of the study (Sekaran & Bougie, 2013). An exploratory study allows one to discover ideas and insights when little is known about the problem at hand and there are high levels of uncertainty, or as in the case of this study, in a practice setting, if the researchers have little knowledge or experience of the particular field (Shields & Rangarjan, 2013)

Explanatory studies often rely on secondary research such as a literature review and/or qualitative approaches. Such studies are usually emergent rather than predetermined in nature and thus characterised by a high degree of flexibility (Yilmaz, 2013); consequently, the results obtained cannot always be generalised. This approach normally requires a small sample size using non-probability methods; the cost of such study is relatively low and it can be done over a short period of time (Sekaran & Bougie, 2013).

Descriptive studies, on the other hand, are used to provide an accurate and valid presentation or description of the characteristics or variables relevant to the research hypothesis or research question. A descriptive study is either quantitative or qualitative and, although being the basis for decision making, can be more costly

and time consuming than an exploratory research approach and requires a larger sample size, using mostly probability-based sampling methods (Sekaran & Bougie, 2013). The causal study is used to determine cause and effect relationships and involves the influence of one or more independent variables. Casual research takes longer to complete in comparison to the two other studies, and the cost can be high (Sekaran & Bougie, 2013). The nature and purpose of this study is to explore a field that is not well represented in the literature. In order to establish a clear foundation, this study is an exploratory study, as mentioned earlier.

3.3.2 The specific methodology

Various approaches to this qualitative study were considered from the multitude of methodologies available, some of these being a case study, action research, social action research, and ethnography. This selection was made on account of the qualitative design, the goal of the study and the context of it being focused on VTs. Case studies provide the researcher with the opportunity to study a particular subject, e.g. a group of people in an organisation, in depth and in its living context (Hancock & Algozinne, 2017). Action research allows the researcher to become involved in the research in order to address particular issues, solve a problem, and monitor and evaluate the results (Altrichter, Posch & Somekh, 2007). Participative inquiry allows the researcher to study his or her own organisation. The combination of participatory and social action-based research, or participatory social action-based research, explores the active involvement of clients, or for the purpose of this study, group members in the evaluation of groups in a particular setting (Fleming & Ward, 2004). When the researcher becomes an active part of the community being researched, it can be described as ethnographic research. This mode of research (ethnography) is the study of human interaction where the researcher becomes a working member of the group or situation being observed. This allows the researcher to understand the situation from the viewpoints of the members of the VTs in the situation (Mouton, 2001).

Although the ideal would have been to have the maximum participation of group

members in both the research process and the production of the report, a social action-based approach to data collection was not possible, because, although the depth and breadth of the data is often a better reflection of the experience of group members and also written in the language of the group members, it is more time consuming and can be problematic for team members who already have a high workload (Mullender, Ward & Fleming, 2013). This critique is also relevant to an ethnographic approach. As the researcher in this study is part of an agency providing guidance, and to a great extent, leadership to the VTs (participants were members of VTs and working either for HEPSA or a partner university in SA), an ethnographic research method with direct participation by the researcher was seen as problematic, especially in terms of the reliability of the data and thus the generalisability thereof (Hammersley, 2006). For these reasons, an exploratory, qualitative case study approach was most suitable, because the researcher aimed to explore the advantages, challenges and success factors of VTs from the perspective of a particular group of people (Yin, 2014). This approach was also practicable within the constraints of time and funds available, the nature of the groups, and the experience of the researcher. Such an approach enables a multidimensional examination of often complex experiences in a real-life setting (Crowe *et al.*, 2011). Case studies allow participants to respond without limitation and with minimal influence from a researcher being directly involved in the groups (as could be the case in ethnographic research), and thus possibly impacting on the narratives of the VT members. Case studies are also widely recognised as a tool for data collection in various fields, including business and policy formulation, with having a proven track record in this field (Crowe *et al.*, 2011).

3.4. Data collection methods

The method of data collection should be determined by the goal, nature and context of the study. Personal interviews are one of the most frequently used methods to collect qualitative data for studies of this kind (Oltmann, 2016). Personal interviews are particularly helpful to explore participants' experiences; they are similar to conversations and appear less formal than other data collection methods. However, they do require a particular skill set and good planning (Doody & Noonan, 2013).

Usually, interviews include questions posed by the interviewer, followed by an opportunity for the interviewee to reply to each question (Eriksson & Kovalainen, 2008). An interview provides the researcher with the opportunity to “dig deeper” or “read between the lines”, as it not only collects the words spoken by the interviewee, but it can also document and analyse the unspoken emotions expressed during the interview (Hancock & Algozinne, 2017).

Eriksson and Kovalainen (2008) present three types of interviews, namely structured, semi-structured or unstructured interviews. During structured interviews, a standardised list of questions is asked, and the interviewer should adhere to the specified wording and order of questions. In semi-structured interviews, the questions are asked with follow-up questions where required, while unstructured interviews allow for conversations to move freely and informally, normally guided by a specific theme rather than a set of questions. This study made use of semi-structured interviews to provide for a rich set of data (Morse, 2015; Mouton, 2001; Yin, 2014). Each interview was guided by an interview protocol (Lewis, 2015). The protocol included an introduction, a brief overview of the study and potential follow-up questions that could be asked to ensure data saturation (Porte, 2013).

In line with suggestions made by Sim and Wright (2000), as well as Yin (2014), pilot interviews were conducted to test the questions and the responses of interviewees. Two pilot interviews were conducted, which indicated that the questions posed during the interviews were correctly worded, with responses aligned with the objectives of the study, and because no changes were made to the questions, it was decided to include both pilot interviews in the data analysis, which is presented in Chapter 4.

The semi-structured interviews required a set of guiding questions, and follow-up questions were asked depending on the responses of the VT members. Each of the five main questions were linked to the goals and objectives of the study. During the interviews, the first question asked participants to provide background information and introduce themselves to the interviewer. The participants were asked to indicate how long they had been working in a VT, what electronic communications media

they used to communicate and collaborate, and to describe the VTs to which they belonged. The second question asked them to share any advantages they had experienced while being part of a VT in comparison to being part of a team that meets face-to-face. The third question asked the interviewees to share any challenges they had experienced while being part of a VT. The fourth question asked participants to share any requirements that should be in place for their VT to be successful. In the final question, the participants were asked if they had any preference between working for a VT or a team that meets face-to-face.

3.5. Population and sampling

The population of the study included participants who were members of VTs and working either for HEPSA or a partner university in SA between February and March 2019. Some of the participants belonged to more than one VT as they were simultaneously allocated to different projects. A HEPSA employee working within the Academic Services vertical (see Chapter 1, Table 1.1) can, for example, belong to a VT working with each of the partner universities. These participants were only interviewed once, but were able to provide some comparative information about the different groups in which they were they were involved. All of the participants were working from locations within SA, but their respective VTs could have included team members from outside SA. The participants were geographically dispersed in four provinces in SA, being Gauteng, Eastern Cape, Free State and the Western Cape, while some of the VTs to which they belonged included members from Britain and the USA.

To ensure a sample was representative of the population, purposeful sampling was used to non-randomly identify 12 potential participants capable of addressing the research and interview questions (Robinson, 2014). The researcher aimed to identify at least two participants from each six vertical streams, as presented in Table 1.1, to potentially participate. The researcher also aimed to interview participants from the OPM company and at least four of the seven universities. All of the non-randomly selected participants were contacted via email or telephonically and invited to participate in the interviews. The invitation included the purpose of the

study. At first, eight of the 12 VT members, at least one from every vertical stream and representation from the OPM company and three universities, indicated their willingness to participate. The researcher contacted an additional four VT members who fit the criteria and one more participant volunteered to participate. Data saturation was reached by the seventh interview. Although each interviewee participated as a professional team member currently working on a project for HEPSA and at least one of its partner universities, some interviewees indicated that they also belonged to other VTs, e.g. VT study groups. The interviewees were encouraged to use all of their VT experiences.

As the teams presented in this case study were working virtually, face-to-face interviews would not have been a feasible option due to the geographic restrictions of the participants. Computer-mediated communication is considered commonplace for many VTs, and it therefore made sense to consider it as a viable data collection method in this study. This sentiment is confirmed by Hai-Jew (2015:3): “The online interview should be treated as a viable option to the researcher rather than just as an alternative or secondary choice when face-to-face interviews cannot be achieved.”

As mentioned previously, all interviews were conducted using Zoom, an audio-video collaboration tool familiar to all participants, as they all indicated that they used Zoom frequently for their VT meetings. Another advantage of using Zoom was that it created the opportunity for the interviewer to be in one location while the interviewees were in other locations, thus saving on travel costs (Morse, 2015). The video-sharing functionality of Zoom also allowed the interviewer to observe the body language of the interviewees and assisted in creating a rapport because both the interviewer and the interviewee could see each other (Eriksson & Kovalainen, 2008). Sound and video checks were conducted before the start of the interview, to avoid technical challenges during a Zoom session. One interview was affected by load shedding experienced across SA during the timeframe of this study, and had to be rescheduled. Each interview lasted between 45 minutes and one hour.

All but two interviews were conducted in English. The two interviews conducted in

Afrikaans were translated into English once transcribed. The data collected was anonymised to ensure the participants could not be identified so as to protect the individuals and their organisations when sharing potentially sensitive data, e.g. the challenges they faced.

During the interviews, the interviewer took electronic, descriptive notes. The recording and transcription functionality of Zoom was used to not only help ensure that all of the information was included, but also because it is considered to be a more efficient than typing the notes manually (Nordstrom, 2015).

3.6. Data analysis

In the selection of a data analysis method, the design and method of data collection and importantly the ethical framework discussed above has to be taken into account. Qualitative studies such as this typically rely on inductive thinking to elucidate and structure the findings. Inductive reasoning generally uses the data to generate a hypothesis or finding, while deductive reasoning uses the data to test a hypothesis previously formulated. This inductive process requires the researcher to get close to the data through a process of deconstruction of meanings and phenomena (Thorne, 2000). Thematic analysis is a trusted and reliable method of data analysis that provides for such a process.

In considering if the thematic analysis is suitable for a particular study, Evans (2018) proposes a couple of guiding questions. Firstly, the researcher should consider if a thematic analysis is suitable for the particular study. The thematic analysis enables the study to examine through a process of immersion, from different postures, the meaning that people attach to their experiences as members of VTs. Thus, for understanding people's personal experiences and how they make meaning of these, thematic analysis is a relevant option. Grounded theory also allows for a process of immersion in the data and even identifying themes (Corbin & Strauss, 2008), but the goal of this study was not to develop a theory to explain the operations (that grounded theory is akin to) of the groups, but rather to primarily explore what works

and what does not.

Secondly, the researcher should consider what actually constitutes a theme and whether the data is of such a nature that themes could emerge. Evans (2018) sees thematic analysis as the process of identifying patterns and themes in the data sets. This is done via a process of getting closer to the data, initially through the process of transcribing the interviews, and then reading and re-reading them (Weich, 2006). The themes are those ideas that point to something important or central to the study, not always those that appear the most frequently (Evans, 2018). Corbin *et al.* (2008) emphasise the importance of the role of individual research in this process. For them, the idea is not to be able to take a neutral stance on the data, but rather to be sensitive to the role of the data analyser. This stance is also closer to the epistemological and ethical position taken in this study and highlighted by a feminist stance to research, where neutrality is questioned, and sensitivity to the data and the people involved is highlighted (Miller *et al.*, 2012). The third question, namely how themes are represented, can only be answered by the type of study, what the author wants to say, the audience to which the report is addressed, and of course the nature of the data.

On account of the considerations set out above, a thematic analysis was selected for this study. The approach to this form of analysis will be outlined in the following section.

3.6.1 Thematic analysis

For the novice researcher, it is always easier to have some practical guidance on how to execute the ideas discussed above. Braun and Clarke (2006) provide six basic steps in the process of thematic data analysis, which were adhered to in this study. Although other forms of thematic analysis were available, this method allowed for a practical and timely process to answer the research question. Their process has also been used in similar studies (Maguire & Delahunt, 2017).

In brief, Braun and Clarke's (2006) steps are as follow:

- Step 1: Familiarisation: This process starts even before the process of data collection, when the literature review is done and participants are approached to participate in the study. The two most important stages in this process are those of transcribing the interviews and secondly, reading the interviews multiple times.
- Step 2: Initial codes: Through the process of emersion, specific codes will start to emerge; these are semantic and often act to identify key features in the data. This is often done on account of one particular interview that is read and re-read.
- Step 3: Searching for themes: The codes identified in step 2 are grouped into indicative themes.
- Step 4: Reviewing the themes: The themes identified are then tested and a thematic map can be created (Weich, 2006).
- Step 5: Refining and naming themes: Through the process of iterative immersion, the themes take on a more specified shape.
- Step 6: Producing the report. This will, of course, require an additional level of reflection on and refinement of the themes.

These steps have been slightly modified to fit in with the ethical stance of the study. Once the final report was completed, all the interviewees had access to the final report to see how their data had been used. The author of the report will also keep this audience in mind in the drafting of a report to HEPSA and the various HEIs.

3.7. Evaluating the quality of the data

Although reliability, validity and triangulation are often referred to as the cornerstones for evaluating quantitative research, they are embedded in a positivist approach that is problematic when considered from a qualitative perspective (Golafshani, 2003; Leung, 2015). Shenton (2004) suggests a different stance, guided by the concept of trustworthiness, which is established by evaluating the credibility, transferability, dependability and conformability of the data. Credibility is established through an expanded engagement with the interviewees, and ensuring they agree with the analysis reached from their stories. Transferability is achieved via a complete description of the research process and results to see if the results

can be applied to a different setting. Dependability is attained via an audit trail, which starts initially with a process of transparency, allowing other researchers, where possible, access to the data and to verify the process of data analysis. Lastly, confirmability is achieved through a process of ensuring that the data and the conclusions are primarily shaped by the stories of the interviewees and not the bias of the researchers (Kortsjens & Moser, 2018).

3.8. Ethical considerations

In all research, but especially research involving people, a clear ethical stance is important to guide the research process and ensure that the results can be judged as having integrity and being of good quality. For the purposes of this study, the ethical principles of the International Sociological Association (ISA, n.d.) were adhered to. Ethical doctrines and guidelines such as these help to scrutinise the underlying values, norms and practices, for example informed consent, voluntary participation, protection, confidentiality and anonymity. In the case of this study where the focus of data collection was on the lived experiences of employees in a company or tertiary institution, permission was sought for the research from the chief executive officer of HEPSA (refer to Annexure 1). The various institutions were also approached before staff members were contacted. Participants who volunteered were informed about the research and were asked to sign an informed consent form.

Before the interview, participants were notified that the interview would be recorded and their consent was again obtained on the day of the interview. During the interview, the interviewer took electronic, descriptive notes. In the notes made during the interviews, no identifying names were recorded, and the notes were saved and password-protected, ensuring confidentiality and privacy.

Increasingly, there has been an awareness that especially in qualitative studies, with their inductive and fluid nature, mere ethical principles as discussed above do not address the more complex questions around boundaries, the true nature of informed

consent or voluntary participation. Miller *et al.* (2012) describe this as the new landscape of research ethics, highlighting the need to carefully consider how as researchers, the private lives and thoughts of participants are placed in the public domain and how abstract rules, narrow principles and guidelines do not always tackle these complex needs. Researchers who work from a reflexive position are better able to engage with the complex ethical dilemmas through an awareness of their own personal values and being part of a community. In the case of this study, the researcher was both a member of the various teams and at the same time, the researcher. This reflexive stance created the space to consider the experiences and impact of this study on the participants. The transcripts made after the interviews were made available to the participants, and they had the opportunity to read, review and verify the information recorded and to make corrections, thus ensuring openness and transparency. This allowed participants the opportunity to ask that their data not be used, enhancing the idea of voluntary participation. Allowing participants to confirm the intended meaning of their responses by checking the transcripts is known as member checking and can, according to Houghton *et al.* (2013) and Morse (2015), validate accuracy and credibility.

3.9. Conclusion

This chapter presented an overview of the specific research methodology for this study, a discussion of the research design, as well as the population and sample used. This was followed by a discussion on the data collection, ethical considerations and analysis processes used. The chapter concluded with comments regarding the quality of the data, to be presented in Chapter four.

CHAPTER 4 – Data Analysis and Findings

4.1 Introduction

The previous chapter provided an overview of the research methodology for this study, a discussion on the research design, as well as the population and sample used. This was followed by a discussion on the data collection, ethics and data analysis processes used. The chapter concluded with comments regarding the quality of data collected.

In this chapter, data gathered from interviewing VT members from HEPSA and HEIs is presented and interpreted against the secondary data presented in Chapter two. The chapter starts by providing the background and context of the interviewees and the VTs they represented. This is followed by the advantages, challenges and requirements for success, presented in parallel, and categorised not by the questions answered, but rather the themes that emerged from the analysis of the interviews. The chapter ends with a summary before the conclusion and recommendations are presented in Chapter five.

4.2 Contextual background of the virtual teams presented in this study

The goal of this study was to analyse the advantages, challenges and success criteria of VTs from the viewpoint of a specific population and sample group (see section 3.5). Although the collected data provides a rich insight, one should refrain from generalising the findings (Sekaran & Bougie, 2013), as each interviewee represents an inimitable, individual context. The individual context is directed by a variety of factors, including the type of organisation for which the individuals work in combination with where they work from, the vertical team to which they belong, the tools they use to communicate and collaborate, and the number of teams of which they are members. Before some of these viewpoints are shared, the context of the group and the individual is presented as a backdrop against which their unique experiences play off.

At the beginning of each interview, the participants were asked to describe their VT context. The interviewer prompted each participant to share details such as the vertical team (for reference, see Table 1.1) within which they worked, the number of teams of which they were a part, whether the teams had members from different time zones, if they had met their team members in person, and what electronic communication media tools they were using. Nine semi-structured interviews were conducted and a summary of the characteristics of the participants as a group is presented in Table 4.1., while Table 4.2 presents the context as shared by each participant. The names of the interviewees have been replaced with numbers to ensure anonymity. These numbers were not used as a reference in the analysis of the four remaining questions, as interviewees could be linked to specific points of view based on the number and the data presented in Table 4.2.

Table 4.1 Demographic characteristics of participants

Gender

Male	Female
4	5

Age

26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70
1	1	1	2	1	2	0	0	1

Organisation

HEPSA	University
3	6

Project vertical

Academic Services	Partner Support	Marketing	Enrolment	Retention	IT Services
3	2	1	1	1	1

Participated in the interview via

Face-to-face	Via videoconference
0	9

Home language English

English	Other
3	6

Office based or other

Office based	Work flexible, office based and virtual	Work mainly virtual
4	3	2

Number of VTs a member of

1 - 2 teams	3 - 5 teams	6 - 9 teams	10< teams
2	3	2	2

Different time zones

Yes	No
4	5

Face-to face-contact

Yes	No
6	3

The average age of the participants was 44,5 years, while the youngest participant was 28 years old, and the oldest participant 66 years old. The person with the longest experience working in VTs had 14 years of experience, and the shortest one-and-a-half years. In total, the participants had 45 years' experience working in VTs. As can be seen from Table 4.1, the sample selected provides a cross-section of the teams and should provide a good representation of both views and experiences.

The participants, despite being a small sample (Porte, 2013), represent a diverse

context. For example:

- Participants communicated primarily in English. English was the home language of only three of the participants. All participants had the choice to participate in either English or Afrikaans during the interviews.
- Only four of the participants were working predominantly from their work offices. Three participants had the choice to work either from their offices or elsewhere, while two participants were not office based and were working primarily virtually.
- Six participants were working for an HE institute, while three were HEPSA employees.
- Three participants who were working as part of the academic services teams were engaging with academic staff to design and develop online courses. These teams were small in size (average three members) and engaged for approximately six months or less. These three interviewees belonged to the highest number of teams (seven or more).
- The three HEPSA-employed interviewees, on average, belonged to the highest number of teams, because they had to provide support to more than one partner university at a time.
- Four interviewees had to schedule their virtual meetings around different time zones. Participant 8, employed by an HE institute, was working with an academic institution in another country during the development of the module. All three HEPSA employees were working on at least one team affected by different time zones.
- Most interviewees (six) reported having met their team members at least once in person.
- A wide variety of electronic communication media tools were used by the participants. The videoconferencing tool used predominantly by interviewees was Zoom. The HEIs often prescribed the use of these tools, e.g. one participant reported that according to university policy, they were not allowed to use either Zoom or Dropbox. The HEPSA interviewees were using a broader spectrum of tools to adjust to the specific needs of the university with which they were engaging.

- All interviewees reported using WhatsApp as an instant messaging tool to collaborate, often for more informal communication with their team members.

In the next section, the responses to the following interview questions are presented:

- What are the advantages, if any, of working as a VT instead of a team always meeting face-to-face?
- What challenges, if any, have you or your team faced because your team operates primarily virtually?
- Teams exist because as a group, you want to achieve certain goals successfully. What do you consider to be the requirements or criteria for your team(s) to be successful, despite being virtual?
- Do you have any preference between working for a VT or a team that meets face-to-face?

Table 4.2 Contextual background of the individual particpants

Part. No.	Is your home language English?	Where do you work from?	For which organisation do you work, HEPSA or Higher Ed Institute?	Which project vertical do you represent?	How many VTs, specific to the partnership and its deliverables, are you a member of?	Do any of your team/s have members from a different time zone?	Have you met all your team members in person?	What electronic communication media tools do you use to communicate and collaborate?
1	NO	Work mainly virtually	HEPSA	Academic Services	3 HEPSA only 10 HEPSA and HE	YES	YES	Zoom, Wrike, Dropbox, Microsoft Outlook, Microsoft Office 365, WhatsApp, Microsoft Teams, Sharepoint
2	YES	Office-based	Higher Education Institute	Data Science	1 HE only 2 HEPSA and HE	NO	YES	Zoom, Google Drive, Gmail, Google Docs
3	YES	Office-based	HEPSA	Partner Support	3 HEPSA only 7 HEPSA and HE	YES	NO	Zoom, Skype, Sharepoint, Microsoft Outlook, Microsoft Teams, Wrike, WhatsApp
4	No	Work mainly virtually	HEPSA	Academic Services	2 HEPSA 6 HEPSA and HE	YES	NO	Zoom, Skype, Wrike, Dropbox, Microsoft Outlook, Microsoft Office 365, WhatsApp, Microsoft Teams, Sharepoint, Google Docs
5	NO	Office-based	Higher Education Institute	Enrolment Services	1 HEPSA and HE 2 HE only	NO	YES	Skype, Microsoft Outlook, Microsoft Office 365, WhatsApp, SharePoint
6	NO	Work flexible: office-based and virtually	Higher Education Institute	Retention Services	1 HEPSA and HE 1 HE	NO	NO	Skype, Zoom, Microsoft Outlook, Microsoft Office 365, WhatsApp, SharePoint
7	NO	Office-based	Higher Education Institute	Partner Support	2 HE only 3 HEPSA and HE	NO	YES	Zoom, Dropbox, Microsoft Outlook, Microsoft Office 365, WhatsApp
8	NO	Work flexible: office-based and virtually	Higher Education Institute	Academic Services	5 HE only 2 HEPSA and HE	YES	YES	Zoom, Microsoft Outlook, Microsoft Office 365, WhatsApp
9	YES	Work flexible: office-based and virtually	Higher Education Institute	Marketing	1 HEPSA and HE	NO	YES	Zoom, Microsoft Outlook, Microsoft Office 365, WhatsApp

4.3 Thematic analysis

The research followed the data analysis process as suggested by Braun and Clarke (2006) and as discussed in Chapter 3, section 3.7.1. When considering the data presented and analysed below, it is important to refer back to the goal of the study, namely, to analyse the advantages, challenges and success factors of VTs working in higher education online programme management projects in South Africa. As the goal of the study is not to formulate or develop an explanatory study to develop an over-arching theory or explanation, but specifically to conduct an exploratory study into the advantages, challenges and success factors, no attempt will be made to develop such a theory or explanation.

It was clear from the outset that the process of immersion allowed for a closer understanding of the text, and themes soon emerged. The starting point for analysis was to read one interview that stood out on account of the richness of the data, a number of times. This laid the groundwork for the identification of themes. One variation from the process of data analysis stipulated in Chapter 3 was the use of thematic maps. It was decided that although the maps were very helpful in organising the themes for analysis, these maps did not add sufficient information to justify their inclusion in this report.

Although the individual responses to the interview questions mostly matched the responses of the interviewees as a group and correlate to the secondary data presented in Chapter 2, interviewees did share new and sometimes opposing points of view. In essence, what was shared as an advantage by one interviewee, could present itself as a challenge to another. For example, one participant commented that, because all VT members communicate in English, there are no language barriers, while another participant indicated that because he must communicate in English, which is not his home language, language is a barrier. In this regard, the same theme, e.g. language, creates a challenge for one participant, but a solution for another.

The data in this chapter will be presented according to the five main themes identified during the thematic analysis (see section 3.7.1) of the transcripts and not according to the sequence in which the interview questions were answered. The five main themes that emerged are people, relationships, environment, alignment and technology.

In order to adhere to the ethical stance of this report and to ensure that the voice of the interviewees is not lost, the voice of the participants has to be accurately reflected. For this purpose, the various themes are illustrated using direct quotes from those whose stories represent the themes.

4.3.1 People

4.3.1.1 Team formation and getting to know others

For five of the participants, being part of the HEPSA HE partnership provided them with a first-time opportunity to work virtually as a team. They all shared how uncertain they felt at the beginning of their engagement, predominantly related to the tools being used and not the people with whom they had to work:

> "…I was nervous in the beginning and worried that I would not know which button to press when… it took about three virtual meetings before I could say I know how to do it…"

A more experienced interviewee commented on the type of support he provided to those VT members participating for the first time online:

> "…when people struggle to join our meeting… in the beginning, I know I just need to be patient…they will get there… I meet them where they are at…when they join, but can't get their audio to work, I will type the steps on the screen… Zoom also allows me to take control of their screen… I can then show them how to fix it themselves…sometimes I call them while we Zoom to

help…it takes time, but once they get it, we work well together…"

The comment made by this experienced team member aligns with the statements of Hoch and Kozlowski (2014) and Meyer (2010) who said that a team needs a member (who could be the leader) with relevant skills to deal with the lack of face-to-face contact while providing support, including technical support, to other team members. According to Kearney (2006), such an experienced team member provides stability in the team.

Being a member of a VT also creates an added benefit in that it allows HE staff to experience what their online students go through, and it develops their confidence to provide academic support in an online environment:

> "…being part of a VT has prepared me for facilitating a module online…it helped grow my ICT skills and I feel more confident going online in front of students… I know what it feels like online and I know what support they need…"

A team represents people from diverse backgrounds. Not only is this determined by their individual context, e.g. the language they speak, but also the structure, management practices and culture of the organisation for which they work. Team members of a distributed or cross-organisational team, as presented in this case study, must understand and be sensitive to these differences, as two participants commented:

> "Every university has their own culture or way of doing things…their own processes…some are more laid back and will get things done when possible…others have a 'get it done immediately' way of doing things…As a partner, I have to be able to adjust to the culture at every university."

Moreover:

> "In the beginning… I need to get used to terminologies used by only their

> organisation…I started a glossary… also how they operate and how their structures work… it takes time… in the beginning, it was a lot of our way and your way… glad we now refer to us…"

This interviewee's comment aligns to the recommendations made by Ratcheva and Vyakarnam (2001) who said that a "third way" (or the "us" as used by the interviewee) of doing things should be developed among team members, thus allowing the team to develop a new micro-culture where the team is not dominated by one team member's idea, location, culture or function.

The team culture and language used may influence the performance and decision making of the team (Bigelow, 2016; Shachaf, 2008) and is established early on during the forming stage (see section 2.8) of the team. Two interviewees commented on the use of English and the impact it had on their team. One participant commented that, because all VT members communicated in English, there were no language barriers:

> "… I think the language barrier has been overcome... because everyone speaks English…"

On the other hand, another participant indicated that, because he had to communicate in English, which was not his home language, language was a barrier:

> "All our meetings and documentation are in English…this is not my preferred language…at times I find it difficult to express myself… I want to say something during the meeting but first need to translate it in my head…once this is done, the other people moved on to a new topic…I have good ideas to share and feel I can contribute, but my level of English is not good enough…"

Zofi (2011) found that varying interpretations of language and conveying complex messages in a written format such as email can be an additional source of conflict.

This sentiment was shared by one interviewee who said:

> "…when I send an email, I have to be so careful… my words can easily be misinterpreted ... it is often easier to pick up the phone and call, but then we don't always have a record of the conversation… so I send a summary via email… I don't like sending emails backwards and forwards…"

This interviewee, like others who participated in the case study, adjusted the way they communicated to best suit the situation or the level of complexity of the message that needed to be conveyed.

4.3.1.2. The human nature of VTs

VTs are made up of people, ideally with complementary skills and ideas, who work collaboratively and interdependently to achieve specific goals. These individuals are selected during the forming stage of the team (see section 2.8). The interviewees shared various advantages and challenges in this regard, from which the following two sub-themes emerged: team design (individual vs number of teams, cross-functional teams, and sourcing the right talent) and the impact of language and culture on their experience of VTs.

An individual can be part of one or more teams, as was the case for eight of the interviewees. For one interviewee, this created an opportunity for a rich, exciting working environment:

> "I love my job…because of this project…I work with so many different people across our university…some are academics and others are from branding…these are people I have never met before…it is exciting…"

Another participant indicated that being part of more the one team was overwhelming:

> "…only one of our team members belong to only one team and he has been appointed only for this role… I envy him…I have to do a balancing act which is increased by the number of teams I am part of… this would have been easier if we all belonged to the same department…some days I feel like a jack of all trades but master of none… it would be easier to work with only one team at a time…"

Kearney's (2006) study confirmed the notion of "jack of all trades but master of none", when he reported that a greater number of members of low-performing teams reported participating in too many VTs. An experienced VT interviewee suggested that the requirement for being available to more than one VT is the ability to work virtually, travel less and experience more, as this helps in coping with being part of many teams:

> "I am part of many teams… the only way to be available to all the teams is doing meetings virtually… because my commuting time has reduced, I have more productive hours in the day and can be more available to those who need me… yes it is a fine balance but through experience I know how to get it done…"

It is not only the number of teams of which an individual is a member that was mentioned by interviewees, but also whether members are from the same department, faculty or organisation. When teams consist of cross-vertical or cross-functional members, they appear to face unique challenges and greater levels of complexity (Pearlson *et al.*, 2016):

> "…although I understand the importance of being on the ops team at our university… it does feel at times that we are too many people from different camps on the team…these meetings carry on for too long with too many departments and people having to report back…half of what is being said, does not interest me…"

And

> "…this is a new partnership that requires a new way of working…going online pushes us to not only work with HEPSA as vertical experts but also people in other parts of the university…how modules are scheduled online does not affect just me, but a far greater group of people…I need to get used to not making isolated decisions…"

One participant highlighted the importance of getting to know and understand the functions of the various teams from the onset:

> "Slow down and then speed up… take time to get to know the different teams and their roles within the bigger picture… don't rush to start engagement until there is a clear understanding of the different teams and their functions…take time to collect background information of the different functional teams on campus before establishing the different vertical teams…"

Membership of fewer teams, the size of teams, and teams being allowed to form over a longer period of time are all important factors mentioned during the interviews as criteria for the success of VTs. One participant added the important role played by more experienced team members to assist new members, underscoring the notion of Kearney (2006) that an experienced team member provides stability in the team:

> "…I was not new to team work, but definitely new to being part of a VT…it helped having [x] on our team…she has so much experience…facing challenges with tools does not freak her out…[x] knows just what to do to help…"

4.3.1.3. Roles and responsibilities

For teams to perform optimally, they need, as a starting point, members with the appropriate skills to accomplish set goals (Clemons & Kroth, 2011; Ferrazzi, 2014),

and VTs afforded all of the interviewees in the case study the ability to include team members they would not have been able to, if not for the ability to communicate and collaborate virtually. VTs can source talent for the duration of the project:

> "I have to find someone that will develop the content…it is great to know that this person can come from anywhere…I can now appoint them for their expertise and not just because they are available on campus...I can look beyond my current overworked and underpaid staff… I can contract a person in just for the duration of this project…this person can even be a retired professor…"

These core team members should ideally have complementary skills needed to accomplish the goals of the project and participate throughout the project. On the other hand, teams can also bring experts or affiliated members on board for some critical phases of the project. These members move in and out of the team (Scholtes *et al.*, 2018):

> "…there's a lot of cost and time to bring an expert into the meeting… I just want to ask him a few questions or need an example… it is more effective I think to bring in the expert virtually…we don't have to pay their travel expense…"

Many of the interviewees working on cross-functional teams noted the importance of having the right people in the meeting, identifying clear roles and responsibilities and the importance of sharing relevant information with all required team members and documenting these with care:

> "from the beginning, our team used a task matrix listing all the phases and steps required… here we document not only who is involved but also who is responsible for what…we use RACI[3] to indicate this… I think this is so important… I know whom to involve when and that helps…"

[3]RACI is an **acronym** for the four key responsibilities most typically used: Responsible, Accountable, Consulted, and Informed.

And:

> "…we struggled to make final decisions on key elements in a course… there were a number of emails and meetings…until we had Prof. [x] in the Zoom meeting…she had insight and could make immediate decisions…what a relief…I ... realised again just how important it is to have the right people in the meetings…"

4.3.2 Relationships

Developing team relationships, at least to the point where "we are willing to both seek each other out when needed", was mentioned during all the interviews as critical for effective VT interaction. Correlating with a recommendation made by Kearney (2006) and Kofi (2011), five of the interviewees commented on the value of regular check-ins to build relationships, even if it seemed that there was nothing to discuss:

> "Set recurring meetings for the team early on… don't fall trap to not having these meetings because there is nothing to discuss… always check in and make yourself visible to the team."

Interviewees across all the vertical teams reported that they did not use only scheduled times for these check-ins, but they all reported using easily accessible tools (Gilson *et al.*, 2015) such as Whatsapp[4] to communicate "on the fly". Their WhatsApp exchanges were both formal and personal. Members mentioned the importance of "checking up and checking in" with one another. This relationship changed the manner in which people interacted, with participants sharing how their relationships had changed from professional to collegial (Powell *et al.*, 2004), to becoming closer friends:

> "…in the beginning we addressed each other as doctor so and so or professor so and so…we were very formal and only communicated when

[4] https://www.whatsapp.com/

> necessary…now we exchange messages via WhatsApp… wishing them well with their exam…and they invite me for supper even if we have not met in person…"

It seems the virtual spaces allowed for personal relationships to develop despite a lack of face-to-face contact. This is important for building stronger teams with members able to support one another. The virtual space between colleagues was also challenged to become less divided, when team members used technology to create an office-like online environment that mimicked the manner in which a team of office colleagues would work together. Two participants shared how they made themselves available virtually to mimic being able to walk over to a colleague's desk and ask a question:

> "Sometimes our team will all be working from different, remote locations, but we will all be in the same virtual Zoom room for the entire morning…our mics are all on mute…when we need help and want to share an idea, we unmute our mic and talk as if we would walk over to someone's desk in the office…for me, there is no difference between being in the office or working remotely…"

Another interviewee shared a similar response to being reachable and available despite working remotely:

> "…just as I would be available at certain times for someone to knock on my office door, I am available for someone to knock on my virtual door… team members know that I am virtually in my office, that I am available and that they can enter my Zoom room by just entering my name and then connect…almost like an open-door policy…"

Video conferencing tools such as Zoom, used regularly by all interviewees, allowed team members to share documents on the screen while seeing and hearing one another in real time. Despite the great benefits of these tools mentioned by all nine participants, the virtual collaboration among team members does have its limitations,

which can lead to potential misunderstandings due to a lack of visual cues (O'Keefe & Chen, 2011). This challenge was raised by three of the participants:

> "not being able to see visual cues during the meeting can cause misunderstandings…I cannot always follow the flow of the conversation because not everyone is visible on the screen…after a meeting, I cannot walk up to someone to clarify a point that was raised…"

Participants were concerned with their inability to observe the body language of the team members on the other side of the screen; they were not always sure if the other team members agreed with or even understood their comments and if they were on "the same page". Eight interviewees commented that meeting a team member in person is vital in building trust and allowing team members to get to know one another.

> "…to really establish trust and then to nurture that trust in a virtual team I think… takes longer… so it would be great to meet face to face…."

The value of meeting face-to-face at the beginning of the team's interactions, for teams that need to engage primarily virtually, is also mentioned by researchers such as Bekkers (2003), Kearney (2006), Kofi (2011), O'Keefe and Chen (2011) and Powell *et al.* (2004). In general, the interviewees thought that in-person interaction should take place as early as possible:

> "I've been in face-to-face contact with all of my team members… more so, in the beginning, to get to know each and trust each other."

And:

> "…the earlier we met in person, the quicker we got on with what needed to be done…"

As the above interviewees mentioned, meeting in person is not only about seeing one another's facial expressions and getting to know one another, but it assists the team in building trust and addressing emotional needs. This need aligns to the

research conducted by Kofi (2011), who found that occasional face-to-face communication is vital, especially during the forming phase or when conflict needs to be resolved but is not a requirement for building relationships. Trust is enhanced through regular contact (e.g., phone/email, etc.), as evident in the comments above where participants were able to establish and build relationships as friends, much as can be expected from an office setting.

Despite the need to build relationships and have a human connection, the interviewees indicated that they did not always use the capabilities of Zoom where participants can share their videos during meetings. Two interviewees suggested this as an opportunity to improve their communication as a VT, and another stated that it might be due to Internet bandwidth challenges. The need for face-to-face meetings can also be guided by the purpose, duration and complexity of the meeting and the issues that need to be resolved. One participant shared that they used the following guideline to make the decision to meet in person or virtually:

> "…when we think the meeting will take longer than 2 and a half hours, we sometimes consider to rather meet in person… longer meeting are often driven by more complex issues that needs to be resolved and it is better to resolve these in person…when the purpose of the meeting is to run a workshop, we meet in person if the workshop is longer than 2 hours… for shorter workshops we use the webinar tool of Zoom…"

The lack of face-to-face contact can leave VT members feeling isolated or "alone". Three participants commented on feeling isolated at times. One participant in particular felt more isolated being the only virtual member in the team and mentioned that the other team members would start a meeting, forgetting to connect virtually.

> "They forget that I am also in the meeting…they don't hear when I want to comment…I sometimes wonder what the people in the room talk about when I exit the virtual meeting… they might be talking about me… I would be more comfortable if everyone were joining via Zoom and not just me."

This participant did not differentiate between being in a virtual team with someone from another organisation or being a VT member only within his own organisation. Another participant had a similar experience, but within a group context, and overcame it by ensuring he had a “counterpart” on the other side:

> “… a team on this side meeting with the rest of the team on the other side… have someone on each side that can help support the communication flow and quality… a counterpart on that side… “

Despite the many challenges related to relationships, trust and communication shared by the interviewees, some of which were presented above, no participant felt that the relationships in their team were so poor that their VTs could be classified as dysfunctional. They expressed their VT experiences as a journey or a process and were willing to continuously work towards better relationships, trust and communication.

4.3.3 Environment

Participants, not restricted by having to work from the office, appreciated the advantages of not having to travel, saving costs and saving time. One participant added a condition to travelling less:

> “I’ll say that VT has opportunities… one means I don't have to get on a jet plane and go all the way to "x" … every day I can make a quick call and meet over the phone or via Zoom and share documents online which makes it fantastic… where you can do it now in one hour online instead of a full day away… we save cost … it becomes a lot cheaper but, and I have to add this but, this only works if we all have good, reliable connectivity.”

Travelling less not only saves time and costs and increase productivity, but it also

holds much greater value to the environment itself, as one participant mentioned:

> "I love the fact that I know we can work together without everyone flying to be in the same location…just imagine the environmental footprint we would have left if we always had to travel to be in the same place…it makes me feel 'green'."

Even times that would have otherwise not been productive can now be used in a more industrious manner. One interviewee described how he was able to use the time spent in a car or in transport to link into meetings or to complete tasks online, but he was concerned with the risk involved:

> "… sometimes I join a meeting in the car… when you're driving around… that's not really easy to work and you're on the move … we should have a rule against this, it is not safe… I can't sit with a laptop on my left while I'm driving a car back from the airport… I feel some people almost expect you to join meetings while you travel…for me the safety of staff comes first…we should have a policy in place to manage this."

This comment suggests that participants were asking questions about the manner in which the ease of access could also intrude in their private lives and safety, where the boundaries between work and life are being challenged. One participant working for the OPM company mentioned that he often had to attend meetings after hours, because some of his team members were working from offices in the US or UK:

> "… there are some weeks where I am attending more than three meetings after hours with the team in the US…for them it is early in the morning and for me it is after hours… although I don't always mind attending, it is not ideal…we all try to compromise…"

Other comments shared by the participants stated the importance of a work environment with little noise and a space that allows for sensitive conversations to take place as a requirement for success:

> "… working virtually does not mean I can sit in a coffee shop all day and work…I need a space that is quiet and where I can have professional conversations even if the other person is not sitting right in front of me…"

4.3.4 The broader systemic context

The broader external systemic environment posed challenges to all nine participants who found it difficult to insulate themselves against national political, economic and social developments. One of the challenges mentioned by all nine participants was access to reliable electricity due to scheduled power outages from the national supplier, Eskom. Although participants did try to overcome this challenge by buying generators or moving to different locations not being affected, they reported to lose up to a week at a time on some of their production schedules:

> "I have challenges with connectivity and electricity during load shedding… I lost 4 hours a day for five days in a row… my team member's load shedding schedule was different to mine and once my electricity came back on again and I could meet with him, he had load shedding… what a challenge to rearrange our schedules even though we did have the Eskom roster, they did not always keep to it…."

Another challenge was the omnipresent threat of violence at HEIs or surrounding areas, preventing access to campuses. Having limited access to campuses due to student protest, one interviewee commented on the time lost as a result:

> "…during fees must fall…and the riots on campus, we lost almost two weeks on the project… our team was able to continue working virtually, but the one campus guy really fell behind and that affected the entire team's deadlines…"

And:

> "…we had urgent matters to address…for the entire duration of the campus protest [x] could not be reached…not only was I concerned for her safety, I

was also concerned for the impact this had on our timelines…"

And:

> "Despite the challenges of our campus being closed… all the riots on campus… I carried on working and got the job done... actually, working as a member of a virtual team prepared me to overcome problems when I could not go to campus…"

Being part of a VT offered the South African-based team members solutions to problems to which their colleagues working in other countries might not be able to relate, but for a growing number of developing countries, the problems of electricity supply and political unrest will be all too familiar. These factors from outside the virtual group are just as important as the events within the confinement of the group and highlighting the importance of a systemic approach to group development (Tubbs, 2004) rather than a linear process as suggested by Tuckmand and Jensen (1977), as well as Clemons and Kroth (2011).

4.3.5 Alignment

While working virtually certainly comes with a unique set of challenges, the physical distance between members is not the only cause of a team struggling when moving from the forming to the transforming and performing phases of team development. One participant in particular mentioned the term "misalignment". Misalignment can come in various permutations, such as the number of workdays or leave days per year, the tools or standards being used, or how quality and progress are measured.

Creating alignment across verticals within the same organisation seems to be less problematic than creating alignment across functional teams consisting of members from different organisations. Participants from the OPM company commented on the frequency of HE staff being available in comparison with their own leave schedules. This, combined with the national holidays when working across countries, created

scheduling challenges.

> "…while we are busy with the development of a module, the academic would go on a 6 month leave to finish his PhD. We did not plan for this upfront because we did not know…when they are busy with exams on campus, the academic is almost not reachable because he is marking…this also affects our timelines…once we realised this, we framed a number of questions into our discovery phase that will allow us to more carefully predict timeframes and adjust accordingly."

Distance does not have to make a project suffer. It does, however, increase the chances of miscommunication, delays, and collaboration challenges; often driven by a lack of shared understanding. Meeting structures and procedures established early on can help drive success:

> "…from the beginning I try to find a rhythm for our team…have an agenda for every meeting… most of the time we have standing agenda points… it helps me to give structure to the discussions when we meet…I distribute the agenda before the meeting…during the meeting I keep notes on the screen and share my screen with everyone…everyone can see what I type…these meeting notes are distributed as soon as possible…"

A further challenge, not only between institutions but even within a single institution or department, was the use of different file-sharing platforms or online communication platforms. Even across the same departments, there seemed to be a misalignment to the communication and technology tools being used. One interviewee said that she was currently using Dropbox, Google Docs, SharePoint, WeTransfer, OneDrive and others to accommodate the needs of all the partners involved in one of the vertical teams, but she was managing despite the challenges:

> "…luckily I have used all these tools before and can easily adjust to whatever tool the teams want to use… I don't know how someone will cope if they did not have the experience to use all these tools… I suppose they will manage

but it will take them longer to get the job done…"

4.3.6 Technology

The fifth theme reports on the affordance offered and the challenges presented by technology. VTs are dependent on technology to communicate and collaborate across a distance. Tools such as email, videoconferencing, etc. are selected and should be established even before the forming phase of the team (Clemons & Kroth, 2011). The same technology that allows one to work as a team can also hinder a team from achieving its goals.

The managers responsible for the design or norming of the team are not always aware of the technical requirements or challenges of VTs:

> "…it took us almost two months before we could meet online because nobody knew that (x) did not have access to a mic or speakers on the computer in his office… budget to buy it was not available… the procurement process took forever…we lost valuable time…"

The participants did not elaborate too much on the challenges presented by technology (some of which have been shared above), but they rather shared specific technical requirements and the support needed for a VT to be successful.

One participant mentioned the equipment required for the specific needs of VTs, such as good speakers, video cameras and microphones, as well as reliable internet access. The participant believed that the correct tools enable teams to have productive meetings that are similar to a face-to-face meeting experience. Unreliable Internet access remains a challenge, even within the same organisation. As one participant mentioned:

> "…I can be on the same campus…in the one building there is good Wifi and

> another building there is no Wifi …when I move to our satellite campus, there is almost no Wifi…we cannot assume because there is internet on the main campus, that all campuses will have access…I think those planning for us to work as virtual teams forget this and they do not provide the access we need."

This participant also mentioned the high cost of data when working online:

> "…data in South Africa is very expensive…I cannot only rely on a WiFi connection at home as I travel a lot…I buy additional data when I travel, and this is costing me so much…"

Seven participants commented on the importance of high-quality sound when meeting virtually. Two participants mentioned some level of the frustration experienced when members do not check their sound before the start of the meetings. Not only should VT members have access to the right equipment, but the equipment needs to be functional and checked before meetings start. A lack of sound can derail a meeting, leaving team members unengaged and feeling isolated. In some instances, meetings had to be cancelled or rescheduled due to a lack of good sound quality.

> "…if we cannot hear each other, we cannot meet…when there is no sound but they can see my screen, I call them telephonically…I know this is not ideal, but at least we get the job done…it is better than have to cancel or reschedule the meeting…it helps when there is an IT guy on standby on campus for someone who joins for the first time…"

Interviewees described the importance of having a good understanding of how to use the different tools and the value of training and support, especially during the early norming and forming stages of VT development. The level of support available differed from organisation to organisation. One participant mentioned the training he had gone through before joining a VT for the first time. He had also had technical

support on standby during his first VT meeting to ensure he connected successfully. This is in contrast to another participant who received no training or support from within her organisation. This participant, for example, purchased her own microphone to improve her videoconferencing experience.

Technology is key to allowing virtual teams to function, yet interviewees had different experiences of access to technology and stable Internet connectivity, training and support for the use of the technology tools.

4.4 Conclusion

The experiences and opinions of participants in this study are, in general, not surprising, and are aligned with those documented in previous research studies. The participants did, however, confirm that VTs in combination with working virtually across two different organisations (HEPSA and HEI) present unique challenges and advantages. The interviewees shared the challenges that all VTs face, e.g. the absence of face-to-face contact, challenges caused by technology due to bandwidth issues and unstable internet connections, and barriers to communication and the building of trust. However, circumstances beyond their control, such as load shedding and on-campus student riots, added to a more complex work environment. The participants did, despite the challenges, indicate that these challenges are not insurmountable and that they would prefer to continue working as VTs due to the advantages this offers.

Although this chapter presented the advantages, challenges and success factors experienced by the nine participants, this was done making use of a thematic analysis. In the next chapter these factors will be summarised when each of the four secondary research objectives are concluded.

CHAPTER 5 – Conclusions and Recommendations

5.1 Introduction

This is the final chapter, which concludes the study and provides a summary by revisiting the aim of the research and the primary and secondary objectives as outlined in Chapter 1.

Using HEPSA as a case study of an OPM company and its partnership with SA universities, the goal of the study was to investigate VTs, and in particular, the advantages, challenges and success factors that contribute towards the effective performance of VTs working in higher education OPM projects in SA. This case study provided a unique context, filling a gap in the research field, as it combined the following attributes:

- The cross-organisational and distributed VTs comprised of members from a higher education institution and a private company working collaboratively towards a shared goal.
- The VTs comprised of members from entities across the university, instead of focusing on only one department or faculty.
- The participants in the study were also responsible for creating online learning solutions for virtual, online students, giving them first-hand experience of what it feels like to work and study virtually.
- The HEPSA participants, although all based in South Africa, had an international footprint, working across time zones and national boundaries.

The following four secondary objectives were formulated to achieve the primary research objective:

- Explore the terms and concepts related to teams and VTs.
- Examine the advantages that may be experienced by VT members working on higher education OPM projects
- Examine the challenges that may be experienced by VT members working on higher education OPM projects.

- Analyse the factors that can contribute to the effectiveness and satisfaction of VTs and their members working on higher education OPM projects.

5.2 Summary of the research objectives

This section contains a summary of each of the four secondary objectives of the study based on the findings presented in Chapter 4, and against the research review and framework as discussed in Chapter 2, section 2.11.3, and illustrated below in Figure 5.1.

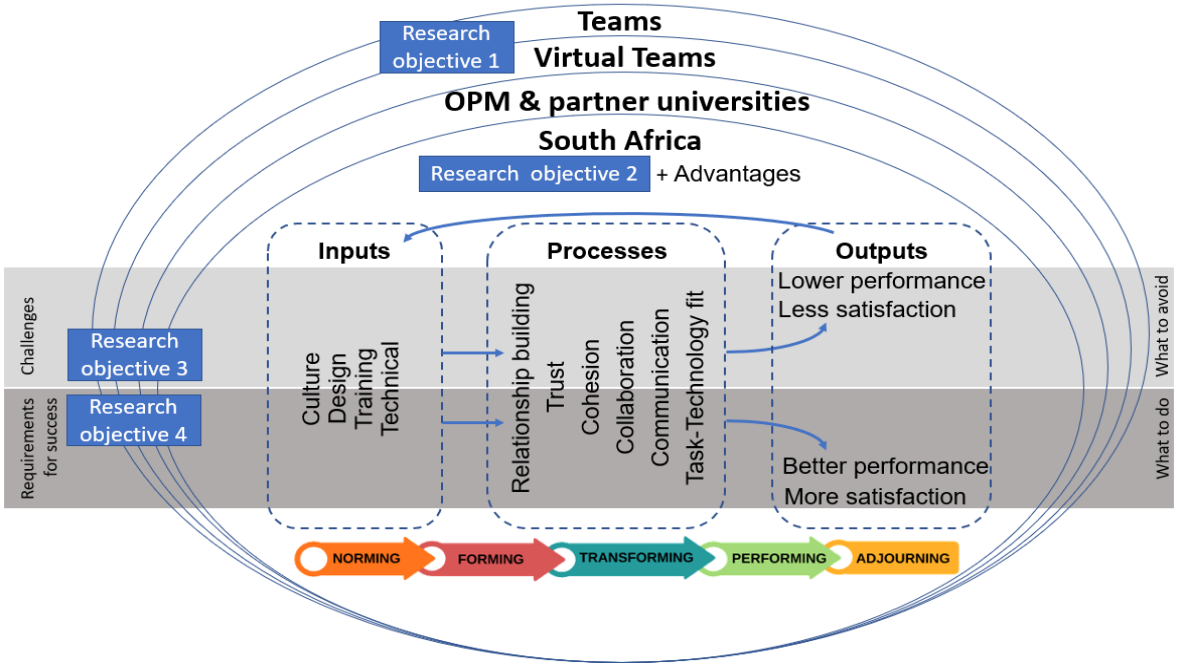

Figure 5.1 Graphical representation of the research objectives

5.2.1 Secondary objective 1

The first secondary objective was to explore the terms and concepts related to teams and VTs.

The study analysed the concept of teams, the types of teams and how teams are developed into high-performance teams. The study also investigated VTs, their

organisation, and the differences between virtual and co-located teams presented in Chapter 2, allowing the researcher to classify the VTs presented in the case study accordingly.

Although the term “virtual team” has been widely used, there is no single consistent understanding of the term (Jimenez *et al.*, 2017). However, for the purposes of this study, VTs were defined as a group of individuals who are, despite being separated by physical, time and/or organisational distance, enabled through the affordances of ICT to work towards and achieve specific tasks and shared goals.

The VTs presented in this case study were both project and functional (natural, self-managing teams, process and management teams) (Isenberg *et al.*, 2012) and the members were either core (participate throughout the project) or affiliated (critical for some phases of the project and move in and out of the team) members (Scholtes *et al.*, 2018). Team members who participated in this study were working for either the OPM company or one of the partner universities, making the teams in this study primarily distributed and cross-organisational teams (Snow, 2017).

5.2.2 Secondary objective 2

The second secondary objective was to examine the advantages that may be experienced by VTs working on higher education OPM projects in South Africa.

The advantages experienced by participants in this study were, in general, well-aligned to those from previous research studies as documented in Chapter 2. Unique to this study, participants felt that being part of VTs prepared them for the responsibility to create and facilitate online learning solutions for virtual, online students. It also prepared participants to overcome challenges when they could not access their place of work due to student protest actions.

Other advantages mentioned by participants included the following:

- Cross-organisational VTs provided the participants with the opportunity to be part of a diverse team.
- VTs allowed team members to save on travel, relocation, office space and utilities costs.
- By saving on travel time, team members could increase the virtual time spent with their team(s) and they reported that this increased their productivity.
- Travel and overhead costs were reduced and members felt this had a positive impact on the environment.
- Despite meeting primarily virtually, cross-organisational teams were able to develop relationships, cohesion and trust.
- VTs allowed all the teams presented in the case study the opportunity to source talented people regardless of their geographical position.
- VTs allowed the teams to source affiliated team members for specific tasks without incurring additional travel and accommodation costs.
- The technology used allowed for innovative ways to support and bring on board new team members, for example using a familiar tool, WhatsApp (voice and video) to guide a novice Zoom user.
- By working virtually, OPM company members were able to support multiple teams across different HE organisations.
- Readily available and easy-to-use tools such as WhatsApp allowed teams to have regular, informal check-ins, which supports the building of cohesion and trust in the team.

5.2.3 Secondary objective 3

The third secondary objective was to examine the challenges that may be experienced by VT members working on higher education OPM projects in South Africa.

There were a number of similarities in the challenges experienced by the participants in this study to previously documented challenges in research studies.

The broader South African context did, however, present the teams in this case study with unique challenges. The broader environmental, political and economic factors that affected the teams included the following:

- National electrical power outages, also called load shedding, caused a decrease in productivity.
- Unreliable internet access in some parts of South Africa, including some remote areas on the various campuses, created challenges.
- Student riots and violent protests made campuses inaccessible.
- The high cost of Mobile Internet connectivity in South Africa was prohibitive.

The other challenges (or what to avoid) identified by participants in the study occurred throughout the IPO lifecycle of the VTs (Dulebohn & Hoch, 2017), as well as during different stages of VT development (Clemons & Kroth, 2011). Some of the challenges experienced are summarised below and where applicable, aligned to the IPO lifecycle or the VT development stage and illustrated against the framework for the study (see section 2.11).

- Challenge 1: Inexperience of working virtually leads to feelings of uncertainty.

More than half of the participants selected for the teams during the design/norming stage had no prior experience of working virtually. The selection of team members with no or limited experience, including technical, in working virtually, can lead to challenges during the process/forming, transforming and performing stages of the team, because they struggle to communicate using the required technical tools. This challenge can be addressed by providing the necessary training and support at the beginning and throughout the engagement.

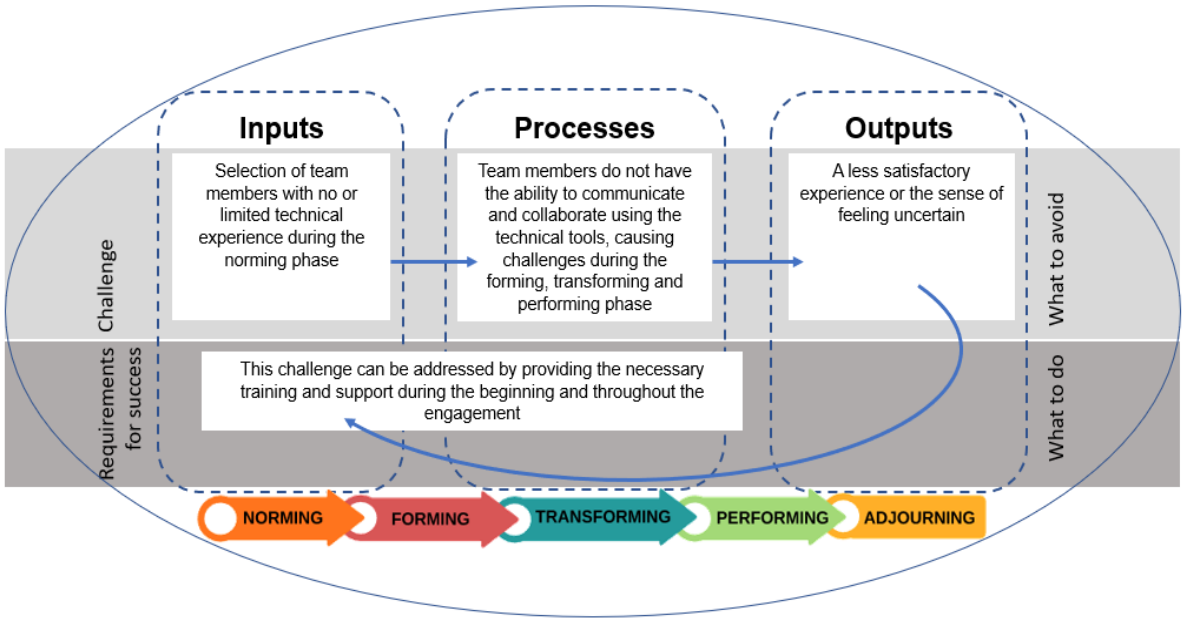

Figure 5.2 Graphical representation of challenge 1: Inexperience of working virtually leads to feelings of uncertainty.

- Challenge 2: Establishing teams with clear expectations and defined roles and responsibilities in cross-organisational VTs takes time.

During the design/norming and forming stages, the selection the team members, the establishment of clear expectations and defining roles and responsibilities across the organisational and cultural boundaries of the OPM company and the partner universities take longer than expected. Having just the right number of skilled team members participate in VTs with clearly defined roles, responsibilities and expectations, despite cultural differences, will support the development of trust, cohesion and collaboration during the process/transforming and performing stages which will lead to better performance and less frustration as an output.

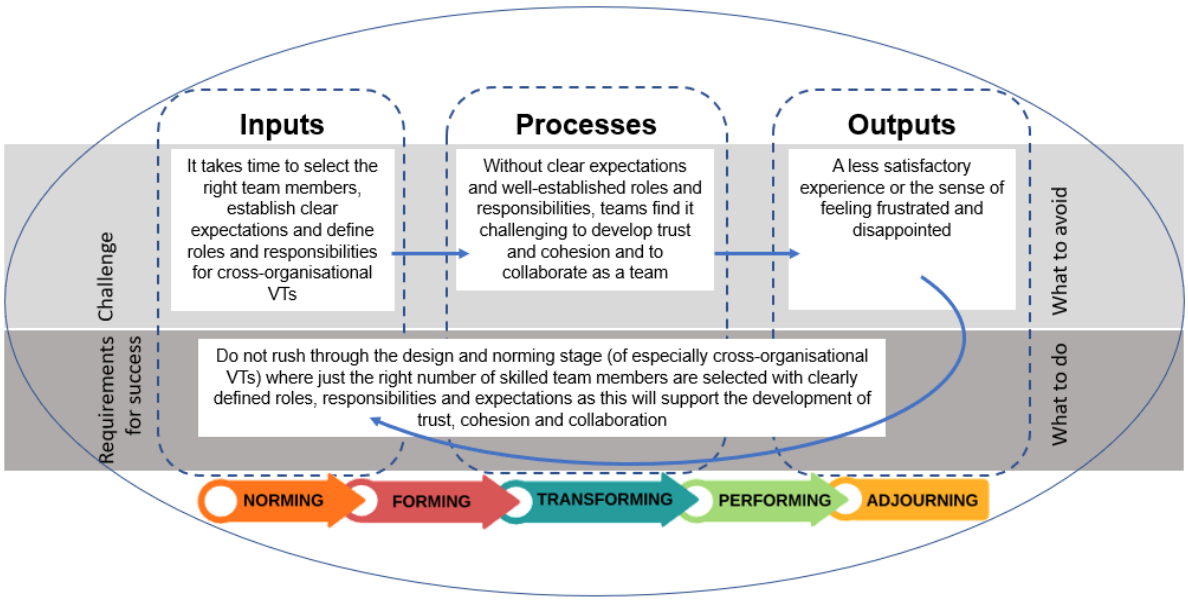

Figure 5.3 Graphical representation of challenge 2: Establishing teams with clear expectations and defined roles and responsibilities in cross-organisational VTs takes time.

- Challenge 3: Teams members do not all have access to the necessary tools to engage, and various on-campus processes delay addressing this.

The project coordinators from the OPM and the HEIs, responsible for the forming of various teams, were not always aware that individual team members did not have access to the necessary equipment, including speakers, microphones and reliable Internet access. The HEI project coordinators could also not always ensure that all their team members have access due to challenges such as lengthy campus procurement processes. The result was that team members were required to start virtual engagement without being adequately equipped. This delayed the forming of teams and challenged the teams in how they collaborate and communicate leading to constant task-technology fit changes to accommodate team members who did not have access. The selection, availability and use of communication technologies should be established and set up early in the norming phase. Minimum requirements should be documented and where access is not possible, alternative ways of communicating should be established as it affects all processes of the team, potentially leading to lower performance if not addressed.

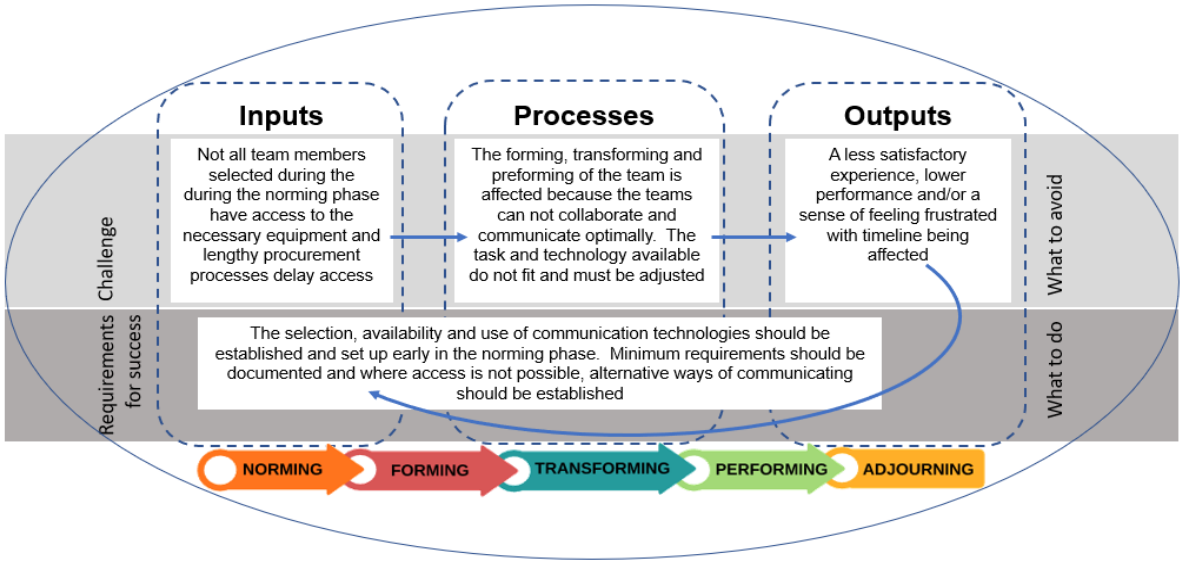

Figure 5.4 Graphical representation of challenge 3: Teams members do not all have access to the necessary tools to engage, and various on-campus processes delay addressing this

- Challenge 4: Team members, especially those from the OMP, had to adjust to and use multiple communication technologies to accommodate various partner organisations, which could be challenging when the team member lacks the necessary technical expertise.

- Challenge 5: Changes to the selection of communication technologies are made without informing and/or training all cross-organisational team members.

- Challenge 6: Lack of in-person or non-verbal communication.

During the forming stage, some teams could not face-to-face for introductions and onboarding, or when new members joined the team later in the process, they did not have the opportunity to meet the team members face-to-face. This challenged the building of relationships and trust. Although teams had the affordance of using the video sharing options of the available tools to overcome the lack of face-to-face communication, they did not always make use of it. Interviewees reported that Internet bandwidth was a possible cause for this. When only virtual or limited visual communication and collaboration take place, some members felt isolated.

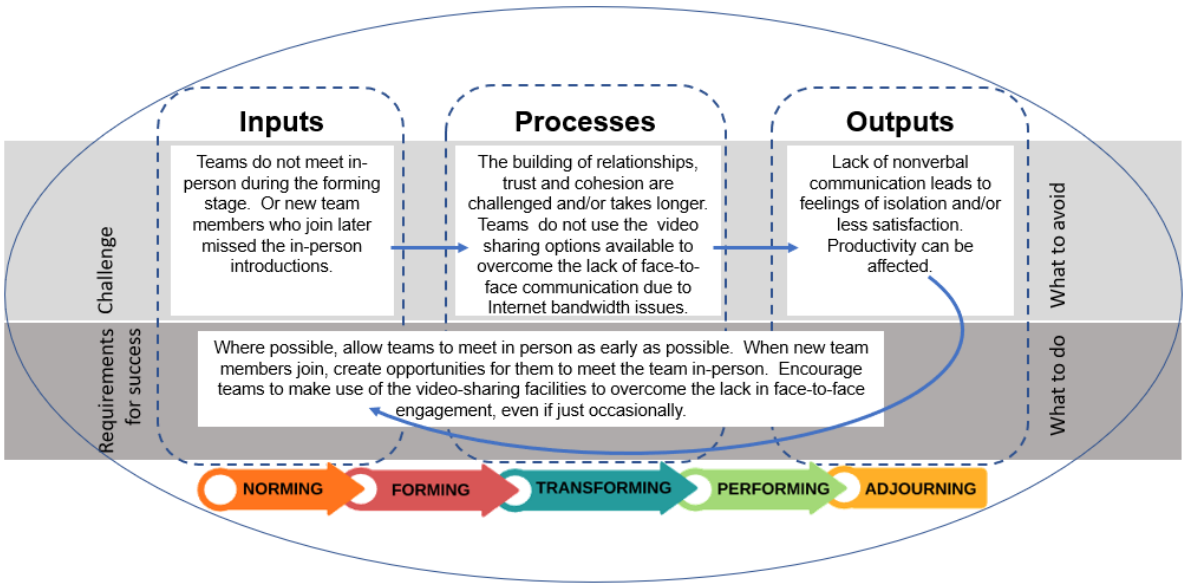

Figure 5.5 Graphical representation of challenge 6: Lack of in-person or non-verbal communication

- Challenge 7: Members from cross-organisational teams found it challenging to co-ordinate tasks and to align calendars and timelines during the forming stages of the project. This eventually affected the cohesion and collaboration of the team, leading to lower productivity and higher levels of frustration.

- Challenge 8: Unrealistic expectations affected the safety of team members

The work ethics and willingness of individual team members to always be available, despite e.g. travelling, meant that some team members could not avoid the project from affecting their personal time and their safety. When the culture of the team sets unrealistic expectations on the individual team member to the extent that the member feels his or her safety is of lesser importance than being available to the team, it affects the relationships and trust among team member which can lead to a less satisfactory experience for team members. The team member lower his commitment in order to overcome the sense of feeling unsafe.

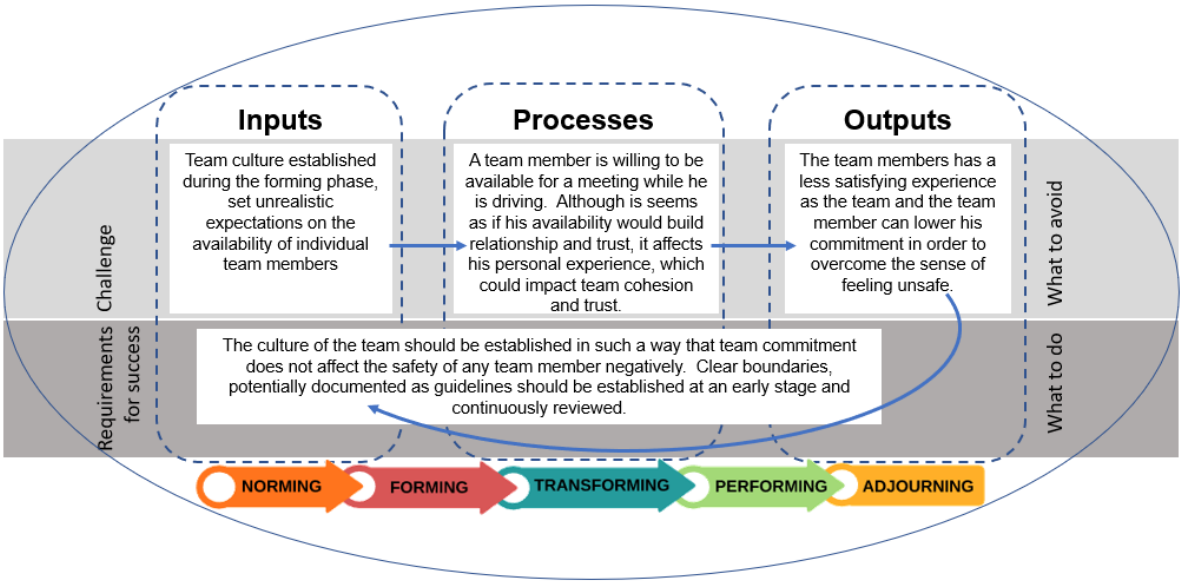

Figure 5.6 Graphical representation of challenge 8: Unrealistic expectations affected the safety of team members

5.2.4 Secondary objective 4

The fourth and last secondary objective was to analyse the factors that can contribute to the effectiveness and satisfaction of VTs and their members working on higher education OPM projects in South Africa.

The participants shared many practical ideas to improve the effectiveness and satisfaction of VT members. Many of these recommendations are documented in Chapter 2, as well as in the above section, as potential solutions to the challenges faced by VT members and to improve the performance output of the team. Recommendations made by the participants included the following:

- A team member with prior VT experience, willing to support other team members, is an advantage as it brings stability to the team.
- Members from cross-organisational or distributed teams must be sensitive to differences such as culture, terminologies used and organisation-specific processes and should be willing to develop a “third way” of doing things.
- Teams should be allowed to select their own easy-to-use and task-fit technologies to best convey complex messages.

- The technologies used, including internet access, should be reliable, in working condition and readily available. Training in the use of these tools, as well as technical support, should be planned for and provided.
- Teams, especially cross-organisational teams, should be allowed time to get to know one another, and where possible this should include time to meet in person.
- Teams should be designed in such a way that they have just the right number of team members with complementary skills to accomplish the goals of the project. Additional or affiliated members should be included only when deemed necessary.
- Teams should have a clearly defined purpose and should take time to establish roles and responsibilities early on. One way to document this is by using a task matrix.
- Regular virtual check-ins, even if informal, should be encouraged as this may assist in the building of relationships and trust.
- VT members should be mindful of the environment from which they choose to work. A noisy background will not support the professional function of a team, nor will joining meetings while driving provide a safe working environment.
- Teams should be encouraged to establish meeting structures and processes early on.
- Teams that wish to mimic an office-like environment can do so through the innovative use of available technologies.

5.3 Limitations of the study

Although this study revealed the advantages, challenges and success factors that contribute towards the performance of VTs, there were some limitations pertaining to this study. Firstly, that the population size was small and included only nine participants. Unfortunately, some interviews could not be conducted in the timeframe allowed due to the unavailability of people to participate. Should there have been more time to complete the study, the researcher would have increased the size of the population.

The second limitation was that only one OPM company and its partner universities were included in the case study, hence the findings of the research cannot be generalised to all OPM VTs. The third limitation is that no comparison was done between the experiences of the OPM members and the team members from participating universities. As OPM company members operate across multiple HEIs, their experiences can differ vastly from those team members employed by only one university. The last limitation was that the study did not investigate the experiences of VT members based on their function in the team. A comparison could be drawn between the team leaders and the team members of the VTs.

5.4 Recommendations

It is suggested that the recommendations made by the participants as listed in section 5.2.4 above be used to evaluate the current practices of VTs presented in the study. It is also recommended that a set of guidelines or a policy be developed to govern the expectations of attending meetings while driving and to safeguard employees.

The following constitute recommendations for future studies:

- Include participants from multiple OPM companies to determine if the results are similar across populations.
- Compare the findings of OPM team members with participants employed by universities, as this might highlight challenges and requirements unique to the two types of organisations.
- Compare the experiences of members from different universities, and members from different vertical project teams.
- Investigate the basic competencies such as technical expertise of VT members to determine gaps that can be addressed through the provisioning of specific training.
- The framework of this study could be further analysed and converted to a generalised framework which could be used by different organisations to better

understand the challenges and subsequent requirements to address the challenges faced by cross-organisational VTs. It could also be used in the training and evaluation of VTs.

- Investigate how cross-organisational VT members develop relationships and build trust and cohesion.

It is likely that infrastructure, political and economic challenges will remain part of the environment in which companies such as those presented in the case study operate. The lessons learnt in this HEI study can be applied to other organisations operating under similar conditions in countries of the Global South.

5.5 Conclusion

This chapter confirmed that the primary and secondary objectives of the study were addressed. It is believed that this study has contributed to the field of Social and Management Sciences with a specific focus on Human Behavioural Sciences. The specific research gaps within this field that were addressed are the higher education sector within SA, and more specifically VTs directly associated with an OPM company and its partner universities.

The study provided insight into the personal experiences of nine participants who had joined the global VT trend, despite facing various challenges. It provided the reader with the opportunity to better understand the factors that contribute to or hinder the successful functioning of VTs, and recommendations were shared to improve the functioning of VTs accordingly.

Appendix 1: Permission letter from HEPSA to conduct study

To whom it may concern

LETTER OF AUTHORIZATION TO CONDUCT RESEARCH AT HIGHER ED PARTNERS, SOUTH AFRICA

This letter serves to give consent to Mrs Sarah Musgrave to conduct her field study for her MBA entitled "ADVANTAGES, CHALLENGES AND SUCCESS FACTORS OF VIRTUAL TEAMS WORKING IN HIGHER EDUCATION ONLINE PROGRAMME MANAGEMENT PROJECTS IN SOUTH AFRICA" at Higher Ed Partners South Africa.

This study will involve interviews with individual virtual team members directly associated with the projects of HEPSA or any of its South African partner universities. All participants in this study will participate voluntarily and with the permission of their organisations.
If you have any concerns or require additional information, feel free to contact our offices.

Thank you
Yours faithfully,

Nicholas Kendall
President and Chief Operations Officer
Higher Ed Partners South Africa

Appendix 2: Interviewee consent form

Research title: Advantages, challenges and success factors of virtual teams working in higher education online programme management projects in South Africa

Thank you for your willingness to be participate in the above-mentioned field study. This consent form serves to ensure that you understand the purpose of your participation and that you agree to the following conditions:

- The interview will take approximately 45 minutes and will be arranged at a time most convenient for you.
- You have the right to stop the interview or withdraw from the research at any time.
- The interview will be recorded and a transcript will be produced.
- You will have access to the transcript and will have the opportunity to correct any factual errors.
- The transcript of the interview will be analysed by the researcher.
- Access to the transcript will be limited to the researcher only and academic colleagues with whom she might collaborate as part of the research process.
- Any summary of the interview content, or direct quotations thereof, will be anonymised so that neither you nor your institution can be identified, and care will be taken to ensure that other information in the interview that could identify you is not revealed.
- The actual recording will be securely kept for 12 months and will then be destroyed.

By signing this form I agree that:

1. I am voluntarily taking part in this field study. I understand that I don't have to take part, and I can stop the interview at any time.

2. I can request a copy of the transcript of my interview and may make edits I feel necessary to ensure accuracy.
3. The transcribed interview or extracts from it may be used as described above.
4. I don't expect to receive any benefit or payment for my participation.
5. I have been able to ask any questions I might have, and I understand that I am free to contact the researcher with any questions I may have in the future.

Printed Name	Participant's Signature	Date
	Researcher's Signature	Date

Contact Information

If you have any further questions or concerns about this study, please contact:

Name of researcher: Sarah Musgrave

Tel: +27 72 641 4214 **E-mail:** sarietjie@live.co.za

You can also contact my supervisor:

Name of Supervisor: Prof. Helena van Zyl

Tel: +27 51 401 3166 **E-mail**: VanZylH@ufs.ac.za

Appendix 3: The interview schedule

Before the interview:

Check to ensure that sound is audible for both the interviewee and the interviewer.

I. Opening

A. Thank you for your willingness to participate in the interview.
B. I am doing a field study about the advantages, challenges and success factors of virtual teams working in OPM projects in South Africa. I would like to take this time to ask you about your experience of working in virtual teams.
C. The interview should take about 45 minutes. Are you available to respond to some questions at this time?
D. Are you aware that this interview will be recorded and transcribed and do you give your consent?
E. Do you have any questions or concerns before we start?
F. In which language would you prefer to be interviewed, English or Afrikaans?

II. Questions

A. General background information

a) Is your home language English?
    a. Yes
    b. No
b) Where do you work from?
    a. Work mainly virtually
    b. Office based
    c. Work flexible: office based and virtually
c) For which organisation do you work?
    a. HEPSA
    b. Higher Education Institute
d) Which project vertical do you represent?

a. Academic Services
b. Data Science
c. Partner Support
d. Enrolment Services
e. Retention Services
f. Marketing

e) How many VTs, specific to the partnership and its deliverables, are you a member of?
   a. Your institution _____
   b. Mix of HEPSA and your institution _____

f) Do any of your team(s) have members from a different time zone?
   a. Yes
   b. No
   c. Unsure

g) Have you met all your team members in person?
   a. Yes
   b. No

h) What electronic media communication tools, like Zoom, do you use to communicate and collaborate?

☐ Zoom
☐ Skype
☐ Wrike
☐ Dropbox
☐ Microsoft Outlook
☐ Microsoft Office 365
☐ WhatsApp
☐ Microsoft Teams
☐ Sharepoint
☐ Google Drive
☐ Gmail
☐ Google Docs
☐ Other: _____

B. Topic-specific questions:

a) What are the advantages, if any, of working as a VT instead of a team always meeting face-to-face?
b) What challenges, if any, have you or your team faced because your team operates primarily virtually?
c) Teams exist because as a group, you want to achieve certain goals successfully. What do you consider to be the requirements or criteria for your team(s) to be successful, despite being virtual?
d) Do you have any preference between working for a VT or a team that meets face-to-face?

C. Do you have any other comments you would like to make related to your experience of working in VTs?

III Closing

A. Thank you for taking the time to participate in this interview.
B. I will let you know as soon as a transcript is available for you to review.

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