The Enterprise Architecture leadership styles of a South African telecommunications company

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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.

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Abstract

Purpose: Enterprise Architecture is a holistic practice used in management which covers business and information technology in order to manage organisational complexities and aid strategic decision-making. Successful implementation of Enterprise Architecture is reliant on a leader who can handle the pressure that comes with the job. Although many Enterprise Architecture leaders are highly qualified and technically skilled individuals, challenges such as communication, stakeholder buy-in and governance issues are often the core hindrances to successful Enterprise Architecture. Previous research shows that Enterprise Architecture initiatives often fail due to substantial challenges demonstrated by enterprise architects' lack of authority and leadership. Due to the technical nature of Enterprise Architecture, its relationship with soft skills like leadership is often overlooked. In this, an opportunity to research the leadership styles that exist in Enterprise Architecture avails itself. The purpose of the research is to analyse the leadership styles of a telecommunications organisation in South Africa.

Research design: This research design was a qualitative non-probability purposive study with semi-structured interviews. The research sample size consisted of twelve (12) participants who are actively functioning in the Enterprise Architecture domain. The sampling strategy used was a purposive sampling strategy. The research was conducted in the Telkom Group and its subsidiaries. Each participant was asked a set of demographic questions and ten (10) predefined questions in the form of semi-structured interviews.

Findings: The findings showed that the most prominent leadership styles were democratic, affiliative and pacesetting leadership styles; the most common one being the affiliative style. Each leadership style was accompanied by a communication style, the most common one being assertive communication. The findings also highlighted that the participants believed that the Telkom Group had a Level 2 Enterprise Architecture maturity level and that Telkom had not fully adopted the Enterprise Architecture mindset. The participants expressed their biggest challenges as being communication, stakeholder buy-in, leadership and vision of Enterprise Architecture.

Conclusion: The enterprise architects displayed strong leadership and communication styles that have a positive impact on the environment; however, due

to their limited influence, they are facing challenges that require the intervention of senior leadership. The leadership styles present in the Enterprise Architecture domain are sufficient and appropriate to deal with the challenges that come with a Level 2 Enterprise Architecture maturity; however, in order to leverage the existing leadership styles, the organisation must increase the scope of influence for the enterprise architects. The use and implementation of positive leadership and communication styles will assist in dealing with the challenges and improve the Enterprise Architecture maturity level of the organisation.

Key terms: *Enterprise Architecture, Leadership, Communication, Enterprise Architecture Maturity*

Contents

Table of Figures

List of Tables

CHAPTER 1: BACKGROUND AND INTRODUCTION

1.1 Introduction

Over the years, Enterprise Architecture (hereafter referred to as EA) has become increasingly popular in assisting organisations in managing the complexity of Information systems and business processes. However, the challenges of leadership on EA initiatives are overlooked. EA is acknowledged as a discipline that drives organisational change in improving the alignment of business and Information Technology (Löhe & Legner, 2014). Despite the increasing popularity of the EA discipline, EA initiatives often fail due to substantial challenges demonstrated by enterprise architects' lack of authority and leadership; and often this relationship is overlooked due to EA being used as a tool to drive digital transformation from a management perspective rather than a modelling perspective. This turns the researcher's focus to the challenges of the leadership in EA that stakeholders encounter in the pursuit of successful Enterprise Architecture Programmes.

According to Goleman (2000), many managers mistake leadership styles as a function of personality rather than a strategic choice. Goleman (2000) suggests that a leadership style should be chosen based on which one would best address the demands of a situation instead of it being chosen to suit the temperament of the manager. The best leaders don't just know a single style of leadership; they are skilled with many styles and have the flexibility to switch between the different styles as the situation dictates (Goleman, 2000).

Leadership effects have the same impact on EA initiatives as in an organisation, and these could be positive or negative. This research will be investigating the different kinds of leadership styles in EA; focusing primarily on the leadership styles and challenges experienced in the EA environment.

1.2. Background to the research

EA is an approach used to provide insight and an overview of an organisation. In information technology, EA is known as a management practice which covers Business and Information Technology in order to manage complexity and aid strategic decision-making (Op't Land, Proper, Waage, Cloo & Steghuis 2009). Successful implementation of EA has five main benefits to organisations:

- reduced IT costs;
- improved efficiency;
- utilisation and integration of Information Technology systems;
- improved strategic alignment between business and Information Technology; and
- improved communication and collaboration within the enterprise.

Over the years, EA has transformed to become not only a tool for information systems management, but it has also become an instrument of leadership practices (Ross, Weill & Robertson 2006). Once EA is implemented in an organisation, it is managed using Enterprise Architecture Management (hereafter referred to as EAM) principles. EAM implementation is a challenging topic for organisations despite the variety of approaches that either define EAM processes and governance systems or derive EA viewpoints and applications based on stakeholder concerns (Löhe & Legner 2013). Morganwalp and Sage (2004) have criticised EAM, highlighting that it requires large amounts of effort and that the benefits are not directly measurable, and that these benefits take time to realise.

Any EA initiative must be anchored in business results in order to ensure its success; strong leadership to keep the stakeholder fixed on the end goal, business value and the results of EA implementation are at the top of the digital architecture challenge (Löhe & Legner 2013). The successful implementation of EA is reliant on a leader who can handle the pressure that comes with the job. Although many EA leaders are highly qualified and technically skilled individuals, Rehkopf and Wybolt (2003) indicate that communication, stakeholder buy-in and governance issues are often the core hindrances to successful EA; therefore, making leadership the key to successful implementation and management of EA.

EA is complex in nature. Clift and Vandenbosch (1999) note that in projects with high complexity, the project leader needs to coordinate between different departments and use high levels of improvisation. The level of improvisation requires an individual to be able to break down and integrate information; an ability known as cognitive complexity. High levels of cognitive complexity bring about a specific type of leadership styles; which according to Goleman, Boyatzi and McKee (2002) could be visionary, coaching, affiliative or democratic leadership styles. These are known to have a positive impact

on the organisation's environment. However, the leadership styles that are perceived to have a negative impact on the organisation's environment are pacesetting and commanding leadership.

High levels of cognitive complexity are often associated with transformational leaders who typically operate in the spectrum of cognitions, mechanisms, affect and behaviours, according to leadership theories. This type of leader can, therefore, be described as a leader who inspires subordinates by influencing and managing behaviours using positive emotions, shared beliefs and mutual expression of collective visions (Tziner & Shkoler, 2018). Unlike transformational leadership, transactional leadership drives conformity and compliance in that the leader will likely invoke mechanisms that are authoritative and direct to influence the follower's behaviour (Tziner & Shkoler, 2018).

1.3. Problem Statement

The South African IT industry's spending has grown in leaps and bounds over the years with signs of it continuing to grow at a higher pace than the economy. According to the State of ICT Sector in SA report (2019:55), the ICT sector grew by 12% from R204 billion in 2017, to R229 billion in 2018. The report also showed that South Africa's ICT sector has one of the biggest job markets and is one of the biggest contributors to the economy, driven by mobile services. From 2015 to 2019, the combined revenue for the ICT sector in South Africa grew by 6.5%, with telecommunication services revenue increasing by 6.4%, broadcasting services revenue increasing by 8.8% and postal services revenue showing a declining trend, decreasing by 3.4% (ICASA, 2019:11).

New and growing trends in telecommunications, data centre revenue, artificial intelligence, and the Internet of Things will provide significant opportunities for small and large players in the IT sector. Technologies that are expected to disrupt the South African Information Technology sector are digital transformation to improve customer experience and online purchasing, fintech banking, blockchain, augmented reality and virtual reality, with start-ups expected to lead innovation.

Today's enterprise environment is more complex with the introduction of new technologies, however, in order for enterprises to manage this complexity they need to have a planned approach which EA offers. EA is a planned approach to mitigate organisational complexities and control the constant environmental changes while

delivering value to the customer (Banaeianjahromi & Smolander, 2016:1). Despite the step-by-step methods and approaches, not all EA implementations are successful or go without challenges.

EA provides well documented concepts, methods, models, and tools to facilitate business-Information Technology alignment and integration (Banaeianjahromi & Smolander, 2016:2). In much of the literature published previously, the challenges expressed are mostly those of a technical nature; however, Chuang and van Loggerenberg (2010) suggest that EA challenges are mostly non-technical in nature by showing that the role of EA is also social in nature. The details of Chuang and van Loggerenberg's study will be covered in Chapter Two.

The researcher did not find any research studies that explicitly detail the social or leadership styles, and therefore an opportunity to investigate the EA leadership styles within a South African telecommunications company presented itself.

1.4. Objectives of the study

1.4.1. Primary objective

The primary objective of the research is to analyse the leadership styles in EA within a South African telecommunications organisation.

1.4.2. Secondary objectives

In order to achieve the primary objectives, the researcher will have to focus on the following:

1.4.2.1. Providing an overview on the key concepts of leadership styles and EA;

1.4.2.2. Evaluating the leadership styles in EA leaders within a South African telecommunications organisation;

1.4.2.3. Identifying the relevant leadership theories and limitations in EA within a South African telecommunications organisation;

1.4.2.4. Lastly, providing suggestions on the most appropriate leadership styles in EA within a South African telecommunications organisation.

1.5. Research Methodology

Quinlan (2011) describes research methodology as data collection methods or data gathering techniques. The research methodology is preceded by a research process; the research process is a systematic way of obtaining information.

Flyvbjerg (2006) highlights that a good social science experiment is more problem-driven than methodology-driven. It employs methods for a given problem to best answer the research question.

The researcher decided to carry out the research in the form of a qualitative non-probability purposive study with semi-structured interviews. The research sample size will consist of twelve (12) participants, making the research more suitable for a qualitative study than a quantitative one. Generally, ideas and detection of contemporary phenomena arise from qualitative research, and case studies in particular.

1.5.1. Research Design

In a field research study, a research design serves as a blueprint to fulfilling research objectives and answering questions. According to Merriam and Tisdell (2015), the appropriateness of addressing the research problem is the single most important criterion in selecting a research design. Cooper and Schindler (2014) propose eight descriptors to classify a research design. These descriptors are used in this study.

Table 1: Research Design

Descriptor	**Classification of this study**
Degree of crystallisation of the research question	Exploratory study
Method of data collection	Communication study
Researcher control of variables	Ex-Post Facto
The purpose of the study	Casual study
The time dimension	Cross-sectional
The topical scope	Case study
The research environment	Field conditions
Participants' perceptions	No deviations from everyday routine

1.5.2. Sampling Strategy

The sampling method that will be used is non-probability sampling because the odds of the sample cannot be calculated, and the sample size is small. Non-probability sampling is defined as a sample in which the probability that a subject is selected is unknown (Acharya, Prakash, Saxena & Nigam, 2013). This method will be used with a purposive sampling strategy, which is a type of non-probability sampling that is the most effective for studying a specific culture domain with knowledgeable experts (Tongco, 2007:147). The inherent bias in non-probability purposive sampling strategy contributes to its efficiency even when tested against random probability sampling (Tongco, 2007:147).

The sample quota comprises twelve (12) participants within the EA domain. Due to resource and time constraints the researcher will focus on only one organisation in the Telecommunication and Information Communication Technology industry.

The participants selected will be a combination of permanent and contracted employees of the Telkom Group and its subsidiaries.

1.5.3. Data Collection Methods

Interviews, specifically, semi-strutured interviews, are the data collection method that will be used for this research.

Semi-structured interviews are considered a verbal interchange where the interviewer elicits information from another person (Clifford, Cope, Gillespie & French 2016). Semi-structured interviews are conversational in nature, allowing the interviewer to explore issues that the interviewee feels are important.

The semi-structured interviews consist of ten predefined questions to evaluate the knowledge and perceptions of EAs in the environment in which they work; as well as how they describe the leadership in the environment in which they function; whether it is constructive or destructive. The interviews are carried out amongst the sample group and analysed for common themes using thematic analysis.

1.5.4. Data Analysis

The researcher will be using thematic analysis to analyse the qualitative data. Thematic analysis is not tied to a specific philosophical orientation, and its goal is to identify, analyse and describe patterns or themes across the data set (Bryman, Bell, Hirschsohn, Dos Santos, Du Toit, Masenge, Van Aardt & Wagner 2017:350). Braun

and Clark (2006) define thematic analysis as the process of identifying themes or patterns in qualitative data; they further explain that the advantage of this method is that it is not tied to an epistemological or theoretical perspective, making it a flexible method.

1.5.5. Ethical Considerations

Cooper and Schindler (2014) identify ethics as the norms or standards that guide moral choices about our behaviour and our relationships with others. He further mentions that the goal of ethics in research is to ensure that no one is harmed or suffers adverse events from the research activities. It is good practice to consider potential ethical issues in the research design phase (Bryman, et al. 2017).

In this research study, the researcher will be taking note of ethical considerations in order to guide moral decisions to prevent physical and psychological harm to the research participants.

The researcher's ethical conduct would imply that all privileged information and data provided by the participants would be treated as confidential unless written consent has been given by the relevant stakeholders to disclose their information.

All data collected from interviews will be documented in such a way that the participants' rights are safeguarded. According to McMillan and Schumacher (2001), it is the researcher's responsibility to comply with ethical standards by informing participants of all aspects pertaining to the research that might influence their willingness to participate. The researcher should also be open and honest to the participants in disclosing the full purpose of the research study.

Each participant will be required to give informed consent by signing a written agreement or by providing verbal consent before the study. This agreement will state how the information and data will be used in the study. The individuals partaking in the study are free to discontinue their participation at any time without any consequences. All private data will be treated in line with the South African Protection of Personal Information Act of 2013.

1.6. Demarcation of field study

The study will be demarcated in an organisation that is in the Telecommunications and Information Communication Technology industry in South Africa. The focus of the field

study is to determine the leadership styles used by Enterprise Architects in EA within a telecommunications company.

The study will be carried out within the Telkom Group. The company was founded in 1991 and operates in all nine South African provinces and 38 Pan African countries from their regional hubs in Kenya and Nigeria. The Telkom group is South Africa's number one wireless telecommunications provider and leading Internet Service Provider (ISP).

Telkom's vision is to lead the ICT market by forming credible relationships and an above-average customer experience. By offering an enhanced internet experience the company believes it is offering freedom through technology.

The company is selected based on its EA maturity. There are five levels of EA maturity, namely:

1. **Level 1: Non-existent** – There is no formal EA practice in place, and few people in the company would be able to identify formal EA practices or activities.
2. **Level 2: Reactive** – An EA practice is in place, and it is focused on ad hoc technical issues within initiatives and projects.
3. **Level 3: Functioning** – A business-outcome-driven EA practice delivering value to the business and supporting the delivery of key business outcomes.
4. **Level 4: Integrated** – The organisation's EA practices are delivering value and are repeatable. The elements of the organisation's digital strategy are supported, and the EA team is seen as competent, professional, and adding value to the organisation.
5. **Level 5: Ubiquitous** – EA has become a natural way of working in an organisation as a whole. The models and approaches to EA are widely adopted and used. The EA practice has evolved to support the organisation's digital business strategy, incorporating new models and approaches.

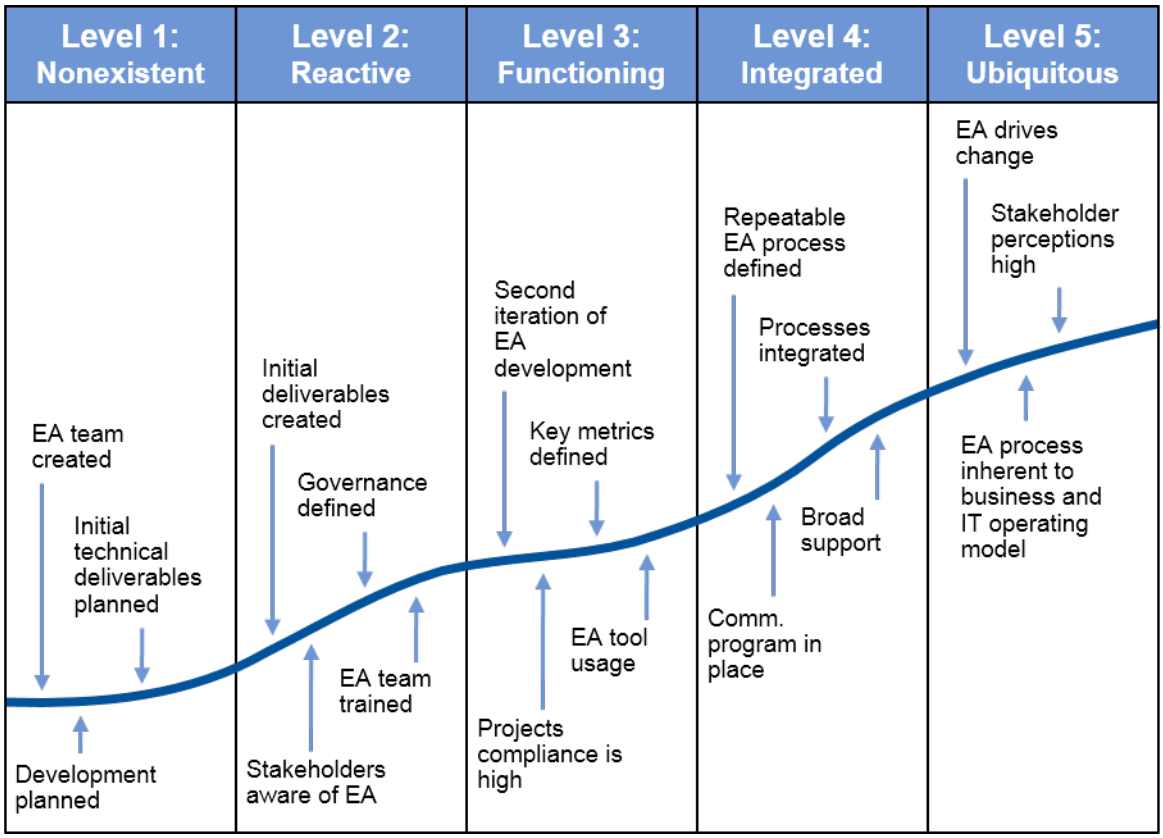

Figure 1: Gartner's EA maturity levels, Source: Gartner (2013)

The Telkom group has characteristics of a Level 2 EA.

1.7. Chapter layout

The chapters of the research have the following layout:

Table 2: Chapter layout

Chapter	Title	Objectives of the chapter
Chapter 1	Introduction	To introduce the background and purpose of the study
Chapter 2	Literature review	To provide a reflection on existing literature and previous work done on the research topic
Chapter 3	Research design and methodology	To go into detail on the research techniques used in this study, including research design, research strategy and research ethics with all relevant subcomponents
Chapter 4	Empirical results	To present the results of the study and what they mean

Chapter 5	Research conclusion	Discuss the findings of the research and draw conclusions from the findings. Make recommendations on what cognitive abilities companies can enhance in their Lead Architects to increase chances of successful EAM

1.8. Conclusion

In this chapter, the researcher discussed the summary of the research and the underlying principles that were considered throughout the research. The background and purpose of the research were highlighted especially as a mechanism to guide how the research should be conducted.

In Chapter 2, the author will critically evaluate previous literature on Enterprise Architecture and leadership.

CHAPTER 2: ENTERPRISE ARCHITECTURE AND LEADERSHIP STYLES

2.1. Introduction

Enterprise architecture is known to have many benefits for organisations that implement it well; however, it does not come without challenges. In Chapter Two, the author will critically evaluate previous literature on Enterprise Architecture and leadership.

The chapter will begin by framing the concepts and principles of Enterprise Architecture by exploring the background and the development of Enterprise Architecture, as well as Gartner's EA maturity framework. The researcher will then further explain popular Enterprise Architecture frameworks; the definition, development and usage of each framework will be briefly discussed. The last parts of Enterprise Architecture will be a discussion of the challenges experienced by enterprise architects, as well as Enterprise Architecture maturity.

The second part of Chapter Two will introduce leadership theories, leadership styles and their effects on the culture of the organisation in relation to change in an organisation. The researcher will then discuss the benefits and challenges of each leadership style. The last part of the leadership section will show the leadership challenges that exist in enterprise architects and how leadership styles could possibly be used to remedy the leadership challenges.

The last section of this chapter will discuss the role of communication in an organisation, as well as the concept of communication styles and their characteristics.

2.2. Enterprise Architecture

2.2.1. Introduction

According to Op't Land et al. (2009), Enterprise Architecture (hereafter referred to as EA) is an approach for providing insight and overview for organisations; it is a holistic practice used in management which covers business and information technology in order to manage organisational complexities and aid strategic decision-making. Aziz, Obitz, Modi and Sarkar (2005) define EA as a holistic view of an organisation's

processes, information and information technology assets and their use in aligning business and IT in a structured, efficient and sustainable way.

Gartner (2008) describes EA as a process of translating the business vision and strategy into effective enterprise change by communicating and improving key requirements, principles and models that describe the enterprise's future state. EA makes use of a model-based approach to the enterprise and supports the relationship between people, process, data and technology. In all the literature that exists to define EA, the concept of EA is described as a tool used to better align an organisation's business and IT (Robertson, Peko & Sundaram, 2018).

2.2.2. Enterprise architecture background and development

The purpose of EA in an organisation is to optimise fragmented processes into an integrated environment in support of the organisation's business strategy (Josey, Harrison, Homan, Rouse, van Sante, Turner & Der Merwe, 2011). Although the discipline of EA is young, it originated in the mid to late 1980s after John Zachman published his work in the form of an article describing a framework to be used in Information Systems architecture. The name of the article was "A framework for Information Systems Architecture", and it was published in the IBM Systems Journal (Kotusev, 2016). The framework that John Zachman created was later known as the Zachman Framework, and formed the foundation of all subsequent EA frameworks and methodologies after that. Consequently, he is frequently referred to as the 'father' of EA due to his pioneering work. The Zachman Framework is intended for describing an enterprise; however, it does not share any detail on how to implement Enterprise Architecture. Methodologies such as The Open Group Architecture Framework (TOGAF), an Open Group Standard, the United States' Department of Defense Architecture Framework (DoDAF) and other methodological frameworks have been created to fill the gap of how to implement EA.

In order for Architecture to be created and executed, practitioners need both ontology to help them define, translate and structure, as well as methodology to populate and implement it. In this instance, methodology simply reuses ontology constructs in order for an enterprise to be 'architected' (Lapalme, Gerber, Van der Merwe, Zachman, De Vries & Hinkelmann, 2015). According to Ross, Weill and Robertson (2006), during the past decade, EA has evolved towards being an instrument for Information Technology (IT) alignment and leadership practice.

From the beginning, EA has always been inclusive of business goals and strategy as elements of the framework (Blomqvist, Halen & Helenius, 2015; however, as it developed, the framework was adopted as a tool for strategic planning and business transformation (Simon, Fischbach & Schoder, 2014). Existing literature shows very few examples of how EA is linked to strategy and decision-making (Simon et al. 2014). This seems to indicate a gap between strategic business leadership and EA.

For an organisation to be able to assess its EA practices and define its improvement paths, it needs to make use of the EA maturity model. A maturity model is a technique that is used to measure different aspects of a process or an organisation (Proença & Borbinha, 2017). Its model consists of varying maturity levels, often five, arranged from lowest to highest; sometimes the number of levels can vary depending on the domain and the concerns motivating the model (Proença & Borbinha, 2017). The maturity modelling technique provides an organisation with the following benefits:

- A measure for benchmarking
- A measure of progress assessment against set objectives
- An understanding of opportunities, strength and weaknesses

Gartner's (2013) EA maturity assessment suggests that there are five levels in EA maturity, and they are as follows:

Level 1: Non-existent – There is no formal EA practice in place, and few people in the company would be able to identify formal EA practices or activities. For organisations implementing EA, this level serves as the beginning of the creation of the EA capability; the EA team is usually created, and planning at various EA levels is initiated. In this level of maturity, the Chief Information Officer (CIO) would normally have agreed to the implementation of EA in a limited way, even though they are still unsure of the benefits it will provide to the organisation.

Level 2: Reactive – This level is typically where the first deliverables are created, and governance structures are defined. An organisation in this level has an EA practice in place which is focused on ad hoc technical issues within initiatives and projects.

Level 3: Functioning – This level is characterised by organisations that are doing the second iteration of EA developments and are starting to define how EA will be governed in the organisation. EA tools are also introduced at this level, accompanied

by high project compliance. Once an organisation has successfully implemented Level 3, EA will be described as one with business-outcome-driven practices that deliver value to the business and support the delivery of critical business outcomes. In some instances, the CIO will start viewing the EA team as a resource that is used to assist in strategic decision making.

Level 4: Integrated – At Level 4, the organisation's EA practices are delivering value and are repeatable. The elements of the organisation's digital strategy are supported, and the EA team is seen as competent and professional and adding value to the organisation.

Level 5: Ubiquitous – At Level 5, EA has become a natural way of working in an organisation. The models and approaches to EA are widely adopted and used. The EA practice has evolved to support the organisation's digital business strategy, incorporating new models and approaches. At this level, the organisation will undertake regular reviews of the EA function every few years to ensure that it is aligned to the business strategy.

For an organisation to be able to implement successful EA and move up the different levels of maturity, it needs to be able to identify gaps that are present between business and IT. This is contingent on EA governance, management and cognition (Kamogawa & Okada, 2008). Espinosa, Boh, and DeLone (2011) further explain that EA maturity and governance are considered to be mediating factors in attaining business benefits derived from EA.

2.2.3. Enterprise Architecture Frameworks

EA was initially created to address application system complexities and poor business alignment. Organisations were investing plenty of money in Information Technology systems, and they were finding it increasingly difficult to keep their increasingly expensive Information Technology systems aligned with the business needs; they were spending too much for the return they received on their investment. Over the years, the costs have increased exponentially, which has increased the need for EA in organisations.

Since the time EA was established, there have been many frameworks; many of which have come and gone. Some of these frameworks were established for specific reasons while others were suited for broader functionality. However, at the moment, 90 per cent

of the Enterprise Architecture field uses one of four enterprise frameworks (Sessions, 2007), namely:

- The Zachman Framework for Enterprise Architecture;
- The Open Group Architectural Framework;
- The Federal Enterprise Architecture Framework; and
- The Gartner methodology.

Although these frameworks tend to overlap or address similar views, they are designed to address specific needs. The most noticeable differences between these frameworks are that they address different stakeholders and building blocks that an organisation may be challenged with. These building blocks represent common vocabulary, methods, standards and tools that make it possible to integrate the building blocks (Urbaczewski & Mrdalj, 2006). Urbaczewski and Mrdalj (2006) highlight that it is difficult to compare EA frameworks because some frameworks have a specific scope; others are only applicable to a particular methodology of development, and some are specific to the development of Information Technology systems only.

2.2.3.1. The Zachman Framework for Enterprise Architecture

Zachman (1999) believed that the increased scope of design and levels of complexity of Information Systems force the use of architecture. The Zachman Framework is centred around the principles of classical architecture that define a common vocabulary and a set of views or perspectives in order to describe complex enterprise systems. The Zachman Framework is more of a taxonomy for the organisation's artefacts than it is a framework; it considers who the artefact targets and what particular issue is being addressed. Taxonomy is defined as the classification of organisms in an ordered system that indicates natural relationships (Sessions, 2007).

Zachman's Framework has two dimensions but does not make recommendations on sequence, process or implementation. The first dimension is the six different views: Planner, Owner, Designer, Builder, Subcontractor and User; and the second dimension deals with six basic questions: what, how, where, who, when and why. The framework focuses on establishing all the views in order to ensure a complete system, regardless of the order in which they are established.

2.2.3.2. The Open Group Architectural Framework (TOGAF)

The Open Group Architecture Framework (hereafter referred to as TOGAF) was established in 1995. It was based on the United States' Department of Defense's Technical Architecture Framework for Information Management (Urbaczewski et al., 2006). TOGAF's main focus is on mission-critical business applications that make use of open systems building blocks.

TOGAF divides EA into four categories, as follows:

1. **Business architecture:** This category describes the processes used by the business to meet its goals.
2. **Application architecture:** This category describes the design of specific applications as well as how they interact with one another.
3. **Data architecture:** This category describes how the organisation's datastores are organised.
4. **Technical architecture:** This category describes the infrastructure of the hardware and software that supports applications and their interactions.

TOGAF has a process called the Architecture Development Method (ADM) that is used to specifically develop Enterprise Architecture (Tang, Han, & Chen, 2004). The ADM process consists of eight sequential phases that are centred around requirements management. The process is initiated by a preliminary phase, with the objectives being to determine the architecture capability desired by the organisation and to establish those capabilities.

TOGAF is complementary to the Zachman Framework in that it provides guidance on how to implement EA. Furthermore, it explains rules for developing sound principles as opposed to just providing architecture principles.

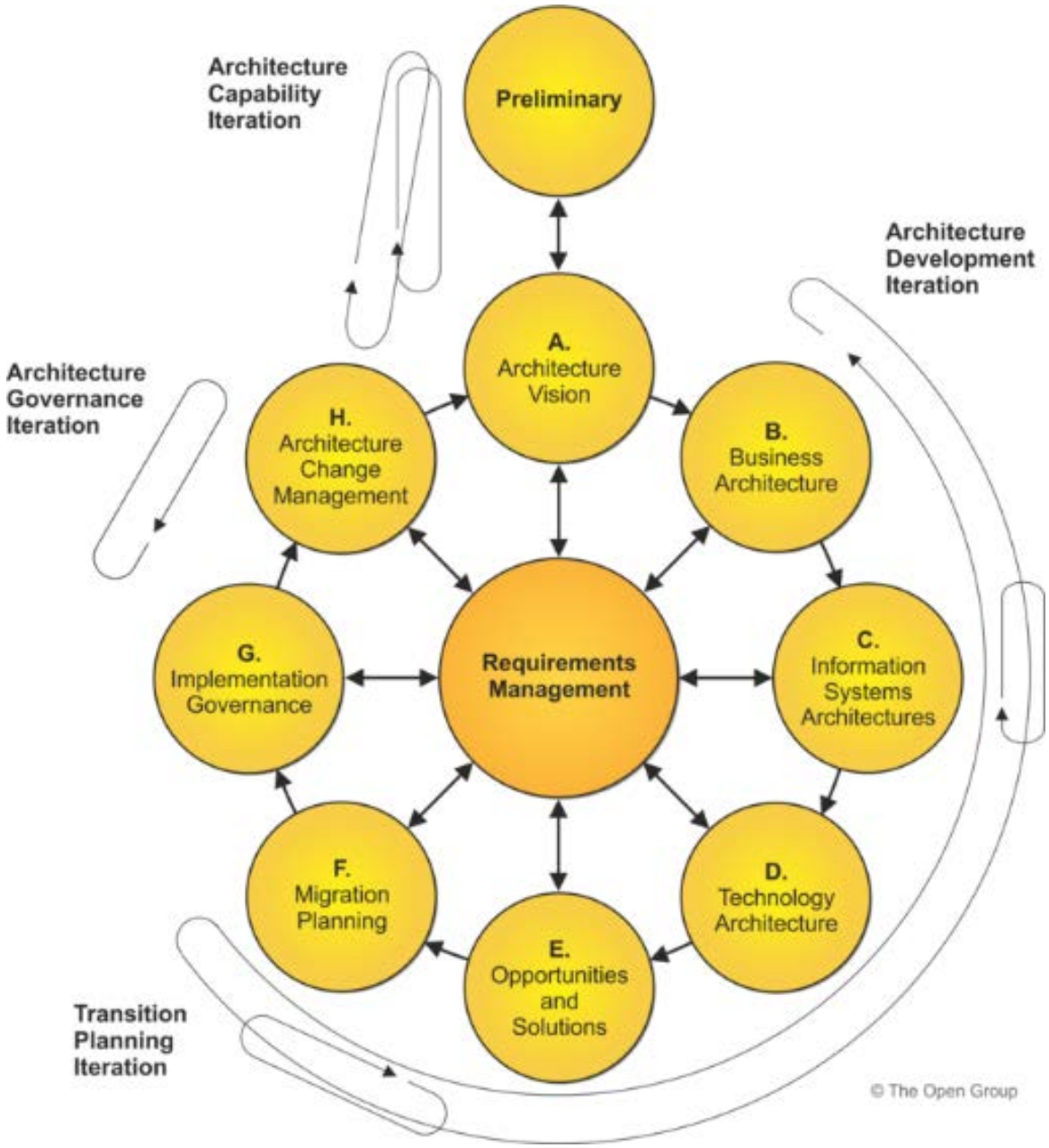

Figure 2: TOGAF ADM Process, Source: The Open Group (2018)

2.2.3.3. The Federal Enterprise Architecture Framework (FEAF)

The Federal Enterprise Architecture Framework (hereafter referred to as FEAF) was established in response to the Clinger-Cohen Act (1996), which required Federal Agency Chief Information Officers to develop, maintain and facilitate integrated systems. FEAF was developed and published by the Chief Information Officers' Council in the United States. It is considered the most complete of all methodologies when compared to the previously discussed frameworks. FEAF consists of a comprehensive taxonomy like Zachman, and an architectural process like TOGAF

(Sessions, 2007). Although FEAF was designed for government organisations, it is also applicable to private organisations.

The EA perspective of FEAF is that architecture is built of segments, whereby a segment can be considered as a major line-of-business functionality. There are two types of segments: core mission-area segments and business-service segments. A core mission-area segment is one that is central to the mission or purpose of a particular political boundary in the enterprise, while a business-service segment is foundational to most organisations and is required by all federal agencies such as financial management (Sessions, 2007).

2.2.3.4. The Gartner methodology

The Gartner methodology is an Enterprise Architecture practice for Gartner, the best-known Information Technology research and consulting organisation in the world. Gartner's enterprise methodology is about merging three constituents: Business owners, information specialists, and technology implementers. According to Gartner, the measure of EA Success is determined by bringing all three constituents and unifying them behind a common vision that delivers business value, while the opposite is considered a complete failure (Sessions, 2007).

Gartner's view on EA is about strategy and not engineering. They believe that an organisation must always start by determining where their strategic direction is heading. The process of ensuring that all stakeholders understand the nature, scope and impact of strategic changes is linked to two important fundamentals of the Gartner methodology: where the organisation is going, and how will it get there.

2.2.4. Enterprise Architecture implementation benefits and challenges

In a synthesis of the EA literature, Niemi (2006) concluded that the benefits of EA largely fall into one of the following four groups: indirect benefits, hard benefits, strategic benefits and intangible benefits. In a qualitative case study by Marco Halén, Sixten Blomqvist and Mika Helenius (2015), thirteen interviews were carried out with the employees of a large Nordic financial services group to determine how the needs of EA were understood. The aim of the case study was to identify and discuss leadership challenges that had been mitigated before an EA initiative's full potential could be realised. The research consisted of four phases, the first of which entailed introducing the subject by reviewing previous academic literature. The second phase

was geared at describing the research. The third phase presented the findings of the case study, and finally, the last phase summarised the findings of the case study.

The research results highlighted that the major importance of an enterprise having EA is to have the ability to handle and integrate large numbers of data systems in order to comply with regulatory demands. The results also showed five core benefits of organisations that successfully implement EA (CIO Council 2001; Ross et al. 2006; Infosys 2007; Kappelman, McGinnis, Pettite & Sidorova, 2008; The Open Group 2009; Tamm, Seddon, Shanks, & Reynolds, 2011), namely:

- Information Technology cost reduction,
- efficiency improvement,
- utilisation and integration of Information Technology systems,
- strategic alignment between business and Information Technology improved,
- and lastly, communication and collaboration within the enterprise improved.

The results showed a general need for EA in the company, and those successful enterprises should have flexibility as a capability to adapt to the changes. The case study showed that the efficiency of EA implementation was highly reliant on the involvement of all stakeholders in the governance process. This made it essential for shared goals to be well communicated; stakeholders should, in this instance, have a shared meaning and promote management practices within the organisation. One of the prerequisites for the successful implementation of EA that stood out in this case study was that a strong business sponsor was necessary to drive the work; this was a leadership role that was critical to the integration of EA into the organisation.

The research conducted showed a gap in the capabilities necessary for the leadership of EA, even though the research touched on the importance of management involvement. The limitations of the case study were that the findings were company-specific and as a result, not representative of enterprises which use EA. In many previous literature studies, EA challenges expressed are mostly those of a technical nature. However, Chuang and van Loggerenberg (2010) suggest that EA challenges are mostly non-technical in nature by showing that the role of EA is also social in nature.

It is somewhat surprising that the role of enterprise architects is largely unaddressed by literature; although there have been no studies that are solely focused on the role

of enterprise architects, the skills required by EA practitioners have been mentioned in some research (Robertson, et al., 2018). An enterprise architect is an individual who is responsible for managing EA initiatives and ensures the success of EA (Chuang & van Loggerenberg, 2010). According to Kaisler, Armour and Valivullah (2005), an enterprise architect must have the technical knowledge and also hold strong project and change management skills to be able to lead EA initiatives effectively. An enterprise architect needs to be proficient in three critical attributes, namely emotional capacity and communication skills, technical Information Technology (IT) skills, and conceptual skills (Armour, Kaisler & Liu, 1999). The role of an enterprise architect is to create a technically coherent and comprehensive visualisation of the current and future state of the organisation's EA. This means they need to be able to understand the business in which they operate as well as how they can structure IT to support the needs of the organisation (Henderson & Venkatraman, 1993).

In qualitative research conducted by Chuang et al. (2010), interviews were conducted with enterprise architects in South Africa to understand the challenges they faced. The research was particularly interesting in that it considered issues such as complex cultural differences. The primary purpose of the research was to acquire in-depth insights into the challenges that South African enterprise architects are faced with within organisations.

A total of eight interviews were carried out with highly knowledgeable enterprise architects working in different EA domains across various industries. The interviews were semi-structured, and each one lasted from sixty to ninety minutes. The data from the interview was collected by means of a voice-recording device, which was further transcribed; however, the interviewees' permission was requested to do so. During the interviews, the researcher identified key words that were later compared. The interviewees identified several challenges, and they were discussed in detail, as it was important that the interviews did not follow a strict question-and-answer approach. The interviewees identified the following challenges they faced with the Enterprise Architecture in their organisations:

- Communication
- Buy-in from stakeholder
- Perceptions of the enterprise architect

- Organisational politics

There were other challenges mentioned, but they were not considered by the interviewee to be of primary importance. As a result, they were recorded as 'other challenges'. The conclusion of the research indicated that although technical issues are related to specific parts of EA, the major challenges, as described by the interviewees, are largely non-technical (Chuang et al, 2010). The researcher further indicates that the enterprise architects need to be more aware of how important their role in introducing fundamental changes is, and the effects that EA imposes on the social structure of the organisation. The challenges highlighted might also indicate that enterprise architects lack 'soft' skills such as people skills, expectations management skills and communication skills, presentation skills and leadership skills, to mention but a few (Chuang et al, 2010).

All the skills mentioned above are potential requirements for enterprise architects, and training for these soft skills appears to be lacking in the developmental plans of the architects interviewed. The overall guidance of the EA process requires leadership, which is essential in ensuring the overall process is properly governed and driven by clear objectives.

2.2.5. Conclusion on Enterprise architecture

In this section of the chapter, the researcher covered the basic concepts and principles of EA and gave background on how EA was established as well as how it has developed over the years. The researcher also discussed the different levels of maturity in accordance with the Gartner EA maturity framework. As Architecture became more popular, new frameworks emerged from the basic EA framework to address different complexities. The researcher then briefly mentioned and explained four popular frameworks used in modern EA; and the differences between the frameworks were used to emphasise the fact that each architecture was established for a different purpose, although in some ways they can complement each other and can be used jointly. The researcher concluded the section by making mention of the benefits and challenges of implementing EA in an organisation. Amongst these challenges, it was clear from previous research that the absence of 'soft' skills amongst enterprise architects constituted non-technical challenges that threatened the success of EA implementation.

In the next section of the chapter, the researcher will investigate leadership theories and leadership styles, as well as their benefits and challenges.

2.3. Leadership

2.3.1. Introduction to leadership

In the previous section, the researcher highlighted the importance of 'soft' skills in the successful implementation of Enterprise Architecture. Leadership is a critical soft skill in any organisation, and it is a major part of the role of an enterprise architect. Burrell, Malik, Rahim, Huff and Finklea (2010) define leadership as the ability to persuade others to try to achieve set goals enthusiastically. It is the human factor that unites the group and motivates towards a specific target. However, it is important to understand that leadership is not necessarily centred in an individual but rather in the committed collective effort of stakeholders. Therefore, if an individual leader has the correct skillset, they can influence stakeholders and ultimately foster the social structures that enable the committed collective effort of stakeholders towards a common goal. An enterprise architect is responsible for facilitating this leadership within an EA context; this is the concept of change leadership. Higgs and Rowland (2000) describe change leadership as the ability to influence others through vision, advocacy and drive, and to access resources to build a platform for change. For leadership to be successful, certain leadership styles are necessary as a tool to manage change in an organisation.

In order to define leadership, there must be a clear difference between a leader and a manager. Although these two terms are often confused, they have many differences. Mullins and Christy (2013) highlight that management is viewed as relating to people working in the organisation's structures within prescribed roles in order to achieve organisational objectives; while the emphasis on leadership is more on the interpersonal behaviour. The main differences between leadership and management are in the attitude towards goals, conceptions of work, relations with others, self-perception and development (Zaleznik, 2004). A leader in an organisational context tolerates chaos and does not need to be in a structure to operate, while a manager seeks control and rapid resolution of issues.

Watson (1983) highlights the differences between leaders and managers from the perspective of their orientation towards different dimensions. Watson (1983) further explains that leaders focus on style, staff, skills and share; these are known as the four

Ss; while managers focus on strategy, structure and system - the 3 Ss. From this perspective it is clear that both leaders and managers are important in the success of an organisation; however, it is important to note that a manager can be a leader and vice versa if the skillset matches. Burrell et al. (2010) define leadership as the ability to persuade others to try to achieve set goals enthusiastically. It is the human factor that unites the group and motivates towards a specific target. Therefore, if an individual leader has the correct skillset, they can influence stakeholders and ultimately foster the social structures that enable a committed collective effort of stakeholders towards a common goal.

Leadership is a critical soft skill in any organisation, and it plays a major role in an organisation's success. The definition of leadership can therefore be concluded to be the relationship where one person influences the behaviours or actions of another person (Koontz & Donnell, 1980).

Because leadership is complex, there are many ways of analysing and measuring it. There are five common approaches to examining leadership (Khan, Nawaz & Khan, 2016), and they are:

- Great-Man theory: This approach assumes that leaders are born and not developed.
- Traits theory: This approach suggests that born leaders have specific traits and characteristics that separate them from people who are not leaders.
- Style and behaviour theory: This approach pays attention to the kinds of behaviours in leaders and the influence these have on group performance.
- Contingency leadership theory: This approach is more concerned with the interactions between the variables involved in the leadership situation.
- Transactional and transformational leadership: This is the type of leadership that either focuses on the outputs of the group or the transformation of a group.

The early researchers of the trait approach to leadership studied the personality and attributes that they believed were important for leadership effectiveness (Fleenor, 2016). Trait researchers believed that leadership success was dependent on a list of characteristics. The trait approach discovered that only a few traits were found to distinguish between a leader and a follower; leaders were slightly higher on traits such as intelligence, extraversion, adjustment, height, dominance, and self-confidence

(Fleenor, 2016). However, as leadership trait research advanced, many of the researchers started mixing very different attributes; some leadership traits were aspects of behaviours and skills in addition to the temperament and intellectual abilities (Fleenor, 2016).

As the trait approach became less popular in industrial/organisational psychology, the development of situational leadership arose. Graeff (1997) explains that the principle of the situational leadership theory suggests that effective leadership requires a rational understanding of the situation and an appropriate response, rather than a charismatic leader with a large group of followers (McCleskey, 2014). The situational leadership theory was originally developed by Hershey and Blanchard (1969; 1979; 1996). This theory described leadership styles and how those styles related to the maturity of the followers. The situational leadership theory suggests that task-oriented leaders define the roles for followers, create organisational patterns, give definite instructions, and establish formal communication channels (Hershey & Blanchard, 1969; 1979; 1996). The relation-oriented leader, on the other hand, is more focused on forming relations with others, reducing emotional conflicts, seeking harmonious relationships and regulating equal participation (Hershey & Blanchard, 1969; 1979; 1996).

Similar to the situational leadership theory is the contingency theory. The contingency theory states that there is no leadership style as precise as a stand-alone, but rather that the leadership style is dependent on factors such as the situation of the followers or other variables (Khan, et al., 2016). The theories of contingency are a category of behavioural theory that challenges the notion that there is one finest way of leading, and proposes that one style of leadership that is successful in some circumstances may not be effective in others (Greenleaf, 2002). The fundamental difference between the contingency and situational theory is that the contingency theory states that a leader's effectiveness is dependent on how their leadership style matches the situation, while the situational leadership theory states that a leader should adapt his or her leadership style to match the situation.

Leadership styles form part of the behavioural leadership theory that states that anyone the who adopts the correct leadership behaviour can become a good leader (Khan, et al., 2016). The Behavioural leadership theory considered that a behaviour

can either be task or relationship driven, and that these can be used in combination to influence a team or group in their effort to achieve a goal (Neculae & David, 2017).

Leadership styles are important in the implementation of EA because they drive EA initiatives in an organisation. They do not only determine the climate of the organisation during and after EA implementation, but they also determine whether or not EA implementation will be successful. Chuang et al. (2010) explain that architecting processes in an organisation are similar to the transformational change process. This is because EA is an inclusive process that requires buy-in from stakeholders for it to be successful, similar to the transformational change process. If stakeholders do not buy into EA initiatives, the chances of success are minimal; therefore the implementation of EA is considered a strategic change process that requires the correct use of leadership styles and behaviours to minimise the risk of failure. Rouse (2005) explains that the competence of leaders in addressing changes such as adaptation, orientation and recreation has a major effect on the overall change process of an organisation.

In the next section, the researcher will be discussing transactional and transformational leadership theories in the leadership domain, their attributes and the advantages and disadvantages of each.

2.3.2. Leadership theories

In this section, the researcher will discuss the concept of leadership theories and delve into the details of the different theories, focusing on two specific conceptions of leadership: transformational and transactional leadership theories.

The literature on leadership has shown that over time, theories have been modified and refined to suit the context in which they are applied. Dess and Picken (2000) explain that leadership functions that are applied with a high degree of precision, confidence level, sensitivity, technical expertise and care are very different to those in management-oriented portfolios. This means that the leadership concept is impacted by situations, contexts, cultures, the working environment, organisational complexities and psycho-socio developments, thereby making it part of the changing organisational dynamics (Amabile, Schatzel, Moneta & Kramer, 2004).

2.3.2.1. Transformational leadership

Transformational leadership has been one of the most widely researched theories since 1980. A transformational leader is one who exhibits idealised influence, inspirational motivation, individualised consideration and intellectual stimulation in order to bring the desired outcomes through their followers (Bass & Riggio, 2006). One of the more prominent characteristics of transformational leaders is that such a leader increases the motivation and morality of the followers; in this, the leader engages in interactions with followers based on common belief systems, goals and values.

Literature suggests that in transformational leadership, the leader and follower set their personal interests aside in order to benefit the group. A transformational leader can identify the need for change, gain stakeholder buy-in and set the vision to guide change (McGregor, 1960). This type of leader treats their subordinates individually and aims to develop their morals and skills; this means that transformational leaders provide both support and learning climates in an organisational context (Bass & Riggio, 2006).

2.3.2.2. Transactional leadership

The transactional leadership theory is leadership that focuses on results and measures success according to the rewards and penalties framework of the organisation. Bass and Avolio (1994) observed transactional leadership as more of a contingent-reward leadership that had an active, positive interaction between the follower and the leader. In transactional leadership, the leader rewards the follower or recognises their accomplishments which have been agreed upon (Bass & Avolio, 1994).

A transactional leader is a leader who values structure and has formal authority in an organisation; for good work, the leader rewards the follower, or the leader could instead focus on errors - an attitude called management-by-exception. Management-by-exception can either be active or passive; the difference between the two is the timing of the leader's involvement (Bass & Avolio, 1994).

Leaders who follow active management-by-exception are seen to trust their followers and avoid conflict. This kind of leadership does not inspire followers to achieve beyond what is expected of them, fosters poor communication and poor confidence (Khan, Nawaz & Khan, 2016).

Leaders who follow passive management-by-exception avoid specifying agreements and are not good at providing goals and standards that need to be achieved by the

followers. In this case, leaders tend to wait for things to go wrong before acting (Khan, Nawaz & Khan, 2016).

2.3.3. Leadership styles

A leadership style is defined as the managerial activity that affects subordinates in such a way that they are willing to voluntarily meet the goals of the organisation (Hur, 2008). Tannenbaum and Schmidt (1958) developed the idea that different leadership styles can be used depending on the organisational environment, the manager's skills and personality. Their argument was based around the premise that the leadership style is dependent on the situation and circumstance. Therefore, they suggested that a leader be trained in various styles so that they can use the correct leadership style for the specific circumstance. This is in line with the situational theory concept.

A study of 200 global companies revealed that soft skills have a lot to do with emotional intelligence (Goleman, 1998). The study examined the relationship between emotional intelligence and effective performance in leaders; the analysis showed that emotional intelligence was increasingly important in the highest levels of the company, where differences in technical skills were of insignificant importance (Goleman, 1998). This was an indication that emotional intelligence was the reason for the effectiveness of high-ranking star performers. Goleman (2000) further argues that emotional intelligence is the key component of leadership.

Effective leadership eludes people and organisations because there is virtually no quantitative research that has demonstrated which precise leadership behaviours give positive results, and advice from leadership experts is mostly based on inference, experience and instinct (Goleman, 2000). In research conducted by the consulting firm Hay/McBer, a random sample of 3 871 executives was selected from a database of more than 20 000 executives worldwide. The research found that there were six (6) distinctive leadership styles, each of them coming from a different component of emotional intelligence (Goleman, 2000) The leadership styles were as follows:

- The coercive style
- The authoritative style
- The affiliative style
- The democratic style
- The pacesetting style

- The coaching style

The research noted that each style taken individually had a direct and unique impact on the atmosphere of the organisation and team, in turn yielding good financial performance.

Goleman (2000) suggests that the best leaders are skilled in more than one leadership style and that they are able to switch the leadership style to suit the situation at hand. Each leadership style is derived from different emotional intelligence competencies; the competencies that he refers to are self-awareness, self-regulation, empathy, motivation and social skills.

2.3.3.1. The Coercive style

When an organisation is going through a crisis and requires a turn-around strategy, the suggested leadership style necessary is the coercive leadership style. This style of leadership is commanding, and often the leader demands immediate compliance when they give out orders or work instructions. The reason why this leadership is ideal for organisations that are looking to turn around an organisation is that it spurs short-term performance, therefore making it a good short-term strategy (Goleman, 2000).

This coercive leadership style tends to have a negative impact on the climate of the organisation. It can thus damage the organisational culture, motivation and creativity when implemented for a long period. One of the roles of a leader is to motivate the teams in which they lead, but this leadership style does the opposite. It is important to note that caution must be exercised when implementing this leadership style (Goleman, 2000).

2.3.3.2. The Authoritative style

The authoritative leadership style is that of a leader who is a visionary and can set a clear long-term vision. This leadership style is most ideal when clear vision and direction is necessary or when a leader is leading an organisation through a crisis. These types of leaders typically create strategic goals for organisations. When an organisation is going through a change that requires a new vision and a mobilised team, this is an ideal leadership style to use. An authoritative leader has high self-confidence and empathy, and their impact on the organisational climate is generally positive.

An authoritative leader is associated with bringing positive change in an organisation. Although this kind of leader lays out a map and shares the vision with the rest of the organisation, they do not really mind how the vision is executed (Goleman, 2000).

2.3.3.3. The affiliative style

Affiliative leadership is a leadership style that revolves around people; it values individuals and emotions more than tasks and goals. Affiliate leaders generally have a positive impact on the organisational climate, but this leadership style is particularly effective when trying to build team harmony, improve communication, increase morale or repair broken trust (Goleman, 2000). Affiliative leaders see themselves as a beacon of moral guidance for everyone to follow; this is mainly because of their ability to accept fault and maintain a high level of honesty.

Although this leadership style takes on a positive approach, it should not be used alone. Affiliative leaders provide a sense of recognition for work that is done well and offer plenty of positive feedback. However, this exclusive focus on recognition can possibly allow poor performance to go uncorrected because team members may perceive that mediocrity is the standard (Goleman, 2000).

2.3.3.4. The democratic style

A democratic style of leadership forges consensus through participation. Democratic leaders build respect, trust and commitment by spending time with their team members getting to know their ideas and encouraging buy-in. Democratic leaders allow team members to have a say in the decision making, and allow team members to voice their concerns; by doing this, they drive flexibility and responsibility (Goleman, 2000).

The drawback of this style of leadership is that meetings can be endless and end without a consensus. Ideas can be discussed endlessly and require more time for them to be discussed, leading to more meetings and no conclusions. In some situations, the leader can use this leadership style to put off crucial decision-making with the hopes that it will yield blinding insight. This leadership style can lead to conflicts and make team members feel confused and without a leader (Goleman, 2000).

Democratic leadership is best when a leader is uncertain of the direction they should pursue, even though a clear vision is in place, as this leadership style allows for the generation of new ways to implement the vision by allowing able team members to provide guidance. When the problem at hand is time-sensitive and critical, the

democratic leadership style is ineffective and could lead to the demise of an organisation (Goleman, 2000).

2.3.3.5. The pacesetting style

The pacesetting style of leadership sounds admirable in many ways, but it is important to note that this style should be used sparingly. A pacesetting leader is known to set high-performance standards and becomes an example of those standards. This leadership style is obsessed about high performance and enforces it on themselves and on the team. It is easy to think that this type of leadership would be good for an organisation's climate, but it is not. This leadership style has a negative impact on the climate of the organisation, as due to the demand for high performance from team members, this demand decreases the morale of the team (Goleman, 2000).

The pacesetting leadership style is best suited for environments that need quick results and have highly competent teams to deliver such results. A pacesetting leader does not communicate guidelines for working because they expect individuals to know what to do. Work becomes task-focused and routinised and involves diminished creativity, flexibility and team responsibility (Goleman, 2000).

2.3.3.6. The coaching style

Coaching style leadership is one that helps team members identify their unique strengths and weaknesses and links them to the individual's personal and career goals. Coaching leaders encourage and inspire development in team members. They excel in delegating work to individuals in the team, and they provide plenty of useful feedback in an effort to constantly improve the performance of team members. Coaching leaders sometimes put up with short-term failure for long term learning, which will ultimately lead to the success of an individual and the organisation (Goleman, 2000).

The drawbacks of this type of leadership style are that it focuses more on the development of an individual and not the immediate work-related tasks. However, this type of leadership still improves the overall results in the performance of an organisation. This leadership style can be time-consuming, but it impacts the climate and performance of an organisation positively (Goleman, 2000).

The coaching style of leadership is best in an organisation where individuals are open to it, where team members are aware of their abilities and would like to improve their performance (Goleman, 2000).

2.3.4. The use of leadership styles

When taking into consideration all the leadership styles, it is important to note that the more leadership styles a leader possesses, the more equipped they are to lead. Goleman (2000) states that if a leader masters four or more leadership styles, they show the best performance.

From the above, four of the leadership styles are more transformational, and the other two are more transactional. Transformational leadership operates through affect, cognitions and behaviours; thus, this approach to leadership inspires team members by influencing their behaviours using shared belief systems (cognition) and positive emotions (affect) (Jung & Avolio, 1999). Transformational leadership paradigm is a reciprocal process rather than a unidirectional leadership pattern. The transactional leadership approach is where a leader is focused on results and compliance. This leadership approach is only suitable for providing short-term rewards.

Authoritative, affiliative, democratic and coaching leadership styles are transformational in nature, and when they are used jointly in an organisation, they can address challenges of communication, stakeholder buy-in, organisational politics and EA perceptions. Coercive and pacesetting leadership styles cause challenges, as mentioned above. This indicates that if the EA leaders do not possess the correct leadership skills and use them at the correct stages of the change process, they carry the risk of doing more harm to the strategic change process than good.

If leaders aspire to have the necessary leadership styles, they need first to understand which emotional intelligence competencies underlie the leadership styles they seek to possess. In order to achieve the execution of leadership in an organisation, it is important to consider the communication. In the next section, the researcher will be discussing communication styles and their characteristics.

2.4. Communication

2.4.1. Introduction to communication

Leadership is a behaviour that is carried out through communication, whereby communication clarifies the perceptions of a leader's charisma (Holladay & Coombs, 1993). Hall and Lord (1995) further expand on the idea of communication by saying that the leader's message conveys affective and cognitive strategies. When a leader communicates their vision effectively, it is more likely that the leader will gain the trust

of their followers and eventually affect the communication between the leader and the follower (Madlock, 2008). In this way, communication skills are important in influencing stakeholder attitudes (Wikaningrum & Yuniawan, 2018). A leader that is considered a competent communicator is able to share and respond to information while paying attention to different stakeholders' points of view, and communicating clearly and concisely at all levels in the organisation. To achieve this, the individual must be able to use different communication channels and various communicative resources such as language, gesture, and sounds (Shaw, 2005).

Goleman (2000) outlines six leadership styles that each have a distinct effect on the atmosphere of the organisation and in turn on its financial performance. Communication skills are associated with effective leadership, in that an effective leader enacts their leadership through communication with their subordinates or teammates. In this section, the researcher will be discussing the theories around communication and the different communication styles that exist. The research will then show how these communication styles are used across different leadership styles and theories.

2.4.2. Communication styles

According to Wikaningrum and Yuniawan (2018), communication has a variety of important roles, including coordinating activities within an organisation, sharing information and developing friendships and building trust amongst the message receivers. Halim and Razak (2014) argue that communication in organisations or groups has four main functions, namely:

- **Control:** A leader can use communication to ensure that subordinates complete specific tasks or to communicate job-related issues for action to be taken.
- **Motivation:** A leader is able to encourage stakeholders to complete or add value to different work deliverables by providing feedback on their performance.
- **Emotional expression:** In work-group settings, stakeholders are able to express their feelings and the fulfilment of social needs because of social interaction.
- **Information:** Members in the organisation need information to make decisions at all levels, whether operational or strategic, and information needs to be communicated to ensure alignment with the actions taken.

Sherman (1999) argued that there are three basic communication styles: aggressive, passive and assertive. Every individual has a unique communication style influenced by factors such as gender and cross-cultural differences. However, all communication styles can be learned and applied. Each communication style has weaknesses and strengths, and as a result, there is no single style that works bestoverall, but individuals typically tend to use one communication style (Wikaningrum & Yuniawan, 2018). Communication skill is demonstrated through an individual's ability to demonstrate knowledge about appropriate communication behaviour in certain situations.

There are four basic types of communication styles, namely, passive, aggressive, passive-aggressive and assertive (UK Violence Intervention and Prevention Centre, n.d.). The next subsection will explain each of them and their characteristics.

2.4.2.1. Passive communication

The passive communication style is when an individual avoids expressing their emotions or thoughts, which allows unacceptable behaviour to continue and build up (UK Violence Intervention and Prevention Centre, n.d.). Individuals with passive communication behaviour tend to have outbursts triggered by their avoidance in addressing situations. These outbursts often lead to shame and guilt (Bocar, 2017).

According to the UK Violence Intervention and Prevention Centre (n.d.), Passive communicators have the following characteristics:

- The communicator fails to assert themselves and express their feelings
- The communicator allows other people and situations to infringe their rights
- The communicator tends to be apologetic in their way of communicating
- The communicator displays poor eye contact

2.4.2.2. Aggressive communication

The aggressive communication style describes an individual who expresses their opinions or feelings in such a way that it infringes the rights of others (UK Violence Intervention and Prevention Centre, n.d.). Aggressive communicators are usually verbally and physically abusive towards other individuals; these communicators are usually close-minded and have difficulty understanding or accepting other people's viewpoints (Sherman, 1999). Aggressive communicators are more likely to challenge others and get counter-aggression. This places the aggressive communicator in isolation due to the resentment of others (Sherman, 1999).

According to the UK Violence Intervention and Prevention Centre (n.d.), aggressive communicators have the following characteristics:

- The communicator is generally dominant over others
- The communicator uses humiliation to manipulate others
- The communicator is impulsive
- The communicator is loud, demanding and overbearing
- The communicator estranges others
- The communicator is not a good listener
- The communicator criticises and blames others
- The communicator tends to be rude

2.4.2.3. Passive-aggressive communication

Passive-aggressive communication is one where the individual appears passive on the surface, but reacts out of anger indirectly (UK Violence Intervention and Prevention Centre, n.d.). These individuals use sarcasm and facial expression to express their passive-aggressive behaviour. Passive-aggressive communicators are quick to deny that there is a problem and appear cooperative while acting to disrupt or annoy the other individual. People who develop this communication style are usually resentful, and are incapable of directly dealing with the objects of their resentment. Instead, the individual expresses their dissatisfaction by undermining the object of their resentment. These individuals cannot mature. Their real issues can never be resolved because their response is full of resentment.

According to the UK Violence Intervention and Prevention Centre (n.d.), passive-aggressive communicators have the following characteristics:

- The communicator struggles to acknowledge their anger
- The communicator uses subtle sabotage to get even
- The communicator mutters to themselves instead of confronting the person or issue.

2.4.2.4. Assertive communication

The assertive communication style is one where an individual is able to express their opinions and feelings without violating the rights of others (UK Violence Intervention and Prevention Centre, n.d.). This is considered the most effective communication

style. Sherman (1999) argues that assertive communicators are effective and active listeners; furthermore, the assertive communication style shows characteristics of increased self-esteem and self-confidence. An individual who uses this style of communication is usually connected to others and is able to mature due to them being able to articulate and express themselves when resolving issues (Bocar, 2017). This communication style is best in a team environment as it creates an environment of respect for others to mature and grow.

According to the UK Violence Intervention and Prevention Centre (n.d.), assertive communicators have the following characteristics:

- The communicator is able to communicate their needs
- The communicator is a good listener
- The communicator feels in control of themselves
- The communicator has good eye contact

2.5. Summary

In the literature review, the researcher began by discussing the purpose and concept of EA in an organisation. EA is important in ensuring integration and interoperability within an organisation in support of the organisation's strategic objectives. Modern EA has evolved to become a critical tool in business transformation due to its inclusion of business goals and strategy.

The researcher further discussed EA and showed four popular frameworks that exist and briefly discussed the concept of each framework. It was clear that each framework is unique and the decision on which framework to use was completely dependent on the situation or problem it was tailored for, even though more than one framework could be used in an organisation.

The researcher then discussed the five core benefits of EA that an organisation would experience once EA has been implemented successfully. However, due to the cost of EA projects, most organisations never get a chance to experience these benefits. As a result, it is difficult to determine exactly what contributes to the success of EA in an organisation. The researcher then highlighted previous research to show the implications of situations where EA has been implemented. This further showed the benefits and even went on to show the challenges associated with implementing EA.

It was clear that although EA technical challenges existed, there were more non-technical challenges that made it difficult for organisations to implement organisational EA successfully. In research done previously, the non-technical challenges were mostly 'soft' skills that enterprise architects did not possess, such as leadership capabilities.

The researcher discussed leadership theories and leadership styles as a determinant of how successful EA implementation is and as a potential solution to addressing non-technical EA challenges. Two leadership theories and six leadership styles were discussed briefly, along with their advantages and disadvantages. The researcher concluded leadership styles by highlighting that when they are used in EA projects, they can address challenges experienced by enterprise architects.

The last part of this chapter covered the role of communication in an organisation, as well as the concept of communication styles and their characteristics. The researcher highlighted that there were four basic communication styles with unique characteristics, and each of them was explained briefly to indicate their strengths or drawbacks.

2.6. Conclusion

The literature reviews show that EA is an integral part of an organisation that is going through strategic change. In this chapter, the researcher discussed the benefits of EA and the frameworks that are associated with its implementation. The researcher highlighted the non-technical challenges experienced in EA implementation and the risks that they are carrying for EA initiatives. In the second section, the researcher introduced two leadership theories and six leadership styles and discussed the challenges associated with each one. In the last part of the chapter, the researcher showed how leadership styles could possibly be used to remedy the leadership challenges experienced in EA initiatives. The last section of this chapter discussed the four basic communication styles that exist, as well as their characteristics, and highlighted that the assertive communication style is the optimal communication style of them all.

In Chapter 3, the researcher will introduce research methodologies and discuss how they will be used in this research.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Introduction to research design

The research design refers to a blueprint used to fulfil research objectives and answer questions; it is a framework of methods and techniques that a researcher chooses to link various components of research logically to ensure that the objectives are addressed (Mouton, 2001). An effective research design creates the minimum possible bias in data and increases trust in the data collected and the research information analysed.

The single most important criterion for selecting a research design is its appropriateness in addressing the research problem (Merriam & Tisdell, 2015). Cooper and Schindler (2014) describe research design as the plan and structure used to obtain answers to questions. It can, therefore, be deduced that a research design provides insights about how the research will be conducted using a specific methodology.

For an efficient research design to be compiled, the following would need to be addressed:

- Research design
- Research methods
- Techniques used for data collection for research
- Method applied to analyse collected data
- Probable objections to the research
- The setting for the research study

In this chapter, the researcher will be detailing the design of the research, which became the blueprint when collecting, measuring and analysing data. The researcher will discuss the methods that were used to support the design of the study.

3.2. Research design

The research design that was implemented in this study focused on measuring aspects that were directly related to the objectives identified in Chapter 1; involving ways to understand the leadership styles in EA.

The nature of this research is qualitative and therefore follows qualitative research design principles and research methods. Research design and research methods are often confused, and in order to define a clear and effective research design, a distinction is needed. A research design is a structure that guides the use of a research method and the analysis of subsequent data (Bryman et al., 2017:100), while a research method is a technique used for collecting data (Bryman et al., 2017:100). Cooper and Schindler (2014) propose eight descriptors to classify a research design, and the researcher has discussed the key descriptors for this research.

Cooper and Schindler (2014), when considering the degree to which the research question has been crystallised, explain that a study is either exploratory or formal. An exploratory study is less structured and seeks to find new insights from assessing a phenomenon in a new light. In the instance of this research the researcher sought to understand leadership in EA, which allows for EA to be assessed in a new light as it is naturally a technical field where the role of social factors such as leadership are easily overlooked. Babbie and Mouton (2001:80) explain an exploratory study as one where questions are asked, usually to lead to some insight, rather than the collection of detailed, accurate and replicable data (Saunders, Lewis and Thornhill, 2012).

The method of data collection used would be in the form of semi-structured interviews. This is known as a communicative form of collecting data where the researcher questioned the participants and collected their responses. Mouton (1996) explains that a communicative form of collecting data may be in the form of observations, interviews, interactions, videotapes and written descriptions by the participants.

The researcher would not have control over the variables, a phenomenon known as ex-post facto. In this type of study, the researcher simply observes and reports on what is happening or what has happened (Mouton, 1996).

In the next section, the researcher has discussed the research methodology, sample strategy and data collection method that were used with the research design.

3.3. Research methodology

In this section, the researcher examined the different research methodologies and highlighted the one utilised in this research.

In order to implement the appropriate research design, the researcher evaluated qualitative and quantitative research designs to determine which should be used for this research.

3.3.1. Qualitative Research methodology

A qualitative research methodology is an approach used to facilitate the exploration of a phenomenon within its context using a wide variety of resources. Qualitative research informs why and how things happen. Its techniques seek to describe, decode, translate and come to terms with the meaning as opposed to the frequency of certain phenomena (Cooper & Schindler, 2014). Qualitative research is associated with the social constructivist paradigm. It records, analyses and attempts to uncover the deeper meaning of human behaviour and experiences.

The process that qualitative approaches follow is inductive, which means that theories are developed based on the data which is collected. Qualitative research does not have a predetermined hypothesis on which the research is based; however, a clear problem or topic still needs to be identified (Frankel & Devers, 2000).

Qualitative methods generally have small samples sizes and require a high level of involvement from the researcher. Qualitative research is best when trying to build a theory from the phenomena being researched. Due to the goal of qualitative research, purposive sampling is often used rather than random sampling (Frankel & Devers, 2000).

3.3.2. Quantitative Research methodology

A quantitative research methodology is an approach used to determine the relationship between two variables within a population (Bacon-Shone, 2015). It is associated with a positivist paradigm. Cooper and Schindler (2014) describes quantitative research as a precise count of some behaviour, opinions or attitudes with the use of statistical data. Quantitative research makes use of numbers in order to conclude on research; it is controlled in order to control bias, and it requires large samples sizes in order to be effective.

Quantitative research focuses on deductive reasoning, which evolves from the general to the specific, this is known as the top-down approach. In quantitative research, there is one or more hypothesis. A hypothesis is a tentative explanation that accounts for a set of facts and which can be tested further (Sukamolson, 2007).

3.3.3. Conclusion

The researcher conducted qualitative non-probability research with a purposive sampling strategy. In this research, the sample size was expected to be small, and as a result, it was more suitable to conduct a qualitative study that a quantitative one. Generally, qualitative research brings about ideas and detection of contemporary phenomena, particularly in case studies. In qualitative research, a small number of participants and more flexibility would not in any way make the research less scientific than a typical quantitative study.

In the next section, the researcher reviewed the sampling strategy used in the research.

3.4. Sampling strategy

In this section, the researcher examined the sampling strategy used in this research.

The sample size of this research was modest, and the odds of the sample could not be calculated. As a result, a non-probabilistic purposive sampling method was applied. Non-probabilistic sampling is defined as a sample in which the probability that a subject is selected is unknown (Acharya, Prakash, Saxena & Nigam, 2013). Purposive sampling is a form of non-probabilistic sampling; the main goal of purposive sampling is to focus on specific characteristics of a population. Because the participants needed to be leaders in EA within their respective organisations, they needed a certain amount of experience and unique characteristics with EA. As a result, the sample type of the research was a purposive sample.

The participants needed to have more than two years of EA experience in order to participate in the study. The sample was a quota sample of which a few respondents (n=12) would represent the telecommunications organisation being evaluated by the researcher. The population size of the sample was n=25.

The participation of each participant was voluntary, and they could withdraw at any time. The results of the study would not be published in the public domain, and there would not be any direct benefits for participating in the study.

In the next section, the researcher deliberated the data collection methods and tools employed in the research.

3.5. Data Collection

In this section, the researcher will be discussing the data collection method used in this research as well as the process that was followed.

3.5.1. Semi-structured interviews

According to Bernard (2006), a semi-structured interview is best used when a researcher is not guaranteed another chance with the interviewee. This form of interview guides the researcher by providing a clear set of instructions, and provides reliable comparable qualitative data.

All responses were kept confidential, and hard copies of the responses were placed in a locked cabinet, with limited access. Electronic data was stored on a password-protected computer. The interviews were approximately 45-60 minutes each in duration. The participants granted consent to the researcher to record the interview. This was done to provide an opportunity for the researcher to review the recording after the interview, and to use for reference when analysing the data. The biggest advantage of these semi-structured interviews was that they allowed the participants to convey their views on their own terms.

The interviews consisted of 10 main questions in three main categories; namely, EA knowledge, leadership styles and leadership challenges. The category of EA knowledge aimed to understand the knowledge and experience that the participant had had, followed by a series of leadership style questions. With regards to the leadership styles, the researcher was also listening to the tone and level of confidence in order to categorise the leadership style correctly. The last part of the interview dealt with the leadership challenges, which would aim to solicit the main challenges that the participants faced and how they dealt with them.

3.6. Data analysis

In this section, the researcher discussed how the data from the research would be analysed and provided literature to support the discussion.

The researcher used thematic analysis to analyse the qualitative data. The thematic analysis is not tied to a specific philosophical orientation, and its goal is to identify, analyse and describe patterns or themes across the data set (Bryman et al., 2017:350).

3.6.1. Thematic analysis

Thematic analysis is an approach used to recognise, evaluate, systematise, describe and account for themes that are found within a data set (Bryman et al., 2017:350). This method aims to identify prominent themes in the data and interpret them in addressing the research.

Although thematic analysis is not well branded, it is one of the most commonly used forms of data analysis method in qualitative research (Braun & Clarke, 2006). Thematic analysis is a qualitative research method that can be utilised across a variety of research questions and branches of knowledge.

3.6.2. Advantages of thematic analysis

Characteristics of thematic analysis are its intellectual freedom which provides a very adaptable approach that can be tailored to the needs of diverse studies. Even so, it still provides elaborate, abundant and intricate data (Braun & Clarke, 2006:5). It offers a more ready-to-use form of analysis requiring very little technical knowledge.

Braun and Clarke (2006:5) assert that thematic analysis is a handy method when inspecting the views of diverse subjects, underlining the similarities and differences while unearthing unexpected insights. Thematic analysis is effective in outlining critical features in a vast data set and allowing the researcher to take a highly organised approach in managing the data to produce a coherent report (King, 2004:268).

3.6.3. Disadvantages of thematic analysis

The scarcity of consequential literature on thematic analysis in comparison to discourse analysis or grounded theory may leave an apprentice researcher uncertain about how to conduct the analysis (King, 2004:268). This can cause an oversimplification of themes lacking weightiness in their interpretation or those too complex to manage (Nowell, Norris, White & Moules, 2017:2).

3.6.4. Thematic analysis steps

There are many ways to approach thematic analysis (Alhojailan, 2012; Boyatzis,1998; Javadi & Zarea, 2016); however, in this research, the researcher followed the 6-step framework of Braun & Clarke (2006).

Phase 1: Familiarising yourself with your data

The researcher became well acquainted with the body of data in its various forms such as interviews, documents, focus groups and any other data that would be used. The

author may use different ways of collecting data. It is important to document all of them as part of being actively engrossed in the data.

Phase 2: Generate initial codes

In this phase, being knowledgeable about the data, the researcher arranged the data in an orderly and meaningful way. Significant sections of the text were labelled and indexed into smaller chunks of meaning.

Phase 3: Searching for themes

Once all the data had been coded, it was sorted and grouped into themes. A theme can be described as a pattern that rounds up compelling information and assigns meaning to it in relation to the research question.

Phase 4: Review themes

During this phase, the themes were evaluated to establish whether each coded chunk formed a coherent pattern. The researcher would refine and develop the themes, verifying whether they showed the meanings evident in the data holistically.

Phase 5: Define Themes

This phase is focused on determining the crux of each theme. This phase emphasises the facets of data that capture the unique points of interest particular to each theme. The researcher named the themes and got a sense of how each theme fits into the bigger scheme.

Phase 6: Producing the report

This is the final step where the final analysis would be summed up in a written report communicating the researcher's findings in a clear, concise and logical manner.

3.7. Research Ethics

In this section, the researcher evaluated the importance of ethics and how ethical principles were applied to ensure that ethical standards were upheld.

Ethics refers to a system of principles that can change previous considerations (Fouka & Mantzorou, 2011). In research, it is the primary responsibility of the researcher to ensure that research is conducted ethically and that moral decisions are made to

prevent physical and psychological harm to the participants taking part in the research. Ethics are considered to be the norms or standards that direct moral decisions about behaviour and relationships with others (Cooper & Schindler, 2014). The main purpose of ethics in research is to ensure that no one is harmed or suffers adverse events from the research activities.

When conducting research, the researcher refrained from referring to participants by their names or any other sensitive information. However, if the researcher found that sensitive information needed to be revealed, consent was sought from the participant; by doing this, the researcher preserved honesty towards the research participant and protected them from physical or psychological harm. Informed consent seeks to incorporate the rights of autonomous individuals through self-determination, this means that a person gives consent knowingly, voluntarily and intelligently (Fouka, et al., 2011). Informed cosent allows a research participant to be protected from assaults on integrity and it protects their personal veracity and liberty (Fouka, et al., 2011).

For the purpose of this research, the researcher submitted an ethical clearance request to the University of the Free State, and a research committee decided that the ethical clearance of the research complied with the ethical standards of the University of the Free State.

Once the ethical clearance had been granted; consent was obtained from the participants, which permitted the researcher to share the information they had provided. The researcher ensured anonymity, confidentiality and privacy as per the ethical standards of the University. All the collected data was kept confidential and hard copies of the responses were kept in a locked cabinet, with limited access. The electronic data was stored on a password-protected computer.

3.8. Summary

In this chapter, the researcher presented the research design that was used and discussed the methodology that was used along with it. The researcher highlighted that the research design was qualitative with a non-probability purposive sampling strategy. The researcher detailed the sampling strategy that was used; it was concluded that the sampling strategy best suited for this research is non-probabilistic

purposive sampling. The target population comprised 12 participants in a South African telecommunications company, each participant having more than two years' experience. The researcher further went on to discuss the semi-structured interviews and the process that was followed to carry them out as a method of data collection.

3.9. Conclusion

It was important for the researcher to go through the process of planning how his research would be conducted. This would ensure that the correct data was analysed in order to address the objectives of the research. In the next chapter, the researcher will present the results of the study and interpret their meaning.

CHAPTER 4: DATA ANALYSIS AND FINDINGS

4.1. Introduction to data analysis and findings

In this chapter, the researcher will present the data analysis and findings of this study. The researcher carried out the research using qualitative research methodology. The data collection method was in the form of semi-structured interviews. The semi-structured interviews consisted of ten open-ended interview questions with the aim of understanding the different leadership styles and challenges that exist in the Enterprise Architecture environment of a telecommunications company in South Africa. The research used a non-probabilistic sampling method with a quota sample of 12 participants in different levels of EA from the telecommunications company. All the interviews were conducted telephonically or face-to-face.

Once the researcher had collected the data from the interviewees, a thematic analysis which followed six steps was performed. The themes were then interpreted as a collective in order to address the objectives of the research.

4.2. Background of the telecommunications company

The researcher collected data from Telkom South Africa (SA), a leading telecommunications provider and leading Internet Service Provider (ISP) in South Africa. Telkom SA was founded on 1 October 1991, at which time it was incorporated with an authorised share capital of R1 million. In 1994, the company formed Vodacom Group by collaborating with Vodafone of the United Kingdom (UK). Telkom has grown to operate in all nine South African provinces as well as in 38 Pan African countries from its regional hubs in Kenya and Nigeria. In 2016, Telkom implemented a horizontally integrated structure by forming different business units. Telkom's organisational structure is composed of three subsidiaries; namely, BCX, Yellow Pages and Gyro. Telkom also consists of three divisions, namely Telkom Consumer, Openserve and Small and Medium Business (Telkom SA, 2020). This structure makes Telkom decentralised in order to ensure that these business units are empowered to make decisions that will assist in organisational growth and value creation.

Telkom offers fixed-line, mobile, information and communications technology (ICT) as well as data services to business and consumer markets. The industry within which Telkom operates is categorised by ambiguous technology advances and multifaceted

customer needs, which makes it necessary and important for Telkom to differentiate their services to meet these complex needs (Aryasa, Wahyuni, Sudhartio & Wyanto, 2017).

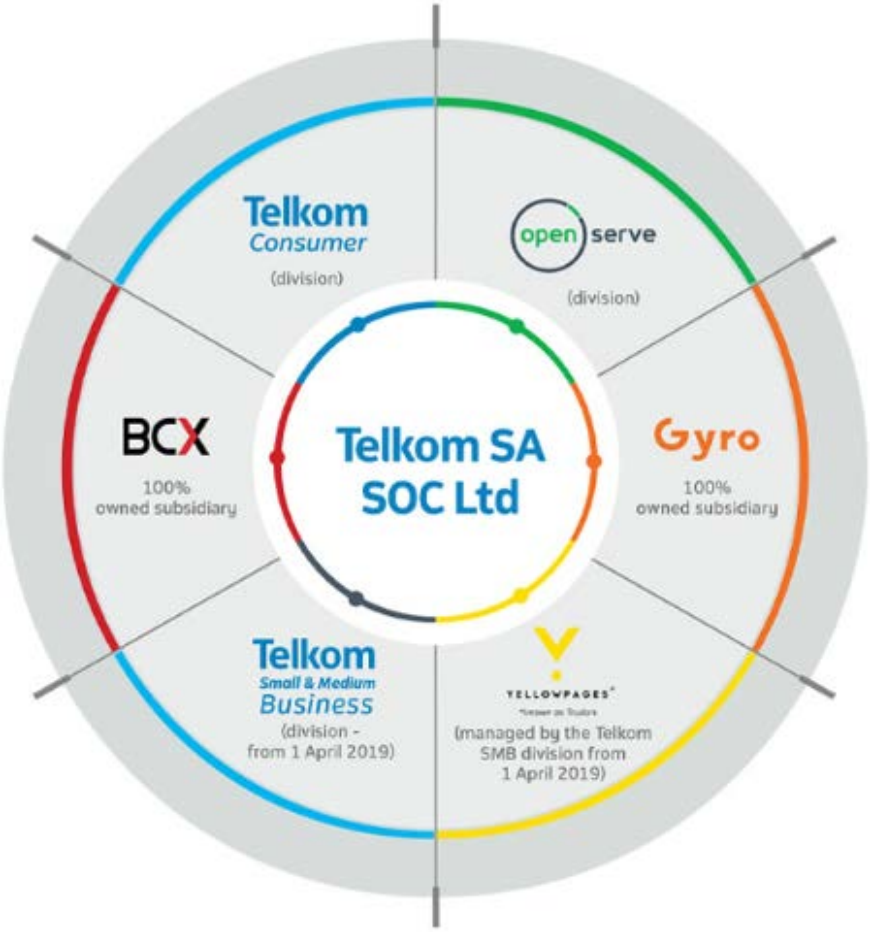

Figure 3: Telkom SA SOC Limited's organisational structure, Source: Telkom SA (2020)

Telkom SA promises to connect people seamlessly to a better life. The vision of the company is to lead the ICT market by forming credible relationships and providing an above-average customer experience. As of 31 March 2019, Telkom SA had connected more than 2.8 million premises with fibre internet through Openserve and had increased their active mobile subscriber base to 9.7 million (Telkom SA, 2020).

Telkom has implemented an EA capability in order to bridge the gap between information technology and business. Due to the complicated mesh of systems and applications, as well as the constantly evolving technology environment, EA tools have assisted Telkom in accelerating analysis and decision support.

4.3. Analysis of biographical data

In order to ensure enough representation of the human resource component of the organisation, the researcher ensured the demographic data which was collected included gender, age, years of experience and race. The gender distribution of the participants consisted of six (6) males and six (6) females; from the twelve (12) participants, the majority were Africans who comprised five (5) participants, followed by four (4) Caucasians, two (2) Indians and one (1) so-called coloured person. The ages of the participants ranged between 20 and 60, with a total of more than 60 years' work experience in the EA environment.

4.4. Qualitative analysis of themes

The qualitative results were obtained through face-to-face and teleconference verbal exchanges. The results were then supplemented by existing work done in other research. The data was collected from people who operate in different levels and functions of EA. The intent of collecting data was to allow further exploration of the research question expressed in Chapter 1. The sample type, size and sample strategy were determined before the data was collected.

The researcher compiled a total of twelve (12) interviews which lasted 30-45 minutes each. Each interview was recorded to be analysed later; for each interview, the researcher obtained verbal consent from the interviewee. All the interview questions were formulated in line with the objectives of the research. The interviews allowed the researcher to investigate the EA maturity in the organisation, the leadership styles, as well as their challenges.

Before the interview, each interviewee was informed of the purpose of the study, details regarding their participation in the study as well as an assurance of their confidentiality being maintained in the study. The interviewees then provided informed consent for the researcher to continue with the interview.

Overall, the participants were asked background information and ten interview questions as follows:

1. How is EA managed in the organisation you work in?
2. Who in your organisation has the power to gets things done in EA?
3. How would you describe your leadership style?

4. How would you describe your communication style?
5. How do you handle a crisis/pressure during EA projects?
6. Describe your strengths and weaknesses.
7. How would you describe the most ideal leadership style in an EA environment?
8. What would your suggestions be on how to improve leadership styles within this organisation?
9. What are the common challenges you face as a leader when it comes to ensuring the success of an EA project?
10. Do you think there is room for improvement regarding leadership within the organisation? Explain the reason(s) for your answer.

Each of the interview questions was coded using open coding; this means that there were no pre-set codes, but rather the codes were created and modified as the researcher worked through the coding process.

4.4.1. Organisational EA Maturity

An organisations's EA practices are measured using the EA maturity model, which also defines the improvement paths of the organisation's EA. Gartner's EA maturity assessment suggests that five levels of maturity exist. Level 1 is when there are no formal EA practices in place. Level 2 means that EA practices are in place but are focused on ad hoc technical issues within projects and initiatives. Level 3 describes a business-outcome-driven EA practice which delivers value to the business and supports delivery of key business outcomes. Level 4 maturity describes an organisation's EA practices that are repeatable and which deliver value. Lastly, Level 5 maturity is when EA practices have become a natural way of working in the orgnaisation.

In order for the author to understand how the participants in EA perceived the maturity of the EA capability within the organisation, they were asked to determine the maturity using the EA maturity levels. They were presented with five levels of maturity, each of which was explained; they then had to provide their opinion on which one of the levels was most applicable to the EA capability in the organisation. In providing their opinion, the researcher also paid attention to the reasoning behind it, which substantiated the level that a particular participant chose.

The participants believed that the EA function was still growing, and as a result, the maturity of this capability was perceived differently across different business areas in the organisation. Upon providing the maturity ratings, the participants highlighted that the rating was challenging to determine due to *"Complexities in the organisation".* Participant four (4) highlighted that amongst these complexities was the fact that the *"maturity levels across the organisation could be different as other parts of the organisation are still growing".* Most of the participants believed that the organisation's architecture was on Level 2, in that EA was reactive in nature and mostly used to drive business outcomes and revenue. This rating was consistent with that which the researcher concluded on upon investigating the organisation's EA practices.

The emphasis that led to the ratings from the participants centred on the following themes:

i. The use of EA capabilities
ii. The documentation of the EA process
iii. The communication of EA across the organisation

4.4.1.1. The use of EA capabilities in strategy

The participants showed a clear understanding of the theoretical frameworks that accompany EA and the role they play in complementing the execution of the overall organisational strategy. Four (4) of the twelve (12) participants indicated that an explicit link between EA and strategy was visible. According to the participants, the use of EA capabilities was focused on the solution architecture in order to drive strategic objectives; with participant two (2) indicating that *"Solution Architecture is implemented in the organisation and seen as an extension of the EA function".*Furthermore, Solution Architecture is often related to the implementation of the EA strategy.

The other eight (8) participants acknowledged that EA was aligned to the strategy, but they could not explain whether or not an explicit link existed; this highlighted that prevalent gaps and risks existed in the alignment of EA to strategy. Participant three (3) emphasised that *"EA is supposed to be a forward-thinking capability that's focused on long-term rewards, this existed before but over time the shift gradually moved towards short-term deliverables"*. The participants further indicated that this short-term outlook limited the innovation of EA value streams in the organisation. The responses were a clear indication that enterprise architects understood the role of EA capabilities

in strategy. However, the focus on Solution Architecture highlights the organisation's attempt to make the EA function more manageable and communicable by keeping it practical. Participant eight (8) provided a glimpse into EA growth opportunities by mentioning that, *"the pressure to reduce costs in the implementation of certain strategic initiatives has presented opportunities to improve the overall position of EA in the organisation".*

The participants agreed that stakeholders in the organisation were generally receptive towards EA and some business units included its capabilities in their way of working. This further validated that there was evidence of EA capabilities and that basic practices were followed to ensure the delivery of essential projects.

4.4.1.2. The documentation of EA processes

Most of the participants confirmed that formal EA processes existed, and six (6) of the twelve (12) participants could confirm that these processes were partially documented. Participant nine (9) mentioned that *"EA tacit knowledge is not well documented, but it is well implemented by the individuals who possess it through years of industry experience".* This indicated the risk of knowledge being lost when people leave the organisation. When further discussing the future-state architecture with participant two (2), the participant stated that *"the future-state architecture planning is not embraced because the immediate need and demand for EA skills is in the solution architecture space"*, which was an indication of the shortage of skills in planning and documenting strategic EA initiatives. Further analysis showed that organisational initiatives had selective degrees of commitment from the enterprise architects, was and that these were biased towards the more immediate revenue-generating functions.

The other three (3) participants indicated that they had not seen any formal documentation of processes. Still, they followed a specific way of doing work by observing how the more senior enterprise architects executed certain functions. This was an indication of the role of an inherent organisational culture EA as a function in the organisation. This culture appeared to be one of the limiting factors of innovation.

The rest of the participants were not sure about whether documented processes existed, but they also highlighted that there was a specific way of working they used, and which was undocumented.

4.4.1.3. The communication of EA across the organisation

The participants shared similar sentiments in terms of the importance of communicating EA across all the levels in the organisation. An interesting comment from participant one (1) was, *"It's important to keep EA communication clear and recent so that the strategic vision of the EAs is not lost in the clutter of project execution".* The participants made it clear that essential communication took place on projects. However, four (4) of the participants mentioned that the reason for taking on certain projects was not clear, and in some instances, projects seemed to be misaligned to the overall strategic objectives. Participant twelve (12) shared that *"EA strategy exists, but it's not well communicated"*, while some did not agree with the statement. The inconsistencies in communication that presented themselves further explained some of the challenges of EA communication in the organisation.

Three (3) participants believed communication of EA in the organisation was sufficient but needed to be managed better. A comment from participant five (5) was that *"There is a lack of familiarity with the processes due to information sharing not being sufficient."*

Five (5) of the twelve (12) participants believed that EA communication existed but that it was mostly ineffective. They further emphasised that the Information Technology business unit placed a lot of emphasis on EA when projects and solutions were rolled out.

4.4.2. Enterprise Architecture Organisational Context

The researcher asked the participants a set of two open-ended questions to determine how EA was adopted in the organisation and how the organisational culture affected EA. The aim of these questions was to determine the extent to which EA is managed in the organisation, and how the participants perceived the contribution of senior leadership to the management of EA. The first question was to solicit the enterprise architects' understanding of how the organisation implemented and manages EA. The second question was to understand who in the organisation was influential in driving EA and in understanding the strategies and processes used in driving the capability.

Two thematic areas were evident in understanding the context of EA in the organisation. They were are follows:

i. Implementation and management of EA

ii. The influence of organisational culture on EA

4.4.2.1. Implementation and management of EA

The participants believed that EA implementation was visible in the organisation and that the best industry-standard practices were used. Nine (9) of the twelve (12) participants believed that the EA capability was used more on operational functions than on strategic functions, which further explained why enterprise architects were more involved in solution architecture. Participants explained that the EA capability resides in the Information Technology Business Unit of the organisation, and that this unit was used primarily to drive revenue generation across the whole organisation. Participant seven(7) explained that *"there is a lot more focus on solution architecture and individual solutions in the organisation"*. At the same time, participant six (6) mentioned that *"EA management in the organisation still lacks long-term alignment to the business strategy"*.

According to participant three (3), *"the journey of adopting and implementing EA involved external consultants who played a big role in defining the Information Technology strategy, which later became the blueprint of the organisation"*. There appears to be a clear shift from the original goal when comparing the response of the participants; a shift from a strategic outlook of EA to a more operational one. A participant mentioned that this shift is not necessarily an intentional one, but rather one driven by organisational resource changes in senior leadership. Participant three (3) further emphasised that *"As the organisation changed and people left, certain information and knowledge they acquired was lost due to the lack of documentation or the transparency of documented information"*. With this taken into consideration, governance seems to be adding to the challenges of managing EA in the organisation.

Three (3) of the twelve (12) participants believed that the implementation of EA in the organisation still had strategic undertones, and they deduced that EA was still strategic in nature.

4.4.2.2. The influence of organisational culture on EA

All the participants believed that the culture of the organisation was critical in determining the success or failure of EA in the organisation. The organisational decisions are made by senior executives and communicated downstream, symbolising

a hierarchical structure. However, within EA, the structure has no clear hierarchies, but the more experienced EA were more likely to lead EA initiatives.

Seven (7) participants alluded to the idea that the current organisational structure and culture negatively affected the success of the organisation, mainly because information sharing was ineffective throughout the organisation. Participant six (6) encapsulated this by saying, *"there is a lack of familiarity with processes and technical information due to information not moving through the ranks effectively"*, which further affected the understanding of EA in the organisation. Five (5) participants felt that the culture of the organisation had little impact on EA and that EA had its own independence which resulted in an organisational sub-culture.

4.4.3. Leadership and communication styles

The researcher asked the participants two (2) open-ended questions to determine the leadership and communication styles of the participants; this was followed by one (1) open-ended question to describe their strength and weaknesses. The objective of these questions was to solicit how the participants lead in their environment and how their specific leadership styles affected the organisation. The participants showed several qualities that appeared to be common across the EA contexts; most of the enterprise architects possessed multiple leadership styles. In such cases, they were asked to provide their most dominant leadership style. Along with their leadership style, the participants were asked to provide a description of their preferred communication style.

The participants described their leadership styles as follows: three (3) participants described their most dominant leadership styles as democratic, eight (8) were affiliative, and one (1) was pacesetting. This meant that amongst the participants, the most common leadership style was affiliative, and the least common was pacesetting. A common thread in all the styles was a heightened awareness and consideration of people's feelings. This consideration showed a mature level of emotional intelligence; in addition to that, the participants possessed traits of outspokenness, creativity and the ability to take in information and analyse it.

4.4.3.1. Democratic leadership

Three (3) of the twelve (12) participants described their most dominant leadership style as democratic in nature. All three participants showed high strength in their ability to

collaborate with stakeholders. Participant five (5) emphasised the importance of collaboration and further explained that *"collaboration is important to due to our role in leveraging off the knowledge of other stakeholders"*. Two (2) of the three (3) participants were assertive in their communication style, while only one was passive. The passive participant also had the least EA experience of the three.

The participants who expressed that this is their dominant leadership style indicated that their leadership strengths were people orientation, team collaboration, and information sharing. These strengths were also evident in the scenarios they provided for their leadership style. However, the participants indicated that this leadership style is not always effective when working on projects and initiatives that had strict timelines. One of the participants emphasised that when trying to get all the relevant stakeholder inputs before concluding on a matter, this caused a process bottleneck and impacted the time needed to deliver the specific project. It was also evident that the more assertive communicators were able to deal with and manage this weakness better than the passive communicators, especially in situations when no stakeholder is willing to compromise.

4.4.3.2. Affiliative leadership

Eight (8) of the twelve (12) participants described their leadership style as affiliative in nature. Six (6) of these eight (8) participants described their communication style as assertive, while the other two (2) participants described their communication style as persuasive. Participant nine (9) emphasised that *"It is important in my role to be inclusive in opinion and ideas"*, which showed a strong sense of inclusion. Another participant mentioned that this leadership style yields a positive response from stakeholders and fosters an environment of trust. The assertive communication style was closely linked to the pressures of having to meet stringent timelines on projects and initiatives. Alternatively, two (2) of the eight (8) participants believed that a persuasive communication style was preferable, and as a result, it was the communication style towards which they gravitated.

The participants who expressed that this is their dominant leadership style indicated that their leadership strengths were problem-solving and team collaboration. These leaders typically used the inputs of domain experts to solve problems in the form of a partnership. Participant two (2) framed the challenge with this leadership style by

saying that, *"the biggest weakness is trying to meet the needs of everyone, which sometimes requires the sacrifice of doing the right things just to preserve the working relationship"*; a statement which indicated the complexity and incentivisation of affiliation.

4.4.3.3. Pacesetting leadership

One (1) of the twelve (12) participants described their leadership style as pacesetting with an assertive communication style. Participant eight (8) explained that *"awareness of my thoughts and opinions when dealing with other people is important in order not to overstep boundaries"*. The participant also explained that it is important to be assertive when operating in an environment that requires agility when delivering solutions. Throughout the interview, the participant showed confidence in sharing information and had a clear advantage of experience.

The participant who expressed that this is their dominant leadership style indicated that their leadership strength was mainly working under pressure. This came with the directly-related weakness of compromised quality of work and feeling burned out due to pressure in some instances.

4.4.4. Leadership challenges

The researcher asked two questions on the challenges that enterprise architects faced as leaders in the organisation. The first question was to determine the challenges they faced in ensuring success in EA projects, and the second question was to hear their opinions on how they thought the leaders in the organisation could best address some of the challenges. With regards to the challenges faced, the themes that arose were:

i. Leadership and vision
ii. Stakeholder buy-in
iii. Communication

One of the participants explained that although these challenges might reveal a specific pattern, it is important to note that the challenges are not unique to EA but can be seen across the organisation. Another participant mentioned that some of the challenges were due to the EA maturity and culture of the organisation.

4.4.4.1. Leadership and vision

When EA initiatives and projects are carried out, they are often carried out in line with the EA vision of the organisation. Strong, knowledgeable leadership is important in

setting the EA vision and fixing it in the minds of all stakeholders. Eight (8) of the twelve (12) participants explained that EA is misunderstood in executive leadership and as a result, the consultation and communication of vision were not efficient; which contributes to poor commitment towards a common goal. Further challenges of poor commitment brought about poor communication. Although an EA development plan with principles had been drafted, it did not show any details regarding the scope and alignment to the overall organisational strategy. Participant eleven (11) explained that *"commitment of senior executives to EA needs to be stronger to ensure better success of the capability"*, while another participant expressed that leadership competence and knowledge about EA varies from time to time and is also affected by organisational restructuring initiatives.

Top-down organisational leadership in the organisation further shows the importance of the vision being set and communicated from senior executive levels to the rest of the organisation. For this to be achieved, there needs to be a common understanding of EA and the role it plays in the organisation.

4.4.4.2. Stakeholder buy-in

Ten (10) of the twelve (12) participants expressed that stakeholder buy-in was one of the more prominent challenges; this was inclusive of all stakeholders at all levels in the organisation. Participants expressed that when fulfilling their EA functions in the organisation, stakeholders believed that their duties were time-consuming; this was mainly because many stakeholders were necessary, therefore adding complexity to initiatives when conflicts arise.

Stakeholders also expected business benefits in short timeframes, which put pressure on enterprise architects to deliver projects in unrealistic timeframes. The impact of this was low stakeholder buy-in to the role that enterprise architects played in initiatives and projects. A participant expressed that the lack of understanding in the EA role was also a significant contributor to poor stakeholder buy-in.

4.4.4.3. Communication

Nine (9) of the twelve (12) participants expressed that communication was one of the challenges they faced. The participants explained that communication was one of the most important success factors in EA. Communication is important in sharing the vision of EA and obtaining stakeholder agreement on initiative and project scope. The

communication challenges highlighted were mainly due to the lack of role clarity and the communication of value not being clear. The challenges of communication also directly impact stakeholder buy-in into the architectures of the organisation. Participant twelve (12) said, "*the message we get across to the rest of the organisation about our (EA) role in the organisation would assist in positioning EA to become successful*".

The participants also highlighted that communication was visible among the members of the team but was not effective. One of the participants said that within the EA team communication happens in project silos; this means that enterprise architects who are not involved in or assigned to certain projects will not have information about that specific project. This was flagged as a risk in that information flow is not fluid across the organisation.

4.5. Interpretation of findings

The knowledge attained in this research is assessed in order to provide an analysis of the leadership styles that exist in the EA environment of a South African telecommunications company. Along with the leadership styles in the EA environment, the research considered the organisational context in which the capability operated. This section sets out to interpret the findings obtained in the research in relation to the research's primary objective.

Telkom's EA maturity was described to be Level 2 on the maturity framework of EA. This is an important indicator in understanding the different leadership styles that exist within the EA capabilities because different levels of the maturity model yield different work cultures and thus, different leadership styles. Level 2 on the maturity framework is a reactive EA within the organisation. This means that EA practices exist and are officially recognised by the organisation. However, these EA practices are only considered to be ad hoc and as a result, only offer short-term fixes rather than long-term rewards.

Telkom has not fully adopted the EA mindset. This leads to challenges in the communication of the EA strategy and vision from senior leadership; which could be a result of lack of EA understanding, which is a pervasive problem in EA. The communication within EA projects appeared to be more stable than that which addresses the positioning of EA within the organisation. The resultant challenge was that the culture of EA in the organisation was not widely adopted or accepted by

stakeholders outside the EA capability. Role clarity throughout the organisation is negatively impacted by the communication challenges resulting in poor stakeholder buy-in and in some instances, resistance. Communication is essential in establishing a common understanding of EA, and it seemed that the main communication hurdles were with the decision-makers communicating the value of EA in the organisation.

The most prominent leadership styles that came from the participants were democratic, affiliative and pacesetting leadership styles; with the most common one being the affiliative style. Participants with the democratic leadership style were people-oriented and had strong knowledge-sharing capabilities. They had good relationships with their stakeholders. These participants were not good at fulfilling timebound activities, even though they were assertive communicators. The affiliative leadership style also proved to build good relationships with stakeholders and addressed the weaknesses of the democratic leadership style. It, however, posed a challenge of always trying to please the stakeholders in order to achieve certain goals. This leadership style aims to establish a win-win relationship, but this is not always successful, and it requires one of the parties to compromise. The pacesetting leadership style was transactional leadership that was more focused on outcomes than on the people. Still, it needed cognisant efforts in order not to overstep the boundaries with stakeholders when it came to collaboration. This leadership style required more mature leaders.

Considering the maturity of the EA in Telkom, the combination of democratic, affiliative and pacesetting leadership styles are a good combination of leadership styles in minimising the risk of communication and buy-in challenges. All the leadership styles have a positive impact on the climate of the organisation and are a good foundation in growing the organisation's EA capability. The democratic style is essential in gaining value-adding input from stakeholders across the organisation to ensure that all the information is considered when implementing EA. The affiliative style is important in forming a partnership with business; both the democratic and affiliative styles are strong in communication, but this is not evident in the organisation as the scope of influence is mainly focused on project work. The pacesetting leadership style is, in this instance, positive to the climate of the organisation because of the heightened awareness of stakeholders. It is also mainly used in the organisation by highly competent leaders to achieve specific outcomes in the EA environment. This

leadership style can also have a negative impact on the climate of the organisation when not used with caution.

4.6. Chapter conclusion

In this chapter, the researcher discussed the findings from the data collection method. Data were collected from twelve (12) participants with demographics that were representative of the organisation. The feedback was then analysed using a thematic analysis that was then interpreted to address the objectives of the research.

The findings showed that the main leadership styles that were evident in Telkom were democratic, affiliative and pacesetting leadership styles. These styles were further analysed to determine their impact on the organisation with consideration of the maturity of the organisation.

In the next chapter, the researcher will be discussing recommendations based on the results that were collected.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The purpose of this research was to analyse the different leadership styles in the EA function of a telecommunications company in South Africa, namely the Telkom Group. The researcher provided a theoretical background on Enterprise Architecture, leadership and communication; and the knowledge on these theories was used to conduct semi-structured interviews on 12 participants. The participants' feedback brought about themes that were then grouped through a process of thematic analysis. The findings were then discussed and interpreted in detail.

In this chapter, the researcher will provide a summary of the theories and findings of the research. The findings in Chapter Four addressed the primary objective of the research, which was to analyse the different leadership styles in the EA within a South African telecommunications organisation. Concluding on the findings, this chapter will also provide recommendations and discuss further areas of research. The chapter will consist of conclusions separated into two parts; part A will discuss the conclusions on the theories discussed in Chapter Two, while part B will discuss the conclusions on the findings in Chapter Four. The researcher will discuss the recommendations based on the findings as well as the achievement of the different objectives of the research. The final part of the chapter will be the discussion of the limitations of the research and further areas of research.

5.2. Research conclusions

In this section, the researcher will be discussing the conclusion of the research in two parts; one will cover the conclusion on the theory while the other will cover the conclusion of the findings.

5.2.1. Part A: Conclusion of the theories

In Chapter Two, the researcher discussed three major concepts that have had an impact on the research objectives. The chapter started with a discussion of EA, which also highlighted some of the important principles and frameworks used in EA. The chapter briefly discussed the different levels of EA maturity that an organisation could reach as well as what each level meant for the organisations. It was highlighted that most of the previous research around EA was technical and that there was some

research which discussed that non-technical challenges threatened the success of EA implementation in an organisation. Due to EA being driven mainly by leadership, the researcher sought to analyse the different leadership theories and styles that existed in EA and how each of them impacted the implementation of EA in a South African telecommunications company.

The author highlighted the impact of each leadership style in an organisational context, providing positives and negatives of different types of leaders. In the literature on EA, it could be noted that communication was one of the prominent challenges with implementing successful EA. The literature also showed that communication was an important leadership skill in order to coordinate activities within an organisation; sharing information, developing friendships and building trust amongst the message receivers. This led the researcher to explore different communication styles.

A leader's ability to achieve control, motivation, emotional expression and information sharing through communication determines how effective they are in their role as leaders. This is no different in EA. An effective leader can communicate EA in the organisation and obtain stakeholder buy-in, and these qualities decrease the chances of EA implementation failure. The success of EA implementation and communication improves the maturity of EA in the organisation.

5.2.2. Part B: Conclusion of the findings

In Chapter Four, the researcher presented the findings of the research. The main objectives of the findings were to provide an analysis of the leadership styles in the EA of a telecommunications company in South Africa. The sampling method used was non-probabilistic and consisted of a quota sample of twelve (12) participants, who were asked ten (10) open-ended interview questions in the form of a semi-structured interview. Before the open-ended interview questions, the researcher asked the participants their opinion on the level of EA maturity in the organisation. Once all the data was collected from the interviews, the researcher conducted a thematic analysis and discussed the interpretation of the data based on the themes from the thematic analysis.

In the research, the researcher found that the organisation was described to have a Level 2 EA maturity level. At this level of maturity, the organisation is perceived to have a documented EA process that is basic, and at least one cycle of the EA development

process has been completed. EA decision-making at this level is made by both Information Technology (IT) and the business, with senior leadership beginning to see the value of EA in the organisation.

The findings showed that three main leadership styles were present in the telecommunications company: democratic, affiliative and pacesetting. These leadership styles were accompanied by different styles of communication. All the leadership styles tended to be assertive in their style of communication, which is the preferred style of communication for effective leadership. This finding highlighted that communication challenges were not a dominant factor amongst most enterprise architects due to their characteristics of assertive communication. However, enterprise architects described communication and stakeholder buy-in as two of the biggest challenges in EA. Having communication as a challenge in the organisation but a strength amongst the enterprise architects was an indication that enterprise architects were not directly involved in the communication of EA in the organisation; as a result, their influence is only limited to the scope of their projects. The reliance on senior leadership to set the tone for EA in the organisation further explains that the participants considered leadership and vision a challenge with regards to EA.

The observation on challenges uncovered that leadership and communication responsibilities on EA do not lie solely with the architects, but rather with the senior leadership as well. This finding is an extension of existing literature that the implementation of EA in the organisation needs to be endorsed by senior leadership. Furthermore, the maturity of EA in the organisation was heavily dependent on how communication and leadership in senior management were executed.

When considering the three leadership styles identified in the participants, their characteristics displayed a positive impact on the climate of the overall organisation; and at the level at which EA currently operates, this is considered appropriate. Enterprise architects are important in building a relationship with different stakeholders in the organisation. However, considering the EA maturity of the organisation, the senior leaders need to have a more assertive communication style due to the fact the enterprise architects are typically highly competent and highly motivated. Based on the findings, the senior leaders were more commanding due to the top-down leadership structures and hierarchies.

5.3. Recommendations

In this section, the researcher will discuss the recommendations based on the theory and the findings of the research. Based on the results obtained in Chapter Four, this section will be giving recommendations on the most appropriate leadership styles based on the EA maturity level of the organisation. The proposed recommendations came from the theoretical analysis and the findings presented. The recommendations will also provide suggestions on how to improve leadership and communication styles in order to improve the chances of EA implementation success.

5.3.1. Improving the EA maturity in the organisation

In the research, the researcher found that the organisation was described to have a Level 2 EA maturity. This level of maturity requires stakeholder buy-in and great communication from the EA capability. These are coincidentally amongst the two biggest challenges that the participants identified, along with EA vision. With the above considered, the theory discusses the importance of a leader having different leadership and communication styles that should be used depending on the situation. In order to advance the EA maturity of the organisation to Level 3, it is important to invest in leadership development of enterprise architects to make sure that they are able to use the right styles to achieve EA growth goals.

The transformative affiliative leadership style coupled with assertive communication is the most appropriate leadership style for the EA maturity of the organisation. This will address the challenges of stakeholder buy-in, leadership and communication directly.

5.3.2. Enhancing transformative leadership

The theory in Chapter Two shows that transformative leadership increases the motivation and morality of the followers. Furthermore, the leader engages with followers based on common belief systems, goals and values. A transformational leader can identify the need for change, gain stakeholder buy-in and set a vision that guides the change (McGregor, 1960). In the findings in Chapter Four, the participants highlighted the challenges of senior leadership and poor commitment to vision; these could be alleviated by a transformative leader and also enhance the efficiency of communication in the EA capability of the organisation. By increasing the scope of influence of the enterprise architects, the organisation can leverage on existing transformative leadership styles. In the case that the influence of enterprise architects

remains the same, the organisation can invest in building similar leadership capabilities in senior leadership for the EA domain.

5.3.3. Implementing the affiliative leadership style

The affiliative leadership style is already a prominent leadership style among enterprise architects. As a result, the focus needs to be on ensuring the implementation of this leadership style to address the challenge of stakeholder buy-in. The affiliative style of leadership is important in building team harmony, improving communication, increasing morale and repairing broken trust; these are all necessary to ensure successful EA implementation.

5.3.4. Implementing assertive communication styles

Assertive communicators are effective and active listeners. They are also confident and well-spoken. This style of communication is associated with transformative leaders. This means that the implementation of transformational leadership will lead to assertive communication. Assertive communication was one of the dominant communication styles of the participants in the research, but the implementation of this style was very limited to certain levels of the organisation. The organisation needs to work on expanding the reach and impact of this communication style by building a company culture around effective leadership and communication.

5.4. Achievement of the objectives

This section discusses whether the objectives of this research were achieved. The primary objective of the research was to analyse the leadership styles in EA within a South African telecommunications organisation. The secondary objectives were as follows:

I. To provide an overview of the key concepts of leadership styles and EA;
II. To evaluate the leadership styles in EA leaders within a South African telecommunications organisation;
III. To identify the relevant leadership theories and limitations in EA within a South African telecommunications organisation;
IV. Lastly, to provide suggestions on the most appropriate leadership styles in EA within a South African telecommunications organisation.

The first objective involved assessing different concepts and theories of leadership styles that affect the success of EA implementation success. This objective was

achieved in Chapter 2 of the research. This brought about the analysis of the EA maturity and communication styles.

The second and third objective were to evaluate the leadership styles that existed in a South African telecommunication company and see which leadership theories and limitations were applicable. This was achieved in Chapter 4 and further concluded in Chapter 5 (5.2.2).

The fourth objective entailed providing recommendations on the most appropriate leadership style based on the maturity of the organisation. This objective was achieved in Chapter 5 (5.3).

5.5. Limitations of the study

The limitations of this research have to do with the location, scope and number of organisations. The research was conducted in Gauteng, South Africa, and the results cannot simply be generalised across other provinces in South Africa.

The scope of the research covered leadership styles but did not regard the cognitive skills and abilities of the leaders. This was mainly due to the financial and time constraints of the research; and the same reason is applicable to the limitations of only researching a single organisation operating in a specific industry.

5.6. Future research

Further studies could be conducted in other areas of South Africa so that insight can be gained on the different trends that exist in EA leadership. Also, the extension of the scope to other areas of leadership, such as cognition, could provide further insights on the reasons for different leadership styles. Since only a single organisation in a specific industry was researched, understanding the role of leadership styles in other industries that implement EA would allow for comparative research on whether or not these styles are affected by specific industries.

The focus on further research should be primarily on extending the understanding of leadership and the different leadership aspects that affect the success of EA implementation in organisations in different industries that operate within South Africa's borders . This could then incorporate the impact of company culture on leadership styles.

Lastly, research could be done specifically on organisations that have different EA maturity levels. This would allow a more holistic view of leadership across the different levels of maturity, which would aid organisations to enhance their EA implementation success through leadership at all levels of maturity.

5.7. Chapter summary

This chapter discussed the main parts of the study and concluded the theories and the findings. The chapter further discussed the recommendations that were based on the findings, as well as how each objective of the research was achieved. The conclusion of the chapter was a discussion of the limitations of the research and opportunities for future research.

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Appendixes

Appendix A: Ethical clearance

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS UV

GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

24-Apr-2020

Dear Dr Crous, Cornelie C

Amendment Approved

Research Project Title:
MBRP7900/GNR791 - MBA field studies - AMENDMENT

Ethical Clearance number:
UFS-HSD2020/0545/2104

We are pleased to inform you that your amendment application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for notifying the ethics committee of the changes/amendments that have been made to your study; we wish you the best of luck and success with your research.

Yours sincerely

Prof Derek Litthauer
Chairperson: General/Human Research Ethics Committee

Digitally signed by Derek Litthauer
Date: 2020.04.27 16:42:12 +02'00'

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Park West
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Appendix B: Permission to conduct research

DATE

[Date]

TITLE OF THE RESEARCH PROJECT

The Enterprise Architecture leadership styles of a South African telecommunications company

PRINCIPLE INVESTIGATOR / RESEARCHER(S) NAME(S) AND CONTACT NUMBER(S):

Lemphane Mokhobo 2009027216 084 406 8038

FACULTY AND DEPARTMENT:

Economic & Management Sciences

Business School

STUDYLEADER(S) NAME AND CONTACT NUMBER:

Dr. Madelein Fourie

083 718 8727

WHAT IS THE AIM / PURPOSE OF THE STUDY?

The purpose of the study is to understand the leadership styles within enterprise architecture. There is no clear understanding of the leadership styles and challenges in an enterprise architecture environment. This affects quality outputs and the perceived success of Enterprise Architecture Management.

WHO IS DOING THE RESEARCH?

Lemphane Mokhobo will be the researcher responsible to carry out this study as part of his MBA qualification. Lemphane has experience in Information technology and is currently certified in the area of Enterprise Architecture and Information Technology management. He has served in Business Process Architecture Management for 5 years and is currently a Specialist in Business Process Architecture for a Telecommunications company.

WHY ARE YOU INVITED TO TAKE PART IN THIS RESEARCH PROJECT?

The sampling method that will be used is non-probabilistic sampling because the odds of the sample cannot be calculated and the sample size is small. Non-probability sampling is defined as a sample in which the probability that a subject is selected is unknown. The sample will be a quota sample of which a few respondents (n=12) will represent the organisation; the researcher will be evaluating a telecommunications organisation. You have been selected as one of the respondents due to the Enterprise Architecture role you occupy in the organisation you represent.

WHAT IS THE NATURE OF PARTICIPATION IN THIS STUDY?

The participant's role in the study is to provide information of the leadership styles they use to initiate and manage Enterprise Architecture in their respective organisation to ensure that it is successful. The study involves semi-structured interviews which will happen face to face and telephonically. The interview are expected to take 45-60 minutes each. In order to address the risk of time lost during working hours, the researcher will conduct telephonic interview after-hours. Information of the participant and the organisation which they represent will be kept confidential, and should the interviewee want to stop the interview they are welcome to do so anytime during the interview.

PARTICIPATION, BENEFITS AND CONFIDENTIALITY

Your participation in the study is voluntary and you may withdraw at any time. The results of the study will not be published in the public domain and there are no direct benefits for you in participating in the study. Your answers will be kept confidential and hard copies of responses will be kept in a locked cabinet, with limited access. Electronic data will be stored on a password-protected computer. Your participation may result in the loss of work or study time for participation. The interview will take approximately *45-60 minutes* to complete.

Thank you for taking time to read this information sheet and for participating in this study.

Appendix C: Paticipation consent form

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable). I am aware that the findings of this study will be anonymously processed into a research report, journal publications and/or conference proceedings.

I agree to the recording of the *semi-structure interview.*

I have received a signed copy of the informed consent agreement.

Full Name of Participant: _____

Signature of Participant: _____ Date: _____

Full Name(s) of Researcher(s): _____

Signature of Researcher: _____ Date: _____

Appendix D: Language editing certificate

www.starlanguageservices.co.za

naledi@starlanguageservices.co.za

Tel. 083 965 7945

6 October 2020

To whom it may concern

Language editing – MBA thesis: Mr Lemphane Mokhobo

This serves to confirm that the MBA thesis submitted to Star Language Services in September 2020 by Mr Lemphane Mokhobo was indeed subject to language editing, and that the accompanying feedback was sent to the client thereafter.

Star Language Services can provide further details regarding what was edited, should such information be requested.

Please note: While every effort is made to ensure that each client is given thorough feedback, Star Language Services cannot guarantee that that which the client submits in its final form is identical to the text received for editing or the changes that were suggested.

Please feel free to contact me should any further information be required.

Yours faithfully,

Naledi Gouws

Owner: Star Language Services