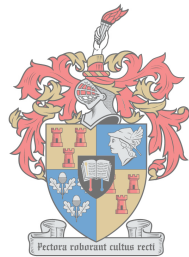


# Developing a Model to Overcome the Organisational Communication Deficiencies that exist in the PAM industry

by

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in the Faculty of Engineering at Stellenbosch University*

Supervisor: Dr. JL Jooste

March 2018

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# Abstract

## Developing a Model to Overcome the Organisational Communication Deficiencies that exist in the PAM industry

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In a service providing industry such as Physical Asset Management (PAM), a strategic partnership is a business relationship that is established to reach organisational objectives and to obtain a competitive advantage amongst industry peers. For this relationship to be optimal, effective communication is essential. The diverse workforce, however, includes role players in the communication system that has diverse backgrounds, knowledge and experience and are not effective communicators by profession.

The problem is that service delivery objectives are not being met due to communication deficiencies. Research on effective communication is conducted in other service providing industries, such as aviation and medicine. However, it remains a great challenge in the PAM industry. The research question investigated in this research is to identify the root causes of communication deficiencies and to investigate a model that could support PAM organisations in overcoming these deficiencies.

The foundation of the research is based on Hegel's thesis-antithesis-synthesis philosophy and follows a qualitative research methodology. To understand the deficiencies and the context in which management identifies the problem, in-depth interviews and discussions were conducted with research participants from the PAM industry. The data are analysed according to four inductive data analysis activities from the Hutter Hennink qualitative research cycle, each being more nuanced and conceptual than the foregoing activity.

In accordance to the qualitative research cycle, the analysis resulted in a theory regarding the root causes of communication deficiencies in the PAM industry. Research found that communication deficiencies are rooted in three domains: cognitive issues, connective issues and strategic issues. The root causes are depicted by twelve codes that represent the core issues raised by research participants. The theory developed in the research is further developed into a concise solution, the COMMPAS model.

The COMMPAS model describes three collaborating elements that should be in place to achieve effective communication: A communication culture and vision, training and the SBAR situational briefing technique. The model achieved highly positive validation feedback from research participants and has the potential to, if implemented and maintained correctly, significantly improve organisational communication in the PAM service providing industry.

# Uittreksel

## Ontwikkeling van 'n Model wat die organisatoriese kommunikasie tekortkominge in die Fisiese Batebestuur bedryf oorkom

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Organisasies in die dienslewings industrie, byvoorbeeld die Fisiese Batebestuurindustrie, maak gebruik van strategiese vennootskappe as besigheidsverhouding om organisatoriese doelwitte te bereik asook om die mededingende voordeel wat hul teenoor ander organisasies in hul industrie het, te behou. Hierdie besigheidsverhouding is optimaal mits doeltreffende kommunikasie gehandhaaf word. Die arbeidsmag diversiteit van hierdie industrie sluit rolspelers in die kommunikasie sisteem in wat beskik oor diverse agtergronde, kennis en ervaring en wat nie vanuit hul amp effektiewe kommunikeerders is nie.

Die probleem is dat organisatoriese doelwitte, as gevolg van kommunikasie tekortkominge, nie bereik word nie. Doeltreffende kommunikasie word nagevors in dienslewings industrië soos die lugvaartbedryf asook die mediese bedryf. Gegewe die laasgenoemde, is doeltreffende kommunikasie steeds 'n uitdaging in die bedryf van fisiese batebestuur. Die navorsingsvraag wat ondersoek is die kern oorsake van kommunikasie tekortkominge asook om te ondersoek of 'n model ontwikkel kan word om Fisiese Batebestuur organisasies te ondersteun om hierdie tekortkominge te oorkom.

Die navorsing is gebaseer op Hegel se tesis-antitesis-sintesis filosofie en volg 'n kwalitatiewe metodiek in benadering tot die probleem. In-diepte onderhoude en besprekings is met navorsingsdeelnemers uit die batebestuurgemeenskap gevoer om die tekortkominge en die konteks waarin bestuur die tekortkominge identifiseer, te verstaan. Die data wat deur hierdie interaksies ingesamel is is

geanaliseer volgens vier induktiewe data analiese aktiwiteite, soos voorgestel in die Hutter Hennink kwalitatiewe navorsingsiklus. Elk van die aktiwiteite is meer genuanseerd as die vorige aktiwiteit.

Die analise is uitgevoer in ooreenstemming met die kwalitatiewe navorsingsiklus en het 'n teorie oor die kern oorsake van kommunikasie tekortkominge in die batebestuurdienste tot gevolg. Die navorsing het gevind dat die oorsake van kommunikasie tekortkominge in drie domeine opgedeel kan word: kognitiewe probleme, konnektiewe probleme en strategiese probleme. Die kern probleme wat deur navorsingsdeelnemers genoem is word deur twaalf kodes verteenwoordig. Die teorie wat ontwikkel is verder ontwikkel tot 'n omvattende oplossing, die COMMPAS model.

Die COMMPAS model bevat drie elemente wat in samewerking aangewend moet word om doeltreffende kommunikasie te bereik: 'n kommunikasie kultuur en visie, opleiding en die SBAR tegniek. Die model het hoogs positiewe terugvoer van navorsingsdeelnemers ontvang tydens die validasie proses en het die potensiaal om, indien dit reg geïmplimenteer en onderhou word, noemenswaardige bevorderings vir organisatoriese kommunikasie in die batebestuurdienste te lewer.

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- To the research participants and the sixteen attendees who validated the model, for their valuable feedback and inputs.

The Author  
November 2017

# Dedications

*Aan my ouers, Johan en Nicolene*

*Hulle het die liefde vir leer en harde werk in my gekweek, en my geleer wat geen Universiteit beter sou kon oordra nie – onvoorwaardelike liefde, genade en geduld.*



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# Nomenclature

## Terminology [H]

<b>Communication Excellence</b>	The ideal state of how knowledge is communicated in support of the overall strategic management of organisations.
<b>Latent Content</b>	The hidden meaning that is discoverable by analysis.
<b>Manifest Content</b>	The content as it is remembered.
<b>Axial coding</b>	The process of relating categories to their subcategories Methods (2010).
<b>Thick description</b>	A description of a particular behaviour described within the context that it occurs (Geertz, 1973).
<b>Feedback</b>	The process in which the output of an activity is reflected on or fed-back to modify the next action.
<b>Update</b>	A strategic activity where estimates, planning and schedules are revised to reflect the most recent information.
<b>Role Player</b>	An employee or stakeholder or any individual that is part of the organisational communication system in a PAM environment.



**Acronyms [H]**

<b>AM</b>	Asset Management
<b>ACE</b>	Asset Care Engineer
<b>AMS</b>	Asset Management Services
<b>BAM</b>	Business Area Manager
<b>IAM</b>	Institute of Asset Management
<b>ICT</b>	Information Communication Technology
<b>IoT</b>	Internet of Things
<b>KPI</b>	Key Performance Indicator
<b>PAM</b>	Physical Asset Management
<b>PAS</b>	Publicly Available Specifications
<b>PMBOK</b>	Project Management Body of Knowledge

# Chapter 1

## Introduction

This chapter serves as introduction for the study that is undertaken. Background information of the research problem is covered as well as supporting evidence as to why research regarding this topic is important. The research problem statement follows, creating a focus to narrow down to the research question. The problem statement includes research objectives, the importance of the research, limitations and delimitations to the study as well as the ethical implications of the research. The research problem is followed by the proposed research design and serves as a planned methodology identified by the researcher as guidance to how the study will be approached.

### 1.1 Background of Study

*The single biggest problem in communication is the illusion that it has taken place.*  
– George Bernard Shaw

In order for an organisation to reach their organisational objectives and achieve their competitive advantage, they need their employees to fully cooperate. A fundamental aspect of cooperation is communication, as stated by Barnard (1968) in his seminal book, *The Functions of the Executive*. No skill or intelligence could compensate for an organisation's incapability to communicate effectively. The incapability or lack of effective communication skills becomes detrimental when the amount of employees or dependents increase, leading to decreased cooperation. Feliú-Mójer (2015) argues that effective communication skills are no longer perceived as soft skills and are becoming one of the core professional skills that are expected to be present in a professional.

In a study of the top communicators of organisations carrying job titles such as chief executive officer, executive director, president and so forth, none of the organisations studied was efficient in communication (Dozier, 2013). This

proves that, even though organisations have found ways to transmit orders, share information and any form of communication, it remains to be something that can be improved upon and add value. Even though the importance of communication skills in professionals is realised, training opportunities for communication skills for professionals are still limited (Feliú-Mójer, 2015).

Communication challenges are a common phenomenon in organisations, especially within projects. Gill (2008) performed a survey on communication challenges that organisational leaders face, and identified the following 9 categories of challenges:

1. Not all employees are kept informed;
2. Employees are not receiving consistent messages from management;
3. Employees are not receiving timely messages;
4. The right information is not being sent to the right people;
5. Expectations are not clear;
6. Plans for the future are not known;
7. Functional areas are not collaborating;
8. Employees are not open with each other; and
9. Communication is hampered by distance between units.

Communication as a challenge is confirmed by a leading physical asset management (PAM) company that identifies an opportunity for improvement in preventive action towards problems that occur (Jackson, 2016). Various solutions have been published to serve as a framework for effective communication that could be applied to a specific organisation or field. An example of these solutions is the 9 Knowledge Areas of Project Management Body of Knowledge (PMBOK) where one of the knowledge areas is Project Communication Management. The challenge lies in applying these frameworks whilst integrating Information Communication Technology (ICT) available to improve these solutions. Three of the five communication management processes in the document that are challenging to implement are given as an example (Project Management Institute, 2016):

- Plan Communications;
- Distribute information; and
- Manage stakeholder expectations.

According to Mohr and Spekman (1994), it has become general practice to form partnerships with firms to establish and maintain their competitive advantage. The factors of partnership success given by Mohr and Spekman (1994) are Communication Behavior, Partnership Attributes and Conflict Resolution Techniques (1.1), which confirms the importance of effective communication between partners to maintain a successful partnership. The specific form of partnerships investigated in this thesis is the formation of partnerships between PAM service providers and their clients and contractors respectively.

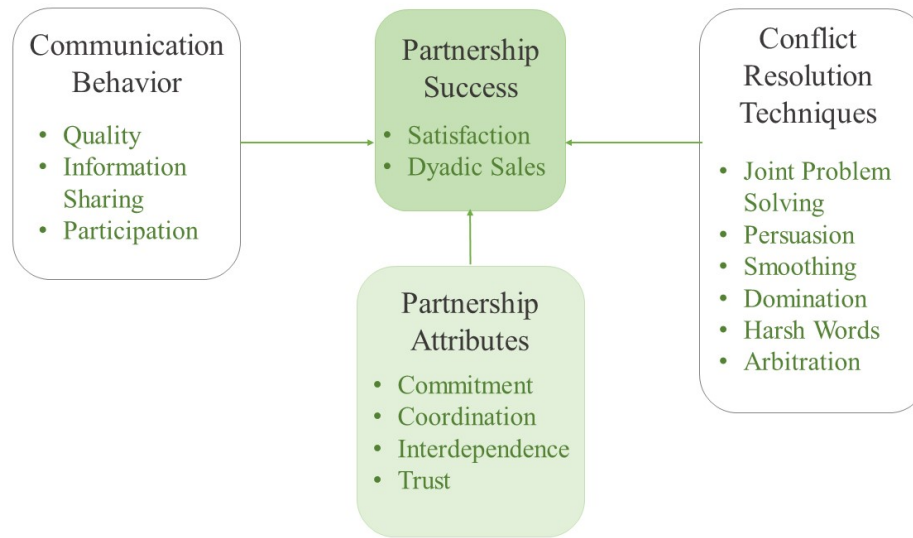


Figure 1.1: Factors Associated with Partnership Success (Mohr and Spekman, 1994)

Numerous solutions have been developed to support organisations to improve their own efficiency. Such solutions address communication issues in the line of strategic planning, organisational effectiveness and customer- and employee relations (Dozier, 2013). However, there are limited academic resources that address communication challenges in the PAM industry, specifically communication challenges between asset management service providers and their clients and contractors respectively, which creates an opportunity for researching the field. A model or system to support organisations with efficient communication in partnerships in the PAM industry proves to be of great need.

In conclusion, there is no doubt that organisations continuously aim to gain competitive advantage. In order to do so, they rely on the cooperation of their employees, which is supported by communication excellence.

## 1.2 Research Problem Statement and Objectives

In light of the above, the problem is that service delivery objectives in the PAM industry are not being met as a result of communication deficiencies.

The problem stated is addressed by investigating the following research questions:

1. What are the main reason(s) for communication deficiencies primarily from the perspective of service providers in relation to their clients and contractors respectively?
2. What is the available ICT relevant to communication that could support effective communication?
3. What are the available models or systems to improve organisational communication?
4. What model or system can assist PAM service providers to improve communication deficiencies by utilising effective ICT methods?

### 1.2.1 Research Objectives

The aim of this study is to support the PAM industry in overcoming communication challenges that hinders them from achieving their objectives. In order to guide the research process, a list of objectives has been developed in response to the research questions given in section 1.2.

Objectives addressing research question 1:

1. Establish the basic principles of Asset Management (AM).
2. Investigate how strategies toward effective communication are integrated in AM standards.
3. Identify the core components of effective communication.

Objectives addressing research question 2:

4. Investigate existing ICT that is accessible for organisations.

Objectives addressing research question 3:

5. Investigate existing communication models.

Objectives addressing research question 4:

6. Devise a research design and methodology for the study.
7. Analyse the data gathered from the investigation.
8. Develop a model or system to support PAM service providers to improve communication deficiencies.
9. Validate the model.

Objectives one to five are addressed in chapter 2 and aims to establish a foundation of literature to support the research study. By means of these first five objectives, a better understanding is obtained regarding the PAM industry, existing communication standards within the PAM industry, the generic organisational communication challenges, the methods and systems that have already been put in place to overcome these challenges as well as the available technology that could become possible solutions.

Objective six is addressed in chapter 3 in pursuit of a research design and methodology that best suits the research study. A qualitative approach is taken and research designs are investigated and adapted to devise a research design and methodology that provides a suitable framework to collect and analyse data.

Objective seven is addressed in chapter 4. The data gathered from the field work and the findings from the literature is analysed to identify the root causes of ineffective communication as well as to emphasise organisational strategies that proved to be successful in pursuit of effective communication.

The paramount objective, objective 8, is covered in chapter 5 where a model is developed to support organisations in overcoming communication challenges.

The final objective, covered in chapter 6, entails the validation of the model developed. The validation phase is conducted with the support of a PAM service providing organisation with whom a relationship is established and an agreement is already in place.

### **1.2.2 Importance of Research Problem**

The benefactors of this thesis are organisations in the PAM industry that are in a partnership, such as service providers in a partnership with asset owners and multiple contractors. The proposed model will contribute to support such organisations with optimising organisational relationships by resolving communication challenges. It also serves as a strategic breakthrough by improving current communication methods.

### 1.2.3 Limitations and Delimitations

As a strategic consideration to narrow the focus, a set of delimitations is established, followed by the limitations of the research.

#### 1.2.3.1 Delimitations

This thesis will specifically address communication challenges that exist in the PAM industry with regard to the relationship between large service providing companies and their contractors.

The model, as the output of this theses, will only be developed for the specific problem stated in section 1.2, thus the focus will remain on *organisational* communication for *PAM* service providers.

With regard to the model, it is not inferred that new ICT will be developed, but that existing ICT will be investigated in support of the model.

The ICT availability in South Africa lags behind other countries, thus the feasibility of solutions investigated from outside South African borders should be considered (Dagada, 2016).

The content and results of the thesis extends to identifying a list of root causes of communication deficiencies and the development of the model as solution, to serve as an implementation guide of recommendations for future research.

While the in-depth detail of the model is specific to each organisation, the model should remain universal and applicable to all PAM organisations. Thus, whichever form the model takes must be managed so as to remain universal within the PAM industry.

#### 1.2.3.2 Limitations

Data collection and interpretation is a time consuming process that concludes at data saturation, which will only be determined by the data itself. Techniques can be integrated into the interviewing process to obtain essential information as quickly as possible, but it remains an irrepressible factor.

The quality of the data gathered cannot be assured. This limitation is mitigated by identifying research participants based on a criteria.

A risk that could complicate the study is the implementation and validation of the model, as it would be used and tested partly by contractors, who are not as meticulous regarding the non-technical aspects of their work. Complete implementation is a tedious process that will not be finished before the end of

the thesis. The risk is mitigated by approaching the solution primarily from the perspective of the service provider, who will be the only party to validate the model.

An unknown factor in the study is the availability of research participants. Interviews should be scheduled at least two weeks in advance due to their full schedules.

### 1.2.4 Ethical Implications of the Research

This study includes qualitative data collection, which involves research methods such as focus group discussions and in-depth interviews. These methods are explained and elaborated on in section 4.1. A written consent and information letter is signed by both the principal investigator and research participant as formal agreement that research participants will remain anonymous (Appendix D). Ethical clearance is obtained from the university.

## 1.3 Proposed Research Design

A qualitative research approach is followed for this study. Qualitative research concerns reasoning about continuous aspects of entities and systems in a symbolic, human-like manner (Van Harmelen , 2008), for example; the use of words transcends the collection and analysis of numerical data, the focus is on generating theories, rather than proving them and an interpretivist approach is taken to view social reality and acknowledges it as constantly shifting and emergent (Bryman , 2015).

## 1.4 Proposed Thesis Outline

The proposed outline and chapter layout of the thesis is as follows:

### Chapter 1 **Introduction**

This chapter introduces the background of the study which paves the way for the problem statement. A research question is established based on the problem statement and research objectives are developed to address the research question(s). The research approach is discussed as well as the proposed thesis outline.

### Chapter 2 **Literature Study**

In chapter 2 a literature review is conducted and the relevant literature that supports the study is reflected. Research covers literature regarding asset management, communication, how communication can be measured and modelled, available ICT and systems that address the flow



of information in organisations. An investigation of the integration between the three main themes that form part of this study, namely AM, communication and ICT, is conducted.

#### Chapter 3 **Research Design and Methodology**

In chapter 3 the research design and methodology to execute the study is established and discussed.

#### Chapter 4 **Data Collection**

In the data collection phase the problem will be investigated by means of focus group discussions and in-depth interviews. The problem is described in depth by means of a list of inferences that is developed to reflect the main communication issues raised by research participants.

#### Chapter 5 **Model Construction**

In chapter 5 the data and information collected in the previous chapter is analysed. Further investigation continues as more information is gathered until the point of saturation is reached in data collection. The data is compared, categorised and conceptualised to reach the final step which is model construction.

#### Chapter 6 **Validation of Model**

In this chapter the model undergoes the interactive process of validation. A validation method is researched and selected for the validation of the model. The model is validated by a service providing organisation that has strong relations with various asset owners and contractors.

#### Chapter 7 **Conclusion and Recommendations**

Chapter 7 includes the discussion of the undertaken study. The results are discussed together with suggestions for further research. The contribution that this study offers to industry is explained.

## 1.5 Chapter Summary

In this chapter a complete introduction of the research is given with the research objectives, the research methodology and research outline. The following chapter covers a literature review.

# Chapter 2

## Literature Study

*Write to be understood, speak to be heard, read to grow.*  
– Lawrence Clark Powell

The aim of this chapter is to reflect on the literature that will be used to support the research. The vast amount of researched literature is critically evaluated in order to identify the relevant, high quality literature. The literature study is divided into three domains, namely, Asset Management, Communication and ICT. Research questions are addressed to establish the basic principles of AM, to investigate if there are existing strategies toward effective communication standards integrated in the AM standards, to establish if there are existing communication models and if they address the core components of effective communication and finally, to investigate existing ICT that could support effective communication.

Standardised AM literature such as ISO 55000, PAS 55 and the Institute of Asset Management's (IAM) AM Anatomy is investigated in order to comprehend the current framework by which communication flows within the PAM domain.

Literature regarding communication is researched to define the key performance indicators of successful communication as well as verified communication models that are used in, among others, organisational partnerships, third-party relationships and organisational structures.

Information Communication Technology is investigated as a possible method to remove communication barriers within the PAM industry as well as optimising the current communication framework.

## 2.1 Asset Management

*Good asset management is increasingly viewed as normal practice in mature organisations around the world.*  
– John Woodhouse

In this section there is reflected upon literature concerning AM in support of the study. The term, Asset Management is discussed followed by a look into the benefits and importance thereof.

### 2.1.1 Asset

Prior to discussing Asset Management, it is important to establish the meaning of ‘asset’ in the context of this thesis. The research conducted in this thesis is aligned with the ISO 55000 standards which state:

*An asset is an item, thing or entity that has potential or actual value to an organisation (British Standards Institution, 2014).*

Literature offers multiple categories and dimensions to divide the variety of assets into groups. The researcher finds the PAS 55 specifications to be the most comprehensive and descriptive, which provides five categories into which assets could be divided. These groups are: physical assets, information assets, intangible assets, human assets and financial assets. These groups of assets have to be managed simultaneously in order to add optimal value to the organisation. Although assets can generate value individually, customarily they contribute value to an organisation when they work together as an asset system (Institute of Asset Management, 2015).

The period from when the asset is created until the end of its life is called the asset life cycle, as illustrated in figure 2.1.

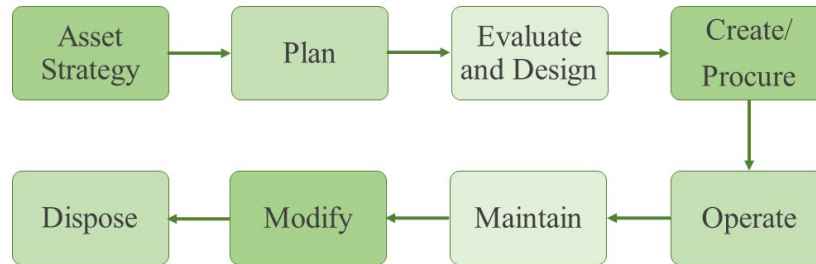


Figure 2.1: Asset Lifecycle, adapted from Campbell (2011).

Depending on how the asset is managed, the asset could have a variety of life cycle stages in an organisation. A few examples of how these life cycle stages can vary are illustrated in figure 2.2.

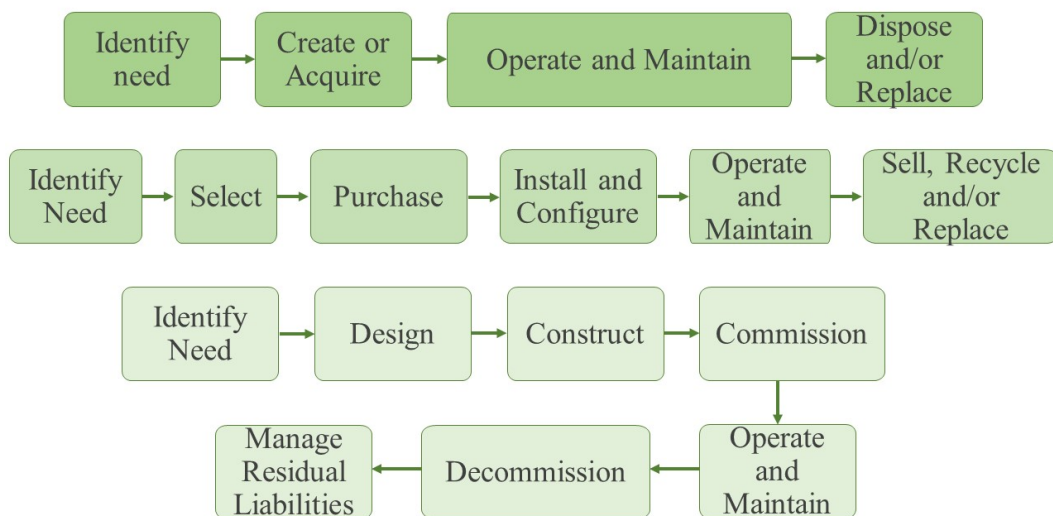


Figure 2.2: The variations of life cycle stages, adapted from An Anatomy of Asset Management, Version 3 (2015).

## 2.1.2 Asset Management

The term AM is an umbrella term used for a wide spectrum of variants related to physical assets, resulting in a number of different descriptions to define this term. Variants of asset management include, *inter alia*, strategic asset management, property asset management, facilities asset management and enterprise asset management. The ISO 55000 standards provides an overview of the standards, concepts and definitions of AM in order to eliminate ambiguity. In clause 3.3.1 in the ISO 55000 standards, AM is described as the coordinated activity of an organisation to realise value from assets, with three notes to support this definition (British Standards Institution, 2014):

- Realization of value will normally involve a balancing of costs, risks, opportunities and performance benefits;
- Activity can also refer to the application of the elements of the asset management system; and
- The term, activity has a broad meaning and can include, for example, the approach, the planning, the plans and their implementation.

AM is based on four fundamentals: Value, Alignment, Leadership and Assurance (Institute of Asset Management, 2015).

### 2.1.2.1 Value

The term ‘value’ is a subjective term that differs per organisation, depending on their organisational objectives. These objectives regard the needs of the organisational stakeholders, such as investors, customers, regulators, employees and the community. It is important for an organisation to acknowledge this ambiguity, to define what value means to the organisation specifically and to consider their personal definition in decision making, customer satisfaction and environmental responsibility. To summarise, an organisation needs to have (British Standards Institution, 2014):

- a clear statement of how the asset management objectives align with the organisational objectives;
- a life cycle management approach to realise value from assets; and
- established decision-making processes that reflect stakeholder needs and define value.

As stated in the AM Anatomy document of the Institute of Asset Management (2015), there are two ways to conceptualise value in an organisation:

- Value Stream: A lean operations concept that focuses on customer satisfaction; and

- Value Chain: A strategic concept that focuses on competitive advantage.

The value chain is an integration of the organisation and its strategic activities to create value. The focus of the value chain is the value proposition to the customer, whilst the value to the organisation is profit to the profit-organisations and cost of service to the non-profit organisations. Value becomes relevant in AM when value is assigned to the assets that support these activities. If the right assets are in the right place at the right time, the organisation's value chain is supported, making the organisation more successful.

### 2.1.2.2 Alignment

Alignment, in the context of AM, means that organisational objectives are translated into objectives, a strategy and an AM policy that paves the way for more detailed plans and activities. The alignment of organisational objectives and the AM activities create a 'line of sight' that explains the reason and importance of each activity, from activities of paramount importance through to activities that seem insignificant. Not only is alignment advantageous due to employees being more focused and responsible, but also due to the fact that they tend to be innovative as their understanding of the importance of their jobs can stimulate them to find new and creative ways to get it done more effectively (Institute of Asset Management, 2015).

### 2.1.2.3 Leadership

For successful execution and implementation of the asset management policy, strong support and commitment from all managerial levels is of the utmost importance. This includes:

- Clearly defined roles, responsibilities and authorities;
- Ensuring that employees are aware, competent, and empowered; and
- Consultation with employees and stakeholders regarding AM.

### 2.1.2.4 Assurance

Assurance is the act of auditing and monitoring the processes and outcomes to measure if the intended strategies, plans and asset management activities are being executed. The objectives of assurance are (Institute of Asset Management, 2015):

- to assure that assets will fulfill their purpose; and
- to assure that AM activities will be delivered, and AM objectives will be achieved consistently and sustainably over time.

Organisations need to have policies, plans and strategies for assurance in place in order to get the appropriate feedback to manage assets effectively.

### 2.1.3 Asset Management Models and Management System

There are various models to describe AM. These models are adapted often and different models work for different organisations, depending on their specific needs. The model developed by the Institute of Asset Management is chosen to illustrate AM (Institute of Asset Management, 2015). The IAM's conceptual model of AM illustrates AM at the hand of six subject groups. This model highlights core traits that should be known about AM as it illustrates:

- the scope of activities that forms part of AM;
- the interrelationships between activities and the importance of integrating them; and
- the critical role of AM and the importance of aligning the AM policy with the organisation's strategy.

The model is illustrated in figure 2.3.



Figure 2.3: The Six Asset Management Subject Groups containing the 39 asset management subjects (Institute of Asset Management, 2015).

### 2.1.4 Importance and Benefits of Asset Management

AM is a system that supports organisations in operating at their optimum, meaning that when it comes to assets, a desired balance between cost, risk and performance can be achieved. The AM platform enables this balance by translating an organisation's objectives into asset-related plans, activities and decisions. Each organisation has certain objectives that will influence how the assets are managed, such as:

- The nature and purpose of the organisation;
- The operating cost of the organisation;
- The organisation's financial constraints and regulatory requirements; and
- The needs and expectations of an organisation and its stakeholders.

By taking these factors into account, AM could successfully be established, implemented, maintained and be continuously improved to support organisations in optimally achieving their objectives. The importance of AM is also reflected in public well-being through the reduction of accidents and breakdowns in public utilities (Xerri , 2014).

The benefits of optimised AM include (British Standards Institution, 2014; Woodhouse, 2014):

- Top management benefits from new insights and cross functional integration;
- Alignment of processes, resources and functional contributions to improve effectiveness and efficiency (removing departmental silos and enhancing cross-functional optimisation).
- Creating a transparent audit trail for what is done, when it is done and why it is done;
- Better understanding and usage of data and information to make informed and consistent decisions;
- Improved planning and organisational sustainability (especially capital expenditure);
- Consistent, prioritised and auditable risk management;
- Alignment and coordination of existing initiatives, including competency development;
- Greater engagement of the workforce, including leadership, communications and cross-disciplinary teamwork;



- Demonstrated social responsibility;
- Enhanced reputation through improved customer satisfaction, stakeholder awareness and confidence; and
- Demonstrating compliance by conforming to legal, statutory and regulatory requirements while aligning with AM standards, processes and policies.

### 2.1.5 Communication in Asset Management

The AM policy that is set out in the ISO 55001 standards, consists of five categories, one of which regards communication, which confirms how communication is valued within the AM industry. The five categories of the policy are (Institute of Asset Management, 2015):

- Consistency with organisational strategic plans and execution;
- Appropriateness for the purpose, nature and scale of organisational assets and operations;
- Commitment of the organisation to fulfill all applicable requirements and to pursue continuous improvement of the AM System;
- A framework for setting AM objectives; and
- Communication to managers and staff within the organisation as well as key partners and relevant stakeholders.

One of the leading practice principles when deciding on the structure of an organisation is to ensure that the communication channels are clear to all stakeholders and that there is a mutual understanding of vertical and horizontal information flow in the organisation. A vital concern that is stipulated in the AM Anatomy document (Institute of Asset Management, 2015), is how people are organised within an organisation, as it influences how they work together and how they communicate.

The AM system is an interrelated, interacting set of organisational elements that altogether establishes the AM policies and procedures that should be in place to achieve the AM objectives. These elements are tools to provide assurance that the agreed activities will be delivered.

This system impacts the entire organisation and its stakeholders and integrates all organisational activities that would otherwise have operated in isolation. The system is established by means of a clear understanding of the complete set of organisational activities and the policies, plans and procedures that integrates them. As per standardisation of the AM system, a set of requirements

is provided in ISO 55001 to support organisations in implementing their AM system.

The AM system focal point is the ‘Support’ element, as one of its functions is *communication*. The framework that is illustrated in figure 2.4 illustrates how communication fits into AM. There will exclusively be reflected upon the communication plan and communication plan content given in Clause 7 in the ISO 55001 document.

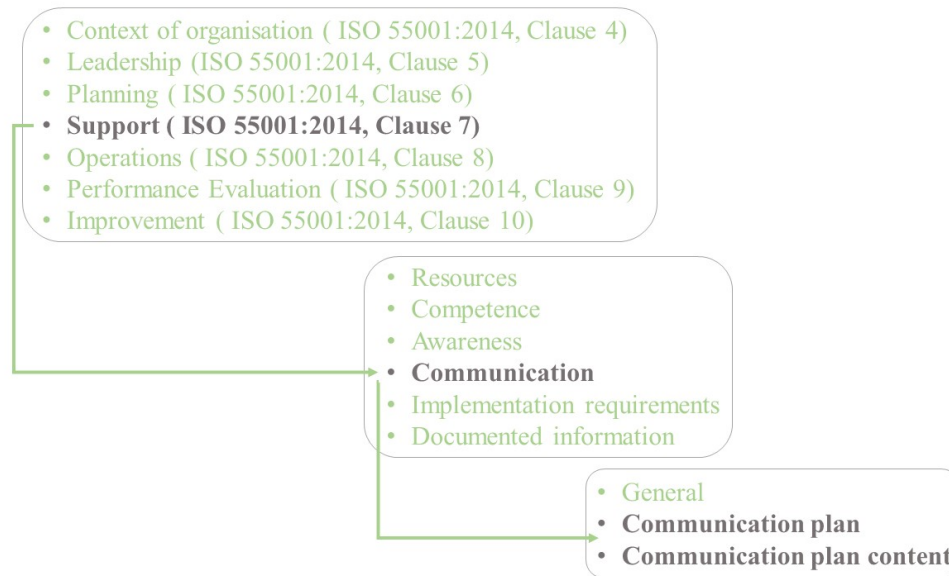


Figure 2.4: The importance of communication in AM.

As stated in Clause 7.4.1 in ISO 55002:2014, periodic and coordinated communication with stakeholders regarding AM activities should be carried out as an integral part of the activities of the AM system.

The AM communication plan is stipulated in Clause 7.4.2, (ISO 55002, 2014) and suggests consideration of the following during the development of an organisational communication plan:

- Building awareness of the AM requirements and expectations;
- Developing an understanding of how the implementation of the AM system can impact stakeholders;
- Promote engagement with stakeholders to foster transparency and accountability for the AM system; and
- Managing, informing and influencing stakeholders that has a direct influence on the AM system and the achievement of AM objectives.

Clause 7.4.3 in the ISO 55002:2014 standards states that a organisation's communication plan's content could include the following:

- The benefits of implementing an activity, project, programme or asset modification or augmentation, and how these improvements are expected to, collectively or individually, impact stakeholders and the organization;
- Any improvement schedules, including key milestones, who will be involved, and for how long;
- Any resource specific communications, including statements of the AM system expectations;
- The who, why, when and what of communicating, including how well the organisation is performing against its organisational objectives and the contribution AM is making to this performance;
- If appropriate, what external and internal knowledge is needed for the stakeholders to make informed contributions or decisions, or provide informed feedback;
- The representative who is best suited to deliver specific communications;
- The format to be used for the communications; and
- The feedback and reporting processes.

### **2.1.6 The relationship between Asset Management and Communication**

In a study done by Jooste (2014), the critical success factors for Asset Management Services (AMS) are investigated. The research concludes that the critical success factors for AMS are:

- The continued and sustained commitment from the asset owner senior management in support of the AMS;
- Open and effective communication between the asset owner and service provider;
- A focused and continuous improvement process to improve the AMS through monitoring, analysis and feedback;
- Mutual trust and respect between the service provider and asset owner;
- The alignment of the asset owner's AMS requirements with their overall organisational and business strategies;

- An adequate training programme in place for all AMS role players, both in the service provider and asset owner teams;
- An effective organisational change management programme in support of the AMS;
- Proof of operational and financial performance achievements as a result of the AMS;
- The use of performance measurement to monitor, control and improve the AMS;
- The integrity of the leadership and delivery team and the set of values to ensure sustainability of the AMS;
- The involvement of knowledgeable and demanding individuals from the client during the design and preparation, rather than individuals that want to abdicate their AM responsibilities;
- Active client participation in reporting, problem solving and improvement relating to the AMS; and
- The ability to measure the AMS quality and value creation.

The importance of effective communication in the field of PAM is thus confirmed in variants of the critical success factors for AMS. The relationship between AM and effective communication is clearly demonstrated in this research. This study continues with a focused investigation into the second critical factor identified by Jooste (2014) namely, open and effective communication between the asset owner and service provider but extends the research boundary to include and investigate the role of contractors in AMS.

## 2.2 Communication

This section covers literature regarding communication. The aim is to answer the following research questions:

- How big of an impact does effective communication have on an organisation?
- How is communication defined in an organisational context?
- Can effective communication be measured?

### 2.2.1 The Impact of Effective Communication

In *Assessing Organisational Communication: Strategic Communication Audits* by Downs and Adrian (2004), the author states that the survival of an organisation rests upon the ability of employees to exchange and coordinate information. Effective communication in organisations is often overlooked and only paid attention to when significant problems occur. Downs and Adrian (2004) states that, at a fundamental level, effective communication is something that should be monitored and improved periodically.

It is not claimed that all organisational problems is a result of the lack of communication, or that effective communication is the solution to all problems, it merely states that the importance of communication and the effects thereof need not be explained to organisational members.

### 2.2.2 Communication in an Organisational context

The study of organisational communication entails integrating two dynamic and complex topics: organisations and communication. Organisational communication is a difficult phenomenon to describe and is often broken down into two categories; formal organisational communication and informal organisational communication. There exists a great debate on whether formal or informal organisational communication is the most powerful. The core traits of each category is discussed as follows (Rogelberg, 2007).

#### 2.2.2.1 Formal Organisational Communication

In formalising organisational communication, we investigate how the nature of communication sets it apart from other forms of organisational behaviour, and how the organisational environment and processes influence communication (Rogelberg, 2007).

When conceptualising formal organisational communication, there are four approaches which is each briefly discussed below (Rogelberg, 2007):

- Communication as information transfer;
- Communication as transactional process;
- Communication as strategic tool; and
- Communication as balancing creativity and constraint.

#### Communication as information transfer

This approach or model is also called the transmission model or information engineering approach. This approach views communication as a tool used by people to transfer information in order to reach their goals and objectives. It

is suggested that information flows linearly from the sender to the receiver and back in a predictable fashion. From this perspective, the information engineering approach, the SMCR model is developed. This model postulates that communication occurs when a sender (S) transmits a message (M) via a channel (C) to a receiver (R).

Problems identified by this view are:

- Ambiguity;
- Distortion; and
- Information overload.

### **Communication as a Transactional Process**

This approach is in contrast with the information transfer approach as it states that there is not such a clear differentiation between senders and receivers, but that both communicators are encoding and decoding messages simultaneously. The importance of *feedback* and *nonverbal communication* are emphasised by this approach. This transactional process model suggests that the meaning of messages is in people, not in words, therefore the focus of this model is on how a message is constructed.

A problem that is identified with this view is the difficulties that is associated with creating shared meaning through communication.

Creating shared meaning could be achieved by focusing on clarity, openness and understanding, which addresses complexities such as ambiguity, vagueness and instrumental objectives, which are central in some forms of organisational communication.

### **Communication as Strategic Tool**

The strategic tool approach argues that communicators should not be expected to communicate in an objective or rational manner and that clarity, honesty and communication rules can be manipulated to suit the communicator's personal interests. This approach relies on the belief that organisational communicators are competent communicators, meaning that they can communicate appropriately and effectively. This model states that clarity, openness and understanding are not always the primary goals of organisational communication and that communicators often have multiple goals or agendas in their interpersonal and organisational interactions.

Strategic ambiguity is a communicator's tool used to achieve strategic control by deliberately communicating ambiguously to accomplish personal goals. This tool takes advantage of multiple meanings of messages when conversed in an ambiguous manner or under pressure.

The primary goal of this approach to communication is to organise action, which implies emphasising working and acting in mutually satisfying ways to fulfill one's personal goals. The importance of clarity and understanding is minimised, as these elements are unimportant in this case.

The following are problems identified by this view:

- This approach disregards the importance of ethics; and
- Full responsibility and focus is placed on individuals without acknowledging the implications on the community. Individual goals are concerned exclusively and often at the cost of the organisational or the larger community.

### **Additional Approaches to Formal Organisational Communication**

Additional approaches to organisational communication are the functional approach and the meaning-centered approach.

#### **Functional Approach**

The functional approach conceptualises communication as a complex organisational process that serves *messaging*, *organisational change* and *relationship functions* as explained in the following paragraphs. Communication is a medium to distribute information, rules and regulations.

In an organisational context, the message function explains that messages act as a communication function for production, maintenance, adaptation, management communication, regulation, integration, innovation, information tasks, persuasion, command, and instruction.

The organising function concerns the rules and regulations that structure the communication activities within an organisation. By means of the organising function, what is expected of the employees and how they are required to accomplish these goals is communicated.

The relationship function is an important function that is established by the verbal or nonverbal interactions of employees and defines the roles of individuals. These roles are continuously re-established and support the morale and organisational confidence within each individual. The debate about the informal organisation being more powerful than the formal organisation becomes relevant when looking at this function, as the informal organisation is characterised by the relationship function.

The final function is the change function that concerns *what* an organisation

is doing and *how* it is doing it. It enables the organisation to adapt to changes due to decision making, internal and external environmental changes, organisational positioning and other change factors. Effective change communication is essential for the survival of a company as it provides new information that facilitates innovation and adaptation during environmental change.

### Meaning-Centered Approach

The meaning-centered approach explains that, to understand organisational communication, one must understand how organisational reality is constructed through human interaction. This approach describes organisational communication as a system consisting of organising, decision making, sense making, influence and culture.

In a book written by Shockley-Zalabak (2002), five key assumptions regarding the meaning-centered approach is given:

- All human interaction is some form of communication, either verbal or nonverbal;
- Human interaction is what constructs an organisation, thus an organisation cannot exist without human activity; individuals' execution of organising and structuring. According to Shockley-Zalabak (2002), structures and technologies result from the information to which individuals react;
- Organising and decision-making are essentially communication;
- Organisational influence is reflected in communication systems such as identification, socialisation, communication rules and power. This aspect is important as it indicates how an organisation encourages socialisation among members and how individuals identify with their organisation; and
- Organisational culture is reflected in communication processes such as decision-making, organising and influence processes.

#### 2.2.2.2 Informal Organisational Communication

Formal communication is the system by which rules and regulations are defined and organisational structure is provided. The norms and manner by which different individuals abide by these rules, regulations and provided structures could be described as *informal organisational communication*. Informal communication is mediated by physical proximity and emerges naturally from a formal organisational structure (Kraut, 1990). Rules are necessary in every organisation, in strictly hierarchical organisations even more so, but values,



norms and practices are informally developed around these rules in relation to their specific environment, peers and managers.

According to Kraut (1990), informal communication is what remains after eliminating rules, structure and hierarchy. One of the mechanisms that arguably makes informal communication more powerful or effective than formal communication, is the feedback mechanism. The feedback mechanism allows communicators to react to how they perceive the current state of affairs and information is then exchanged interactively. The communicators' current understandings and interests are taken into account, which makes for relevant information sharing.

### 2.2.2.3 Formal vs Informal Organisational Communication

The most elementary illustration of the difference between formal and informal organisational communication is given in figure 2.5. This illustration provides substantial background for the argument that follows.



Figure 2.5: The formality dimension of communication.

Researchers worked towards a clear distinction between formal and informal organisational communication, but the lines are not clearly drawn. Theoretically, formal organisational communication is the planned communication that is written, centralised, vertical, instructed and executed. Informal communication is the actual communication patterns that are unplanned, decentralised and horizontal.

## 2.2.3 Organisational Communication Models and Approaches

In this section a number of communication models that are developed in order to explain and understand communication in the organisational context are

discussed. Deutsch (1966) summarises the advantages of models and the reason we consult them. Some advantages gained from the use of models are:

- They provide an organising function that orders related concepts, systems or people with each other;
- They explain holes in our understanding and simplify information that is ambiguous or complicated; and
- They enable predictions of outcomes or events.

The risks that should be acknowledged when using models are (McQuail and Windahl, 1993):

- The originator and user of the model can find themselves trapped within the limits that is formed by capturing a concept in a model;
- The models could become outdated or obsolete if not modified;
- Some components of models are often based on questionable assumptions; and
- Models could be incomplete or oversimplified.

The conclusion drawn regarding the use of models, is that the risks are mitigated merely by being aware of them and that no model is flawless or adequate for all purposes. The advantages of using these models, however, outweigh the risks related thereto.

The following models are investigated:

- The Lasswell Formula;
- The Shannon-Weaver Model of Communication;
- The Osgood-Schramm Circular Model;
- Dance's Helical Model;
- Berlo model; and
- Barnlund model;
- McGreavy (2015) approach to Organisational Communication as a Complex System;
- Using vision to improve organisational communication; and
- The SBAR situational briefing model.

### 2.2.3.1 The Lasswell Formula

Lasswell, a professor in political science in America, was one of the first and most famous researchers to develop a model to understand communication. His famous statement in 1948 was Lasswell (1948):

"A convenient way to describe an act of communication is to answer the following questions:

- Who?
- Says what?
- In which channel?
- To whom?
- With what effect?"

This breakdown is, until now, known as the Lasswell formula and has also been translated into the graphical model given in figure 2.6.



Figure 2.6: Lasswell's Formula with corresponding elements of the communication process and fields of communication research (?).

The criticism against the Lasswell Formula is that it projects the idea that the communicator has the intention of influencing the receiver. Also, the assumption is made that messages always have effects and that by probing for an effect, the effect is often exaggerated. Finally, the model is criticised for overlooking the element of feedback, which relates to the first criticism that accuses the model of assuming communication to be mainly treated as persuasive. Given that Lasswell studied political science in the time of propaganda, the model is effective for analysing political propaganda (McQuail and Windahl, 1993). Braddock (1958) found that there are facets missing in the Lasswell Formula and extended the model by adding questions such as, "Under what circumstances?" and "For what purpose?"

### 2.2.3.2 The Shannon-Weaver Model of Communication

In 1948 an American mathematician and electronic engineer, C.E. Shannon, partnered with an American scientist, W. Weaver, to develop what they called “A Mathematical Theory of Communication” or “The Shannon-Weaver model of communication” (McQuail and Windahl, 1993). The model developed (figure 2.7) illustrates communication as a linear, one-way process with five functions to be performed.

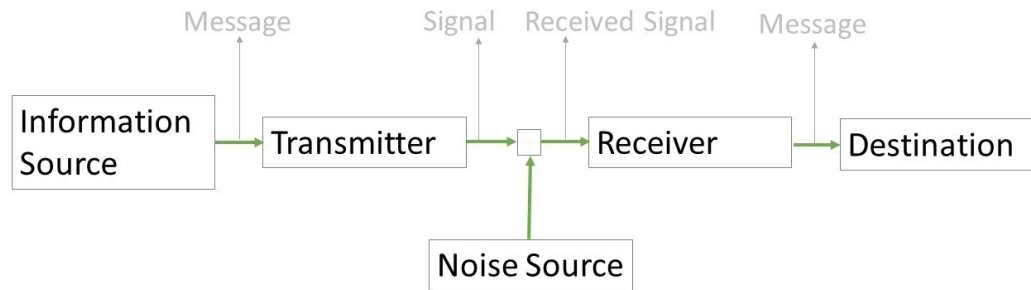


Figure 2.7: The Shannon-Weaver model of communication (Shannon and Weaver, 1949).

A message is produced by the information source, which is then transformed into signals by the transmitter. The second part of the communication chain performs the opposite of the first part, i.e. the receiver reconstructs the signal into a message and then sends it to the destination. In the middle of the chain, the "Noise source" function represents any interference that could disturb the communication channel and result in a difference in the message that is sent and received. Communication fails as a result of the communicators being unaware of the difference in messages that are sent and received (McQuail and Windahl, 1993).

DeFleur (1966) addressed the miscommunication dilemma between the message sender and receiver by developing the communication model by Shannon and Weaver (1949) further, figure 2.8. DeFleur (1966) adds that the message at each stage of the communication chain is transformed into ‘meaning’. Where the model developed by Shannon and Weaver (1949) is criticised for its linearity and lack of feedback, DeFleur (1966) accounts for these features in his model by suggesting the circular and two way elements of communication.

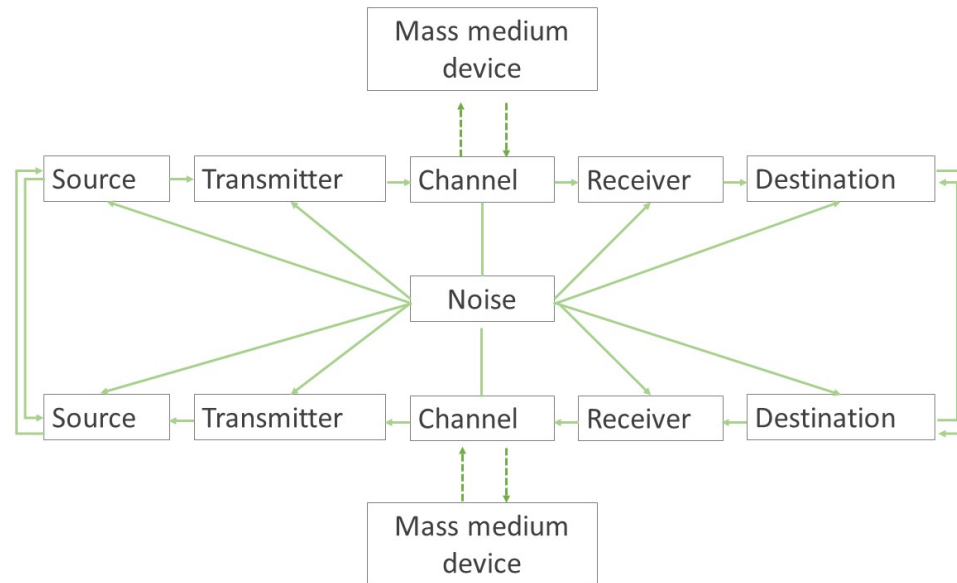


Figure 2.8: DeFleur's Model of Mass Communication (DeFleur, 1966).

### 2.2.3.3 The Osgood-Schramm Circular Model

The Osgood-Schramm Communication Model differs from the linear Shannon model in terms of its circularity. This model reflects the concept of communication as an endless process as opposed to it starting and ending somewhere (McQuail and Windahl, 1993). The Osgood-Schramm Model does not focus on the specific activities along the communication chain, but rather on the actors that take part in the process and views these acting parties as equals. The functions that are performed by these actors are basically the same namely; encoding, interpreting and decoding. The encoding and decoding features are analogous to the transmitting and receiving facets of the Shannon-Weaver model respectively (McQuail and Windahl, 1993).

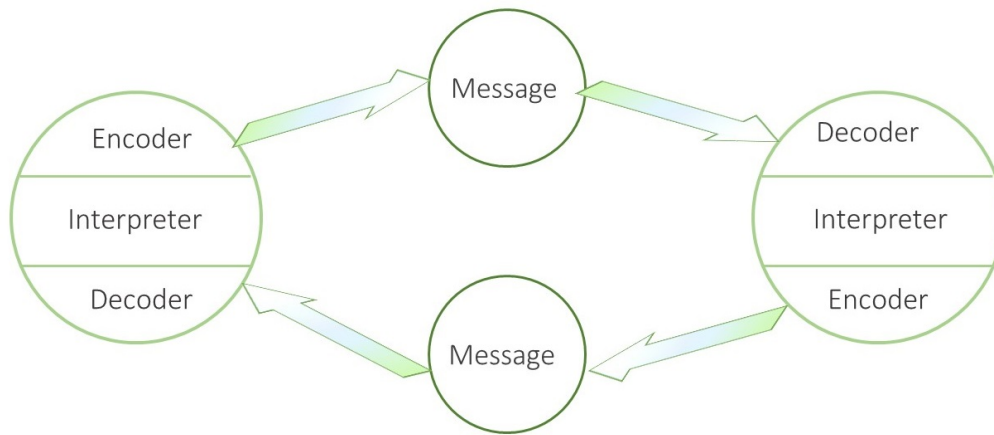


Figure 2.9: Osgood-Schramm Model of Communication (McQuail and Windahl, 1993).

The criticism against the Osgood-Schramm model is that it suggests equality in the act of communication, whereas communication is in laymen's terms often seen as unbalanced, depending on the resources, power and time that forms part of the communicators and the communication process.

#### 2.2.3.4 Dance's Helical Model

The Helical Model developed by Frank Dance in 1967, is a development of the Osgood-Schramm circular model. In a discussion about communication models, the circular approach was identified as the more adequate model for communication, even though it is not flawless. The criticism against the circular model is that it suggests that communication takes the route of a full circle and ends up at its exact starting point (Dance, 1967).

Dance's Helical Model addresses this erroneous assumption by illustrating that communication moves forward and that present communication influences communication in the future. In contrast to most models that represents communication as a static activity, the helical form of this model illustrates communication in a dynamic way and acknowledges that the elements of the communication process are ever changing. As illustrated by this model (figure 2.10), the process of communication could attract more parties or actors as it goes on and, as a result, the actors' knowledge and information regarding the topic expands, indicating that communication is accumulative, progressive, continuous and, fundamentally, expansive (Puro, 2011).

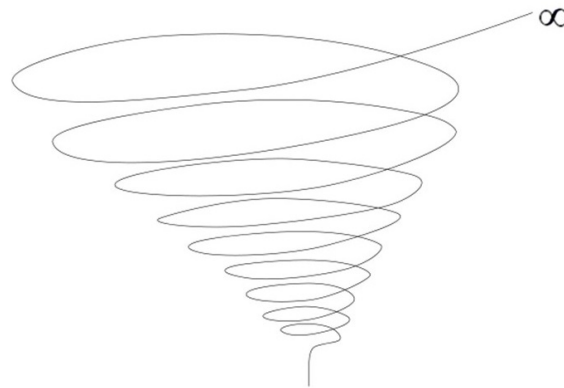


Figure 2.10: Dance's Helical Model of Communication.

### 2.2.3.5 Berlo's SMCR Model

Berlo (1960) is a communications theorist that has broken the process of communication down into his famous SMCR model where he illustrates the importance of the psychological view of communication. As illustrated in figure 2.11, the four parts of communication is source, message, channel and receiver Lee (1993).

Lee (1993) states that communication comes from a source. The operation of the source depends on several factors such as, sociocultural context, ability and skills to communicate, background knowledge about the audience or receiver as well as attitude towards the receiver.

The message entails the package that is sent by the source. The content of the message must be well chosen by the source, otherwise the message is likely to fail.

The channel is the method by which the message is sent. The type and amount of channels depends on the sender and the message.

The receiver is the final link in the communication process. The communication skills and knowledge of the receiver determines the message style and channel chosen by the source. The sociocultural context of the receiver may also differ from the source and may affect the receiver's understanding of the message, which confirms the importance of how the message is packaged and channelled to the receiver.

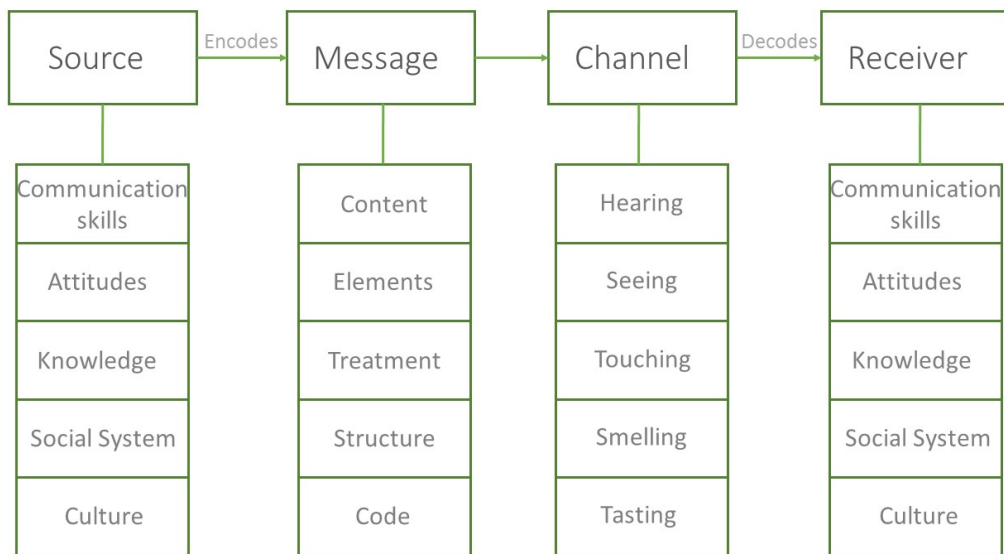


Figure 2.11: Berlo's SMCR Model of Communication.

### 2.2.3.6 Barnlund's Transactional Model of Communication

The basic principle of the transactional model of communication is that individuals are mutually connected and simultaneously engaging in sending and receiving messages (Velentzas and Broni, 2014). Velentzas and Broni (2014) confirms that communication is the meaningful exchange of information. The element that Barnlund highlights by his constructionist view is that the way a message is communicated to a receiver is a determining factor to how the message will be interpreted. Communication is merely the channel by which information is shared, and the act of communication and the information itself is separated. The filters of the sender and receiver are devised from their cultures, genders and traditions respectively and could result in them interpreting the communicated information in different ways. An advantage of the transactional model is that it enables a simplified illustration of a system with multiple variables and how they relate to and influence each other.

The example given in Akin (1970) is used to explain Barnlund's transactional model in figure 2.12. A person ( $P_1$ ), referred to as Mr. A for the sake of this scenario, sits in the waiting room of a clinic awaiting his doctor's appointment. Mr. A decodes (D) the various cues that are sent to him by his perceptual environment and assigns meaning to them by transforming sensory judgments into neuro-muscular sets (E) that manifests to others in the form of verbal and non-verbal cues. The spiral line inside ( $P_1$ ) illustrates the internal process of encoding and decoding and represents the nature of communication as continuous, unrepeatable and irreversible. The lines terminating in arrows are the stimuli that comes to Mr. A's attention. The direction of the arrows illustrates



the suggestion that meaning will be assigned to, rather than received from, the objects admitted to perception.

There are three sets of cues to which Mr. A could assign meaning, namely: public cues ( $C_{PU}$ ), private cues ( $C_{PR}$ ) and behavioural, nonverbal cues ( $C_{BEH_{NV}}$ ). For a cue to be classified as a public cue, it must fulfill two criteria: firstly, the cue must be available to all possible communicants in the perceptual field, and secondly, the cue must have been created prior to the event that is being analysed and must be outside the control of the persons under observation. These cues can include sounds that everyone can hear, the decorations in the room, etc. There are two types of public cues; natural cues and artificial cues. Natural cues are cues created by the physical world without the intervention of man. Artificial cues are cues created by man by manipulating and modifying the environment.

The second set of cues, private cues, come from sources that are private in nature and not initially available to all communicants in the perceptual field. These private cues may include sounds heard through a pair of earphones, or Mr. A finding something in his pocket or feeling a tinge of pain in his chest. Public or private cues may be both verbal or nonverbal but the critical similarity between these two sets of cues is that they remain beyond the control of the communicants and were created by external, natural or artificial, factors.

The third set of cues that is in contrast with the first two sets discussed, comprises the behavioural, nonverbal cues. These cues are under the control of and created by Mr. A. These may include observations he makes of himself or his environment, his reactions to external factors in terms of body language (nonverbal) or verbal expressions.

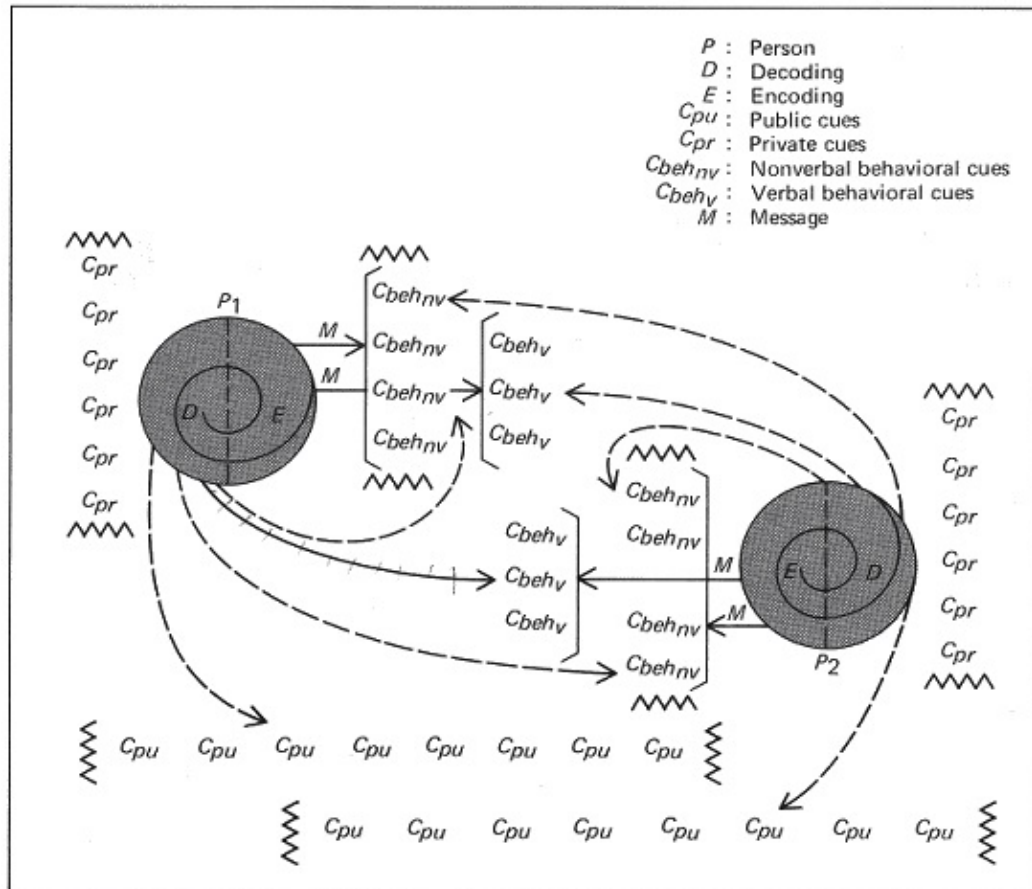


Figure 2.12: Barnlund's Transactional Model of Communication.

### 2.2.3.7 McGreavy's Approach to Organisational Communication as a Complex System

Communication is a phenomenon that is often approached through a systems perspective, meaning that people simultaneously take part in and establish the system by means of structure and processes (McGreavy, 2015). According to McGreavy (2015), communication as a *system* is divided into three dimensions, namely; system as structure, process and outcomes, explained as follows:

Communication structure is the set of norms that is developed to guide people in their interactions with each other within a certain environment. These norms comprises of material and symbolic configurations that can be openly negotiated and established by all stakeholders. Structure gives way to channels for interaction and also defines the degree to which stakeholders participate.

Communication processes address the resources and capacities that people exploit in their interactions. These processes include decision making, communication competencies, and motivation and identity formation. Processes

are the spaces of interaction that occur within the structure and recreate the channels by means of which interaction takes place.

Communication outcomes comprises of the integration of multiple disciplines, continuous and interactive learning and progress towards the specified goals. Through qualitative research, McGreavy (2015) found that the outcome of decision making and communication competencies such as trust, respect and listening, has a substantial impact on how participants felt about the process as well as their ongoing commitment to collaborate. It also had an impact on project outcomes such as implementing new technologies, which is an important notion regarding this study.

The research done by McGreavy (2015) contains important dimensions regarding communication systems and is included by highlighting four key strategies for desiging a communication structure for specific outcomes:

1. Participation is structured by words, typologies, meeting strategies, and technologies;
2. Decision making matters;
3. Communication creates relationships and teams; specific communication competencies can intentionally help to guide both; and
4. By acknowledging the complexity of communication as a system, alignments toward a specific goal or outcome can be established.

#### **2.2.3.8 Using Vision to Improve Organisational Communication**

A different approach to organisational communication is to use vision to create a shared context in order to improve communication (Kelly, 2000).

Kelly (2000) questions the classic communication models such as Shannon and Weaver (1949) and Berlo (1960) based on the challenges Quirke (1995) offers against these models. Quirke (1995) argues that a primary reason for communication deficiencies is that managers and supervisors underestimate the central role of the receiver in the communication process; that more context should be shared in order for a receiver to decode a message. Quirke (1995) lists a number of reasons why context is traditionally not shared, one for example is that the emphasis is on task focused communication to get immediate results which results in context being left out.

Prior to the vision-directed approach, communication research generated potential barriers to organisational communication, which were categorised into two groups; interpersonal barriers and organisational barriers. Interpersonal

barriers include: perception and perceptual selection process; semantics; channel selection; and inconsistent verbal and non-verbal communication. Organisational barriers include: physical distractions; information overload; time pressure; technical and in-group language; status differences; task and organisation structure requirements; and absence of formal communication channels. Traditional linear representations of communication skews the emphasis towards the sender, where Kelly (2000) states that effective communication will be better achieved by creating a shared context and using receiver-oriented approaches to communication. The vision-directed approach delivers a solution to these barriers, as illustrated in table 2.1.

Table 2.1: Vision-directed ways to improve organisational communication (Kelly, 2000).

<b>Barrier</b>	<b>Vision-directed way</b>
<b>Interpersonal</b>	
Perception	Awareness, self-efficacy
Semantics	New meaning, expressive language
Channel selection	Face-to-face, multiple channels
Inconsistent, verbal/non-verbal	Honesty, non-verbal defined broadly
<b>Organisational</b>	
Physical distractions	Critical incidents
Information overload	Questions
Time pressure	Stories
Technical/in-group language	Images, metaphors
Status differences	Ceremonies
Task/structure requirements	Cooperation, gains
Absence of formal channels	Symbols, artifacts, rituals

Kelly (2000) provides an assiduous explanation for each solution and concludes by listing the three advantages of a vision-directed approach to communication: a shared context is built through the vision-directed communication by reinforcing the organisation's values and beliefs; communication barriers are minimised and problems are reconceptualised as opportunities; and finally, some of the ideas, such as using artefacts, symbols and ceremonies, are messages that are present even when the sender is absent.

### 2.2.3.9 SBAR Pack

According to Leonard (2004), the model and concepts proven to be most valuable for managing communication in a complex environment are; SBAR (Situation, Background, Assessment, Recommendation), appropriate assertion, critical language, and situational awareness. The model and three concepts are

explained below.

The SBAR model is a situational briefing model that originated in the medical industry. The model is effective as it is easy to remember, it enables structured conversations which are necessary in critical situations where attention and action is urgent, and it sets expectations for what will be communicated (Leonard , 2004; Powell, 2007).

The SBAR model consists of four elements, namely; situation, background, assessment and recommendation, which are explained at the hand of medical examples as it is originally illustrated (Leonard , 2004):

- **Situation** – “Dr Preston, I’m calling about Mr. Lakewood, who’s having trouble breathing.”
- **Background** – “He’s a 54 year old man with chronic lung disease who has been sliding downhill, and now he’s acutely worse.”
- **Assessment** – “I do not hear any breathing sounds in his right chest. I think he has a pneumothorax.”
- **Recommendation** – “I need you to see him right now. I think he needs a chest tube.”

The advantages of the SBAR model are threefold; critical information is transmitted in a predictable structure, the standard communication method creates familiarity in how people communicate and critical thinking skills are developed as the person initiating the communication needs to provide assessment of the situation and what they think the solution is prior to starting the conversation.

**Appropriate Assertion** – Appropriate Assertion is a change in communication style that originates from the medical industry which identified the lack of a common mental model which got in the way of effective communication between different groups with different communication styles. Instead of speaking indirectly, a common practice was initiated where nurses had license to say: “Something’s wrong, and I need your help.” When the request is made, the situation is not open to argument and the physician responds every time. The situation relationship can be reassessed and learnt from afterwards when role players can be more objective.

**Critical Language** – In a service providing organisation, such as medicine, aviation and the PAM industry, the environment includes complications

such as hierarchy, cultural norms, lack of psychological safety or uncertainty. The “CUS” programme developed at the United Airlines addresses this issue by using critical language to get everyone’s attention, despite their culture, hierarchy or anything that could hinder their attention. “CUS” stands for “I’m concerned, this is unsafe, or I’m scared.” Critical language bridges the natural tendency to speak deferentially and indirectly by creating a clear and mutual communication model (Kelly, 2000).

**Situational Awareness** – Maintaining a perspective of the “big picture” and constantly planning ahead to discuss contingencies. Employees are hereby kept up to date and constant awareness and examination are applied to situations (Kelly, 2000).

**Debriefing** – Debriefing is the practice of briefly getting together after a procedure, at the end of the day or after a big project to assess what went well, which challenges occurred and what will be done differently in the future. Debriefing has a quick learning curve and was seen as one of the key success factors for effective communication in the medical industry (Kelly, 2000).

## 2.2.4 Social Network Analysis

In this section Social Network Analysis (SNA) is investigated with the aim of identifying possible elements of this perspective that could be used to map and analyse a communication system. SNA is a method that can be used to analyse the communication system (Baum, 2012), and to identify employees who have critical roles in an organisation and who are essential for effective communication and coordination.

### 2.2.4.1 Social Network Analysis Definition

SNA is a research perspective that expresses relational concepts and processes (such as communication flow) in terms of theories, models and applications (Wasserman and Faust, 1994). The book, *Social Network Analysis Application Methodology*, written by Wasserman and Faust (1994), contains a substantive body of knowledge on SNA and the application thereof. This network perspective allows researchers to give formal definition to a political, economic or social structural environment and, as a result, enables them to investigate and determine patterns within these relations. The researcher will not be using SNA as a primary research tool, but merely as a perspective that could be used to enhance the quality of the study.

### 2.2.4.2 History

Radcliff Brown was an anthropologist who developed non-technical social structures. Between the 1930's and 1970's, an increasing number of social anthropologists and sociologists began exploring the concept of 'social structures' initiated by Brown and developed metaphors such as the 'fabric' and 'web' of social life. From the 1950's a smaller group of specialists started inventing more formal translations of the metaphor and from their writings emerged some of the key concepts of SNA. From there, the techniques and applications of SNA have developed continuously (Scott, 2012).

Substantial growth of applications and techniques has occurred ever since and even more so recently due to the stimulation by the emphasised importance of networking. The proliferation of social media has encouraged many to see the value of SNA, and as they engage in investigating SNA, they tend to find that it is highly technical. Participants with minimal mathematical competence tend to find the technical literature regarding SNA daunting (Scott, 2012).

### 2.2.4.3 Key Concepts of SNA

There are a few fundamental concepts of SNA such as; actor, relational tie, dyad, triad, group, subgroup, relation and network. These concepts are discussed and explained below.

**Actor** – Actors illustrate the social entities that form part of the social network. In order to analyse the network, all the different parties must be identified and represented to be able to investigate their interactions and influences. Actors are discrete individual, corporate or joint social entities. The term “actor” does not imply the ability of these entities to “act” or necessarily having an opinion in all cases. Most social networks are used to illustrate and analyse the interactions of actors of the same type (for example individuals in a work group). Such collections are called “one-mode networks”.

**Dyad** – Dyads are pairs of actors and their associated ties.

**Triad** – A triad is a subset of three actors that forms part of a greater social network but is investigated exclusively.

**Subgroup** – A subgroup is any subgroup of actors and the ties among them.

**Group** – A group represents a system of actors on which ties are to be measured. The power of SNA is specifically illustrated in the ability to model the relationships in a group. The actors in the group must belong together in a less bounded set and a more concrete description for the group must be given.

A group then consists of a finite set of actors against which network measurements are made. The restriction to a finite group is an analytic requirement as the difficulties of analysing infinite groups are too great. Modelling finite groups already produces important issues such as boundary specification and network sampling.

**Relation** – Relations are the collection of ties of a specific kind between the actors in a group. There are numerous variations of the nature of these ties. Wasserman and Faust (1994) describes natures such as “friendship” between children. These specific ties exist between certain actors exclusively.

**Social Network** – A social network consists of all the abovementioned concepts; actors and the relations that define them that are bound together in a finite set. An essential element that forms part of the social network is the presence of the relational information.

#### 2.2.4.4 The Social Network Perspective

The central principles of SNA are:

- Actors and their actions are viewed as interdependent, rather than independent, autonomous units;
- Relational ties between actors are channels for the transfer of either material or nonmaterial resources;
- Network models focusing on the individual view the network structural environment as providing opportunities for or constraints on individual action; and
- Network models conceptualise structure as lasting patterns of relations among actors.

#### 2.2.5 Project Management Body of Knowledge: Project Communication Management

The Project Management Body of Knowledge (PMBOK) is a recognised set of standards for the application of knowledge, skills, processes, tools and techniques for the project management profession. This body of knowledge has been developed by project management practitioners that contributed their recognised good practices to compile a formal document with a set of standards that would improve the chances of success in the profession.

As stated by the Project Management Institute (2016), a project is a temporary endeavour undertaken to produce a unique result or product. Even



though the body of knowledge is specifically developed for communication in project management, the communication processes included in the PMBOK is still considered valuable and relevant literature. It is confirmed in the Project Management Institute (2016) document that effective communication connects various stakeholders to bring together different cultural and organisational backgrounds, various levels of expertise as well as different perspectives. There are five communication processes stipulated in the PMBOK (Project Management Institute, 2016):

1. Identify Stakeholders - The process of documenting all people that are influenced by the project and stipulating their respective interests, contribution, and impact on the project success.
2. Plan Communications - The process of determining the information that all stakeholders need and how it will be communicated to them.
3. Distribute Information - The process of making the relevant information available to the stakeholders as planned.
4. Manage Stakeholder Expectations - The process of communicating with stakeholders to ensure that their expectations are met and to address problems as they occur.
5. Report Performance - The process of gathering and distributing status reports, progress measurements and performance information.

Communication activity has many potential dimensions, as documented in Project Management Institute (2016), such as:

- Internal (within the project) and external (customers, stakeholders, investors, media, other projects etc.);
- Formal (reports, memos, briefings etc.) and informal (emails, ad-hoc discussions etc.);
- Vertical (up and down the organisation) and horizontal (with fellow employees);
- Official (newsletters, annual report etc.) and unofficial (off the record)
- Written and oral; and
- Verbal and non-verbal.

A list of *communication skills* is also given in the PMBOK document that is general knowledge in the organisational context:

- Listening actively and effectively;

- Questioning, probing ideas and situations to ensure better understanding;
- Educating a team to increase their knowledge and make them more effective;
- Fact-finding to identify or confirm information;
- Setting and managing expectations;
- Convincing an organisation or person to perform an action or execute a task;
- Negotiating between different parties to reach consensus;
- Resolving conflict to prevent disruptive impacts; and
- Summarising, recapping and identifying next steps.

### 2.2.6 Knowledge Communication through Training

In a study by Johannessen and Olsen (2003) it is stated that the role of an untapped capability in organisations, which is knowledge, is essential in creating a sustainable advantage to organisations. By identifying the knowledge and competence of employees, the gap between actual competence and expected competence could be addressed (Johannessen and Olsen, 2003). Raelin (1997) argues that training is a dominant way of developing employees by increasing their knowledge and competence, therefore, Johannessen and Olsen (2003) focus on training as an instrument to develop competence into sustainable competitive advantages.

Literature on the effectiveness of training is investigated as a possible method for implementing knowledge on new communication systems or standards. Edens and Bell (2003) confirms that training is one of the most prevalent ways to increase productivity and to communicate organisational goals to personnel. Edens and Bell (2003) aims to identify the effectiveness of training while considering the following factors:

- a) The type of evaluation criteria used to measure the effectiveness of training;
- b) The need for assessment prior to implementing training;
- c) The skills that are trained; and
- d) The match between skills that are trained and the training delivery method.

The literature found that the evaluation criteria of the effectiveness of training should be based on the objectives of the training whether it is, for example, to increase productivity, to increase knowledge or improve behaviour. Conducting a needs assessment is a crucial step in terms of designing and developing the training program. Needs analysis is a three step process that consists of; organisational analysis, task analysis and person analysis. This is done to identify what the training needs from the organisation, the job requirements and employees to be trained, the skills and content the training should cover as well as the type of training.

Typologies for categorising skills and tasks are offered to support the decision making of tasks and skills to be trained (Gange , 1992; Rasmussen, 1986; Schneider and Shiffrin, 1977). Edens and Bell (2003) summarised these typologies into three broad categories namely; cognitive skills, interpersonal skills and psychomotor skills. Cognitive skills include tasks regarding idea generation, decision making, problem solving or knowledge related requirements of their job. Interpersonal skills include communication skills, team-building skills, leadership skills and so forth. Psychomotor skills include physical activities that are associated with a certain job or role in the organisation.

Edens and Bell (2003) concludes that training is an effective method to increase knowledge in an organisation and that the training method, the task or skill that is trained and the evaluation criteria are related to the effectiveness of the training.

As a concluding remark on the effectiveness of training, a study is executed by Pfeffer (1998) to evaluate the impact of the World Health Organisation's (WHOs) training multi model. Results have shown that the training was an effective intervention as the knowledge level of health care workers increased with an average of 41.66% (Sopjani , 2017).

## 2.3 Information Communication Technology

This section covers literature about the third dimension of the literature study. The purpose of investigating existing ICT is to gather holistic insights into possible support to overcome communication deficiencies. The concept of ICT is investigated, the technology that is available, the importance of integrating ICT in organisations, basic steps for the implementation of ICT and constraints to the implementation process.

### 2.3.1 What is ICT

Information Communication Technology (ICT) includes both computer and network hardware, as well as their software. The general explanation for ICT is the combined technologies that allow individuals and organisations to interact in the digital world or otherwise stated; equipment and programs that are used to communicate and process information (Rouse, 2017; Learn.org, 2017). An illustration of examples of equipment and technologies is given in figure 2.13.

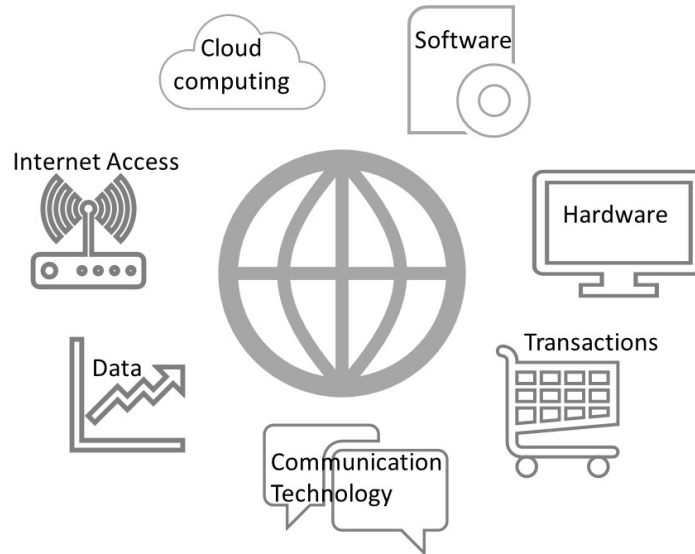


Figure 2.13: Components of ICT (Rouse, 2017).

In table 2.2 a few simple examples are given of how ICT is integrated in the everyday lifestyle of a working individual (Learn.org, 2017):

Table 2.2: ICT in everyday lifestyle.

Examples of communication using technology	Devices or systems used
Reading train information at a station	Electronic noticeboard to display information.
Getting into an office building	Bar code on swipe card, card reader at the door. Network to central computer to verify authorisation for card holder to enter.
Email a colleague	Network linking the computers.
Sending a text message on a mobile phone	Mobile phone. Wireless connection into mobile phone network.
Using the Google Maps mobile application to get to a destination	Mobile phone. Wireless connection into mobile phone network.
Request an Uber ride with your Uber mobile application	Mobile phone. Wireless connection into mobile phone network.

Gartner (2016) identified the top 10 technology trends that will impact organisations' long term strategic planning. Cearley (2016), Vice President and Gartner Fellow in Gartner Research divided the ten technological trends into three themes: intelligent, digital and mesh. The first three trends represent intelligent systems that learn, adapt and act autonomously rather than executing predetermined instructions. The following three trends represent the digital world that starts to appear as part of the physical world and creates opportunities for new business models and digitally enabled ecosystems. The final four trends represent mesh technology that refers to the dynamic interaction and integration of people, processes, things and services.

The top 10 technology trends are (Gartner, 2016):

1. AI and Advanced Machine Learning;
2. Intelligent Apps;
3. Intelligent Things;
4. Virtual and Augmented reality;
5. Digital Twin;
6. Blockchain;
7. Conversational Systems;
8. Mesh App and Service Architecture;
9. Digital Technology Platforms; and
10. Adaptive Security Architecture.

### 2.3.2 Implementing ICT

ICT implementation poses a set of challenges which creates the necessity for a well structured implementation plan to be developed. The implementation plan will prevent making a large investment without getting the planned return. The main challenges are summarised in this study, but can be found in an intelligible article written by Tsubira and Mulira (2005), Integration of ICT in organisations: Challenges and best practice recommendations based on the experience of Makerere University and other organisations. Tsubira and Mulira (2005) identify ten challenges in ICT implementation and provide best practice approaches to overcome these challenges. The identified challenges are:

1. Lack of awareness and mindset;
2. Lack of top-level commitment;
3. Defining the role of ICT as a method towards organisational improvement rather than organisational transformation;
4. Making ICT responsive to the organisational vision and mission;
5. Developing a systemic method of implementation;
6. Creating Ownership;
7. Sustainability;
8. Information Resource Management;
9. Appreciating critical stages in information systems implementation; and
10. Developing the organisational information policy.

These best practices can be tailored to fit specific implementation scenarios, but will serve as a framework for an improved implementation process.

### 2.3.3 Digital Leadership

The concept of digital leadership, also referred to as e-leadership, describes a set of skills required to leverage the available technology to work for the benefit of the organisation's operations. A digital leader is one who can combine strategy, business and ICT (Godley, 2016). The predicted challenge to future organisational leaders is to accept and become part of the digital world and to develop digital leadership skills by putting them into practice to manage the business operations that reflect excellence.

A digital leader does not have to have all the skills from all three dimensions from the start, and can come from any background. It could be that they come from an IT background and aspire to become a digital leader, and therefore tap into existing knowledge of the other dimensions to acquire the lacking skills. So a digital leader usually starts from a background related to one of the three dimensions and expands their skillset in order to have the ability to be able to operate a business and understand the market, make strategic decisions and be able to identify technology that could be used and even transformed to suit the organisation (Henley Business School, 2016).

The CEO of Studio Graphene, Ritam Gandhi, reflects on his experience as a leader in business and states that leaders in large organisations often struggle to reach and engage with all employees. He finds that mobile applications are a cutting-edge solution to share information, motivate employees to engage, share their opinions, vote or get rapid feedback. An important fact that Gandhi (2016) states is that your solution will depend on the challenges you face, but that managing new technologies is crucial.

Digital leadership is divided into three dimensions which are brought together and integrated to form a new form of organisational leadership. The three dimensions of digital leadership are ICT capability, business acumen and strategic leadership (Godley, 2016). These three dimensions are illustrated in figure 2.14.

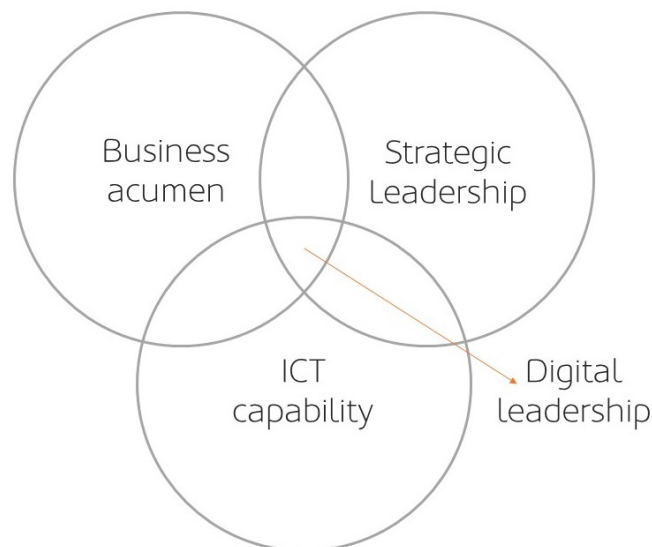


Figure 2.14: The three dimensions of digital leadership (Henley Business School, 2016).

Each of these dimensions requires a set of skills or elements in order to become a digital leader. The business acumen dimension refers to the skillset of knowledge and expertise in operations from sourcing to selling, new products to market, innovation, understanding your market and finance.

The strategic dimension concerns continuous improvement within the organisational framework, thinking about, for instance, new horizontal and vertical frameworks. This framework is concerned with strategic decisions such as forming partnerships, collaborations, keeping customers happy and so forth. A strategic leader must be able to interpret the environment in order to predict future trends and to implement such trends into the business model to prepare the organisation for the future.

The IT capability dimension represents the need for awareness and knowledge of new technologies and the ability to make an accurate judgement on whether it could be aligned to advance business operations. This dimension suggests that a digital leader must have access to digital skills and talent, but must also be able to combine technology with artistic skills.

The question is then, how can these dimensions be measured in order to know if an e-leader is a master of the required skills? In the IT-dimension, it can be measured by looking at the investments and budgeting for SMACi (Social, Mobile, Analytics, Cloud, and IoT) technologies, the number of employees that are assigned to expand ICT-skills and intangible knowledge.

The business dimension can be measured by how well products sell and how well the business is doing as a result of the manager's ability to read and understand their different markets. Indicators such as the percentage sales coming from new products or an organisation's innovation processes are examples of ways to measure skills in the business dimension.

The strategy dimension can be measured by the introduction of new organisational frameworks and strategic decisions concerning collaborations, partnerships, vision, and mission.

The European e-competence Framework provides a set of e-competencies that has been developed by a group of stakeholders and experts under the name of the CEN ICT Skills workshop. This set of e-competencies is a common language that represents competencies, knowledge, skills and proficiency levels when implementing ICT in an organisation (European E-Competence Framework, 2016). These e-competencies support organisations by providing a list of skills to develop in order to become a strong e-leader.

The European e-competence Framework has a website where a personal e-CF



profile could be created and guidance is given to become an effective digital leader by looking into e-competencies that are relevant to certain fields or organisational roles. The list of e-competences is given in Appendix A.

### 2.3.4 Business and IT alignment

Information Technology (IT) has changed from an administrative support tool to a strategic role in organisations, still Henderson and Venkatraman (1993) found a lack fundamental frameworks to support organisations in aligning IT with business operations in order to understand the potential that lies within business operations being supported by the right IT. Henderson and Venkatraman (1993) therefore developed the Strategic Alignment Model to conceptualise and direct the strategic management of IT.

Business-IT alignment is a concept that is often taken for granted, according to Liu (2016). Speaking from experience as a lecturer in Business Informatics, Liu (2016) suggests that the business alignment model given in figure 2.15, adapted from the Strategic Alignment Model developed by Henderson and Venkatraman (1993), will enable organisations to analyse and align organisational business and IT components to work together effectively.

By making use of the alignment model, better choices regarding business and IT can be made as one of the model's functions is to construct awareness of how the four components interrelated. According to Liu (2016), the alignment of business and IT in an organisation is essential for growth and innovation.

The top part of the model addresses strategic components. It illustrates that an organisation's business strategy must be specified, and that an IT strategy must be developed that complements the business strategy. For example, if it is within the scope of the organisation to be international, the IT strategy must integrate features such as different time zones or languages, Liu (2016).

The bottom part addresses operational components such as infrastructure, skills and processes required to execute the strategic components. As illustrated in figure 2.15, there needs to be a strategic fit between the strategic and operational level.

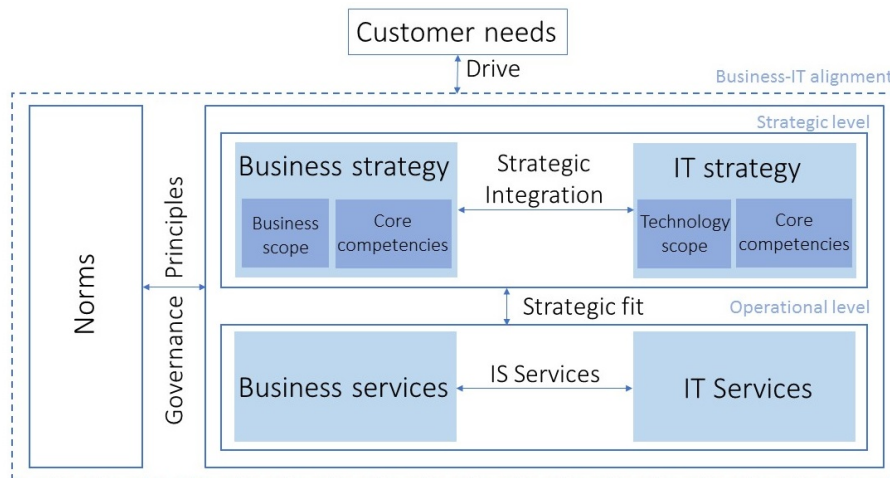


Figure 2.15: Business-IT alignment model adapted from the Strategic Alignment Model (Henderson and Venkatraman, 1993).

A survey was conducted by the Henley School of Business during the Digital Leadership course to identify what the key constraints are to the use of ICT in organisations. The survey was completed by 220 participants. The participants had to select constraints that they identified with from the following predetermined list:

- a) Insufficient access to skills;
- b) Lack of time;
- c) Understanding in how to use IT strategically;
- d) Lack of budget investment in technologies;
- e) Understanding of how to work with external service providers;
- f) Responsibility and accountability for key ICT decisions; and
- g) Lack of prioritization.

The participants selected the constraints that they found to be relevant and the results were as follows:

- 53% identified a lack in understanding how to use IT strategically (c);
- 50% agreed that a lack of budget investment in digital technologies (d) is a major constraint;
- 45% of the participants identified insufficient access to skills (a) as a constraint;

- 28% agreed on the lack of clear vision on who is responsible and accountable for key ICT decisions (f) as a constraint; and
- 23% stated that they find a lack of understanding of how to work with external service providers (e) as a constraint.

The responses with the highest variation were:

- lack of budget investment in digital technologies;
- insufficient access to skills and use of IT strategically;
- demonstrating diversity in budget investment; and
- time allocated to use IT and its strategic use in the market.

The importance of digital leadership is clear and the steps toward achieving these leadership skills are achievable by any candidate who is determined to be a good leader. Having a clear vision on the importance of being a digital leader and communicating this vision to employees is a step in the right direction. By empowering employees to be digitally smart, to be able to use IT optimally and to support them in this endeavour is an even greater step forward.

## 2.4 Chapter Summary

In this section the three fundamental themes of this study is reviewed. The basic principles of AM are reviewed, the importance and benefits thereof as well as how communication is implemented in AM. The importance of effective communication is confirmed, followed by a review of literature on organisational communication and communication models. Finally, ICT is investigated, as to what classifies as ICT and how it can be used to support and improve the existing communication system in an organisation to achieve competitive advantage.

# Chapter 3

## Research Design

*Give me six hours to chop down a tree and I will spend the first four sharpening the axe.*  
– Abraham Lincoln

The aim of this chapter is to discuss the research design and methodology. The chapter commences with the research approach, which is influenced by two philosophies. Furthermore, based on the research approach, the research design is given, followed by a description of the research methodology. The significance of a well-designed research methodology is not undervalued. Therefore, an astute analysis is applied to develop, in the opinion of the researcher, the best suited methodology.

### 3.1 Research Approach

The research approach is determined by two philosophies: the Dilemmatic view of the research process and the Hegel legend. According to McGrath (1981), an American behavioral scientist, the research process should be regarded as a set of dilemmas to be lived with, rather than a set of problems to be solved. This opinion emerged from the dilemmatic view of the research process. The dilemmatic perspective states that there is no one, true method or a best strategy for a research problem. Rather, the view claims that a researcher can merely find the best combination of multiple strategies that could be used for the specific case. McGrath (1981) believes his view to be realistic, not pessimistic, and developed a set of Rules of Dilemmatics:

1. Always face your methodological problems squarely;
2. A wise researcher never rests;
3. The researcher often choose the lesser of evils;
4. It is not possible, in principle, to perform a flawless study; and

5. You can't build flawless theory either.

The Hegel Legend suggests that the closest to an ideal philosophy is the thesis-antithesis-synthesis philosophy, also referred to as the Hegelian dialectic reasoning or Hegel's dialectic triad. Hegel's dialectic triad aims to predict human thought and reasoning, and provides a method to support philosophical and theoretical studies (Popper, 1940). The power of this dialectic method is the intellectual development that is obtained by enforced criticism.

A plant analogy explained by Popper (1940), provides a clear interpretation of Hegel's dialectic triad. The plant seed is analogous to the thesis that is initially investigated, the plant which develops from the seed is analogous to the antithesis and the seeds which develop from the plant is analogous to the synthesis. The antithesis is thus not seen as a statement contradictory to the thesis, but rather as the new philosophy that develops from criticism on the thesis. The most important characteristic interpreted from Hegel's dialectic triad is its cyclic nature.

## 3.2 Research Methodology

As specified in section 1.3, a qualitative research design is followed. In light of the philosophies on which the study is based and the complexity of the problem investigated herein, the qualitative research design cycle is found to be the best suited methodology for this thesis. The qualitative research methodology follows a cyclical nature, such as Hegel's triad. The theoretical cycle is illustrated in figure 3.1.

The process of the qualitative research cycle consists of three interlinked cycles, namely the design cycle, the ethnographic cycle and the analytic cycle. The theoretical qualitative research cycle is the foundation of the three main cycles of this thesis. The research methodology, adapted from the Hutter-Hennink qualitative research cycle is illustrated in figure 3.2 and is discussed below.

The research design cycle is based on the first cycle of the qualitative research cycle and is completed in chapter 1, 2 and 3. The core tasks in the design cycle are shown in figure 3.1 and include: research question, literature and theory, conceptual framework and the fieldwork approach.

The design cycle commences with formulating the research questions, to establish a particular focus in the research and give direction to the search for literature and theory, as seen in Chapter 1. The purpose for conducting a literature study is twofold. Firstly, it leads to further development of the research questions. Secondly, as De Bruijn (1998) states, a literature study is the

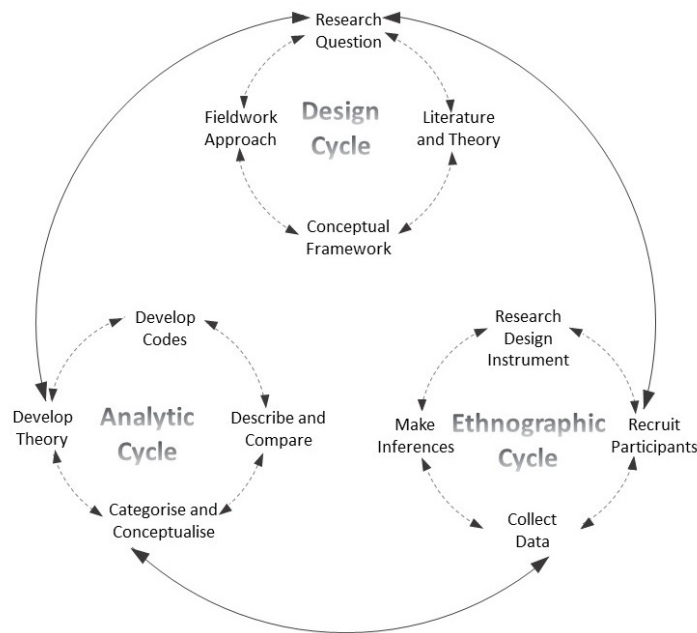


Figure 3.1: Hutter-Hennink qualitative research cycle (Hennink , 2011).

investigation of theory, which is the relationship between concepts. The literature study flows into developing a conceptual framework, which summarises the conceptual theory and research questions that are explored in this study.

The first three steps of the design cycle support decision making for the best fieldwork approach that will be needed to answer the research questions. Selecting a fieldwork approach refers to both the research approach and the selection of research methods. The fieldwork approach thus covers *how* data will be collected as well as *which* research methods will be used.

Three fieldwork approaches are given by Hennink (2011) as: ethnography, participatory action research and mixed methods research. Ethnography literally means, the description and understanding of the ways of an ethnic group, to obtain a holistic view of a community. Participatory action research is a fieldwork approach where the research is not conducted *on* the community, but rather *with* the people from the community. The mixed methods approach is another fieldwork approach that is otherwise referred to as the triangulation approach, or as a sequence of methods approach. The term ‘mixing research methods’ refers to the fieldwork approach where methods from different paradigms (eg. qualitative and quantitative) could be mixed.

For this study, the ethnographic field work approach is taken. This approach consists of implicit activities, such as in-depth interviews, focus group discus-

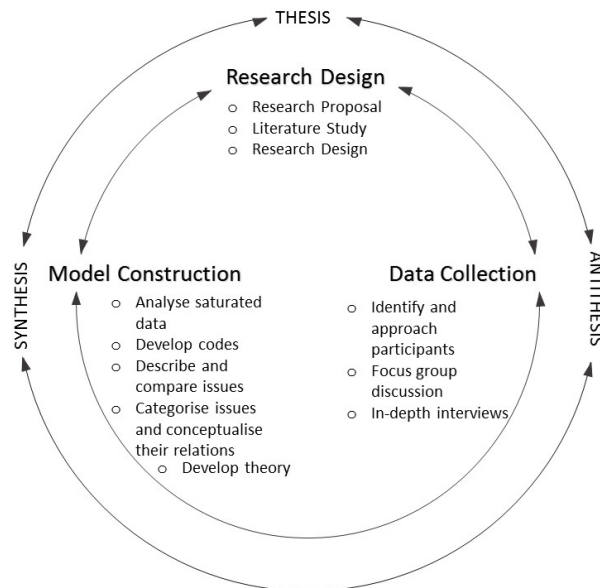


Figure 3.2: Research Design to identify and address communication deficiencies.

sions and participant observation. A comparison of the activities is given in table form in Appendix B. Geertz (1973) states that ethnography is not identified by the implicit activities, but rather by the ability of the researcher to deliver a description of the situation. Thus the researcher needs to explain and recreate the underlying meaning of the activities within the community. It is acknowledged that the field work, as well as the transcripts and interpretation thereof, are equally important.

### 3.2.1 Data Collection

The theoretical *ethnographic cycle* of the qualitative research cycle is the foundation of the data collection method in this thesis. The steps taken in the data collection cycle are based on the theoretical ethnographic cycle by Henink (2011), which entails four core data collection activities: designing of research instrument, recruiting participants, collecting data and making inferences.

The study population and interview questions are initially developed from the design cycle. However, as more information is gathered throughout the ethnographic cycle, by means of interviews or other data collection methods, inductive inferences can be drawn to conduct a more focused and accurate study. Inference development is performed by using Atlas.ti qualitative data analysis and research software.

The ethnographic fieldwork approach that is chosen as research design for this thesis, includes three data collection methods: in-depth interviews, focus group discussions and observation. The comparison between these three methods are drawn in Appendix B, from which in-depth interviews and focus group discussions are chosen to be used for this thesis based on the following reasons:

1. Focus group discussions are the quickest way to develop a wide range of issues, challenge the issues and explain the issues in a short period; and
2. In-depth interviews make use of a one-on-one data gathering method, where the interviewer and interviewee discuss the interviewee's personal experience regarding the relevant topics in-depth.

The method of participant recruitment is discussed, followed by a reflection on the data collection processes by means of in-depth interviews and focus group discussions.

### 3.2.1.1 Participant Recruitment

Participant recruitment consists of two stages: the identification of an appropriate study population and the identification of strategies for recruiting participants from the study population, based on specific characteristics that would contribute to the gathering of data for the study. Purposive recruitment is a flexible, as well as deliberate, method used in this thesis to identify participants. The criteria given in Appendix C is used to identify the three study populations for this study, namely: the PAM service provider, PAM client and PAM contractor. Together with the three identified populations, two other recruitment goals are used to identify best suited participants:

- Recruit participants that are experts in their field; and
- Recruit for diversity to obtain a range of communication issues as large as possible.

### 3.2.1.2 In-depth Interviews and Focus Group Discussions

Qualitative researchers rely on good interviewing skills in order to conduct successful interviews and interactions with research participants. Even though very few researchers focus on this aspect of the research, it is a necessary skill that adds value to gather accurate data in the least amount of time. The following guidelines, suggested by Dilley (2000), were used in preparation for the interviews:

**Studying Background Information** – Gather background information of the topic and interviewee. This will aid in understanding the cultural and professional context, enhance analysis and also put the interviewee at ease.



**Analysing Interviews** – Observe and analyse the flow of interviews, to look for patterns in the conversation and identify potential areas for improvement.

**Creating and Revising Protocols** – Memorise the structure and order of protocol, questions to guide the interviewee on a journey and develop a frame of mind. This will help them to comprehend the more complicated questions.

### **Practicing Self-Reflexive Interviewing**

A focus group discussion is an interactive discussion between a pre-selected group of participants, to focus on specific issues in an interactive discussion to surface and address a range of issues. The environment created by a group discussion offers the opportunity for participants to identify issues, which could be challenged by other participants. Moreover, a group discussion probes participants to justify the issue or provide examples to explain and validate the issue. The most important reasons why focus group discussions are used for this thesis are: larger amounts of data about an issue that is unclear could be gathered in a short period, information is gathered from a group of people rather than from an individual, typical behaviour and socio-cultural norms could be explored to highlight extreme, uncommon behaviour and the participants are witnesses to each other's opinions and experiences (Hennink, 2011).

A focus group discussion is not adequate for collecting individual-level information and the information gathered by this method is the product of the interaction between the participants in a group setting. Therefore, in-depth interviews are held as well.

In Hennink (2011), an interview is referred to as a meaning-making partnership, whereas S. Hesse-Biber (2006) describe an in-depth interview as 'a special kind of knowledge-producing conversation.' The meaning of the relationship between the interviewer, in most cases the researcher, and the interviewee is thus to co-create knowledge, specifically the reality that is being investigated.

### **3.2.2 Model Construction**

The analytic cycle of the qualitative research cycle is the theoretical foundation of the model construction cycle in this thesis. The analytic cycle is an inductive process that incorporates scientific literature from the design cycle and data collected from the ethnographic cycle, to develop new theories and concepts based on the existing theory. The analytic cycle is therefore inter-linked with the other cycles.

This cycle comprises of the following core activities of qualitative data analysis:

developing codes to describe and compare, to categorise and conceptualise and to develop a theory. Activities such as code development and data preparation, see sections 5.1.1 and 5.1.2, are performed by using the Atlas.ti qualitative data analysis and research software.

### **Identifying the root causes of communication deficiencies**

The code development step in the analytic cycle is the theoretical foundation of this section, identifying the root causes of communication deficiencies. Once the data that has been gathered is transcribed in the final step of the Data Collection cycle and inferences have been drawn, the code development can commence. Codes are topics or issues that are evident in the data, essentially identified by the researcher and participants through discussions, interviews and literature reviews. The purpose of identifying codes is to identify the range of issues evident in the data and to comprehend what these issues represent to the participants. The codes are also used as markers, to ensure the focus of the study remains on the paramount issues that should be addressed.

The generation of codes will cease upon saturation of new issues surfacing during interviews and group discussions (Hennink , 2011). These codes could be adapted during the study, as this is when issues become more distinct.

There are two types of codes, deductive and inductive. Each code type is developed from different approaches. Deductive and inductive codes are both important and illustrate how the design cycle integrates with the analytic cycle. Deductive codes are developed prior to inductive codes, which sequentially follow after the data is collected. The ideal approach is to develop both deductive and inductive codes. Brief descriptions of each code follows. More research about deductive and inductive codes will be reflected upon in Chapter 4.

Deductive codes are developed from the researcher, for example concepts from research literature or the topics derived from the literature study that the researcher uses as topics in the interviews. These topics are used as a guide to prompt specific information from the research participant. Deductive codes are merely developed from theory that is gathered in the design cycle, not from any information gathered from research participants in the ethnographic cycle.

Inductive codes are developed from reading and analysing data and identifying important issues that are shared by participants during the data gathering phase. The inductive codes are very important as they enable the data to 'speak for itself' and reflect issues that are of highest importance to the participants, which could be different from the issues anticipated by the researcher (Hennink , 2011).

Strategies for developing deductive codes include (Hennink , 2011):

- Topics from interview guide;
- Concepts from research literature; and
- Professional and personal experience.

Strategies for developing inductive codes include (Hennink , 2011):

- Read for overall content of data gathered;
- Annotate data;
- Notice repetition;
- Identify topic changes;
- In vivo codes;
- Analytic reading; and
- Explore underlying concepts.

### 3.2.2.1 Comprehending the data

The theoretical step of the analytic cycle, describe and compare, is the framework according to which the codes are further analysed in this section. Providing a description is an important activity in the analytic cycle where rich detail about issues is gathered. It enables the researcher to understand how issues are connected and the issues can also be understood from the perspective of the research participants.

In qualitative research, researchers are required to make thick descriptions. A thick description means providing the depth, breadth and context of an issue or topic. A thick description is developed by delving deeper into the data to explore each issue and identify the context of issues, the relations between issues as well as certain patterns in the data.

A comparison between issues is necessary to clarify each issue and determine what factors differentiate the issues from each other. There are various types of comparisons, which will be elaborated on later in the thesis, see Appendix B.

### 3.2.2.2 Conceptual Model

Developing a conceptual model is a step based on the categorisation and conceptualisation step in the analytic cycle. Categorising and conceptualising are two distinct activities in this step that are closely interlinked. Categorising data entails identifying codes that have similar characteristics and grouping them together into useful categories. The categorised data is then conceptualised by investigating the relationships between the issues and developing a higher level of understanding of the issues. These concepts form the building blocks of further theory development.

The main platform by which categories emerge is by identifying attributes or characteristics that the different codes share. This activity is the starting point for developing a category. From there, the name and description of the category could be further refined by means of axial coding and by refining and rethinking the categories (Hennink , 2011; Draucker , 2007; Constas, 1992). Literature on thematic analysis is consulted to investigate whether a systematic approach towards further data analysis could be found. As stated by Vaismoradi (2013), thematic analysis and content analysis are often used interchangeably as they are so similar. A comparison between thematic analysis and qualitative content analysis, which was developed to help researchers choose the appropriate approach, is given in table 3.1.

Table 3.1: Process of data analysis in thematic analysis and qualitative content analysis.

<b>Analysis phases and their descriptions</b>	
<b>Thematic analysis</b>	<b>Content analysis</b>
<i>Familiarising with data:</i> Transcribing data, reading and rereading data, noting down ideas	<i>Preparation:</i> Being immersed in the data and obtaining the sense of a whole, selecting the unit of analysis, deciding on the analysis of manifest content or latent content.
<i>Generating initial codes:</i> Coding interesting features of the data systematically across the entire data set, collating data relevant to each code.  <i>Searching for themes:</i> Collating codes into potential themes, group all data relevant to each potential theme.  <i>Reviewing themes:</i> Checking if themes work in relation to the coded extracts and the entire data set, generating a thematic map.  <i>Defining and naming themes:</i> Ongoing analysis for refining etc.	<i>Organising:</i> Open coding and creating categories, grouping codes under higher order headings, formulating a general description of the research topic through generating categories and sub-categories as abstracting.
<i>Producing the report:</i> The final opportunity	<i>Reporting:</i> Reporting the analysing process and the results.

Conceptualisation is a process of seeing the data as a whole in order to shift analysis to follow a more abstract approach. Whilst keeping analysis close to the data, conceptualisation is the abstract step from categorisation towards theory development.

A list of strategies to approach categorisation are given below with a short description of what each entails (Hennink, 2011):

- Big picture - A simplistic approach to identify the central story and core issues.
- Telescoping - Moving from a broad view of the data to a close examination of the detail.

- Explore links - Following up on associations noticed in the data when describing and comparing data.
- Matrices - A systematic strategy by using matrices to show patterns in the data.
- Process or pathway - Considering whether the data is describing a particular process or pathway.
- Questioning data and analytic puzzles - Prompt data searches by formulating analytic questions.
- X-ray view - Looking past the detail of the data to the backbone or structural aspects.
- Typologies - Describing and categorising data in order to classify the variations within a single issue.
- Social domains - overarching realms or contexts that could bring a group of issues together in the data are investigated.

### 3.2.2.3 Developing a model to support organisations in communicating effectively

Theory development indirectly starts during the *conceptualisation* step, and finally involves bringing everything together from previous steps in the inductive cycle. Theory development is an inductive cycle that consists of three tasks: developing theory, verifying theory and refining theory, which relates back to Hegel's philosophy (Hennink, 2011). Theory development advances the thesis from descriptive information, to a substantive contribution to research.

## 3.3 Chapter Summary

This chapter covers the research philosophy, the Hegel Legend that argues that the closest to an ideal philosophy is to follow the thesis-antithesis-synthesis cycle, which is the approach that is followed in this thesis. The research design is discussed followed by the research methodology, where the qualitative research cycle is introduced. The adaption of the sub-cycles and steps of the qualitative research cycle are discussed. The following two chapters are based on the next two cycles of the qualitative research cycle, namely the ethnographic cycle and the analytic cycle.

# Chapter 4

## Data Collection

*The way to do fieldwork is never to come up for air until it is all over.*  
– Margaret Mead

This chapter is the commencement of the inductive process of data collection by means of ethnographic fieldwork. The main steps that are included in the ethnographic cycle are: research design instrument, recruiting participants, collecting data and drawing inferences. The ethnographic research methods that are used are focus group discussions and in-depth interviews (section 3.2.1).

Before conducting discussions or interviews, there is a process of participant recruitment and additional formalities that must be dealt with. This chapter covers a detailed discussion of the aforementioned steps, followed by the reports on information gathered from these interactions.

### 4.1 Participant Recruitment

Strong relations were established with a PAM organisation, company A, through which eligible research participants were identified.

Participants have been invited to participate in the study by means of a face-to-face introduction or a phone call. Participants who agreed to contribute to the study were collaborated with further by means of emails until a time had been confirmed to meet face-to-face (if possible) or via Skype, to conduct the in-depth interview or focus group discussion.

Three documents were sent to participants to ensure the effectiveness of the interview as well as to establish ethical clearance and transparency. The following documents were used and are provided in Appendix D:

- An information sheet that contains the essential information regarding

what the study is about and what it will be used for. This document serves as a short introduction to the interview to offer the participant time to develop a framework of what the research, as well as the interview, is about.

- The list of questions that the researcher will ask. By sending a list of questions, the researcher prepares the participant for the interview, giving them the opportunity to contemplate the questions and develop answers that are well thought through. By providing the questions beforehand, the researcher establishes transparency.
- A written consent document in which further explanations of the research are given. Moreover, a series of declarations were provided to allow the participant to confirm their willingness, having the given information, to take part in the study by signing the Declaration of Consent.

The recruited participants covered profiles such as, Business Area Manager (BAM), Field Engineer, Project Coordinator, Call Centre operator, Asset Care Engineer and Contractors. There are language and cultural differences within these subgroups as well.

#### 4.1.1 Interview design and approach

Interviewing is a complex process that entails simultaneous trails of thought that must be managed by the interviewer. Certain things that the researcher found challenging during the interview process include:

- To listen to what the respondent is saying while observing how they are saying it;
- To compare what the respondent is saying to what is researched;
- To compare the respondent's answers to each of the questions;
- To be aware of time and weighing the options of rushing to get through all the questions, or to prioritise between questions and allow the respondent to elaborate on questions that they have a longer response to;
- To monitor the conversation and prompt the respondent for reflection, clarification or further information.

The ability to do all the abovementioned is a skill that must be practised and monitored, which is enhanced by effective listening. As stated in Dilley (2000), one rule of thumb is that during an interview, the interviewer talks 20% of the time and listens 80%. Therefore, an underestimated part of the preparation for conducting a successful interview is for an interviewer to ensure



that their listening skills are well developed. The researcher took note of and applied the following suggestions from Wilson (1994) that one should concentrate on to be considered a good listener:

- Give the speaker cues that you are listening, by means of both verbal and nonverbal cues;
- Keep good eye contact and indicate engagement in the conversation with body language. Don't glance sideways during the conversation;
- Give occasional nods, an occasional "yes" and give brief summaries of what the interviewee said in order to make sure you interpret what he says correctly; and
- When a person is expressing their thoughts or concerns, do not interject your opinions before they are finished talking, no matter how badly you want to share your solution.

Personal preparation for the interviews was done based on suggestions from Stovall and Hull (2016) on possible barriers to effective listening:

- Own biases and prejudices – pre-decided disapproval of a speaker could result to destructive listening;
- An inability to understand the speaker because of foreign dialect – being a good listener is often impeded by having the difficulty to understand what the speaker is saying;
- An inability to hear because of background noise – an unnecessary obstacle to being a good listener is simply background noise that can result in a breakdown in communication;
- Worry or fear that preoccupies one's thoughts often leads to a listening breakdown; and
- A short attention span, due to environmental distractions or thoughts that occupies the mind of the listener, leads to a useless conversation.

Physical preparation was done by preparing the venue where the interview(s) were to be conducted. The preparation was done in such a way that anything that could hinder the effectiveness of the interview, is eliminated. Therefore, the researcher ensured that there is enough light and little noise in the room.

Psychological (emotional and intellectual) preparation was offered by means of the following steps:

1. Inform participants of the interview process by means of face-to-face interaction, phone call or email. By first informing the participant and personally asking them if they want to participate in the study, the researcher found that a greater sense of commitment is established within willing participants.
2. Information is shared beforehand, as discussed in subsection 4.1.
3. Participants are greeted on their names and sensible conversation is made in order put them at ease.
4. The interview questions are developed in such a way that the interview will flow naturally, starting with easy questions and ending with more challenging ones. Refer to section 4.1.2.

### 4.1.2 The Science of Interview Questions

According to the structure of the discussion guide by Hennink (2011), the researcher developed a list of questions around the framework of: introduction, opening questions, introductory questions, specific questions, closing questions and post-discussion questions. The aim was to structure the questions in such a way to encourage a discussion during the interview.

The flow of the questions, given in Appendix D, were found to be sufficient. Question 7 and 8 were initially swapped around, but experience after the first interviews found that a more natural flow of discussion occurred when asking whether a communication system is in place, followed by whether they have the needed technology to support the system. Looking at the order of these questions in retrospect, it seems rather obvious that they should follow in the order given in Appendix D. However, it was discovered that such elements are not as clear from the start. By asking questions 7 and 8 in this order, the belief is established that to have a system in place is most important and that technology is merely supplementary to an existing communication system.

The most important questions, that had the greatest effect on the success of the interview/ focus group discussion are questions 2 and 3. Strong conviction was shown by research participants regarding the importance of communication and the fact that it is a great challenge. A sense of agreement and importance of the topic of this thesis was shared, which motivated participants to share their opinions and experiences in detail. They also shared advice with the hope that they are contributing to a solution that will benefit them in the future. The fact that the interviewer and interviewee both strongly agreed upon the importance of this topic also made the interviewee feel more comfortable.

## 4.2 Data Saturation

Data saturation is a term often used in guidelines for qualitative research, but the operational concept of saturation is often provided without description. Researchers are left without practical guidelines for estimating sample sizes of research participants (Guest, 2006). Morse (1994) states that saturation is the key to excellent qualitative work but also notes that guidelines regarding the estimation of the required sample size to reach saturation are not provided. Thus, the point of saturation is a vaguely defined concept.

Bartos (1967) defined saturation as, a point where no additional data is being found whereby the researcher can develop properties of the category. As similar instances are observed repeatedly, the researcher becomes empirically confident that a category is saturated. Guest (2006) agrees that this commonly used term, saturation, has become diffused and vague. After reviewing numerous research method books and databases, Guest (2006) operationalised the concept of saturation as the point where new information brings very little, or no change, to the developed codes. In this study, the definition developed by Guest (2006) is used for saturation.

The point of saturation can only be identified once data collection has been running for a while. This point will be towards the end of the ethnographic cycle (Hennink, 2011). The point of saturation is determined by means of an iterative process of gathering data, analysing the data and investigating variations in the issues raised, and then starting the process again. When this process is followed and the researcher can identify the point where new information makes little or no adjustments to the developed codes, the researcher will confidently conclude with a sufficient period of data collection.

## 4.3 Developing Inferences

The ethnographic cycle concludes with drawing inferences and a data filtering process. Developing inferences includes activities such as abstraction, comparison, integration, iteration and refutation. These activities are needed to produce a summarised list that represents the issues that surfaced from the interviews and discussions with research participants during the data gathering period (Spiggle, 1994).

The list of 24 inferences, developed by the researcher, with an example of where each occurs, is given below:

**Language and cultural barriers** – Due to the difference in language and culture, misunderstandings exist as colleagues do not communicate in

the same manner, do not use the same words when referring to the same things, and do not find the act of communicating equally important.

**Engagement** – Lack of engagement, primarily among ground-level employees, results in employees not taking part in fundamental communication activities, such as feedback.

**Response** – A trainer cannot establish whether receivers of information (usually contractors) comprehend what is taught due to the lack of response from the receiver. For example, it often occurs that contractors are artisans who do not understand the importance of basic communication skills, such as response.

**Do not always communicate according to system** – Even if a system is in place, it is still dependent on an individual's skill and discipline to communicate in accordance to the system.

**Lack of support** – The lack of inter-departmental support leads to clients losing trust in the organisation as they do not receive feedback from their service provider, who is waiting on internal support.

**Information is available but is 'like hanging in a cloud'** – The problem is not that needed information does not exist, but rather that the information remains with the person who has it and is not shared with relevant stakeholders.

**Call centre (centre point of contact) is not asking the right questions** – The call centre is the point through which a lot of communication flows. The client logs a call with the call center and the call centre addresses the call by issuing a work order. If a misunderstanding occurs at the call center, information exchange from that point onwards will be incorrect.

**Information is not shared at the same (knowledge) level** – As explained by interviewees, when knowledge (information) is shared, the context and experience that the messenger has is different from that of the receiver. Thus, they misunderstand each other, due to difference in perspectives.

**Communication is not direct, not face-to-face** – Employees, specifically contractors, tend to only communicate with colleagues or stakeholders that are in close proximity to them. They share information with people in their immediate environment and then they do not make it a priority to share the information with stakeholders that were not present.

**Urgency of feedback and orders are not communicated** – When a message is sent along a channel from one person to another, the urgency of the message or of feedback, is often not given along with the content of the message.

- Following up and feedback is an issue** – When a work order is executed, no feedback or follow up is done. Feedback should be sent whether the work is executed successfully or not.
- Communication does not extend to all relevant parties** – When information is shared, it is not shared with all stakeholders.
- Information addressed to irrelevant parties** – Irrelevant parties are included in communications regarding an asset or a work order and are left unsure whether it is part of their responsibility.
- Complexity of inter-dependent role players who all have to focus on their work** – The stakeholders/ role players are not all available at the same time when other stakeholders need them, but often have priorities of their own that they need to attend to.
- Decisions cannot be made in isolation** – The inter-dependency of stakeholders results in a tedious decision-making process.
- Operations cannot wait for the process of decision making** – Decisions have to be made and executed immediately on site, but that is not always possible, which leads to urgent work being left delayed.
- Uncertainty regarding role definition and responsibilities** – Work is often left undone or sent to the wrong employees, due to employees being unsure of their own responsibilities as well as the responsibilities of their colleagues and other stakeholders.
- Managing the volumes of work, decisions and people** – Employees are often too busy to communicate and send updates of the work that they are busy with to the relevant stakeholders.
- Communication of success** – Positive communication such as work, plans or implementations that delivered positive results are not shared.
- Managing the expectations between service providers and clients** – Grey areas exist between what the client thinks falls within the responsibility of the service provider, and what the service provider is responsible for.
- Keeping all relevant parties up to date** – There are many stakeholders related to activities in the asset management process and some of the stakeholders are not aware of the others that should be kept up to date. Thus, not all stakeholders are on the same page at all times.
- Balance with amount of information** – People struggle to find the balance between not giving messages that are too cryptic and information overload, but to only give the essential amount of information.

**Lack of communication** – Communication did not happen at all.

**Lack of knowledge and skill** – This issue mostly occurs among contractors or new employees who do not have any knowledge regarding basic communication skills.

The essence contained in the transcripts of all the interviews and discussions conducted is summarised in the list of inferences above. By developing a list of inferences, the data is translated into a manageable format for analysis.

A group of fifteen research participants were interviewed. The profile of this group includes English, Afrikaans and other African-languages the variety of job titles amongst the research participants includes: a Business Area Manager (BAM), Field Engineer, Asset Care Engineer (ACE), Call Centre Operator, an Academy Administrator at a PAM service provider, clients of a PAM service provider and contractors of a PAM service provider.

All of the research participants strongly agreed that communication is one of their greatest challenges in everyday activities. Most of the issues described by research participants were rooted in the fact that a role player did not have knowledge about something. Certain participants stated that the manager of the department or project, influences the mindfulness of communication of the rest of the team and if the manager takes it seriously to send feedback or to send updates, the rest automatically follow. They experienced that, in a team where the manager had strict requirements regarding feedback and sharing information, the team automatically took it seriously. The opposite could be said for other teams where the employees could sense that feedback and sending updates is not important to the manager. Thus, the culture is largely influenced by the manager.

Language and culture was raised by research participants, but not necessarily that they do not understand each other, as the organisational language is English. The difference in language and culture becomes evident in the way that they communicate with each other, the way they interact, interpret information and even dress. None of the research participants mentioned that the lack of the necessary technology impedes communication effectiveness.

## 4.4 Chapter Summary

This chapter covers the steps in the ethnographic cycle from participant recruitment, through to developing inferences. Three groups are identified as populations from which research participants are identified, namely PAM service providers, asset owners (clients) and PAM contractors. Data is gathered by means of in-depth-interviews and focus group discussions. The raw data

is transcribed and translated into a first draft of issues that were mentioned most by research participants. This first draft is referred to as inferences and will be used in the next chapter, chapter 5, to develop codes, which is the first step in the analytic cycle, Model Construction (Chapter 5).

## Chapter 5

# Developing the COMMPAS Model

*Developing excellent communication skills is absolutely essential to effective leadership. The leader must be able to share knowledge and ideas to transmit a sense of urgency and enthusiasm to others. If a leader can't get a message across clearly and motivate others to act on it, then having a message doesn't even matter.*

– Gilbert Amelio

This chapter is based on the analytic cycle in the qualitative research cycle (figure 5.1). The final objective of the ethnographic cycle (Chapter 4) is to develop inferences, which is the foundation of the analytic cycle. The first step in the analytic cycle is to develop codes that represent a set of issues that arise from the data, based on the inferences made in the ethnographic cycle. These codes are described and compared to establish a deeper understanding of each code and what differentiates each code from the next. Categorisation and conceptualisation follows, where mutual attributes between codes are identified and grouped together into meaningful categories. The relationship between these categories is investigated to foster a conceptual understanding of the issues.

The final activity in the analytic cycle is theory development, which is where the activities of the analytic cycle converge to one solution. The qualitative research cycle remains an inductive process. Thus, some of the steps may be revisited as more information is gathered or refined throughout the abovementioned processes.

### 5.1 Code Development

Uncovering the root causes of communication deficiencies from the raw data entails two steps: data preparation and code development. Data preparation is an important step that prepares the data for analysis. Code development



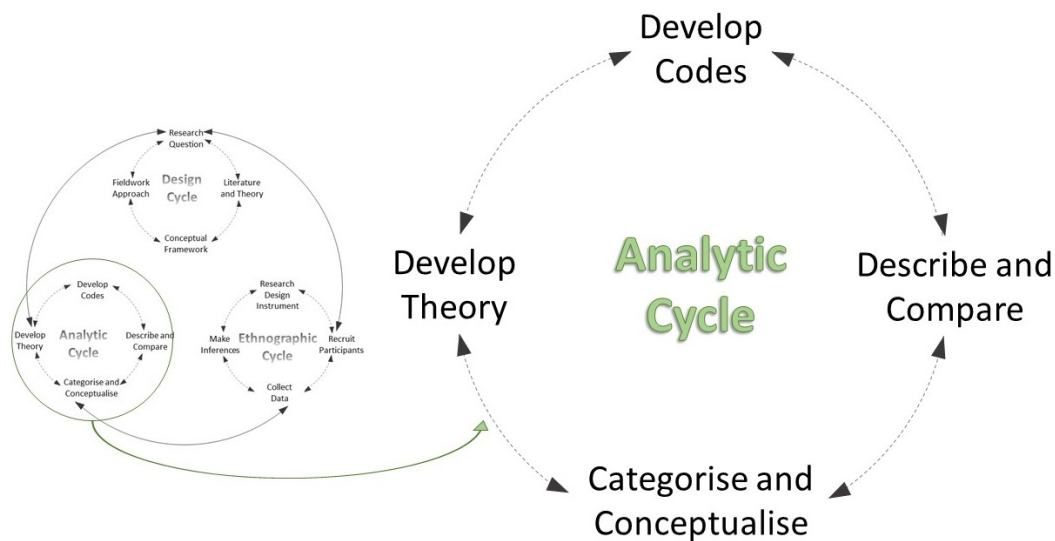


Figure 5.1: Analytic Cycle, adapted from Hennink (2011).

is an inductive method of creating markers of issues in the data that must be addressed. These steps are reflected as follows:

### 5.1.1 Data Preparation

Preparing data for analysis entails three activities: producing an exact transcript of the interview or group discussion, decoding the transcript (if necessary to translate the literal words of the participants into the context-free meaning and) and clearing the data of identifiers so that personal information of participants will not be disclosed.

A written record of the conversation is made. Additional notes of information are added where it could contribute to truly capture the discussion conducted. It is imperative to capture all the information that is shared by the participant. As stated by Hennink (2011), in an ethnographic approach the informational content is more important than the mechanics of speech. Therefore, it is sufficient to capture merely what is said, and not how it is said.

The responsibility to preserve the anonymity of all participants lies with the researcher as it is part of the agreement between the researcher, and the participants<sup>1</sup>. The transcripts are anonymised by removing all information such as names of places, people or any information that could disclose their identity.

<sup>1</sup>Refer to Appendix D for the documents given to research participants prior to interviews as a requirement for ethical clearance.

The software, Atlas.ti (section 3.2.2) is used for the anonymising process.

The translation of data that Hennink (2011) refers to, is the literal translation of interviews or discussions that are conducted in a language different from what is used in the research. Interviews were conducted in both English and Afrikaans, depending on which language the research participant was most comfortable in. Being bilingual enabled the researcher to understand research participants clearly and to create an English transcript of interviews conducted in Afrikaans.

However, the researcher identified the need for translating the contextual-bound meaning of a participant's words into a more understandable meaning. For example, the participant explained that, in their daily communications, they are not communicating "at the same level". This translated to: when information is shared with a colleague from a different background and skill set, they are not sharing and comprehending the information from the same perspective and level of knowledge, leading to them encoding and decoding messages differently. The list of anonymous quotations were translated from an explained issue, which is specific to the situation and context of the participant, into a more generic description. Transcripts are revised meticulously by the researcher, to ensure that no meaning or information is lost in translation.

### 5.1.2 Root causes of Communication Deficiencies

From the list of inferences (section 4.3), it is possible to develop codes. These codes serve as markers of evident issues that arise from the qualitative data gathered. A combination of inductive and deductive strategies are used to develop these codes, which is further illustrated in table 5.2.1. The list of codes, with the quotations they originate from, is given in Appendix F. The codes are given with a concise explanation:

1. Cloud volume of information – Communication deficiencies do not exist as a result of too little information, but rather due to too much information that is stagnating at the resources, such as the software that is used to capture data of the physical assets, and not shared with stakeholders.
2. Engagement – Employees are not making an effort to communicate effectively due to a lack of engagement.
3. Feedback – No feedback is given when work is done.
4. Incomplete Information – Miscommunication and confusion is a result of an order, an assignment or feedback that is given but the message is incomplete.

5. Interdependent – The inter-dependency of stakeholders leads to a delayed decision-making process.
6. Lack of Experience – New employees do not have experience about what essential information to share with whom. The difference in work experience amongst the diverse workforce also leads to messages that are interpreted differently by each of the role players in the communication system.
7. Lack of Knowledge – Employees lack knowledge regarding communication skills and also knowledge of each others' fields of expertise, and therefore they misunderstand each other.
8. Language and Culture – Misunderstandings occur due to differences in vocabulary and manner of communicating, which stem from different languages and cultures.
9. Role definition – Unclear role definition becomes a communication deficiency when employees are not sure to whom to send information, or do not know that an order is relevant to them when they receive it.
10. Update – Employees are not always sharing new information as it becomes available, which leads to communication deficiencies due to stakeholders not always having and receiving the most up-to-date information.
11. Urgency – Urgent information is not conveyed timeously, which means the urgency is either not comprehended or not appreciated.
12. Volume of Priorities – Too many priorities lead to role players being too busy to communicate with each other properly or at all, or they do not react to a request from a colleague as it is not of high priority to them personally.
13. Volume of Role Players – Too many role players becomes a deficiency when the number of people that must constantly be kept informed is too great and too many stakeholders are dependent on the authority or contribution of another, whether it is a contribution of time, money or intellect.

In figure 5.2 the codes are illustrated graphically indicating the number of quotations that were assigned to each code, reflecting how many times an issue was raised. Each count represents a participant that raised an issue that is represented by a code. If a participant referred to an issue again during the interview, it was not counted again.



Figure 5.2: Codes and number of quotations under each code.

The top five codes have all been mentioned between twelve and eighteen times. In figure 5.2 it is clear that the biggest issue is Lack of Knowledge. The second biggest issue is Role Definition, followed by Feedback, Update and Volume of Role Players.

The next group of issues that were raised more than five and less than twelve times are Cloud Volume of Information, Interdependence, Lack of Experience and Language and Culture.

Issues raised five or less times are Urgency, Incomplete Information, Engagement, Lack of Communication and Volume of Priorities.

## 5.2 Comprehending Data

Codes are described and compared to facilitate the understanding of data. The steps in the analytic cycle are formulated in a circular manner, implying that it is a set of closely interlinked activities that could be repeated, or even be conducted simultaneously, at different points of the analysis (Hennink, 2011).

### 5.2.1 Describe

The purpose of the description is to achieve familiarity with each issue and to fully comprehend the essence of each issue. This will result in unique insight into the data. Codes are developed from issues that are most evident in the data. The information of the codes is presented in a codebook in table 5.2.1

together with the type of information as inductive or deductive, examples from the data, as well as a description of what each code represents.

Table 5.1: Codebook of Codes and Descriptions.

<b>Code</b>	<b>Type</b>	<b>Examples from Data</b>	<b>Description</b>
<b>Update</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Keeping stakeholders up to date;</li> <li>• Keeping stakeholders in the loop;</li> <li>• Don't share too much information;</li> <li>• Sharing information constantly with client;</li> <li>• Only share relevant information; and</li> <li>• Follow up on requests.</li> </ul>	<i>Update describes the issue of stakeholders that are not distributing critical information that they receive to all relevant role players. This, for example when it comes to clients, leads to them losing faith in the organisation's ability to deliver a high quality service in a short time as they are not being kept informed about the progress that is made.</i>

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<b>Code</b>	<b>Type</b>	<b>Example from Data</b>	<b>Description</b>
<b>Lack of Knowledge</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Urgency not explained;</li> <li>• Centre point of communication not asking the right questions;</li> <li>• Information is not shared at the same level;</li> <li>• Skewed expectations due to uninformed stakeholders;</li> <li>• Employees with too little knowledge have responsibility to convince stakeholders of important issues;</li> <li>• Lack of support and timely feedback;</li> <li>• Not aware of basic communication skills;</li> <li>• Way of communicating.</li> </ul>	<i>Lack of Knowledge describes several issues. It refers to the lack of knowledge of how, when and with whom one should communicate, as well as lack of knowledge in fully comprehending what a colleague, contractor or client is communicating. The code also represents clients or employees not being fully informed of what their roles are, leading to different expectations based on the lack of knowledge.</i>

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<b>Code</b>	<b>Type</b>	<b>Example from Data</b>	<b>Description</b>
<b>Role Definition</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Unsure of activities that are included in role;</li> <li>• Different role players have different expectations;</li> <li>• All other roleplayers / stakeholders must be included in communications; and</li> <li>• Expectations of certain roles must be clearly defined by management.</li> </ul>	<i>Role definition describes the need that is shown for clearer definition of roles and tasks. The specific tasks that falls under each role should be defined to the finest detail so that if a work order is distributed, employees know when they should take responsibility for it.</i>
<b>Volume of Role Players</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• A lot of communication and role players;</li> <li>• Constantly sharing the right information with relevant stakeholders;</li> <li>• Large volume of role players results in slow process of decision making when changes have to be made;</li> <li>• Difficult to always think of and include all stakeholders;</li> <li>• Too many stakeholders that are speaking to each other without order.</li> </ul>	<i>Volume of Role Players describes the issue that the correct information should constantly be shared with a large number of relevant role players / stakeholders. All stakeholders should be included in decision making processes, which slows these processes down.</i>

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<b>Code</b>	<b>Type</b>	<b>Example from Data</b>	<b>Description</b>
<b>Feedback</b>	<i>Deductive</i>	<ul style="list-style-type: none"> <li>• Response;</li> <li>• Communicating success;</li> <li>• Discipline to give feedback;</li> <li>• Different stakeholders with different priorities;</li> <li>• Lack of support;</li> <li>• Following up.</li> </ul>	<i>Feedback describes the issue that employees are unsure about their complete role description and as a result do not know when to do what.</i>
<b>Inter-dependent</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Cannot make decisions in isolation;</li> <li>• Stakeholders are dependent on each other to keep each other informed.</li> </ul>	<i>Interdependence describes the issue of stakeholders that cannot make decisions in isolation, even though a decision needs to be made as soon as possible. There are many stakeholders, each contributing in their way and therefore have to be included and kept up to date with every step of a process.</i>
<b>Cloud volume of Information</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Information is available but is like hanging in a cloud;</li> <li>• Large volume of people speaking to each other;</li> <li>• A lot of information comes in but must be filtered and only the essential information must be shared;</li> </ul>	<i>Cloud volume of information describes the availability of information that is hanging around, either with a fellow employee that is not sharing it, or it is captured within the system, but is not extracted and used.</i>

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<b>Code</b>	<b>Type</b>	<b>Example from Data</b>	<b>Description</b>
<b>Lack of Experience</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Lack experience in how and what to communicate;</li> <li>• No experience in various fields, thus do not understand information shared by employees from other organisational areas.</li> </ul>	<i>Lack of experience describes the issue that the parties communicating with each other occasionally do not have experience in each other's fields. This leads to, for example in the case of a contractor with technical expertise sending a request to the call centre, the call centre not understanding what the contractor means as they have no technical experience on the matter. Certain employees, especially younger employees, also do not have experience in how to communicate and which is the right amount of information to share.</i>
<b>Language and Culture</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Language and cultural barriers;</li> <li>• Culture differences leads to differences in communication skills.</li> </ul>	<i>Language and Cultural describes the issue of differences that become a barrier when it comes to understanding the information that is shared as well as adapting to the cultural norm in which one should communicate. Effective communication is often limited by communication skills that is evident in or lacks in certain cultures. People from different cultures with different languages communicate in different ways, which often leads to people misunderstanding each other or misinterpreting the message that is conveyed.</i>

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<b>Code</b>	<b>Type</b>	<b>Example from Data</b>	<b>Description</b>
<b>Urgency</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Lack of support when it comes to urgent feedback;</li> <li>• Priorities of colleagues differ, thus what is urgent for one is not necessarily urgent for the other.</li> </ul>	<i>Urgency describes the issue of feedback or replies that are often needed, but due to a role player being occupied by other priorities the urgency is ignored or not appreciated.</i>
<b>Volume of Priorities</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Management and other employees are too busy with other priorities and thus often responds too late to urgent requests.</li> </ul>	<i>Volume of Priorities describes the issue that employees have too many priorities, thus when there are urgent requests that they need to tend to they are occupied with other priorities, leading to slow communication from their side.</i>
<b>Engagement</b>	<i>Deductive</i>	<ul style="list-style-type: none"> <li>• Little engagement leads to lack of discipline to communicate.</li> </ul>	<i>Engagement describes the issue of employees who do not take response and feedback seriously and do not make it a priority. This is often a result of lack of engagement.</i>
<b>Incomplete Information</b>	<i>Inductive</i>	<ul style="list-style-type: none"> <li>• Information shared is not always complete;</li> <li>• Receiver of information is not always sure what is required of them.</li> </ul>	<i>Incomplete information describes the issue that when information is shared, the sender does not think to include all the necessary information. This results in incomplete information being shared and the receiver decoding an incorrect message.</i>

### 5.2.2 Compare

Comparison is the second activity in the first step of the analytic cycle, in which the researcher clarifies what makes each code or issue distinct from the other. By doing this, links and patterns between the codes can be identified. According to Hennink (2011), comparison facilitates the uncovering of distinctions, which provides the foundation for developing theory. The strategies for comparison are discussed below:

Cross-case comparison, which entails comparing a single issue across the whole data set (mostly used when making a thick description). Another strategy is to conduct a comparison by comparing deductive subgroups developed by the researcher, for example comparing a code mentioned by a contractor with a code mentioned by the service provider.

Comparison by inductive subgroups, which is a strategy where subgroups that are developed from the data (inductive) are compared. Comparison across and within subgroups is another strategy, for example comparing between two subgroups may lead to many differences, whereas comparison within a subgroup could lead to further subgroups.

Another strategy involves comparing codes by typologies that emerged during descriptive analysis. A final strategy is a comparison by study design elements, such as field workers that work on site or project managers who manage major projects regarding the site.

The abovementioned strategies are used conjointly to discover the variations and nuances in the data. Comparison is accomplished by adapting the thick description tables 5.2 to 5.14, proposed by Hennink (2011), where codes are described and compared with other codes. In this table the context of each code is assessed in terms of possible subgroups, typologies and design elements to compare the codes and establish which code intersects with another. The frequency of issues occurring is depicted by the following scale: Extremely Frequent, Frequent, Less Frequent and Occasional. 'Extremely Frequent' represents an element of the code that is raised the most and 'Occasional' represents an element of the code that is raised the least.

The approach to comparison is presented in tables 5.2 to 5.14 below.

Table 5.2: Lack of Knowledge.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Knowledge of urgency</b>	Urgent requests are often logged, but due to the fact that the centre point of communication is not aware of the urgency. Even though the urgency is stated in the information, they do not comprehend the urgency and work is not reacted to immediately.	Frequent. Mentioned by a Field Engineer.	Urgency, Lack of Experience
<b>Knowledge capacity</b>	Different employees have different knowledge capacities in certain areas. Thus, when one employee is sharing information with another, the receiver is not understanding the message as the messenger is sending it. It is of the utmost importance that the centre point of communication is at least on the same knowledge level as those who communicate with them.	Frequent. Mentioned by a Field Engineer and Project Coordinator.	Lack of Experience, Interdependence
<b>Expectations</b>	Stakeholders, specifically clients, tend to develop expectations that are not in the scope of service, of which the service provider has no knowledge.	Less Frequent. Mentioned by a BAM.	Role Definition
<b>Communication skills</b>	Communication skills regarding when and how to communicate, are not up to standard.	Frequent. Mentioned by BAMs	Lack of Experience, Update, Language and Culture
<b>Convincing</b>	Employees with too little knowledge have the responsibility to convince a stakeholder of a certain decision. They are unsuccessful as they are not equipped with the knowledge to convince the person with authority to make the decision.	Occasional. Mentioned by a BAM.	Role Definition

*Lack of knowledge* is a code that describes several phenomena. Lack of knowledge in the form of *knowledge of urgency* is mentioned by a field engineer and occurred when the field engineer is on site and in need of urgent approval from higher management. The urgent approval regards changes that have to be made, or work that needs to be done. Even though the urgency is conveyed by the field engineer, the needed parties do not react as expected due to them not being on site. A code similar to this phenomenon is lack of experience.

Lack of knowledge also appears in the form of *different knowledge capacities*,

where colleagues are sharing information but the knowledge capacity of the receiver differs from that of the messenger, which leads to the receiver decoding the message incorrectly.

Lack of knowledge regarding expectations occurs when, for example, clients do not know what the scope of the service provider is. Thus, miscommunication occurs when the expectations of clients are not grounded in the service level agreement.

Lack of knowledge in communication skills results in unprofessional interactions, as well as a lack of standards when it comes to what the communication norms in the organisation are.

Lack of knowledge troubles an employee who has to convince a stakeholder of a decision when they do not have the required knowledge to support the case.

Table 5.3: Update.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Updating clients</b>	Clients are waiting for an update on the progress of requests they have submitted. Clients start losing faith if no update is given.	Extremely frequent. Mentioned by a BAM.	Feedback
<b>Updating fellow employees</b>	When something in an organisation happens, it often affects several employees who are all stakeholders. They should all be kept up to date with the progress of projects or with events.	Frequent. Mentioned by a BAM (different from BAM at previous aspect), Project Coordinator.	Feedback, Volume of Role Players
<b>Volume and Timing of Updates</b>	Employees are often unsure when to send updates and which information is relevant, not too little or too much.	Less frequent. Mentioned by a BAM.	Cloud Volume of Information, Volume of Role Players, Lack of Experience, Lack of Knowledge.

*Update* is a code that represents three issues: updating clients, updating fellow employees and the volume and timing of the updates. Clients need to be kept updated when any new knowledge or information regarding their assets occur, as well as regarding the process of projects. Fellow employees do not always keep each other updated of their mutual work, where knowledge of the one's progress is essential to the other. This relates to the 'Discipline' issue raised in "Feedback." The final issue is to know the amount of information

and the timing of when to send an update, as constant information overload is just as ineffective as no information at all. This issue also relates to the ‘Communication skills’ issue raised in “Lack of Knowledge.”

Table 5.4: Volume of Role Players.

<b>What are the different aspects?</b>	<b>What is the context and meaning</b>	<b>How often is each aspect mentioned and by whom?</b>	<b>What other codes intersect?</b>
<b>Amount of people that should be kept up to date</b>	When an event occurs, progress should be reported or any form of information that should be shared, it often happens that a few stakeholders are not included in correspondence due to the large volume or stakeholders/ role players.	Frequent. Mentioned by a BAM.	Update, Role Definition
<b>Right amount to right people</b>	Should an event occur, the amount and the type of information that each stakeholder wants would differ. A more technical stakeholder will need the technical information, whereas an employee in a management position would be frustrated if they receive technical information, however it is essential that all stakeholders are still informed.	Frequent. Mentioned by a BAM.	Cloud volume of information, Update, Incomplete Information, Lack of Experience.
<b>Decision making</b>	Due to all of the role players / stakeholders, the process of decision making is delayed as decisions cannot be made in isolation.	Frequent. Mentioned by a Project Coordinator.	Inter-dependent, Urgency, Volume of Priorities.

*Volume of Role Players* addresses the issue of stakeholders that are left out when new information is shared, due to the fact that the number of stakeholders is too great for informants to keep track of who they should keep up to date. This issue is similar to those raised in “Update” and “Role Definition.” Sending the right information to the right people is also an issue, which relates to an issue raised in the “Lack of Experience” code. When an event occurs, for example, when a pump breaks, the contractors will only need to know what the fault is, they do not want to know the cost of repairs. The client, on the other hand, would want to know how much it is going to cost them to repair the pump and the manager of the site is going to want to know how long it is going to be out of order so that they can plan for how long they have to manage with one less pump. Thus, it is a challenge to know which essential information to send to the right people and not to distract stakeholders with irrelevant information. This challenge can exacerbate the issues raised in “Urgency” and “Interdependence.”

Table 5.5: Role Definition.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Uncertainty about roles</b>	A request or work order is often sent to an employee, which is then passed on to the next as none of them are sure who is responsible for the request when it comes to grey areas. As a result, the request or work order is not addressed.	Frequent. Mentioned by Project Coordinator.	Lack of Knowledge, Volume of Role Players
<b>Expectations</b>	Stakeholders in certain roles often expect tasks of other stakeholders that they are not responsible for, due to uncertainty of what the other stakeholders' roles are.	Less frequent. Mentioned by a BAM.	Lack of Knowledge
<b>Uncertainty about requirements</b>	Work is not executed effectively as employees are uncertain of what is expected of the position that they are in or when a random order is given.	Frequent. Mentioned by a Field Engineer and Project Coordinator.	Lack of Knowledge, Engagement
<b>Include all roles</b>	Stakeholders are not included in discussions or information distribution as the informant is not aware of all stakeholders.	Extremely frequent. Mentioned by Project Coordinator.	Volume of Role Players, Lack of Knowledge

*Role definition* represents issues such as uncertainty regarding roles, expectations, requirements, as well as including all relevant role players when distributing information. Uncertainty about roles and uncertainty about requirements are similar: employees receive information but send it on as they are not sure if it is part of their role. Thus, employees are often ineffective as they are uncertain about what is required of them in more specific assignments. These issues have been mentioned by project coordinators and a field engineer and are similar to the 'Expectations' issue that is raised in the "Lack of Knowledge" code and other issues raised in the "Volume of Role Players" and "Engagement" codes. The expectations issue occurs when different stakeholders are not sure what the scope of each others' roles are and then develop expectations that are not within the other stakeholder's capabilities. This issue was mentioned by a BAM and is similar to the issue raised in "Lack of Knowledge." Unclear role definition leads to informants not including necessary role players, as they do not know that the information they have is relevant to that role player as well. This issue was mentioned by a project coordinator and is similar to the the 'Expectations' issue in "Lack of Knowledge" and the 'Amount of people that should be kept up to date' issue in "Volume of Role Players."

Table 5.6: Feedback.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Response</b>	When communicating with colleagues from different cultural groups, it is difficult to know if they are comprehending what one is saying as they do not respond in the same way or respond at all.	Occasional. Mentioned by a Field Engineer.	Language and Culture, Lack of Knowledge, Engagement
<b>Discipline</b>	The discipline of giving feedback is lacking. Some of the employees on ground level only provide feedback when they are in close proximity to the person they must give feedback to.	Frequent. Mentioned by a BAM and a Project Coordinator.	Lack of Knowledge, Engagement, Volume of Priorities, Update
<b>Urgency</b>	Feedback is not given quickly enough when urgent information is needed.	Extremely frequent. Mentioned by a BAM.	Urgency
<b>Communicating success</b>	Feedback of success is not shared often, which could positively affect the moral and belief of stakeholders.	Occasional. Mentioned by a BAM.	Engagement

*Feedback* is a code that represents the lack of response from ground level employees, the discipline it takes to give feedback, delayed feedback when immediate information is needed and that feedback of successful events is not shared. Due to a lack of response from ground level employees, a trainer would not know if the employees understood what is being taught. This issue was mentioned by a field engineer and is similar to the issues raised in codes such as the ‘Communication skills’ issue raised “Language and Culture” and “Lack of Knowledge,” and the ‘Language and Cultural Barriers’ issue raised in the “Experience” code. Feedback is a discipline that few employees decide to instill. This issue was mentioned by both a BAM and a project coordinator and is similar to the issues raised in “Lack of Knowledge” and “Engagement.” Urgent feedback is often required to either make a decision or to pass on to another stakeholder in the communication system, but is not given quickly enough. This issue is similar to the issue raised in “Urgency” and is mentioned by a BAM, who states that it occurs extremely frequently. Communication of success, which has the potential to spur engagement, is not shared. This was mentioned by a BAM and is similar to the engagement code.



Table 5.7: Cloud Volume of Information.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Including all stakeholders</b>	Information is available, it was just not shared with all stakeholders. As a result stakeholders are not kept updated with important information, resulting in numerous other issues.	Extremely Frequent. Mentioned by a Project Coordinator.	Volume of Role Players, Update
<b>Right amount at right time</b>	Information is available, but the timing and amount that must be shared is incorrect.	Frequent. Mentioned by a BAM.	Lack of Knowledge, Lack of Experience, Incomplete Information
<b>Information overload</b>	There is simply too much information resulting in the critical information getting lost.	Occasional. Mentioned by a client and BAM.	Volume of Role Players
<b>Information communication</b>	A lot of information is shared via information communication structures, thus information is generated, but not shared with all stakeholders.	Less Frequent. Mentioned by a Project Coordinator.	Volume of Role Players, Update

*Cloud Volume of Information* plays out in issues such as including all stakeholders, sending the right information at the right time, information overload and information communication. The first issue, the “Volume of Role Players” that must be informed is so big that an informant unknowingly leaves one or more role player out. A project coordinator mentioned that this issue occurs frequently, and is similar to those raised in “Volume of Role Players” and “Update.” Sending the right information at the right time is a challenge mentioned by a BAM and relates to the issues raised in “Lack of Knowledge,” “Lack of Experience” and “Incomplete information.” Learning what the right amount of information is to send to get a clear and comprehensible message across is also an issue, mentioned by a client and a BAM, which is similar to that raised in “Volume of Role Players.” The final issue is communicating information; the problem is not always that information does not exist, but just that it is not communicated. This issue was mentioned by a project coordinator and is similar to the ‘Right amount to right people’ in “Volume of Role Players” and ‘Volume and Timing of Updates’ code in “Update.”

Table 5.8: Interdependent.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Center point of communication</b>	Information is going through a lot of channels, making stakeholders dependent on each other to spread the information accurately, especially the center point of communication.	Frequent. Mentioned by a Project Coordinator and a Field Engineer.	Lack of Knowledge, Volume of Role Players
<b>Decision making</b>	Due to the large volume of stakeholders, decisions cannot be made without including all stakeholders in the decision making process.	Extremely Frequent. Mentioned by a Project Coordinator.	Volume of Role Players
<b>Full programs</b>	The stakeholder who is required to be included in the decision making process is often busy with other high priorities and cannot support other stakeholders in making a decision.	Frequent. Mentioned by a client and a Project Coordinator.	Volume of Priorities.

The *interdependent* code represents issues such as centre point of communication, decision making and full schedules. A lot of information moves through the call center, which is the center point of communication. The rest of the stakeholders are dependent on them communicating correctly as any misunderstandings that occur at the centre point of communication, will reciprocate throughout the whole system. This issue was mentioned by a project coordinator and a field engineer and is similar to the ‘Knowledge capacity’ issue raised in the “Lack of Knowledge” code and the ‘Decision making’ issue raised in the “Volume of Role Players” code. As mentioned by a project coordinator, the interdependence of stakeholders makes the decision-making process slow, which becomes an issue. The full schedules of stakeholders results in them often waiting on each other for urgent information. This issue was mentioned by a client and a project coordinator and is similar to the issue raised in “Volume of Priorities.”

Table 5.9: Lack of Experience.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Technical Experience</b>	Employees that are not part of the technical part of the work do not have experience in that area and as a result do not understand technical information. As a result, incorrect information is passed along from them.	Less Frequent. Mentioned by a Field Engineer.	Lack of Knowledge, Volume of Role Players
<b>Communication skills</b>	Employees who have not been in the industry for long lack a few communication skills and do not have experience in the way in which colleagues expect them to communicate.	Less Frequent. Mentioned by BAMs.	Lack of Knowledge
<b>Relevant amount of information</b>	Information is available, but the amount that should be shared is often wrong. Employees do not have experience in which type and amount of information should be shared with whom.	Frequent. Mentioned by a BAM.	Lack of Knowledge, Cloud Volume of Information, Volume of Role Players

*Lack of Experience* describes issues such as lack of technical experience, experience in communication skills and which information is relevant to which role player. When an employee from a technical division explains a problem to someone from a non-technical background, misunderstandings often occur. This code is raised by a field engineer and strongly relates to the ‘Knowledge capacity’ issue raised in the “Lack of Knowledge” code. For example, new employees lack experience in communication skills, an issue raised by BAM’s. Employees with a lack of experience do not know which information is relevant to whom. Thus, they send too much information to all stakeholders, which takes time for the receivers to work through. This issue is raised by a BAM and is similar to the issue raised in the “Volume of Role Players” code, ‘Communication skills’ issue raised in the “Lack of Knowledge” code and the “Including all stakeholders” issue in the “Cloud Volume of Information” code.

Table 5.10: Language and Culture.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Barriers</b>	Colleagues can not communicate optimally due to language and cultural barriers.	Less Frequent. Mentioned by a Field Engineer.	Lack of Knowledge
<b>Communication skills</b>	Communication skills differ across cultures, resulting in colleagues communicating ineffectively. Not all cultures and characters find skills, such as feedback or response, equally important.	Frequent. Mentioned by a Project Coordinator.	Lack of Knowledge, Feedback

*Language and Culture* represents two issues: the barriers that exist due to language and cultural differences, and the difference in communication skills. Miscommunications occur in various scenarios, which are all rooted in the difference in language and culture, from the words that are used for certain things to the way that a scenario is explained. These issues were raised by a field engineer and a project coordinator and are related to the ‘Communication skills’ issue raised in the “Lack of Knowledge” code.

Table 5.11: Urgency.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Priorities</b>	Even though work that needs to be done is urgent, it does not hold the same level of priority for all stakeholders.	Frequent. Mentioned by a BAM.	Volume of Role Players, Volume of Priorities
<b>Support</b>	Internal support is often needed between departments but the department that should offer the support does not react to it as urgently as the receivers of support needs it.	Less Frequent. Mentioned by a BAM and Project Coordinator.	Feedback

*Urgency* is a code that represents, *i*, the fact that priorities of stakeholders differ and that which is urgent for the one, is not treated with the same urgency as the other. This issue was mentioned by a BAM and is similar to the issues raised in the ‘Decision making’ issue raised in the “Volume of Role Players” code and the issue raised in the “Volume of Priorities” code. The other issue represented by this code is when internal support is needed and is not reacted to quickly enough, not necessarily between stakeholders but from an internal division such as the IT department. This issue was mentioned by a BAM and project coordinator and is similar to the issue raised in “Feedback.”

Table 5.12: Engagement.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Language and Cultural Barriers</b>	The engagement of employees is hindered due to them not fully understanding what is communicated to them.	Frequent. Mentioned by a Project Coordinator.	Lack of Knowledge, Language and Culture
<b>Proximity</b>	Employees often only engage with colleagues who are in close proximity to them.	Less Frequent. Mentioned by a Project Coordinator.	Feedback

*Engagement* describes two issues, namely language and cultural barriers and proximity. The difference in language and culture leads to lack of engagement as employees do not fully understand what is communicated to them. This code can be compared to the issues raised in “Lack of Knowledge” and “Language and Culture,” and was mentioned by a project coordinator and a field engineer. Due to the lack of engagement, ground level employees tend not to make an effort to communicate with stakeholders that are not in close proximity to them. In this context, this code is similar to the feedback code and was mentioned by a project coordinator.

Table 5.13: Incomplete Information.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Uncertain of requirements</b>	When work is given, the information is incomplete and the employee is unsure of what is required of them.	Frequent. Mentioned by a Field Engineer and a Contractor.	Role Definition

*Incomplete Information* has one facet only, which is the uncertainty of an employee of what is expected of them – due to lack of information when an assignment is given. This issue was raised by a field engineer and a contractor and could be compared to the issues raised in “Role Definition.”

Table 5.14: Volume of Priorities.

What are the different aspects?	What is the context and meaning	How often is each aspect mentioned and by whom?	What other codes intersect?
<b>Lack of communication</b>	Due to a too large volume of priorities, role players are not communicating, sending updates or feedback and so forth.	Frequent. Mentioned by a BAM and client.	Update, Feedback, Volume of Role Players

*Volume of Priorities* leads to role players being so consumed that they forget or simply do not get time to communicate with other stakeholders. This issue was raised by a BAM and a client, and could be compared to issues raised in codes such as “Update,” “Feedback” and “Volume of Role Players.”

By conducting the comparison clarification is achieved in the sense that issues are refined to identify what makes each issue distinct from the other. This distinction becomes the foundation for explaining issues in the approach to developing theory.

### 5.3 Conceptualising the COMMPAS Model

In this section a conceptual model is developed by categorisation and conceptualisation. These activities build on the descriptions (section 5.2.1) and comparisons (section 5.2.2) developed, and serves as conceptual preparation of data for theory building (section 5.4).

#### 5.3.1 Categorise

Based on the comparison in table 3.1 (section 3.2.2.2), a qualitative content analysis (coding and categorising) approach is taken (Vaismoradi, 2013). Categorisation is performed by developing a table where each code is analysed objectively and the attributes of each code are listed in table form, as seen in table 5.3.1.1. The codes with similar attributes are compared and grouped into relevant categories as explained below. By taking this approach, the probability of bias is limited as the categories are established in retrospect of attribute development.

The description and comparison given in section 5.2 are used to group codes into meaningful categories, based on similarities of meaning (Hennink, 2011). Categorisation is done by identifying similarities, referred to in this thesis as attributes, followed by grouping the attributes to develop categories. Once the categories are established, codes will be assigned to the categories. The results

of this process lead to themes and constructs that support theory development.

### 5.3.1.1 Attribute Development

Attributes should reflect the essential dimensions of a code. The development of attributes is therefore guided by an appropriate conceptual model or process (Terjesen , 2007). The process of developing thorough and measurable attributes is established based on the limited available literature by Abiuro (2014) and Hennink (2011) on attribute development. The first step is to develop a set of conceptual attributes inductively by investigating literature and identifying similarities between codes (Abiuro *et al.* 2014; Hennink 2011).

It is important to not simply apply the concepts gathered from literature, but rather to compare categories emerging from data with those from the literature (Hennink , 2011). By doing this, the researcher ensured that categories are well rooted in the data by refining and rethinking the categories that are being developed. The list of attributes are refined deductively through interviews and discussions with research participants. When the final list of attributes is established, categories are developed based on shared attributes between codes.

Based on the above, the conceptual attributes gathered inductively and deductively through research literature, data collection and similarities between codes are: knowledge, culture, teamwork, communication, decision making, responsibility/ accountability, awareness, feedback, strategy, adaptability, engagement, learning opportunities and shared values (Rogel, 2014). These attributes are used to characterise the codes in table 5.15.

Table 5.15: Codes characterised by attributes.

Code	Attributes	Description
<b>Update</b>	Responsibility	Together with the responsibility of executing a job, lies the responsibility to keep stakeholders updated with information regarding that job or activity.
	Feedback	When a work order is completed, feedback must be given regarding the work done.
	Strategy	For all stakeholders to be kept up to date, a strategy must be in place.
	Teamwork	It is a team effort and the responsibility of all stakeholders to keep each other updated.
<b>Feedback</b>	Feedback	The 'feedback' attribute is inevitably a characteristic of the 'feedback' code.
	Culture	The discipline of giving proper feedback, is related to an employee's culture.

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<b>Code</b>	<b>Attributes</b>	<b>Description</b>
	Engagement	Employees tend to give more and better feedback when they are fully engaged.
	Teamwork	Feedback is a teamwork effort and the one characteristic depends on the other and vice versa.
<b>Lack of Knowledge</b>	Knowledge	An overall lack of knowledge regarding professional conduct on how to communicate.
	Strategy	A strategy must be set in place as to how knowledge will be advanced throughout the supply chain.
	Learning Opportunities	Which learning opportunities are there to increase the knowledge of employees and stakeholders?
	Shared Values	All employees should carry knowledge of the shared values of the organisation, specifically knowledge of the values regarding communication.
<b>Role Definition</b>	Knowledge	Employees often have uncertainties regarding what is included in their role description.
	Decision Making	Processes are often slowed down due to the fact that certain decisions can only be made by people in certain roles.
	Engagement	When employees are certain about their roles and know what they are responsible for, they tend to be more engaged.
	Responsibility	If roles are clearly defined, it is easier to keep colleagues accountable for the things they are responsible for.
<b>Volume of Role Players</b>	Knowledge	A lot of knowledge is spread across the large volume of role players, but is not always shared.
	Strategy	Without a communication strategy, a large number of role players will not be able to keep track of information flow and execute effective communication.
	Teamwork	With a large number of role players, good teamwork is imperative.
	Shared Values	It is important that everyone shares the same values.
<b>Cloud Volume of Information</b>	Knowledge	Role Players lack knowledge of things they need to be aware of, as the information exists, but is not shared with the role players/stakeholders.
	Decision Making	Information often exists, but is not shared with all stakeholders. Thus, it happens that decisions need to be made, but the information that supports the decision has not yet reached the decision maker.
	Feedback	Feedback is not given as often as needed, thus new information is available, but is not shared.

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<b>Code</b>	<b>Attributes</b>	<b>Description</b>
<b>Interdependent</b>	Decision Making	Decisions cannot be made in isolation, thus the process of decision making and executing urgent orders is slowed down.
	Responsibility	All stakeholders are dependent on each other in some way and are all accountable for sharing information with each other.
	Teamwork	In all circumstances, all work that is done is a team effort, thus all stakeholders are interdependent on the work and dedication of the others.
<b>Lack of Experience</b>	Knowledge	Employees often lack knowledge in certain fields in which they do not have any experience.
	Strategy	A strategy must be set in place to bridge the gap between the lack of knowledge due to lack of experience.
	Decision Making	Employees with lack of experience lacks the knowledge to make decisions in a certain field.
	Teamwork	Employees often work together in a team where their fields of experience are different. As a result, they struggle to understand each other and are often not on the same page.
<b>Language and Culture</b>	Culture	A difference in culture leads to different ways of communicating, which creates a great gap between employees in understanding each other.
	Knowledge	The great gap of misunderstanding could be bridged if employees have knowledge of each other's language and culture, and of the communication culture that the organisation aims to instill.
	Adaptability	All employees need to be adaptable to meet and understand each other in the midst of their differences.
	Engagement	The differences in language and culture often influence, the engagement of employees as they do not always understand what they must do.
	Shared Values	Shared values regarding how to communicate, give feedback and so forth, differs among different cultures, as well as knowledge background.
<b>Urgency</b>	Feedback	Feedback is not given quickly enough, leading to a lack in sense of urgency.
	Knowledge	Due to lack of knowledge of certain scenarios, employees do not comprehend the urgency of a situation.

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<b>Code</b>	<b>Attributes</b>	<b>Description</b>
	Teamwork	When working in a team, stakeholders should keep each other updated as new and relevant information comes to light. The sense of urgency to keep stakeholders updated is not the same for all employees.
	Decision Making	Decisions often have to be made urgently for the process to continue.
<b>Engagement</b>	Engagement	Engagement is inevitably an attribute of the 'Engagement' code.
	Culture	The difference in language and culture often influences the engagement of employees, as they do not always understand what they must do.
	Shared Values	Not all employees are equally engaged and share the same values or take the values of the company equally seriously.
	Teamwork	Engagement is often a team effort. If management is engaged and that engagement could overflow to other employees, they will also influence each other.
<b>Incomplete Information</b>	Feedback	Feedback is not given as often as needed. New information is available, but is not shared, which leads to gaps in information.
	Knowledge	Employees and stakeholders do not have the knowledge of which information should be shared, thus they correspond but do not share all the relevant information.
<b>Volume of Priorities</b>	Teamwork	Colleagues that work together have their individual volume of priorities and often find it difficult to work together when work that needs to be done does not hold the same level of priority to each of them individually.
	Responsibility	Employees have a large volume of responsibilities they need to attend to, and therefore they are not always able to update fellow employees and stakeholders.

### 5.3.1.2 Categorising Attributes

A pairwise comparison is illustrated in figure 5.3, where the number of times that attributes were used together to describe a code, are given. The pairs with the highest count are highlighted and investigated for possible development of categories e.g., Knowledge and Decision Making with a count of four.

	Knowledge	Culture	Teamwork	Decision Making	Strategy	Feedback	Responsibility	Adaptability	Engagement	Learning Opportunities	Shared Values
Knowledge		1	2	4	3	3	1	1	2	2	3
Culture	1		2	0	0	1	1	1	3	0	2
Teamwork	2	2		2	3	3	4	0	2	0	2
Decision Making	4	0	2		2	3	0	0	2	1	0
Strategy	3	0	3	2		1	2	0	0	1	2
Feedback	3	1	3	3	1		1	0	1	1	0
Responsibility	1	1	4	2	2	1		0	2	0	1
Adaptability	1	1	0	0	0	0	0		1	0	1
Engagement	2	3	2	2	0	1	2	1		0	2
Learning Opportunities	2	0	0	1	1	1	0	0	0		0
Shared Values	3	2	2	0	2	0	1	1	2	0	

Figure 5.3: Attribute Analysis

If codes are used together often, the possibility exist that they reflect a shared root cause. Attributes with shared root causes form logical groups, which could become candidates for categories. From figure 5.3 it is evident that the following attributes are used together the most to describe a code:

1. Knowledge, Decision Making, Strategy, Feedback, Learning Opportunities and Shared Values;
2. Teamwork and Responsibility; and
3. Culture, Engagement and Adaptability.

The largest number of times that any two attributes are used together to describe a code is four times, making four the highest count. If a relationship between two attributes is described by four counts, this will be referred to as a level one strength relationship. A relationship that is described by three counts will have a level two strength. A level three strength relationship describes two counts, and a relationship between two attributes that are only used together once has a level four strength.

Knowledge, Decision Making, Strategy, Feedback, Learning Opportunities and Shared Values are grouped together, as they all share their highest level of relationship strength with Knowledge, as well as relatively high strength levels amongst each other. Teamwork and Responsibility shares a mutual highest level of four, which for Responsibility is considerably higher than with other attributes. The Culture and Engagement pair has a mutual highest level of three. Adaptability only has four links – each with a level one strength, named,

Knowledge, Culture, Engagement and Shared Values. In the context of the issues shared, Adaptability links best with the group formed by Culture and Engagement. Learning Opportunities is used only once, which is to describe the Lack of Knowledge code, therefore it is added to the group where Lack of Knowledge is also an attribute. After the process of grouping attributes together based on figure 5.3, three categories are established (figure 5.4) and developed further below.

The foundation on which categories are developed is the initial combinations of attributes, based on similarities as well as the frequency in which the attributes are used together to describe a code. The categories are refined by comparing each one with the context in which the issues, represented by the codes, are raised, in conjunction with categories identified in research literature (Hennink , 2011). The codes developed are divided into the three categories. Some codes have a clear link, while a more abstract approach is required to identify the links between others. The three categories developed are illustrated in figure 5.4:

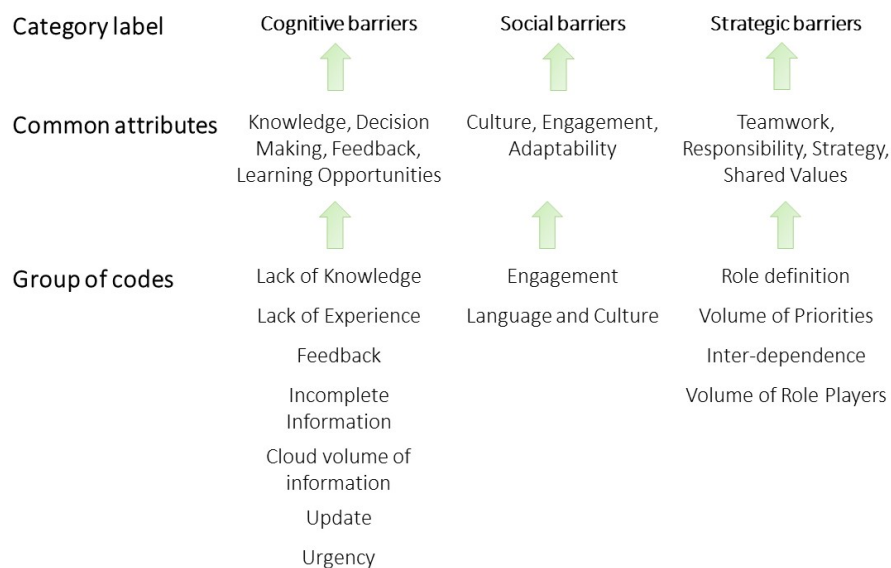


Figure 5.4: From codes to categories in data exploring barriers to effective communication.

### 5.3.2 Conceptualisation Methods

In section 5.3.1 categories are differentiated from each other. In this section the way in which individual components of the data are linked together into a broad conceptual framework is investigated. This approach enables the researcher to identify the relevant phenomena in a complex system that is more

than the sum of its parts (Denzin and Lincoln, 2011).

The strategies presented in section 3.2.2.2 are not mutually exclusive and some strategies are similar. The applicability of each strategy (section 3.2.2.2) is considered by investigating which strategy is used for which type(s) of data and outcome, until the final combination of conceptualisation strategies to be used is identified. The three strategies identified to conceptualise the data are; the links exploration, x-ray view and social domains strategies (Hennink , 2011).

Exploring Links is a strategy that entails identifying links that exist in the data that could be followed up on. These links are identified in an incremental manner to develop a comprehensive understanding of the network of relationships in the data. The X-Ray View strategy is applicable to identify the backbone of structural aspects of the data, which in this case is the core barriers of effective communication. The Exploring Links strategy and the X-Ray View strategy both served as building blocks to develop the conceptualised COMMPAS model by means of the Social Domains strategy and to further construct the COMMPAS Model. The Social Domains strategy addresses seemingly unrelated issues that collectively become an important component in the data, even though they seem insignificant when isolated. The Social Domains strategy is the primary method used to develop the conceptualised COMMPAS model.

### 5.3.2.1 Exploring Links Method

A network diagram is developed to explore the links between the codes (figure 5.5). The development of the network is based on the SNA methodology (chapter 2). Each code represents an actor, and the lines that connect the codes represent the relational ties along which resources are transferred. During the description and categorisation phase, several associations are observed among the data. These associations will be investigated for possible links.

While developing the links, the dyads (pairs of actors and their associated ties) and triads (a subset of three actors) became evident and highlights in which orientation the relationships are linked. For example, a triad exists between lack of experience, interdependent and update, but also between lack of experience, interdependent and lack of knowledge.

An investigation of these sets produce no meaningful information and some of the triads, such as Role Definition-Update-Interdependent, do not constitute meaningful relationships that produce new insights into the data. Some of the triads reflect connections between codes that are, at this point of the research, obvious to the researcher, which makes this method of conceptualising ineffectual.

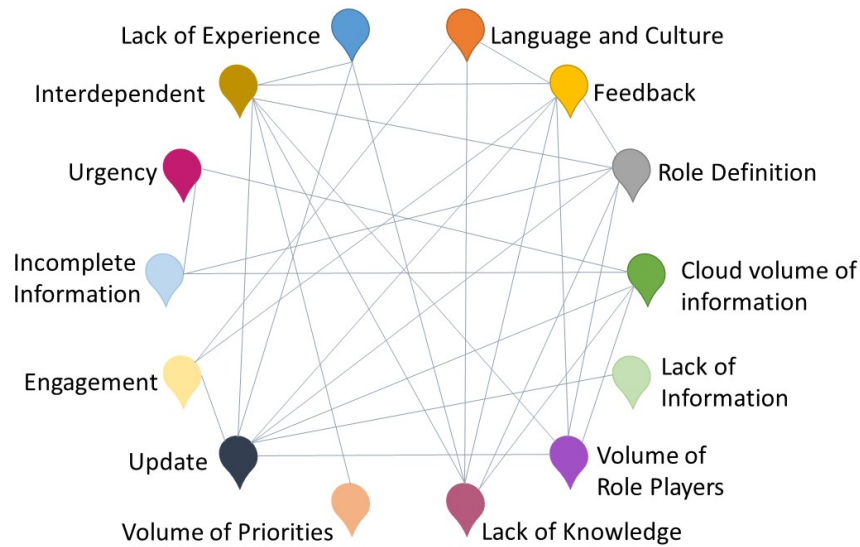


Figure 5.5: Exploring links between codes.

The Exploring Links method is found to be confusing, inadequate and limited as it is one-dimensional. More context lies behind each issue that is not reflected in the network, which produces inaccurate information. Even though the Exploring Links method was ineffective, it was useful in exploring how integrated the codes are and how they influence each other.

The codes are a single concept that represents a large group of complex issues relevant to context. An attribute is a clear and specific characteristic that is not linked to a certain context, but is used to describe a more complex place, person or thing. The attributes are listed next to the codes to investigate if each code, based on the context from which it is developed, could be linked to an attribute. Some links are clear, while other links require a more abstract approach. The results are illustrated in figure 5.6 and explained in section 5.3.2.3.



sub-groups that share such a culture and experienced less internal communication issues.

### 5.3.2.3 Social Domains Method

The Social Domains method is based on the results of the Exploring Links method. As attributes are not restrained by context, it is simpler to group attributes into categories that will be used to categorise the developed codes. The development of attributes is rooted in the data and codes are linked to attributes based on the context that the codes are developed from. Developing categories based on attributes and grouping the codes into categories based on their associated attributes, is thus a valid process. The categorisation of attributes forms part of the conceptual model and is a preparation step for accurately linking the codes to the conceptual domains, as shown in figure 5.8. The final conceptual model is introduced in figure 5.7.



Figure 5.7: Conceptual Model.

Conceptualising the Social Domains is done by investigating categories (section 5.3.1), to devise higher-order categories from the data (Hennink, 2011). By means of the Social Domains method, the categories in figure 5.4 are further developed into three concepts, namely Cognitive, Connective and Strategic. This is the foundation on which the COMMPAS model is built. The construction of the COMMPAS model follows.



## 5.4 Construction of the COMMPAS Model

In this section the construction of the organisational communication model, the Communication in Managing Physical Assets (COMMPAS) model, is covered in three subsections. Firstly, the *communication problems* that are identified and represented by codes, are linked to the conceptual model. Secondly, the solution space is defined. The solutions that are built on the foundation formed by the conceptualised model are described and explained. Thirdly, a detailed description of the solution and how each communication problem is directly addressed, is given. After the three subsections, a compact discussion of the COMMPAS model application follows.

### 5.4.1 Linking communication problems to the Conceptual Model

The concepts that are developed are rooted in the data, thus each of the three domains represents a group of communication problems. The links identified in section 5.3.2.1 are used to allocate communication problems to a conceptual domain, as shown in figure 5.8. An explanation is given to verify the allocation of codes to each concept.



Figure 5.8: Linking communication problems to the conceptual model.

The Cognitive domain represents barriers of effective communication that relate to the act or process of knowing. Some employees simply lack the knowledge of either how, what, when or with whom to communicate. This domain

covers either the fact that knowledge is lacking in some way, or how the acquisition of knowledge is integrated into the system.

The codes in the Cognitive domain are:

- Lack of Knowledge – From the data, it is evident that employees do not have knowledge regarding various areas in the organisation. It is imperative that the knowledge level in an organisation is managed.
- Incomplete Information – Information shared is often incomplete, which leads to stakeholders misinterpreting a message. This result in orders not being completed, or being completed incorrectly due to the stakeholder being uncertain of what is required.
- Lack of Experience – The lack of experience identifies areas for learning opportunity to continuously improve communication skills, as well as areas where knowledge should be expanded.
- Urgency – Immediate information is often needed to make a decision, which leaves employees frustrated when they are unable to proceed due to the required information not being immediately available.

The Connective domain addresses barriers of effective communication that are rooted in the relationship between role players and the responsibilities that they have towards, each other. What connects actors in the communication system is activities such as feedback, teamwork, etc. If these activities are not executed, the link, for the moment, falls away.

The codes in the Connective domain are:

- Language and Culture - The different ways of communicating and different terminologies that are being used results in miscommunications.
- Interdependent – Stakeholders are interdependent to obtain information. The interdependence for information becomes an issue when urgent decisions need to be made or action needs to be taken, thus hindering progress.
- Cloud Volume of Information – The information needed to make decisions and to execute work is available, but gets lost along the connections between stakeholders. It is either not shared by the stakeholder that has the information, or it is not attended to by the stakeholder that receives the information.
- Engagement – Engaged employees and actors in the communication system are essential. Disengaged employees tend not to contribute to the link between role players, by not giving feedback or not taking part in a team effort.

- Feedback – The action of sending new information when a task is completed is not being followed religiously and results in complications. The act of feedback strengthens the link between actors and ensures that the optimal amount of information is shared with relevant actors.
- Update – Role players are not mindful of the importance of keeping all relevant stakeholders up to date.

The Strategic domain represents deficiencies that are rooted in the strategies of an organisation and how they align their resources with their organisational goals. The codes in the Prospective domain are:

- Role Definition – Stakeholders are uncertain of their roles when it comes to more detailed responsibilities, which results in uncertain and less motivated employees.
- Volume of Priorities – The amount of priorities that stakeholders must tend to impedes them from integrating continuous communication into their activities.
- Volume of Role Players – The many role players in PAM service makes communication complex. A system needs to be in place regarding who communicates with whom and who should be kept up to date by whom.

## 5.4.2 Defining the Solution Space

For each of the communication deficiency concepts, a solution set is developed and adapted from learnings from other industries and divisions in the PAM industry. There is no single root cause that could be overcome by one single solution. Therefore, the solutions are grouped based on the domains given in section 5.3.2.3. These results are presented in three single-solution concepts that are broken down into more specific solutions, to accurately and effectively address the root causes of issues raised during the data collection phase of the research.

Prior to discussing the three solutions that are developed for the three conceptual domains, a general comment regarding the solution to communication deficiencies is mentioned. It is important to note that the deficiencies are not rooted in the lack of technology. An employee not giving feedback, for example, is not due to the lack of the needed technology to do so. Instead, it is merely the lack of usage of the available technology. The root cause would rather be the lack of knowledge of the importance of feedback and the lack of discipline to act on that knowledge. Advanced technology to communicate and to force feedback already exist, indicating that the existing technology is either not used optimally or that it is impaired by human error.

Addressing the issues with more complex technology will not solve the problems. Technology can only be a supporting element to a system that is already in place and is executed correctly and diligently by all role players in the system. In chapter 2, literature is given about implementing ICT, Digital Leadership and about aligning IT with an organisation's business operations. Furthermore, the constraints to implementing ICT are reflected on, with methods to address these constraints and to implement ICT effectively. A discussion of the solutions is given in the following paragraphs.

The communication problems in the *Cognitive domain* are: lack of knowledge, incomplete information, urgency and lack of experience. All of the problems in the cognitive category are addressed by the SBAR model (section 2.2.3.9). However, the lack of knowledge represents a more complex group of issues. The only facet of lack of knowledge that is not addressed by the SBAR model, is knowledge regarding Role Definition. This issue is addressed in the Strategic Domain and is explained accordingly.

SBAR bridges the gap in communication styles, which influences responses to urgent messages (Urgency) and how messages are constructed (Incomplete Information), and creates a shared perspective that bridges Lack of Experience. The predictable structure of the SBAR model does not only instill familiarity with how information is being shared, but also develops critical thinking skills (Lack of Knowledge). Role players are challenged to assess the problem and think of a possible, appropriate solution before they share it with stakeholders. The SBAR technique offers a robust standard according to which all employees communicate (Lack of Knowledge). Further detail about how SBAR directly addresses each communication problem in the Cognitive domain is provided in section 5.4.3.

The communication problems in the *Connective domain* are: Language and Culture, Engagement, Feedback and Interdependence. The challenge that results from these problems is the manner in which role players communicate, give feedback and respond to urgent requests to overcome inter-dependency. The aim is to develop a holistic solution to uphold a successful relationship between the service providers and their clients and contractors respectively. Therefore, the solution addresses the root causes by creating a shared vision and culture of sending feedback, instead of merely establishing rules.

Using vision to improve organisational communication is a method that stems from organisational leadership and organisational communication literature. The method of using vision challenges the traditional literature on organisational communication. By examining literature on developing and communicating vision, one's understanding of organisational communication could be improved. The focal points of this solution are:

1. Understanding the central role of the receiver in the communication process;
2. The importance of shared context to understand the meaning of messages; and
3. The importance of a shared vision and clearly understood organisational values.

Differences in language and culture influence the manner in which people communicate. For example, tradespeople have to communicate with middle management, but their communication style and terminology differs, creating opportunities for miscommunication. This issue is addressed, firstly as the re-established communication vision and values of the organisation shifts the focus to the central role of the receiver, and the context they need to successfully communicate with the sender. Instead of progressing to other solutions that covers the issue but does not address the root cause, it is more sustainable to empower the role players in the communication system to communicate effectively and to correct their perspective on communication.

The importance of the shared context and meaning of messages is emphasized as the SBAR model provides a standard for the content of the message. If the service providing organisation, the client and the contractors agree on the shared vision as part of the service level agreement (SLA), an awareness to have knowledge of the standardised terminology and to follow the expected communication style, is established.

Shared context is essential for effective communication and decision making. The shared context in vision-directed communication is established by re-emphasising values and beliefs about what is important in the organisation (Kelly, 2000). The importance of sending feedback and reacting to urgent calls is imperative and the effect of the lack thereof has proven to be problematic. Therefore, there should be a communication vision within a service providing organisation, to instill certainty and trust among colleagues and to emphasise the importance of the abovementioned activities. Further detail about how vision and culture directly address each communication problem in the Connective domain is provided in section 5.4.3.

The communication problems in the *Strategic domain* that must be addressed through training are: Role Definition, Volume of Role Players and Volume of Priorities. All of these issues could be addressed by means of personalised training, as they are rooted in the lack of specific knowledge and information that remains constant such as, *i*, a detailed job description, professional communication style or with whom to communicate. Training is a tested and effective strategy to establish standards among all employees. From section

2.2.6, it is evident that training remains the best intervention to increase the knowledge of people.

To address the communication problems in the Strategic domain, personalised training should be completed by all role players upon commencement of employment. Periodic training should follow to reinforce their knowledge and to communicate changes in standards or information. The personalised training should include:

- An employee's role, which type of work falls within their scope of employment and what they are responsible for.
- The key stakeholders or role players in the communication system that they must report to, or keep up to date, must be specified.
- The importance of the relationship with, and responsibilities to, the specified role players must be emphasised. Part of an employee's responsibility is also to keep their assigned role players up to date, which must form part of each employee's important daily responsibilities.
- Training on organisational vision, standards, ethics and values. Material should specifically include training on the organisation's communication vision and standards.

Further detail about how training directly addresses each communication problem in the Strategic domain is provided in section 5.4.3.

### 5.4.3 Detailed Description of Problem Solution

In this section the final illustration of the COMMPAS organisational communication model is given, followed by a detailed description of how the COMMPAS model addresses the communication problems as an extension of the solution space introduced in section 5.4.2.

The conceptualisation of the COMMPAS model is an illustration of the three domains as overlapping ellipses. The construction of the COMMPAS model evolved into the understanding that the domains become elements in the form of three superimposed ellipses that are integrated and interdependent to increase the probability of effective communication as a unity. The final illustration of the COMMPAS model is given in figure 5.9. The model consists of the following components: the outer component being the culture and vision of communication that encompasses and informs the entire model and which is implemented and conserved by means of training, the middle component, and the SBAR communication technique as core component.

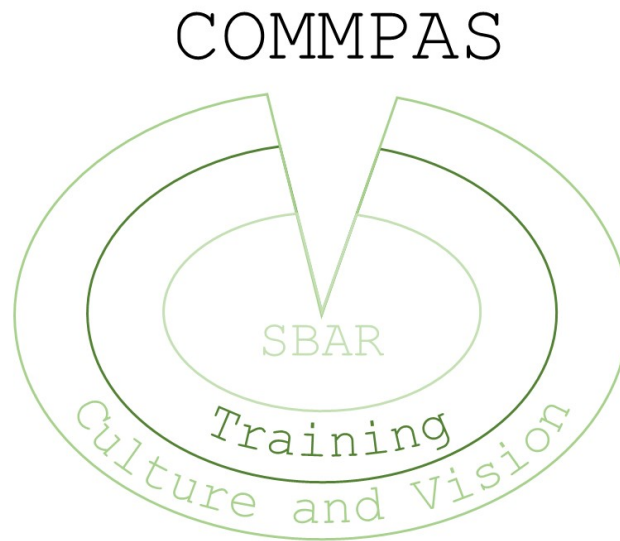


Figure 5.9: COMMPAS Organisational Communication Model.

The solution space introduced the connection between the communication problems identified and the solutions developed. This section provides a detailed description of how each problem is directly addressed. The discussion is provided in the form of three tables that represent the three conceptual domains. The communication problems in each domain is given with an explanation of how the solution, built on the conceptual domain, specifically addresses the problem listed in that group.

The first domain that is discussed is the Connective domain. A culture and vision of communication is suggested as the solution to address communication problems in the Connective domain. A conceptual, high-level explanation of the solution space is given in section 5.4.2. A direct explanation of how a shared culture and communication vision addresses each problem in the Connective domain is given in table 5.16.

Table 5.16: Connective Domain Problems and Solutions.

<b>Communication Problem in Connective Domain</b>	<b>Culture and Vision Solution</b>
<i>Engagement</i>	<i>i</i> is addressed by valuing the receiver, the importance of context for them and their response. By understanding and appreciating the importance of their role, the receiver is more motivated to offer response and to engage in the conversation. By means of the shared context and vision, the receiver is aware of the importance of their role in the communication system, and as a result does not merely act as a receiver but develops the discipline to take part and add value to the communication system.
<i>Interdependence</i>	Based on a shared vision amongst employees, <i>i</i> can be addressed by empowering more role players to make decisions, depending on the importance and complexity of the decision. For certain decisions, middle management or a tradesperson, has enough knowledge and experience to make the best decision if they know what the vision of the senior executives is. Guidelines for decision making should be in place and readily available to decision makers regarding the criteria for decision making, as well as which decisions could be handed to lower level employees.
<i>Update and Feedback</i>	An organisational vision for communication addresses these two problems by announcing the standard that is expected from employees regarding communication. As can be interpreted from the data, the problem is the lack of motivation of role players to send updates, feedback and replies regarding urgent request and to realise and appreciate the importance of these activities. The channel by which updates are sent is the existing, aforementioned technology. A structure for the content of information is now provided by the SBAR model. Time-triggers of knowledge transfer refers to the point when a role player should be stimulated to send an update. The best time-trigger lies in the mere definition of an <i>update</i> : "an act of updating something or someone with new information (Cambridge Dictionary, 2017)." Therefore, the time-trigger for sending information is the change of information itself. The practical implementation of such a time trigger is easily achievable with existing technology and does not warrant further discussion herein. The scale of importance can be determined by the organisation, for example, the change in the type of spanners used by contractors may not be as important to the PAM service provider, but a change in the date that the contractor is going to be on site is of high importance.

The second domain that is discussed is the Strategic domain. Personalised training is suggested as solution to address communication problems in the Strategic domain. A conceptual, high-level explanation of the solution space is given in section 5.4.2. A direct explanation of how personalised training addresses each problem in the Strategic domain is given in table 5.17.



Table 5.17: Strategic Domain Problems and Solutions.

<b>Communication Problem in Strategic Domain</b>	<b>Training Solution</b>
<i>Role Definition</i>	Personalised training addresses <i>i</i> as the training material includes a clear and detailed description of what the responsibilities and roles of the employees are. Training also offers an interactive platform where employees can raise questions if they are uncertain of expectations or have issues in meeting them.
<i>Volume of Role Players</i>	<i>i</i> is addressed as training material on Role Definition should extend to the parties with whom the role player that is trained should communicate. If employees are trained to know who the role players are that they should communicate with, uncertainty regarding who they must send updates and information to is eliminated. The right information reaches the right role players and the right role players are kept updated.
<i>Volume of Priorities</i>	Training addresses <i>i</i> as employees are certain of what they are responsible for and what their priorities should be. Receiving training on their responsibilities and priorities enhances the focus of employees, which increases productivity and enables employees to attend to more of their priorities.

The third domain that is discussed is the Cognitive domain. The SBAR situational briefing model is suggested as communication technique to address communication problems in the Cognitive domain. A conceptual, high-level explanation of the solution space is given in section 5.4.2. A direct explanation of how SBAR addresses each problem in the Cognitive domain is given in table 5.18.

Table 5.18: Cognitive Domain Problems and Solutions

<b>Communication Problem in Cognitive Domain</b>	<b>SBAR (Situation, Background, Assessment, Recommendation) Solution</b>
<i>Lack of Knowledge</i>	<i>i</i> is addressed by this standardised technique for communication, as employees are equipped with the <i>knowledge</i> of how to conduct professional, concise and complete communication. Ambiguity regarding message content is removed, as the SBAR model provides a framework for the context and content of a message. Thus, a difference in knowledge capacity between the sender and the receiver of a message, becomes less relevant. The sender includes all the necessary information for the receiver to decode it correctly, irrespective of their background, experience and knowledge.
<i>Incomplete Information</i>	<i>i</i> in messages, which resulted to extensive communication deficiencies, is eliminated as a framework is provided for the essential information that an update or message must consist of.

*Continued on next page*

*Continued from previous page*

<b>Communication Problem in Cognitive Domain</b>	<b>SBAR Solution</b>
<i>Urgency</i>	If urgent information is required for a stakeholder to make a decision, then the messages need to be detailed and include a recommendation from the relevant role player in the situation to enable rapid decision making on the receiving-end of the message. The SBAR communication technique effectively addresses this problem as it provides a clear summary of a situation by stating the situation and the background and providing an assessment and a recommendation.
<i>Lack of Experience</i>	Employees do not need experience in what information is important to share, as the SBAR model decides that for them. They merely have to insert the information that they have, and that which they do not have, they must find or generate as it forms part of the complete information. Another facet of <i>Lack of Experience</i> that is addressed is the issue of the receiver not having the same work experience as the sender. This becomes less important because the information from the sender is shared with context.

A discussion on the application of the COMMPAS model follows.

#### 5.4.4 COMMPAS Model Application

In this section, the application of the COMMPAS (Communication in Managing Physical Assets) model is covered. Achieving and sustaining effective communication in an organisation is a continuous process. The COMMPAS model is a circular model that consists of three elements. The elliptic form of the model illustrates the three organisational elements (culture, vision and training) that must be encouraged and developed continuously. The model is implemented inward, starting with the outer circle. Once implemented, the three elements of the model support and further establish each other. The COMMPAS model is illustrated in figure 5.9, with an explanation of the elements that follows.

##### **Outer component: Culture and Vision.**

The first and most important step is to develop a communication vision that establishes and governs a culture of communication in the organisation. This is the foundation of effective communication in a PAM organisation that employs a diverse work-force with different skills, languages, cultures, knowledge capacities and experience. The content of the vision would be specific to the organisation. It must essentially entail a plan and standard for communication in the organisation, which states the importance of *effective* communication to the organisation, for example that feedback about a job is a priority and should be approached with the same importance as the job itself.

**Middle component: Training.**

Training is the tool by which the organisation's communication vision and standards, as well as the practical conduct regarding communication such as the SBAR model (section 2.2.3.9), is instilled. Developing the training programme follows a three step needs assessment:

1. Conduct an organisational analysis to determine where the training is needed in the organisation and which organisational goals they aim to address through the training;
2. Conduct a task analysis to determine what the training will cover, i.e. what must the trainee learn to be an effective communicator according to the standards and practice (conduct/vision) of the organisation; and
3. Conduct a person analysis, to determine who needs training, what their current knowledge capacity is to address the gap between what they currently know and what they are required to know to identify what they need training for i.e. what they are supposed to be able to do after having completed the training.

This framework is used to guide organisations to develop a personalised and effective training programme. The content and participants of the training programme should be specific to the organisation.

**Core component: SBAR model.**

The SBAR technique for communication is the core element of the model. It is a practical tool that standardises the communication process within an organisation, to support role players to communicate effectively. Confusion and uncertainty regarding what information to include when sending a message is eliminated. The lack of shared experience that leads to miscommunications amongst role players, is eliminated by the SBAR technique that includes comprehensive information in a concise message. The receiver of the message can interpret it more easily, due to their familiarity with the method of communicating, which increases the probability of the receiver decoding the message as it was encoded by the sender.

The foundation for effective communication is set by means of a culture and vision of communication, it is carried over and implemented by means of training and it is practised at the hand of the SBAR technique.

## 5.5 Chapter Summary

This chapter covers the process of data analysis, to model construction. The list of inferences summarised in Chapter 4 is refined to codes that represent the

root causes of communication deficiencies in PAM organisations. These codes are compared, described, categorised and conceptualised. These consecutive activities are designed to support the researcher, to proceed from the analysis of root causes, to a deeper understanding, to a more high-level and conceptual understanding. Finally, the activities support the researcher to transform the data into information that can be exploited to the extent of theory development.

The results in this chapter lead to the conceptual model that is developed as a preparatory step for the final step of model construction. In the conceptual model, the root causes of communication deficiencies are categorised into three concepts namely: cognitive deficiencies, connective deficiencies and strategic deficiencies. These concepts are integrated into the final model, the COMMPAS model, which addresses the fourth and final research question.

# Chapter 6

## Validation

*If you want to go fast, go alone. If you want to go far, go together.*  
– African Proverb

This chapter covers the validation process and feedback.

### 6.1 Face Validation

Face validation is used as the method to validate the COMMPAS model. The objective of face validation is to establish that the actual problem is accurately formulated and identified. Furthermore, face validation ensures that a sufficient, well structured and credible solution is derived in response to the identified problem (Borenstein, 1998). Research participants are asked to validate the model after attending a presentation given by the researcher. The presentation primarily covered a detailed explanation of the COMMPAS model, which is preceded by the research question, the research methodology and the root causes established. At the end of the presentation, participants are asked to complete a questionnaire (Appendix G), which is used as a formal instrument to measure the validity of the model.

Sixteen participants are invited to attend the presentation and validate the model of which fifteen participants accepted the invitation. These participants are from the PAM industry, with expertise in delivering asset management services, managing client- and contractor expectations, managing projects and designing improvements to asset management services. The job descriptions of the attendees include, Business Area Manager (BAM), field Engineer, Asset Care Engineer (ACE), Focused Improvement Engineer, Supply Chain Manager and Projects Coordinator. Six of the attendees were part of the study prior to the presentation, as they were interviewed during the data gathering phase. Four of the remaining nine participants received a short overview of the study prior to the interview, and the other five were only introduced to the study on

the day of the presentation. By identifying a group of attendees with different perspectives and familiarity with the study to validate the model, the effect of possible bias is decreased and the credibility of the feedback is increased.

## 6.2 Validation Feedback

From the discussion and the feedback in the questionnaire, the majority of the surveyed participants reported that the COMMPAS model is a viable solution. They were also asked to specify why they believe the COMMPAS model is sufficient. Refer to Appendix G for the questionnaire and participant feedback.

Four of the participants indicated the possibility of clear and effective communication that is provided by the COMMPAS model given the structure and guidelines it offers; in the words of a participant: “It is a structured way to communicate and if it gets entrenched in a company’s culture, it will be a sustainable solution.” Another strength mentioned by two participants is the effective training that forms part of the model. Three participants identified the problem identification as one of the greatest strengths of the model. One participant remarked: “The model highlights all areas that need focus and attention to be as clear as possible.”

Three participants commented that the model is thorough and covers a wide variety of issues, then narrows it down to the root causes. Two participants added that the model is easy to understand and could be easily shared and implemented.

To summarise, the participants commented that the COMMPAS model has a lot of potential and will cover the general communication deficiencies experienced within the organisation, due to the following:

- a) The model highlights all areas that need focus and attention;
- b) The model acknowledges communication as a continuous process;
- c) The model can be easily implemented as per discipline;
- d) The model provides a framework for communicating concise messages effectively;
- e) The model includes training;
- f) The model is easy to understand and to share within the organisation;
- g) The model identifies the various root causes and provides a different perspective on communication;

- h) The model is a sustainable solution that can form part of a company's culture;
- i) The model has potential for future development;
- j) The company culture that will be instilled compensates for the difference in individual backgrounds of employees.
- k) The model provides for clear communication that eliminates misunderstandings and hold-ups;
- l) The model is thorough;
- m) The model introduces new research to the PAM industry; and
- n) The model will enable a company to be more effective in gaining competitive advantage.

Participants are asked to give their opinion about the weaknesses of the COMMPAS model. Their feedback is as follows:

Seven of the research participants expressed their concern regarding the implementation of the model; in the words of one participant: "The research needs to be implemented in a company as a case study and the results monitored in order to obtain an outcome." The model will take time to implement and practised through training. It is not an easy or quick process to develop a culture of communication in an organisation, due to different cultural backgrounds. The sustainable results of the solution will not be seen immediately. Buy-in from different stakeholders is a possible challenge that relates to the implementation of the model and was mentioned by two research participants.

Another concern that was raised by one participant is that the SBAR model includes too much information and that the attention of the listener will get lost, which becomes a problem when the sender wants to keep on communicating. The weakness in this comment is twofold. Firstly, the SBAR model provides a framework to communicate merely the essential information needed to convey the core of the message effectively. The discretion of the communicator should be used as to how complex the message is as well as who the receiver is and the SBAR technique must be utilised accordingly. Secondly, by stating their opinion of: "if you want to keep on communicating..." the research participant infers that they have more information than they need to share, meaning that their intention to communicate already includes a larger amount of information.

Further concerns raised was that, to keep the attention of the listener, a message should be kept short. However, a short message is of no use when it is

misunderstood by the receiver. During training, all employees learn to use the techniques of the SBAR model, thus the receiver will anticipate a message that contains the situation, the background, an assessment and a recommendation. By providing a standard about what they can expect, their attention span is automatically extended and they interpret the message quicker and more accurately.

A list of the rest of the comments regarding the model's weaknesses are given, followed by the researcher's reaction to the comments. Participants highlighted factors that could be considered to increase the applicability of the model, such as:

- a) Changing the order of the SBAR model from SBAR to SRBA (Situation, Recommendation, Background, Assessment). They substantiate their opinion by explaining that role players in the communication system are often impatient and do not bother to listen to the background, they primarily want to hear the most important information such as, in the participant's opinion, the situation and the recommendation.
- b) The model highlights key problems from each conceptual category, to indicate the relationship between the categories and how they influence each other. The participant also stated that the model should be diverse to work inward and outward.
- c) Emphasise the importance of focusing on the follow through and effectiveness of the training.
- d) Provide a low-cost implementation guideline to organisations.
- e) Buy-in, support and change management could be difficult.

Suggestion [a] is considered but not applied. The SBAR model is designed and tested in this specific format. Of the fifteen validation participants only one commented that a different order could be more effective. Even though the comment has value, it is not substantially supported to change a model that literature has proved as sufficient. If a change in arrangement could be an improvement of the SBAR model, it could be looked into and tested in future research.

Suggestion [b] is disregarded, as the relationship between the problems and how they influence each other is identified and discussed during the comparison phase (section 5.2). It is taken into account that the research participant is not aware of how the issues are already compared and how their relations influence each other, as they did not read through the thesis document but merely listened to a condensed presentation on the core issues identified and the solution.



The reason for the method of developing conceptual categories, is to group the codes into categories. These categories become a more high level representation of the issues after they have been described and compared. The second suggestion in [b] is not relevant as the model is in fact diverse. For example; a culture and vision of communication provides the foundation for effective communication, which is carried over and implemented by means of training where, amongst others, the SBAR model is taught, which further instills the culture of communication. The model is therefore dynamic and multi-dimensional, and not, as perceived by this participant, strictly linear.

Suggestions [c] – [e] are addressed in Chapter 7.

Participants' opinions about how well the researcher understood and identified the problem(s) and how well the solution is aligned in accordance with the problem(s) identified are illustrated in figure 6.1.

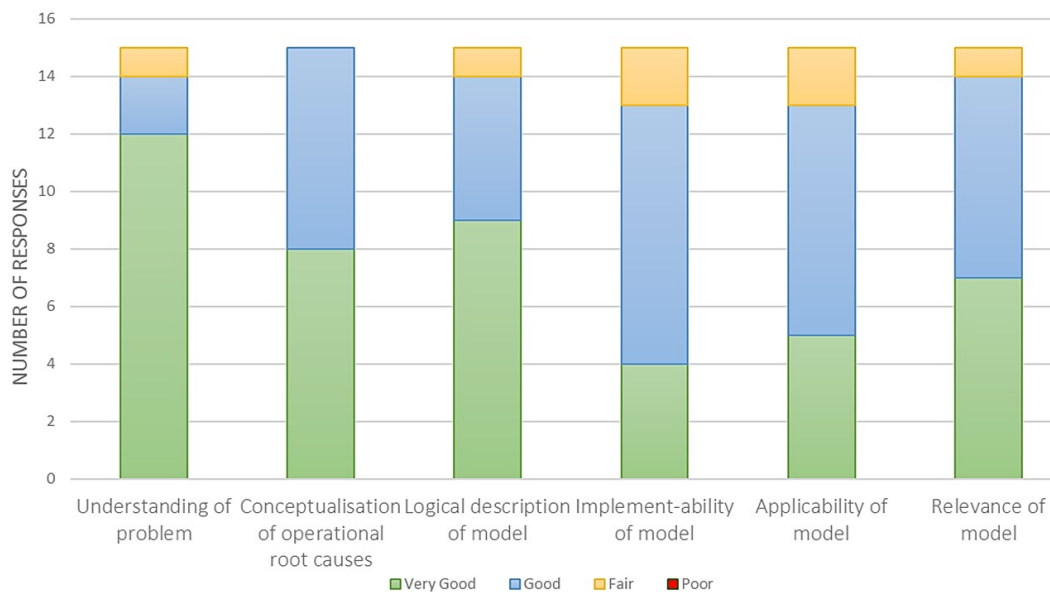


Figure 6.1: Participants' feedback about the researcher's understanding of the problem(s) and the alignment of the solution in accordance to the identified problem(s) during face validation.

The first three questions in the figure are relevant to the researcher, where the last three questions in the figure focus on the model. The general feedback from participants regarding the researcher's understanding of the problem, conceptualisation of the root causes and the description of the model is; 64.44% Very Good, 31.11% Good and 4.44% Fair. This correlates with the feedback that is discussed, reflecting that participants were specifically impressed with

the problems that are identified.

The general feedback from participants regarding the implementability, applicability and the relevance of the model is; 36% Very Good, 53% Good and 11% Fair, which correlates with the concerns raised about the implementability of the model. These concerns are addressed in §7.4. The ‘Relevance of model’ question received the highest number of ‘Very Good’ responses, which is the most important question regarding the model.

### 6.3 Chapter Summary

In this chapter the COMMPAS model is validated and a summary of the feedback from research participants is given. A face validation approach is followed, where the majority of participants commented that the model is applicable, relevant and that it will successfully address the identified root causes. Recommendations from the validation process are addressed in the next chapter.

## Chapter 7

# Conclusion and Recommendations

*The secret of change is to focus all of your energy not on fighting the old, but on building the new.*  
– Socrates

The aim of this chapter is to reflect to what extent the purpose of the research is achieved. This chapter covers an overview of the research, the results, the limitations, the value added by this research and recommendations for future research.

### 7.1 Overview

Organisations depend on effective communication to be coordinated and aligned in order to achieve their organisational objectives and, as a result, excel in their competitive advantage. Communication skills are no longer seen as a soft skill, but as an asset and important attribute in the professional environment. Against this background, the research problem statement is that: service delivery objectives are not being met as a result of communication deficiencies.

By following the framework of the Hutter-Hennink qualitative research cycle (Chapter 3), the research questions are investigated and analysed. In-depth interviews and focus group discussions are conducted to collect data (Chapter 4). The data is analysed through a process of developing inferences, code development, describing and comparing codes, categorising and conceptualising codes to finally support theory development and model construction (Chapter 5).

The research overview is reflected at the hand of the four research questions.

***Question One: What are the main reason(s) for communication deficiencies primarily from the perspective of service providers in relation to their clients and contractors respectively?***

In response to the first research question, a list of thirteen root causes are identified and validated by research participants (Chapter 6). The root causes are listed from high to low, according to the frequency in which they occur (figure 5.2):

1. Cloud volume of information – Communication deficiencies do not exist as a result of too little information, but rather due to too much information that is stagnating at the resources and not shared with stakeholders.
2. Engagement – Employees are not making an effort to communicate effectively due to lack of engagement.
3. Feedback – No feedback is given when work is done.
4. Incomplete Information – Miscommunication and confusion is a result of an order, an assignment or feedback that is given but the message is incomplete.
5. Interdependent – The interdependence of stakeholders leads to a delayed decision-making process.
6. Lack of Experience – New employees do not have experience about what essential information to share with whom. The difference in work experience amongst the diverse workforce also leads to messages that are interpreted differently by each of the role players in the communication system.
7. Lack of Knowledge – Employees lack knowledge regarding communication skills and also knowledge of each others' fields of expertise, thus they misunderstand each other.
8. Language and Culture – Misunderstandings occur due to differences in the vocabulary and manner of communicating.
9. Role definition – Unclear role definition becomes a communication deficiency when employees are not sure whom to send information to, or do not know that an order is relevant to them when they receive it.
10. Update – Employees are not always sharing new information as it becomes available, which leads to communication deficiencies due to stakeholders not always having and receiving the same information.

11. Urgency – Urgent information is not conveyed timeously, which means the urgency is either not comprehended or not taken seriously.
12. Volume of Priorities – Too many priorities lead to role players being too busy to communicate with each other, or they are not reacting to a request from a colleague as it is not a high priority to themselves.
13. Volume of Role Players – Too many role players becomes a deficiency when the number of people that must constantly be kept informed is too great and too many stakeholders are dependent on the authority or contribution of another, whether it is a contribution of time, money or intellect.

During the validation phase, research participants commented that the root causes identified are accurate and excellent.

***Question Two: What is the available ICT relevant to communication that could support effective communication?***

In response to the second research question, a list of available feasible ICT is investigated and identified. Based on the results from the first research question, it is evident that the lack of necessary technology is not a deficiency of effective communication. Thus, the focus on ICT shifted from it being a possible solution, to ICT remaining an important factor, but merely playing a supporting role in the solution.

The primary ICT tools include: customisable mobile applications, emails, Skype, WhatsApp, and IoT. These technologies are already introduced and used in PAM organisations. The implementation thereof and business and IT alignment (section 2.3.4), is important once the COMMPAS model, presented by this research, is in place.

***Question Three: What are the available models or systems to improve organisational communication?***

In response to the third research question, three out of twelve communication models and systems proved to be effective for complex organisational communication systems. Other traditional communication models are criticised for being inefficient, as effective communication requires more than just improving the way messages are sent. The emphasis of these models is on the sender and implies that the sender manipulates the receiver, while the central role of the receiver is neglected. The importance of the receiver and the context they need in order to decode a message accurately, is not built into the models.

The three models that proved to be effective from the communication literature are; the technique of using vision to improve organisational communication, using training to transfer and communicate knowledge and the SBAR situational briefing model. The reasons why these models can be argued to be more effective can be revisited in Chapter 2 and are summarised in the discussion of the fourth research question.

*Question Four: What model or system can assist PAM service providers to improve communication deficiencies, by utilising effective ICT methods?*

In response to the fourth research question, the combination of using vision to improve organisational communication, using training to communicate knowledge and using the SBAR model as the technique by which role players communicate, is found to be the best system to support PAM service providers to improve communication deficiencies. Vision is a receiver-oriented approach to communication, which has proven to be effective in organisations. A PAM organisation will be ideal for this approach as it is likely to have diverse member demographics.

Training is proven to be the most effective method to transfer knowledge, which is evidently the greatest root cause identified. Furthermore, training is the linking element in the COMMPAS model between the communication vision and the SBAR technique. Training not only increases knowledge effectively, but also supports and instills the foundation (communication vision) and the core (SBAR) of the COMMPAS model. The SBAR model is a standardised communication process that manages the transfer of knowledge and information in a complex system, which is what makes it so effective. The combination of these three elements forms a holistic model, which addresses communication deficiencies at the root of multiple problem areas.

## 7.2 Contribution of the Research

To support the value added by this research, selected feedback from research participants during the validation phase is given in *italics*. The contributions made to the PAM research field and industry are:

1. Clear root causes of communication deficiencies.  
“*The model has identified key issues that every organisation (department) is facing, which is very much ideal.*”  
“*The model goes into the background of the root problem in company cultures, where the problem lies...*”

2. A communication model that holistically addresses the wide variety of root causes.  
*“The model is thorough.”*  
*“The model covers a broad spectrum of problems.”*
3. A communication model that offers the possibility of clear and effective communication to all relevant role players in the communication system.  
*“The model guides participants to be focused and concise.”*  
*“The possibility of clear communication between different roles and stakeholders, eliminating misunderstandings and hold-ups.”*
4. A sustainable solution that has a lot of potential to become more robust and more detailed. The model has the potential to be further developed into a flagship communication model, as it offers a solution to the different aspects that could impede effective communication.  
*“It is a structured way to communicate and if it gets entrenched in a company’s culture, it will be a sustainable solution.”*  
*“I think there is a lot of potential in this model. It makes sense and the possibility of bridging the gaps of identical causes can solve many problems.”*  
*“The structure and approach is solid.”*

### 7.3 Limitations

A limitation of the research is the lack of time to implement and test the COMMPAS model. Even though the response from research participants regarding the implementability of the COMMPAS model were positive (87% of the research participants commented that the implementability of the model is Good – Very Good) during the validation phase, the model could not be implemented and tested in practice. The possibility of bias toward the implementability of the model is acknowledged.

The model should remain universal, therefore in-depth, organisation-specific detail of the model could not be developed. During the validation phase, 87% of the research participants selected either the ‘Good’ or ‘Very Good’ column when commenting on the applicability of the model. And 93% selected the ‘Good’ or ‘Very Good’ column when commenting on the relevance of the model (Appendix G). Even though the applicability and relevance enjoyed positive feedback from research participants, the detail of the model, such as the vision statement for the outer element or the training material for the central element, could not be developed as it is specific to each organisation. To address this limitation, an application overview is provided to assist organisations to develop the detail in the COMMPAS model.

The COMMPAS model follows a holistic approach to address the root causes of communication deficiencies that are identified. Each of the problems are not addressed directly, thus an immediate improvement might not be observed. The possibility also exists that other unexpected root causes are created while addressing the identified root causes. Unforeseen root causes created by way of the COMMPAS model will only surface once it is in use. The COMMPAS model is a robust and adjustable framework that is certain to absorb newly created root causes, by adjusting the training material or vision. It is important to keep in mind that the improvement of communication remains a continuous process.

## 7.4 Recommendations and Future Research Opportunities

The contributions made by this research fully achieves the research objectives, however, recommendations to further develop and improve this research are the following:

1. The dynamics of the relationship between a PAM service provider and their contractors and clients respectively, is a complex relationship. The service provider would be dependent on the buy-in from both the client and the contractor for the COMMPAS model to work optimally. This dynamic could be further investigated to develop a strategy that enables the service provider to extend the COMMPAS model to their partnerships.
2. Implementing a new communication model results in changes in an organisation. Change management, specific to implementing a communication model, could be investigated.
3. An opportunity for further research and development of the COMMPAS model is to develop:
  - An implementation guide or strategy to support organisations in successfully implementating the COMMPAS model, with minimum additional time and costs.
  - A more detailed framework for training material that is employee-specific, in other words it addresses the specific knowledge that an employee who transfers the knowledge at the hand of a training method requires and which suits the employee's learning abilities.
4. It is evident that training is a successfull technique to transfer knowledge. However, in a complex environment with different stakeholders and different knowledge capacities, it becomes difficult to teach the same material



to all stakeholders using the same method. Training methods could be developed that suit the knowledge capacity and learning ability of each stakeholder or sub-groups of stakeholders and enables all stakeholders to obtain the required knowledge.

## 7.5 Concluding Remarks

The partnership between a PAM service provider and their clients and contractors respectively, is a strategic relationship that is established to benefit all stakeholders. The relationship represents a set of organisational objectives that can only be met as a result of an effective synergy. A critical success factor for an effective synergy, is open and effective communication between the partners or role players in the relationship (Jooste, 2014).

Communication deficiencies are the result of root causes that could be summarised into three categories: cognitive deficiencies, connective deficiencies and strategic deficiencies (section 5.3). To address these deficiencies, the solution must include: a platform for effective knowledge transfer, a shared vision by all role players in the communication system to understand their role in the system and the importance thereof, and a technique or practical strategy by which each employee can effectively communicate important information. Extensive research and data analysis serves as evidence of these statements (Chapter 2, 4 and 5).

The COMMPAS model is an integration of the three solutions that address the three categories of root causes. The three elements in the model are: a communication vision and culture of communication, training, and the SBAR communication technique. The model is a continuous process of these three elements, which could be seen as concentric circles that work inwards and outwards to compliment each other.

First of all, a vision of culture and of communication should be established in an organisation. It is important for role players in the communication system to understand the importance of communicating information and of keeping each other up to date. In a complex environment with a diverse work-force, it is imperative to have a shared vision for communication. Secondly, the means by which the culture and vision of communication is carried through to the organisation is through training, which has proved to be the most effective technique to transfer knowledge. Thirdly, at the core of the model, is the SBAR communication technique, which serves as the simple, practical framework to support all role players in the communication system to communicate effectively. This situational briefing technique eliminates the issue of different role players not having the same knowledge and experience, as it provides a

concise and comprehensive framework to transfer critical information.

This study was successful in identifying the root causes of communication deficiencies and delivering a model that supports PAM service providing organisations in overcoming these deficiencies. The model has the potential to be further developed into a universal model for all service providing organisations or to be developed into an organisation-specific solution for communication deficiencies.

# Appendices

# Appendix A

## Digital Leadership

# E-COMPETENCES

E-competences are needed to plan, build, run, enable and manage new technologies for business growth.

For this task we have provided you with a selection of e-competences from the European e-Competence Framework': <http://www.ecompetences.eu/>. Please look through the e-competences listed within each of the five e-CF areas and identify within which of the three digital leadership dimensions each one falls.

BUSINESS	STRATEGY	I.T.	
			<h2>Planning e-competences</h2> <p><b>A1: IS and Business Strategy Alignment</b></p> <p><b>A3: Business Plan Development</b></p> <p><b>A7: Technology Trend monitoring</b></p> <p><b>A9: Innovating</b></p> <h2>Building e-competences</h2> <p><b>B1: Application development</b></p> <p><b>B2: Component Integration:</b></p> <p><b>B6: Systems Engineering:</b></p> <h2>Running e-competences</h2> <p><b>C1: User Support</b></p> <p><b>C2: Change support</b></p> <p><b>C3: Service delivery</b></p> <p><b>C4: Problem management</b></p>
			<h2>Enabling e-competences</h2> <p><b>D7: Sales Management</b></p> <p><b>D10: Information and Knowledge Management</b></p> <p><b>D11: Needs Identification</b></p> <p><b>D12: Digital Marketing</b></p> <h2>Managing e-competences</h2> <p><b>E2: Project and Portfolio Management</b></p> <p><b>E3: Risk Management</b></p> <p><b>E4: Relationship Management</b></p> <p><b>E7: Business Change Management</b></p> <p><b>E9: Information System Governance</b></p>

# GLOSSARY

## Planning e-competences

### A1: IS and Business Strategy Alignment

Determines the understanding and implementation of Information Systems and the business architecture, in line with the organisation's policy, whilst providing a secure environment. A person with this competence will be able to make strategic, information systems decisions for the enterprise.

### A3: Business Plan Development

Designs and structures a business or product plan, including the identification of alternative approaches as well as return on investment propositions. Communicates and sells the business plan to relevant stakeholders and addresses financial interests.

### A7: Technology Trend monitoring

Investigates latest ICT technological developments to establish understanding of evolving technologies. Identifies innovative solutions and applies new technology to existing products and services and investigates sustainable alternatives and solutions.

### A9: Innovating

Develops creative solutions for new concepts, ideas, products and services in ICT and business. Deploys novel and innovative solutions, to exploit opportunities for growth.

## Building e-competences

### B1: Application development

Designs applications, including mobile apps, to meet customer needs. Includes: coding, debugging, testing, documenting and communicating product development stages during application development and optimizing costs and quality.

### B2: Component Integration:

Integrates hardware, software or sub-system components into an existing or a new Information system within an enterprise. Ability to comply with established processes and procedures such as; configuration management and package maintenance.

### B6: Systems Engineering:

Ability to design and engineer various software and/ or hardware components to meet solution requirements such as: specifications, costs, quality, time, energy efficiency, information security and data protection.

## Running e-competences

### C1: User Support

Responds to user requests and issues, recording relevant information, resolving incidents and optimisation of IT performance in accordance with pre-defined, service level, agreements.

### C2: Change support

Implements and guides the development of IT according to market requirements. Ensures efficient control over IT and information systems to be modified, according to potential market developments, creating sometimes unpredictable outcomes. Takes into consideration and complies with customer choice and expectations.

### C3: Service delivery

Takes a proactive approach to provide stable and secure applications and functionality of IT services to: avoid potential disruptions, improve capacity, update the set of services and monitor solutions and customer use of other IT tools (i.e. procedures, communications and enablers).

### C4: Problem management

Identifies problems and problem-solving procedures. Takes a proactive approach to avoid and identify root cause of problems in ICT technologies, to optimise individual, team or research unit performance.

## Enabling e-competences

### D7: Sales Management

Establishes a sales strategy which creates added value for new or existing customers and prospects. Establishes a sales support procedure and provides an efficient response to sales enquiries, consistent with company strategy and policy. Establishes a systematic approach to the entire sales process, including: understanding customer needs, forecasting, prospect evaluation and negotiation.

### D10: Information and Knowledge Management

Manages structured and unstructured information, optimisation of information and knowledge exchange between individuals and teams within an organisation and with external partners. Selects appropriate tools to: create, extract, maintain, renew and disseminate business knowledge.

### D11: Needs Identification

Actively listens to internal/ external customers, clarifies and articulates their needs. Manages the relationship amongst all stakeholders, to ensure the solution is in line with business requirements. Proposes different solutions (e.g. make-or-buy), by performing contextual analysis in support of user centered system design. Advises the customer on appropriate solutions, to enable them to make an informed choice.

### D12: Digital Marketing

Understands the range of market channels available to approach customers, using technology such as: internet marketing, social media and web tools.

## Managing e-competences

### **E2: Project and Portfolio Management**

Plans, co-ordinates and directs a single or portfolio of projects. Orchestrates projects to ensure: compatibility, syntheses and integration meets the development priorities of the enterprise. Manages activities, responsibilities, critical milestones, resources, skills, interfaces and budget to optimise portfolio costs and time. Delivers projects on time, on budget and in accordance with original requirements.

### **E3: Risk Management**

Manages risk across information systems by applying the enterprise's risk management policy and procedures. Assesses risk for the organisation's business, including: web, cloud and mobile resources.

### **E4: Relationship Management**

Establishes and maintains positive business relationships amongst stakeholders (internal or external) deploying strategies that comply with organisational processes. Ensures that stakeholder needs, concerns and/or complaints are understood and addressed, in accordance with organisational policy.

### **E7: Business Change Management**

Assesses the implications of new digital solutions. Defines requirements and quantifies business benefits. Manages the deployment of change, taking structural and cultural issues into account. Maintains business and process continuity throughout change, whilst monitoring the impact.

### **E9: Information System Governance**

Defines, deploys and controls the management of information systems in line with business strategy. Considers IT infrastructure, IT strategy and technology availability and their influence on risk management and resource deployment, to achieve balanced business benefits.

## Acknowledgement

The e-competences listed in this PDF document have been reproduced with permission from The European e-Competence Framework 3.0 CEN CWA: e-CF 3.0 CWA

([www.ecompetences.eu](http://www.ecompetences.eu)).

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# Appendix B

## Ethnographic methods

A comparison between ethnographic methods.

	<b>In-depth interviews</b>	<b>Focus group discussion</b>	<b>Observation</b>
<b>Objective</b>	Identify individual perceptions, beliefs, feelings and experiences	Identify a range of opinions on a specific issue or seek community norms	Observe how people act and interact in certain social situations
<b>Research instrument</b>	Interview guide	Discussion guide	Observation guide
<b>Advantages</b>	Gain in-depth information, Identify personal experiences, Useful for sensitive issues, Identify context of participants' lives	Group interaction provides range of issues and opinions, Discussion provides detail, justification and clarification, A lot of information collected quickly, Identify all issues quickly, High emancipatory effect	Unobtrusive, A lot of contextual information, Supports data from other sources, Identify people's actual behaviour, Conduct in many situations
<b>Disadvantages</b>	No interaction or feedback from others, Individual perceptions only, Multiple interviews needed to identify range of issues	Less depth of information, Less suitable for personal experiences, Managing group dynamics	Interpretation of observations may be subjective, Distinction between participation and observation is needed.

Table B.1: Comparison of three qualitative methods Hennink (2011).



# Appendix C

## Participant Recruitment

The amount of research participants recruited is based on the criteria given by Hennink (2011). The amount of participants needed for the study depends on the type of information that needs to be gathered in the study, which differs between studies in qualitative research. The following are a few methodological and practical considerations to guide this decision making process (Hennink, 2011):

- Study topic: The research topic could be either broad or specific. Broader research topics generally require a greater range of research participants to address a greater range of issues. A complex research topic requires more participants to explore more detail and reach saturation.
- Type of research: A research topic could be either exploratory or focused. More focused research requires fewer participants in contrast to exploratory research where the issues are unknown and more participants are needed to identify core issues.
- Use of Information: The aim of the research and how the information will be used influences the number of participants. More participants will be required if the intention of the research is to analyse substantive information than to analyse theory.
- Study participants: The diversity of the study also influences the population. The greater the diversity of the study, the more participants will be required to gather accurate information of various experiences, whereas a homogenous study population will require fewer participants.
- Level of segmentation: The more segmented a study population is into subgroups, the more participants will be needed to reach saturation per group.
- Data collection: The data collection method that will be used in the study determines the number of participants, for example if group discus-

sions will be used more participants will be required than for individual interviews.

- Previous studies: The amount of participants involved in similar historical studies could serve as indication.
- Resources: Available resources such as time, money and skills are a determining factor.

## Appendix D

# Research Participant Preparation Documents



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**STELLENBOSCH UNIVERSITY**

**Information Letter**

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**TITLE OF RESEARCH PROJECT:** Developing a model to overcome the communication deficiencies that exist in the PAM Industry using Information Communication Technology.

**ETHICS APPLICATION REFERENCE NUMBER:** SU-HSD-004220

**RESEARCHER:** Nina Louise van Rooyen

**DEPT NAME & ADDRESS:** Industrial Engineering, Stellenbosch University, Engineering Building, Industrial Department, Joubert Rd, Stellenbosch

**CONTACT NUMBER:** 076 472 4576

**EMAIL ADDRESS:** [17090237@sun.ac.za](mailto:17090237@sun.ac.za)

Dear Participant,

By giving consent to participate in this study, there will be expected of you to:

- engage in a focus group discussion of about 3 participants of the same background; and
- share your honest experience of communication challenges in your organisation or industry.

I, as principal investigator, declare that:

- I will protect all information shared by research participants;
- the information collected will merely be used for research purposes;
- I will be available for participants to contact me at any time in the research period, should it be necessary;
- the identity of participants will not be disclosed; and
- I do not obtain any personal monetary advantages by engaging in this research.

By signing below, I \_\_\_\_\_ agree to take part in this research study, as conducted by \_\_\_\_\_.

\_\_\_\_\_  
**Signed at (*place*)**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature of Participant**



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## STELLENBOSCH UNIVERSITY

### Focus Group Discussion /Interview Guide

---

#### **Introduction**

Introduce myself and share topic of study, reason for research.

#### **Opening Questions**

- 1) What is your role in the organisation?
- 2) Do you agree that effective communication is one of the critical successful factors in optimising professional relationships?
- 3) Do you agree that effective communication is a challenging issue?

#### **Specific Questions**

- 4) How often do communication issues occur in a working day/week/month?
- 5) Does it sometimes have drastic effects?
- 6) What would you say are the root cause of lack of effective communication?
- 7) Do you have a communication system in place?
- 8) Do you have the necessary technology to support this system and communicate effectively?

#### **Closing Questions**

- 9) What would you suggest are the critical success factors for effective communication?

#### **Post Discussion Questions**

- 10) Do you have anything that you want to add to the topic discussed?



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**Stellenbosch University  
Written Consent to Participate in Research**

TITLE OF RESEARCH PROJECT:	Developing a model to overcome the communication deficiencies that exist in the PAM Industry using Information Communication Technology.
REFERENCE NUMBER:	SU-HSD-004220
PRINCIPAL INVESTIGATOR:	Nina Louise van Rooyen
ADDRESS:	Engineering Building, Industrial Engineering Department, Joubert Rd, Stellenbosch
CONTACT NUMBER:	0764724576
E-MAIL:	17090237@sun.ac.za

Dear Participant,

Kindly note that I am a MEng student at the Department of Industrial Engineering at Stellenbosch University, and I would like to invite you to participate in a research project entitled "Developing a model to overcome the communication deficiencies that exist in the PAM Industry using Information Communication Technology."

Please take some time to read the information presented here, which will explain the details of this project and contact me if you require further explanation or clarification of any aspect of the study. This study has been approved by the Research Ethics Committee (REC) at Stellenbosch University and will be conducted according to accepted and applicable national and international ethical guidelines and principles.

Based on the research I have done, I have established that communication deficiencies are an issue in numerous organisations and one of the reasons for organisational objectives that are not being met. In this case the PAM industry will specifically be investigated.

The aim of the research is to optimise the relationship between service providers and contractors in the Physical Asset Management industry by helping them to overcome their communication deficiencies.

The purpose of this study is to support the PAM industry in overcoming communication challenges that hinders them to operate at their optimum.

The procedure is to conduct a focus group discussion as a first round of interaction with participants to collect a range of possible issues from their experience that could be seen as obstacles in the way of effective communication. After analysing the information from the focus group discussions, in-depth interviews will be conducted with the participants to refine the issues. I, as principal investigator, will analyse the saturated information and develop my theory. Prospective participants will only be required to engage in one focus group discussion and one in-depth interview.

Each interaction (focus group discussion, in-depth interview) will be managed to have a duration of 1 hour, or shorter, if possible. Preparation for meetings will speed up the process.

No risks are involved for any of the prospective participants.

The benefits with regard to participation is the contribution that participants would be able to make to help organisations overcome communication deficiencies by engaging in the meetings and sharing their valuable experience.

The information gathered will only be used for research purposed regarding this specific thesis. The identity of participants will not be disclosed or published.

Voice recordings will be made us of during interviews to enable the researcher to play back what was discussed in order to ensure that the information gathered from the interviews are accurate. The recordings will not be shared to any person apart from the principal investigator and her supervisor.

The information gathered from the interviews will be accessible only to the principal investigator and her supervisor and would be stored on the computer of the main researcher. Access to the computer is protected by a request for a personal password.

If you have any questions or concerns about this research project, please feel free to contact:

Nina van Rooyen (Principal Investigator)

[17090237@sun.ac.za](mailto:17090237@sun.ac.za)

076 472 4576

Wyhan Jooste (Supervisor)

[wyhan@sun.za](mailto:wyhan@sun.za)

**RIGHTS OF RESEARCH PARTICPANTS:** You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché ([mfouche@sun.ac.za](mailto:mfouche@sun.ac.za) / 021 808 4622) at the Division for Research Development. You have the right to receive a copy of this Consent form.

**If you are willing to participate in this research project, please sign the Declaration of Consent below and** return it to the investigator.

**DECLARATION BY THE PARTICIPANT**

As the **participant** I hereby declare that:

- I have read the above information and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- If the principal investigator feels that it is in my best interest, or if I do not follow the study plan as agreed to, then I may be asked to leave the study before it has finished.
- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained to my satisfaction.

By signing below, I \_\_\_\_\_ agree to take part in this research study,  
as conducted by Nina van Rooyen.

\_\_\_\_\_

**Signed at (*place*)**

**Date**

\_\_\_\_\_

**Signature of Participant**

.....

**DECLARATION BY THE PRINCIPAL INVESTIGATOR**

As the **principal investigator** I hereby declare that the information contained in this document has been thoroughly explained to the participant. I also declare that the participant has been encouraged (and has been given ample time) to ask any questions. In addition, I would like to select the following option:

	The conversation with the participant was conducted in a language in which the participant is fluent.
	The conversation with the participant was conducted with the assistance of a translator, and this "Consent Form" is available to the participant in a language in which the participant is fluent.

\_\_\_\_\_

**Signed at (*place*)**

**Date**



---

**Signature of Principal Investigator**

# Appendix E

## Anonymised Inferences

## **Project: Inferences**

Report created by Nina vR on 2017-04-21

### **Quotations Report**

All (74) quotations

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- D 1: All Fieldwork - 1:1 language and cultural barriers (374:403)**
- D 1: All Fieldwork - 1:2 Engagement (405:414)**
- D 1: All Fieldwork - 1:3 Response (416:423)**
- D 1: All Fieldwork - 1:4 Language and cultural barriers (429:458)**
- D 1: All Fieldwork - 1:5 Not really a system, communicate as needed (490:531)**
- D 1: All Fieldwork - 1:6 communication is still complicated (997:1030)**
- D 1: All Fieldwork - 1:7 information is available but is like hanging in a cloud (1056:1110)**
- D 1: All Fieldwork - 1:8 quicker for them to communicate when a person is on site and can inter... (1157:1230)**
- D 1: All Fieldwork - 1:10 Call centre is not asking the right questions (1443:1487)**
- D 1: All Fieldwork - 1:11 do not have experience (1495:1516)**
- D 1: All Fieldwork - 1:12 do not really understand what the site is communicating (1522:1576)**
- D 1: All Fieldwork - 1:13 Information is not shared at the same level. (1579:1622)**
- D 1: All Fieldwork - 1:14 technology is not the problem (1637:1665)**
- D 1: All Fieldwork - 1:15 No communication system, just communicate as needed (1675:1725)**

- D 1: All Fieldwork - 1:16 weet nie wat rol (2353:2369)**
- D 1: All Fieldwork - 1:17 Groot gap tussen wie watter rol het (2397:2431)**
- D 1: All Fieldwork - 1:18 op datum hou (2475:2487)**
- D 1: All Fieldwork - 1:19 verwagting (2547:2556)**
- D 1: All Fieldwork - 1:20 Baie kommunikasie en rolspelers (2596:2626)**
- D 1: All Fieldwork - 1:21 in die loop te hou (2648:2665)**
- D 1: All Fieldwork - 1:22 bestuurder op hoogte hou (2710:2733)**
- D 1: All Fieldwork - 1:23 sekere vlak van prioriteit (2995:3020)**
- D 1: All Fieldwork - 1:24 Op hoogte vn sake (3114:3130)**
- D 1: All Fieldwork - 1:25 Maniere hoe gekommunikeer word (3237:3266)**
- D 1: All Fieldwork - 1:26 ortuig (3314:3319)**
- D 1: All Fieldwork - 1:27 om regte informasie op gereelde basis met klient te deel (3410:3465)**
- D 1: All Fieldwork - 1:28 nie te veel nie nie (3468:3486)**
- D 1: All Fieldwork - 1:29 nie controlled environment (3575:3600)**
- D 1: All Fieldwork - 1:30 ingelig (3654:3660)**
- D 1: All Fieldwork - 1:31 Kommunikasie van sukses (3685:3707)**
- D 1: All Fieldwork - 1:32 verhouding wat gebou word en persepsie (3888:3925)**
- D 1: All Fieldwork - 1:33 discipline (4127:4136)**
- D 1: All Fieldwork - 1:34 manage the volumes (4271:4288)**
- D 1: All Fieldwork - 1:35 Type of communication will depend on objective (4290:4335)**

**D 1: All Fieldwork - 1:36 Verskillende rolspelers met verskillende verwagtinge (4396:4447)**

**D 1: All Fieldwork - 1:37 did not have complete information (4500:4532)**

**D 1: All Fieldwork - 1:38 told about the training less than a week before (4614:4660)**

**D 1: All Fieldwork - 1:39 Miscommunication between manager and HR person (4694:4752)**

**D 1: All Fieldwork - 1:40 Lack of communication (5299:5319)**

**D 1: All Fieldwork - 1:41 Lack of support (5321:5335)**

**D 1: All Fieldwork - 1:42 Lack of experience, skills and knowledge (5337:5376)**

**D 1: All Fieldwork - 1:43 from service providers' side regarding the training: Time, date and content is sent... (5430:5504)**

**D 1: All Fieldwork - 1:44 Reminder two weeks prior (5551:5574)**

**D 1: All Fieldwork - 1:45 not sure what is required (5784:5808)**

**D 1: All Fieldwork - 1:46 not clued up in common communication skills (5849:5891)**

**D 1: All Fieldwork - 1:47 Periodic, or 'recap' course (6128:6154)**

**D 1: All Fieldwork - 1:48 kom nie op site nie, kommunikeer nie met jou nie (6331:6378)**

**D 1: All Fieldwork - 1:49 Middelpunt van kommunikasie, nie weerskante komunikeer (6386:6439)**

**D 1: All Fieldwork - 1:50 kan nie in isolasie 'n besluit neem nie (6698:6736)**

**D 1: All Fieldwork - 1:51 al die vlakke van mense intrek (6744:6773)**

**D 1: All Fieldwork - 1:52 weet nie dis hulle verantwoordelikheid (6885:6922)**

**D 1: All Fieldwork - 1:53 klomp rolspelers is betrokke en dit begin cascade van klient na FMC, n... (6925:7022)**

**D 1: All Fieldwork - 1:54 om iets te bereik moet besluit geneem word (7038:7079)**

**D 1: All Fieldwork - 1:55 proses stadiger of met veranderings moet hele proses deurgaans om goedk... (7229:7311)**

**D 1: All Fieldwork - 1:56 baie mense praat met baie mense (7383:7413)**

**D 1: All Fieldwork - 1:57 die wat dan elk rol vervul moet dan ingecopy word met kommunikasie (7583:7648)**

**D 1: All Fieldwork - 1:58 ROLLE moet baie duidelik definieer word deur BESTUUR (7651:7702)**

**D 1: All Fieldwork - 1:59 weet wie pas waar in (7718:7737)**

**D 1: All Fieldwork - 1:60 dringene terugvoer (7761:7778)**

**D 1: All Fieldwork - 1:61 Filter uit wat belangrike indligting is (8107:8145)**

**D 1: All Fieldwork - 1:62 rolspelers te identifiseer (8150:8175)**

**D 1: All Fieldwork - 1:63 inligting net vir die wat van toepassing is (8178:8220)**

**D 1: All Fieldwork - 1:64 Rolle moet duidelik wees (8222:8247)**

**D 1: All Fieldwork - 1:65 fields of expertise (8281:8300)**

**D 1: All Fieldwork - 1:66 het kostes en moet goedkeuring kry (8424:8457)**

**D 1: All Fieldwork - 1:67 Om op te volg (8826:8838)**

**D 1: All Fieldwork - 1:68 Verskille in rolspelers en wat hulle doen (8851:8891)**

**D 1: All Fieldwork - 1:69 management, heeldag besig met meetings (8909:8946)**

**D 1: All Fieldwork - 1:70 individu moet dan verder verantwoordelikhed neem (9089:9137)**

**D 1: All Fieldwork - 1:71 Ingebou in karakter (9166:9186)**

**D 1: All Fieldwork - 1:72 Almal op dieselfde bladsy bring (9519:9549)**

**D 1: All Fieldwork - 1:73 konsekwent in terme van verwagtinge en rolle wat mense het (9744:9801)**

**D 1: All Fieldwork - 1:74 weet wat die roete is om probleem op te los (9911:9953)**

**D 1: All Fieldwork - 1:75 rolspelers nie weet wat van hulle verwag word nie (10114:10162)**

# Appendix F

## Codebook



## Project: Inferences

Report created by Nina vR on 2017-05-16

### Codes Report

All (14) codes

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#### ○ Cloud volume of Information

Created by Nina vR on 2017-04-07, modified by Nina vR on 2017-04-10

##### 8 Quotations:

**D 1: All Fieldwork - 1:7 information is available but is like hanging in a cloud (1056:1110)**

information is available but is like hanging in a cloud

**D 1: All Fieldwork - 1:9 Urgency is not always explained (1277:1307)**

Urgency is not always explained

**D 1: All Fieldwork - 1:27 om regte informasie op gereelde basis met klient te deel (3410:3465)**

om regte informasie op gereelde basis met klient te deel

**D 1: All Fieldwork - 1:28 nie te veel nie nie (3468:3486)**

nie te veel nie nie

**D 1: All Fieldwork - 1:34 manage the volumes (4271:4288)**

manage the volumes

**D 1: All Fieldwork - 1:56 baie mense praat met baie mense (7383:7413)**

baie mense praat met baie mense

**D 1: All Fieldwork - 1:61 Filter uit wat belangrike indligting is (8107:8145)**

Filter uit wat belangrike indligting is

**D 1: All Fieldwork - 1:76 side regarding the training: Time, date and content of course (5444:5504)**

side regarding the training:

Time, date and content of course

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#### ○ Engagement

**Created** by Nina vR on 2017-04-06

**3 Quotations:**

**D 1: All Fieldwork - 1:2 Engagement (405:414)**

Engagement

**D 1: All Fieldwork - 1:33 discipline (4127:4136)**

discipline

**D 1: All Fieldwork - 1:48 kom nie op site nie, kommunikeer nie met jou nie (6331:6378)**

kom nie op site nie, kommunikeer nie met jou nie

---

○ **Feedback**

**Created** by Nina vR on 2017-04-06

**11 Quotations:**

**D 1: All Fieldwork - 1:3 Response (416:423)**

Response

**D 1: All Fieldwork - 1:31 Kommunikasie van sukses (3685:3707)**

Kommunikasie van sukses

**D 1: All Fieldwork - 1:32 verhouding wat gebou word en persepsie (3888:3925)**

verhouding wat gebou word en persepsie

**D 1: All Fieldwork - 1:33 discipline (4127:4136)**

discipline

**D 1: All Fieldwork - 1:36 Verskillende rolspelers met verskillende verwagtinge (4396:4447)**

Verskillende rolspelers met verskillende verwagtinge

**D 1: All Fieldwork - 1:38 told about the training less than a week before (4614:4660)**

told about the training less than a week before

**D 1: All Fieldwork - 1:41 Lack of support (5321:5335)**

Lack of support

**D 1: All Fieldwork - 1:48 kom nie op site nie, kommunikeer nie met jou nie (6331:6378)**

kom nie op site nie, kommunikeer nie met jou nie

**D 1: All Fieldwork - 1:57 die wat dan elk rol vervul moet dan ingecopy word met kommunikasie (7583:7648)**

die wat dan elk rol vervul moet dan ingecopy word met kommunikasie

**D 1: All Fieldwork - 1:60 dringene terugvoer (7761:7778)**

dringene terugvoer

**D 1: All Fieldwork - 1:67 Om op te volg (8826:8838)**

Om op te volg

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## ○ Incomplete Information

Created by Nina vR on 2017-04-10

### 2 Quotations:

**D 1: All Fieldwork - 1:37 did not have complete information (4500:4532)**

did not have complete information

**D 1: All Fieldwork - 1:45 not sure what is required (5784:5808)**

not sure what is required

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## ○ Inter-dependent

Created by Nina vR on 2017-04-10

### 8 Quotations:

**D 1: All Fieldwork - 1:49 Middelpunt van kommunikasie, nie weerskante komunikeer (6386:6439)**

Middelpunt van kommunikasie, nie weerskante komunikeer

**D 1: All Fieldwork - 1:50 kan nie in isolasie 'n besluit neem nie (6698:6736)**

kan nie in isolasie 'n besluit neem nie

**D 1: All Fieldwork - 1:54 om iets te bereik moet besluit geneem word (7038:7079)**

om iets te bereik moet besluit geneem word

**D 1: All Fieldwork - 1:55 proses stadiger of met veranderings moet hele proses deurgaans om goedk... (7229:7311)**

proses stadiger of met veranderings moet hele proses deurgaans om goedkeuring te kry

**D 1: All Fieldwork - 1:57 die wat dan elk rol vervul moet dan ingecopy word met kommunikasie (7583:7648)**

die wat dan elk rol vervul moet dan ingecopy word met kommunikasie

**D 1: All Fieldwork - 1:66 het kostes en moet goedkeuring kry (8424:8457)**

het kostes en moet goedkeuring kry

**D 1: All Fieldwork - 1:69 management, heeldag besig met meetings (8909:8946)**

management, heeldag besig met meetings

**D 1: All Fieldwork - 1:70 individu moet dan verder verantwoordelikhed neem (9089:9137)**

individu moet dan verder verantwoordelikhed neem

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**○ Lack of Communication**

Created by Nina vR on 2017-04-10

**1 Quotations:**

**D 1: All Fieldwork - 1:40 Lack of communication (5299:5319)**

Lack of communication

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**○ Lack of Experience**

Created by Nina vR on 2017-04-07

**7 Quotations:**

**D 1: All Fieldwork - 1:11 do not have experience (1495:1516)**

do not have experience

**D 1: All Fieldwork - 1:12 do not really understand what the site is communicating (1522:1576)**

do not really understand what the site is communicating

**D 1: All Fieldwork - 1:25 Maniere hoe gekommunikeer word (3237:3266)**

Maniere hoe gekommunikeer word

**D 1: All Fieldwork - 1:26 ortuig (3314:3319)**

ortuig

**D 1: All Fieldwork - 1:28 nie te veel nie nie (3468:3486)**

nie te veel nie nie

**D 1: All Fieldwork - 1:42 Lack of experience, skills and knowledge (5337:5376)**

Lack of experience, skills and knowledge

**D 1: All Fieldwork - 1:54 om iets te bereik moet besluit geneem word (7038:7079)**

om iets te bereik moet besluit geneem word

---

## ○ Lack of Knowledge

Created by Nina vR on 2017-04-07

### 12 Quotations:

**D 1: All Fieldwork - 1:9 Urgency is not always explained (1277:1307)**

Urgency is not always explained

**D 1: All Fieldwork - 1:10 Call centre is not asking the right questions (1443:1487)**

Call centre is not asking the right questions

**D 1: All Fieldwork - 1:13 Information is not shared at the same level. (1579:1622)**

Information is not shared at the same level.

**D 1: All Fieldwork - 1:19 verwagting (2547:2556)**

verwagting

**D 1: All Fieldwork - 1:25 Maniere hoe gekommunikeer word (3237:3266)**

Maniere hoe gekommunikeer word

**D 1: All Fieldwork - 1:26 ortuig (3314:3319)**

ortuig

**D 1: All Fieldwork - 1:38 told about the training less than a week before (4614:4660)**

told about the training less than a week before

**D 1: All Fieldwork - 1:41 Lack of support (5321:5335)**

Lack of support

**D 1: All Fieldwork - 1:42 Lack of experience, skills and knowledge (5337:5376)**

Lack of experience, skills and knowledge

**D 1: All Fieldwork - 1:46 not clued up in common communication skills (5849:5891)**

not clued up in common communication skills

**D 1: All Fieldwork - 1:49 Middelpunt van kommunikasie, nie weerskante komuniqueer (6386:6439)**

Middelpunt van kommunikasie, nie weerskante komuniqueer

**D 1: All Fieldwork - 1:59 weet wie pas waar in (7718:7737)**

weet wie pas waar in

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○ **Language and Culture**

**Created** by Nina vR on 2017-04-06, **modified** by Nina vR on 2017-04-07

**5 Quotations:**

**D 1: All Fieldwork - 1:1 language and cultural barriers (374:403)**

language and cultural barriers

**D 1: All Fieldwork - 1:4 Language and cultural barriers (429:458)**

Language and cultural barriers

**D 1: All Fieldwork - 1:6 communication is still complicated (997:1030)**

communication is still complicated

**D 1: All Fieldwork - 1:46 not clued up in common communication skills (5849:5891)**

not clued up in common communication skills

**D 1: All Fieldwork - 1:71 Ingebou in karakter (9166:9186)**

Ingebou in karakter

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○ **Role Definition**

**Created** by Nina vR on 2017-04-07

**12 Quotations:**

**D 1: All Fieldwork - 1:16 weet nie wat rol (2353:2369)**

weet nie wat rol

**D 1: All Fieldwork - 1:36 Verskillende rolspelers met verskillende verwagtinge (4396:4447)**

Verskillende rolspelers met verskillende verwagtinge

**D 1: All Fieldwork - 1:45 not sure what is required (5784:5808)**

not sure what is required

**D 1: All Fieldwork - 1:51 al die vlakke van mense intrek (6744:6773)**

al die vlakke van mense intrek

**D 1: All Fieldwork - 1:52 weet nie dis hulle verantwoordelikheid (6885:6922)**

weet nie dis hulle verantwoordelikheid

**D 1: All Fieldwork - 1:57 die wat dan elk rol vervul moet dan ingecopy word met kommunikasie (7583:7648)**

die wat dan elk rol vervul moet dan ingecopy word met kommunikasie

**D 1: All Fieldwork - 1:58 ROLLE moet baie duidelik definieer word deur BESTUUR (7651:7702)**

ROLLE moet baie duidelik definieer word deur BESTUUR

**D 1: All Fieldwork - 1:59 weet wie pas waar in (7718:7737)**

weet wie pas waar in

**D 1: All Fieldwork - 1:62 rolspelers te identifiseer (8150:8175)**

rolspelers te identifiseer

**D 1: All Fieldwork - 1:63 inligting net vir die wat van toepassing is (8178:8220)**

inligting net vir die wat van toepassing is

**D 1: All Fieldwork - 1:64 Rolle moet duidelik wees (8222:8247)**

Rolle moet duidelik wees

**D 1: All Fieldwork - 1:70 individu moet dan verder verantwoordelikheid neem (9089:9137)**

individu moet dan verder verantwoordelikheid neem

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○ **Update**

Created by Nina vR on 2017-04-10

**13 Quotations:**

**D 1: All Fieldwork - 1:18 op datum hou (2475:2487)**

op datum hou

**D 1: All Fieldwork - 1:21 in die loop te hou (2648:2665)**

in die loop te hou

**D 1: All Fieldwork - 1:22 bestuurder op hoogte hou (2710:2733)**

bestuurder op hoogte hou

**D 1: All Fieldwork - 1:24 Op hoogte vn sake (3114:3130)**

Op hoogte vn sake

**D 1: All Fieldwork - 1:27 om regte informasie op gereelde basis met klient te deel (3410:3465)**

om regte informasie op gereelde basis met klient te deel

**D 1: All Fieldwork - 1:28 nie te veel nie nie (3468:3486)**

nie te veel nie nie

**D 1: All Fieldwork - 1:30 ingelig (3654:3660)**

ingelig

**D 1: All Fieldwork - 1:48 kom nie op site nie, kommunikeer nie met jou nie (6331:6378)**

kom nie op site nie, kommunikeer nie met jou nie

**D 1: All Fieldwork - 1:53 klomp rolspelers is betrokke en dit begin cascade van klient na FMC, n... (6925:7022)**

klomp rolspelers is betrokke en dit begin cascade van klient na FMC, na retailers, na kontrakteurs

**D 1: All Fieldwork - 1:54 om iets te bereik moet besluit geneem word (7038:7079)**

om iets te bereik moet besluit geneem word

**D 1: All Fieldwork - 1:57 die wat dan elk rol vervul moet dan ingecopy word met kommunikasie (7583:7648)**

die wat dan elk rol vervul moet dan ingecopy word met kommunikasie

**D 1: All Fieldwork - 1:63 inligting net vir die wat van toepassing is (8178:8220)**

inligting net vir die wat van toepassing is

**D 1: All Fieldwork - 1:67 Om op te volg (8826:8838)**

Om op te volg

---

## ○ Urgency

Created by Nina vR on 2017-04-10

### 4 Quotations:

**D 1: All Fieldwork - 1:23 sekere vlak van prioriteit (2995:3020)**

sekere vlak van prioriteit

**D 1: All Fieldwork - 1:41 Lack of support (5321:5335)**

Lack of support



**D 1: All Fieldwork - 1:60 dringene terugvoer (7761:7778)**

dringene terugvoer

**D 1: All Fieldwork - 1:76 side regarding the training: Time, date and content of course (5444:5504)**

side regarding the training:

Time, date and content of course

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○ **Volume of Priorities**

Created by Nina vR on 2017-04-12

**1 Quotations:**

**D 1: All Fieldwork - 1:69 management, heeldag besig met meetings (8909:8946)**

management, heeldag besig met meetings

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○ **Volume of Role Players**

Created by Nina vR on 2017-04-10

**12 Quotations:**

**D 1: All Fieldwork - 1:20 Baie kommunikasie en rolspelers (2596:2626)**

Baie kommunikasie en rolspelers

**D 1: All Fieldwork - 1:22 bestuurder op hoogte hou (2710:2733)**

bestuurder op hoogte hou

**D 1: All Fieldwork - 1:27 om regte informasie op gereelde basis met klient te deel (3410:3465)**

om regte informasie op gereelde basis met klient te deel

**D 1: All Fieldwork - 1:34 manage the volumes (4271:4288)**

manage the volumes

**D 1: All Fieldwork - 1:35 Type of communication will depend on objective (4290:4335)**

Type of communication will depend on objective

**D 1: All Fieldwork - 1:36 Verskillende rolspelers met verskillende verwagtinge (4396:4447)**

Verskillende rolspelers met verskillende verwagtinge

**D 1: All Fieldwork - 1:51 al die vlakke van mense intrek (6744:6773)**

al die vlakke van mense intrek

**D 1: All Fieldwork - 1:53 klomp rolspelers is betrokke en dit begin cascade van klient na FMC, n... (6925:7022)**

klomp rolspelers is betrokke en dit begin cascade van klient na FMC, na retailers, na kontrakteurs

**D 1: All Fieldwork - 1:55 proses stadiger of met veranderings moet hele proses deurgaans om goedk... (7229:7311)**

proses stadiger of met veranderings moet hele proses deurgaans om goedkeuring te kry

**D 1: All Fieldwork - 1:56 baie mense praat met baie mense (7383:7413)**

baie mense praat met baie mense

**D 1: All Fieldwork - 1:57 die wat dan elk rol vervul moet dan ingecopy word met kommunikasie (7583:7648)**

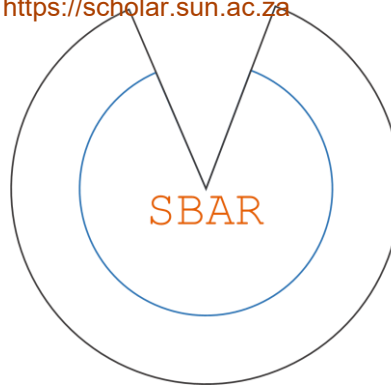
die wat dan elk rol vervul moet dan ingecopy word met kommunikasie

**D 1: All Fieldwork - 1:68 Verskille in rolspelers en wat hulle doen (8851:8891)**

Verskille in rolspelers en wat hulle doen

## Appendix G

# Face Validation Questionnaire



**Validation of the COMMPAS (Communication in Managing Physical Assets) Model:**

1) Considering the root causes identified, what is your opinion of the COMMPAS model as a potential solution to support organisations in the PAM industry to communicate effectively? Please explain.

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2) In your opinion what are the strengths of the COMMPAS model?

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3) What are the weaknesses?

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4) Please comment on the following aspects:

	Very Good	Good	Fair	Poor
Understanding of problem				
Conceptualisation of operational root causes				
Logical description of model				
Implement-ability				
Applicability of model				
Relevance of model (does the model represent the real problem and address it effectively?)				

5) Based on your previous comments, how would you improve the COMMPAS model?

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Thank you!

## G.1 Questions and Feedback

The following is a verbatim transcript of the response of the fifteen participants to each research question:

- 1. Considering the root causes identified, what is your opinion of the COMMPAS model as a potential solution to support organisations in the PAM industry to communicate effectively? Please explain.**

**P1** *“Super interesting. Lots of potential. When can we trial the concept?”*

**P2** *“The model has a potential to work, but it will need to be put into practice and testing, through application/ implementation. In theory it covers good aspects.”*

**P3** *“I think it solves a lot of issues. It could inquire further development from a company using it as well as future development of this model.”*

**P4** *“This is potentially a great solution presented.”*

**P5** *“PAM model has identified key issues that every organisation (department) is facing which is very much ideal. The solution implemented is very important and must be designed in a way that speaks to all those that are concerned. I think it must be a case-by-case solution.”*

**P6** *“It looks like a great model, it address a broad spectrum of potential problems.”*

**P7** *“It will be a benefit to the PAM industry. As teh data was based on the PAM industry, I believe it covers all important aspects. If a company can successfully go through the process to implement the model (it should also be implemented downwards - contractors), the company will be more effective and have a competitive advantage.”*

**P8** *“I think there is a lot of potential in this model. It makes sense and the possibility of bridging the gaps of identified causes can solve many problems, internally and externally. The structure and approach is sound - would like to test and implement it.”*

**P9** *“I think it is a solution that can be effective and if implemented, will solve a lot of communication issues.”*

**P10** *“Good - Effective model to use in the PAM industry as universal, would be good to see how it gets implemented or how it should be implemented and the framework to be used/ guideline.”*

**P11** *“In my opinion, I think the model will cover the general constraints experienced within our organisations communication barriers.”*

- P12** *“It has potential but I would rearrange the method of communication by stating what I need from the receiver and then only giving background at the end. This is to achieve communication toward the solution quicker because we deal with a lot of information.”*
- P13** *“This can be tried at division or department levels and its maturity can be evident in the entire organisation but will take time.”*
- P14** *“The model is fine, however more emphasis are still required in extensive training.”*
- P15** *“I think it is a wonderful initiative that can be useful. I think you should always keep in mind who will receive the communication with a basic understanding of where they come from.”*

**2. In your opinion, what are the strengths of the COMMPAS model?**

- P1 *“It guides participatns to be focused and concise.”*
- P2 *“Training.”*
- P3 *“It goes into the background and root problem in company cultures, where the problem lies instead of solving the immediate communication issue. Which is good.”*
- P4 *“Easy to understand therefore share within organisations.”*
- P5 *“Problem identification.”*
- P6 *“The fact that it covers a broad spectrum and then narrow it to aspects to address communication.”*
- P7 *“The model is thorough. I think it is something new for the PAM industry (not research done before).”*
- P8 *“1 – The possibility of clear communication between different roes and stakeholders, elimintating misunderstandings and hold-ups. 2– Experience is not necessarily relevant.”*
- P9 *“It is a structured way to communicate and if it gets intrenched in a company’s culture, it will be a sustainable solution.”*
- P10 *“SBAR, understanding backgrounds to enhance individual thinking by instilling company culture (if company has this already). The above is due to everyone having different backgrounds.”*
- P11 *“The model highlights all areas that need focus and attention to be as clear as possible.”*
- P12 *“Giving out detailed information of the whole scenario.”*
- P13 *“1 – It is a continuous process. 2 – It can be easily implemented as per discipline only and not one entire organisation.”*
- P14 *“1 – Effective training. 2 – Clear management structures.”*
- P15 *“Working with the different root causes and looking at communication from different points of view.”*

**3. What are the weaknesses?**

- P1 *“That we don’t implement it from day one. We should train on the methodology, then practice, then make it stick!”*
- P2 *“Culture. It is not easy to have an effective communication culture, because of different cultural backgrounds.”*
- P3 *“1 – It does not go into the buy-in from lower level employees which a system is focused upon. 2 – Change management.”*

**P4** *“As with any great theoretical idea – criticality lies in the implementation thereof – so it would only fail in the hands of the people who would be exercising it.”*

**P5** *“1 – Solution implementation: I would want to know more what is then the next phase, is PAM a turn-key solution. 2 – (1) Problem Identification, (2) Improvement strategy, (3) Implement, (4) Results.”*

**P6** *“The only thing problemability that it was not tested and implemented yet in full.”*

**P7** *“The research needs to be implemented in a company as a case study and the results monitored in order to obtain an outcome.”*

**P8** *“How effective training will be needs to be tried and tested.”*

**P9** *“Change management to implement accross different organisations.”*

**P10** *“Buy in and support. How will this system not cost money, add to bottom line, and will there be less time involved to implement with less recources utilised.”*

**P11** *“The model does not tie together the relationship of the three areas and their interdependence and influence on each other.”*

**P12** *“The order of communication, first state what you need from the other party before background before you lose them in the background.”*

**P13** *“Too much communication or information may be a problem as well when trying to keep on communicating.”*

**P14** *“It must be more simple.”*

**P15** *“Training effectiveness – there needs to be an environment where training can be applied and practiced.”*

**5. Based on your previous comments, how would you improve the COMMPAS model?**

**P1** *“The model is perfect. Incorporate steps to implement and expected outcomes in slides.”*

**P2** *“N/A”*

**P3** *“I would look at solving part of the problem at the root of it instead of identifying it at the root and solving from the front end. Mostly this idea is the most realistic solution to the problem. I would also just implement a re-analysis after the solution to make sure you did not create another unexpected root problem just for assurance.”*

**P4** *“Emphasis on the potential of over detailing of the problem (overthinking).”*



- P5** *“Display the issues and provide real solutions that can be tested and implemented. By this is a real and system for problem for problem identification – I am impressed.”*
- P6** *“I would first need to go through implementation steps to see where it can be enhanced.”*
- P7** *“I do not know enough about the model to suggest improvements. I think once the model is practically tested, possible issues might arise for improvement.”*
- P8** *“Don’t see any obvious ways to improve! Well done!”*
- P9** *“\_”*
- P10** *“Provide implementation guideline with various scenarios which can be used that will cost little or no money to organisations that will take up less resource. Otherwise great system.”*
- P11** *“Identify the key problems and link these problems to each gap area in the model. The model should be diverse to work in, out and vice versa.”*
- P12** *“Situation, Recommendation, Background, Assessment.”*
- P13** *“Put it into practice and assess on any that fall or at time remove the unnecessary task of effective communication.”*
- P14** *“1 – Clear description of expectations from all parties involved. 2 – Ongoing skills development.”*
- P15** *“Focus on the follow-thru and effectiveness of the training.”*

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