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A MANAGERIAL FRAMEWORK FOR THE ENABLEMENT OF THE PERFORMANCE OF VIRTUAL KNOWLEDGE WORKERS

by

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ABSTRACT

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With the increasing use of mobile technologies in modern organisations, managers are facing the dilemma of having to manage the performance of individuals who are removed from their direct sphere of control, while using performance management principles that have not necessarily been adapted to accommodate this. The study investigated, analysed and described the management and measurement of the performance of these virtual knowledge workers from the perspective of the manager, with the aim of proposing a new conceptual framework to assist managers in this task. In addition, the study identified the organisational context and individual contribution required to support such a framework.

The study used a constructivist grounded theory framework, with the aim of building theory through an inductive approach rather than testing existing theory. An embedded, multiple-case study research design was used to execute the study, comprising five companies in the Information and Communications Technology and related sectors in South Africa. Quantitative and qualitative data were collected at the organisational, team and individual levels. In total, 39 interviews were qualitatively

analysed using content analysis aided by ATLAS.ti. The 163 questionnaires were quantitatively analysed using descriptive statistical methods. Thereafter, within-case and cross-case analyses were performed to extract themes and to propose a conceptual framework for the enablement of the performance of virtual knowledge workers.

The research uncovered four key findings. The first finding was that the concept of "virtual" in the term virtual worker is often misunderstood, and that the definition should be applied on a continuum of virtuality, leading to the concept of perceived and true virtuality. The second finding was that true virtuality influences how performance is perceived, and how deliverables and metrics contribute to perceived, actual and true performance. The third finding was that parameters affecting virtual performance include organisational, contextual, and customer factors, as well as the managerial approach itself. The manager needs to become the mediator for these parameters, thereby fulfilling the role of enabler of virtual performance. The fourth finding was that the visual or face-to-face element still remains important when managing the performance of virtual knowledge workers.

The study makes a significant contribution on a theoretical level by extending existing theoretical models regarding virtual distance and the management of dispersed teams into a much more comprehensive model. This *concentric performance enablement model for virtual knowledge workers* shows how the manager acts as enabler for the true performance of the virtual knowledge workers. On a methodological level, the research demonstrates how an embedded, multiple-case study, executed on three levels of analysis, and based on a grounded theory approach, can be executed to develop theoretical insights into the complex phenomenon of enabling the performance of virtual knowledge workers; and lastly the study has also made a contribution on the level of practice, by giving managers a conceptual framework and practical recommendations on how to manage and enable the performance of virtual knowledge workers.

KEYWORDS: Virtual worker; Knowledge worker; Performance management, Management Framework; E-leadership; Virtual Performance (Perceived and true performance); Degrees of virtuality (True virtuality); Sociomateriality.

DECLARATION OF ORIGINALITY

I, Karen Luyt, declare that “A Managerial Framework for the Enablement of the Performance of Virtual Knowledge Workers” is my own unaided work both in content and execution. All the resources I used for this study are cited and referred to in the list of references by means of a comprehensive referencing system. Apart from the normal guidance from my study leaders, I have received no assistance, except as stated in the acknowledgements.

I declare that the content of this thesis has never before been used for any other qualification at any tertiary institute.

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2012-08-31



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DEDICATION

To my husband Rick, who has supported me all the way a thousand times over!

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CHAPTER 1

1 STUDY BACKGROUND

1.1 INTRODUCTION

This study investigated the components required for managers to enable their team members who create information-driven deliverables while working remotely from them to produce according to expectations, with the aim of creating: *“A managerial framework for the enablement of the performance of virtual knowledge workers”*.

Chapter 1 provides the background to and motivation for the research, summarising the problem statement and describing the purpose of the research. These were translated into the research objectives that have driven and guided the research process. This chapter also gives a preview of the theoretical, methodological and practice-level contributions that the research has made. The research scope and approach, namely an embedded multiple-case study using mixed data collection and analysis methods in support of the problem statement and purpose, are described, as well as the assumptions made. Next, the chapter provides definitions of the key terms used in the study, namely the concepts of organisation, virtual worker and performance management. Some neologisms, such as “virtual performance” and “virtuality”, which are not necessarily dictionary terms, but are used extensively in this study, are also explained. Lastly, the chapter layout is described. It should be noted at this early point that the traditional sequence of chapters, namely “Introduction, - Literature Review – Methodology”, has not been used for the first three chapters. This is in line with the research process of constructivist grounded theory which has been followed.

1.1 BACKGROUND AND RESEARCH MOTIVATION

Over the last decade, the advances in information and communication technology and the use of the internet and broadband technologies have become more pervasive in work situations (Raghuram, Gurad, Wiesenfeld & Gupta, 2001:384; Raghuram, Wiesenfeld, & Gurad, 2003:181), enabling various changes in organisational structures. These organisational structures range from the original hierarchical and bureaucratic organisations described by Weber (1947:7) to the multinational and global corporations with their inter-organisational networks and modular forms (Ghoshal & Bartlett, 1990:603; Schilling & Steensma, 2001:1149). The advances in information and communication technology have also allowed work to become more dispersed and remote from direct management (Jackson, Gharavi & Klobas, 2006:219), as opposed to the standard worker in a bureaucratic organisation who worked in a fixed employer location, was directly controlled by management and had fixed office hours.

The new type of workers are sometimes referred to as nonstandard workers, working in a geographically remote location, not under the direct control of management, and not necessarily bound by strict office hours (Ashford, George & Blatt, 2007:66-69; Connelly & Gallagher, 2004:959). These work arrangements give organisations various financial and functional benefits, such as being able to scale the workforce, scale the level of skills and reduce the cost associated with physical office space (Broschak, Davis-Blake & Block, 2008:4; Cappelli, 1999:151-152; Cascio, 2000:81-82). Barley and Kunda (2001:76) state that the theories for studying bureaucratic organisations no longer apply to the changed organisational landscape, and need to be recast, specifically through applying work studies on the new contingent (nonstandard) work arrangements.

In this information age, information has become the new commodity (Chichilnisky, 1998:39; Drucker, 1999:97), with the knowledge workers as the “vessel” of this commodity, who therefore own the means of production through the knowledge they possess (Drucker, 1999:149). These knowledge workers are also defined by Davenport (2005:10) as having "... high degrees of expertise, education, or experience, and the primary purpose of their jobs involves the creation, distribution,

or application of knowledge". By performing these knowledge activities, the knowledge worker contributes to the performance of the organisation. Both Drucker (1999:135) and Davenport (2005:8) agree that the productivity of knowledge workers, and the measurement of their productivity, is therefore of key importance to organisations.

However, due to the complexity of the concept of knowledge workers and their performance, the research has not been exhaustive, nor has it been able to create and test new theory in any definitive way. The difficulty lies in the fact that the tasks often need to be defined by the knowledge workers themselves, and that the knowledge of how the task is done is the knowledge worker's competitive advantage. This may lead to the knowledge worker withholding (either consciously or subconsciously) specific information that is relevant to the task and its measurement (Davenport, 2005:17-21; Drucker, 1999:142).

In the early 20th century, Taylor (1916:36) applied scientific management to break down a task to its lowest components. However, this principle cannot be applied to the modern knowledge worker (Davenport, 2005:45). In addition, the added complexity is that the advances in mobile technologies have allowed knowledge workers to work in a place geographically remote from their traditional workplace (Ashford *et al.* 2007:69; Luyt, 2007:13). The effect is that the workers are "... removed from the direct sphere of influence of management and co-workers" (Jackson *et al.*, 2006:219). Workers fitting this description will be referred to as virtual knowledge workers in the context of this study.

Performance management and measures, like many of the other organisational management tools, have not been sufficiently adapted to reflect the new way of work, and are often still based on the outdated bureaucratic principles of organisation theory and design (Drucker, 1974:166; Barley & Kunda, 2001:45). These new workplace dynamics need to be investigated, especially in relation to individual performance and the management of this performance (Ashford *et al.*, 2007:69–74). If the new way of work and models are not considered and included in further research, the following statement may become true: "Over time, society will change and people's expectations of organizations will change accordingly. An organizational

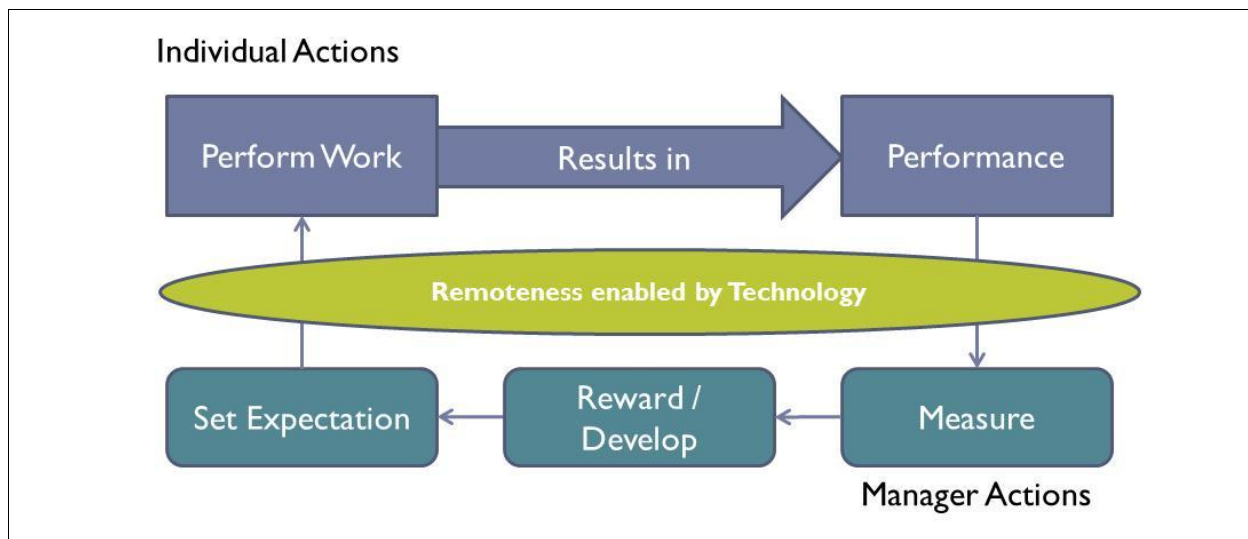
behaviour field that clings to an outdated model of individuals and their interactions with organizations will become anachronistic" (Ashford *et al.*, 2007:106).

For virtual knowledge workers, Cascio (2000:88) makes the statement that goals must be set, and assessment mechanisms put in place, i.e. "develop specific, challenging goals, measures of the extent to which goals have been accomplished and assessment mechanisms so that workers and managers can stay focussed on what really counts". Davenport (2005:26) states that measures will differ according to the type of knowledge worker. Drucker (1999:149) gives high-level guidelines regarding the measurement of knowledge workers, rather than a definitive set of metrics. In Jackson *et al.* (2006:241), there is a suggestion to review how the use of information technology can assist with monitoring individuals, specifically related to the role of the "inner panopticon", i.e. where individuals start monitoring themselves, as opposed to there being a need for external monitoring.

The importance of this study is therefore that it filled the gap regarding the understanding of management of performance of remote individuals by specifically focusing on the performance of virtual knowledge workers, and how the manager could enable this. The study also created a more consolidated view of all the parameters impacting on this virtual performance. To do so, the study was performed in real-life, modern organisations through the case study methodology.

As shown in the background literature, technology has been the key enabler for remote work. At the same time technology has also become a barrier, by making it more difficult for the manager to set expectations and to track the result of the activities. The actions of the individual and the manager and the impact of the technology on this are shown in Figure 1-1. This diagram compares with the very simple but clear definition provided by Dunnette and Fleishman (1982:xx) that performance is "...the results or outcomes of work", thereby opposing it to behaviour. They state that "... performance is the end result and behaviour is the means to that end". The individual performs work and performance is the output thereof, as shown in Figure 1-1.

Figure 1-1: Model for actions of individual and manager showing technology impact



In Chapter 3, the initial literature review gives a historical perspective of performance appraisals, including their objectives (Cascio, 1998:33; Harvard Business School, 2007:1; Latham and Wexley, 1994:5); systems and types of instrument involved (Grobler, Warnich, Carrell, Elbert & Hatfield, 2006, 262; Latham & Wexley, 1994:47); and issues encountered with performance appraisals (Cascio, 1998:58; Culbert, 2008; Harvard Business School, 2007:2-3; Latham & Wexley, 1994:1). Some research has been conducted relating to the performance and measurement of virtual knowledge workers, and how this differs from the more traditional approaches (Broschak *et al.*, 2008:22; Davenport, 2005:39; Drucker, 1999:142; Jackson *et al.*, 2006:221, Piccoli, Powel & Ives, 2004:372).

The theories that are affected by this adjusted way of work are then discussed, and include socialisation (Barley & Kunda, 2001:87; Broschak *et al.*, 2008:18-19), the psychological contract (Rousseau & Tijoriwala, 1998:679), self-efficacy (Staples, Hlland & Higgins, 1999:758-776), goal-setting (Locke, Latham & Erez, 1988:23; Locke & Latham, 2006) and management control (Jackson *et al.*, 2006:220). Finally there is a short review on how information systems and management of performance are used in the context of virtual work (Limburg & Jackson, 2007).

1.2 PROBLEM STATEMENT

Performance management principles and measures in modern organisations have not adapted sufficiently to enable and measure the performance of knowledge workers both effectively and efficiently. With the advent of mobile technologies, management now face a double dilemma of not only having to manage the performance of knowledge workers who work within their direct sphere of influence, but they also need to manage the performance of virtual knowledge workers whom they cannot see on a day-to-day basis. This often leads to management's perceptions of low productivity, especially where trust is low. It can also lead to reduced productivity on the part of the virtual knowledge workers if tasks and deliverables are not defined or agreed on sufficiently, or when too many controls are instituted. In short, the problem that this study addresses is that managers in general have great difficulty with managing the performance of virtual knowledge workers.

1.3 PURPOSE STATEMENT

The purpose of the study was to *investigate, analyse and describe* the ongoing or continuous management and measurement of performance of virtual knowledge workers from the perspective of the manager. It would also *explore* why managers often found it so difficult to manage the performance of this type of worker. The ultimate aim of the study was to suggest a new conceptual framework or intellectual tool to *prescribe*, or rather *suggest, how* managers should manage and enable the performance of virtual knowledge workers.

1.4 RESEARCH OBJECTIVES

The research objectives have been based on the purpose of the study, and the resulting objectives and sub-objectives are listed in Table 1-1.

Table 1-1: Research objectives and sub-objectives

Objective	Sub-Objective
1) To critically review the current state of knowledge and understanding of how the performance of virtual knowledge workers is managed.	RO1: To critically review the current state of knowledge and understanding of how the performance of virtual knowledge workers is managed .
2) To analyse and describe how the organisational context and the approach of managers affect the behaviours and outputs of virtual knowledge workers.	RO2a: To analyse and describe how the organisational context affects the performance and outputs of virtual knowledge workers.
	RO2b: To analyse and describe how the approach of managers affects the performance and outputs of virtual knowledge workers.
	RO2c: To determine what individual factors play a major role in the performance of virtual knowledge workers.
3) To create a new conceptual framework or intellectual tool to help managers to manage and enable the performance of virtual knowledge workers, and suggest what organisational context would be required to support this.	RO3a: To create a new conceptual framework or intellectual tool to help managers to manage and enable the performance of virtual knowledge workers.
	RO3b: To determine what organisational context would be required to support this new conceptual framework.
	RO3c: To determine how individual factors might influence the definition of the intellectual tool.

1.5 CONTRIBUTIONS OF THE RESEARCH

The aim of this study was to build theory by introducing new constructs and by reconceptualising existing constructs through the data-analysis process of constructivist grounded theory, and by following the multiple-case study strategy of inquiry. In this regard, the extended theoretical models that were created based on the real-life multiple-case study used for this research can be used as a basis for future research.

Furthermore, the study makes a significant contribution on a methodological level by showing how multiple cases that include embedded units of analysis on three levels can be analysed and documented in a systematic way, using both qualitative and quantitative data collection and analysis methods. The research therefore demonstrates how such a multi-faceted study can be executed to develop theoretical insights into the complex phenomenon of enabling the performance of virtual knowledge workers.

From a practice or practical perspective, the study makes a contribution by addressing the gap in the understanding of how the performance of virtual knowledge workers is actually being managed and enabled, and provides a conceptual framework that could assist managers in the management of virtual performance.

In addition the study also makes a contribution on a policy level, by identifying areas where changes may be required to policies in support of the management of performance of virtual knowledge workers on organisational level.

1.6 RESEARCH SCOPE AND APPROACH

The study was performed as an embedded, multiple-case study design because a current, real-life situation needed to be reviewed. Multiple cases were included to ensure that generalisations could be achieved across the cases, and that theory could be built in this way. The cases were represented by a set of companies that were using information and communication technology (ICT) as part of their daily business, or implemented such solutions, and which employed knowledge workers to do so. This excluded factories or manufacturing concerns, where many functions still have to be performed by on-site staff. Both fully owned South African companies and companies with international parents were included. Some of the South African companies also had branches overseas. This gave a good spread of managers and individuals locally in South Africa, the United States (US) and the Eurozone, thereby covering managers and individuals in different countries and time zones. A set of four companies was initially included, and this was extended to a fifth company to ensure that data saturation had been achieved.

The study had an embedded design, as multiple units of analysis were used. The units of analysis included teams of individuals, managers, and the organisation. The *team* in the context of this study consisted of the combination of the manager and the individual team members. Multiple teams per business unit were included in order to ensure sufficient coverage of those business units and probable data saturation. From a *manager perspective*, the study included teams who were managed by either a project manager or by their line manager. On the *organisational level*, the company

was represented by one Human Resources (HR) and one Information Technology (IT) representative. It was not always possible to gain access to the full HR or IT policies, and the company representatives in these cases provided the relevant extracts only.

A *mixed methods approach* was used to collect and analyse the data. Analysis of and comparisons took place both within-case and cross-case. The study was executed in the framework of constructivist grounded theory, with the aim of building theory through an inductive approach rather than testing existing theory.

Although the study centred on the performance of virtual knowledge workers, the aim was not necessarily to find ways to improve performance, but rather to measure and evaluate how performance was currently being managed and enabled. Even though knowledge management is important in the context of knowledge workers and the modern organisation, the study did not explore the knowledge worker in more detail. Lastly, the focus was on enablement and management of virtual performance and not management in general.

1.7 ASSUMPTIONS

Leedy and Ormrod (2010:5) state that assumptions are often like "... axioms in geometry – self-evident truths...". It is therefore important to identify these assumptions and make them explicit. If they do not hold true, the whole research effort may be in vain. Three areas of assumptions have been addressed.

From a *theoretical perspective*, the assumption was that no single theory exists that can adequately describe how performance of virtual knowledge workers is managed. The interplay between the theories that occur in a specific context could have different results because of the impact of the different variables on each other.

Two key assumptions on the *research philosophy and paradigm* were identified. Firstly, in relation to an interpretivist view, there is a belief that there is not one truth only which will be found through diligent search. This is important from a social

sciences perspective, since a company cannot be frozen or placed in a laboratory in order to obtain a controlled and definitive result. Rather, there are multiple truths that will emerge through different contexts. The second assumption, in relation to the research philosophy of pragmatism, was that quantitative and qualitative methods can be implemented together in a mixed methods approach. The research philosophy and paradigm are described in more detail in Chapter 2 of this document.

Lastly, from a *methodological point* of view, the assumption was that the chosen organisations would sufficiently represent the phenomenon under consideration, namely the management of performance of virtual knowledge workers. Also that both the managers and the individual team members would truthfully answer the questions in relation to how performance is measured.

All of these assumptions have held true throughout the research process.

1.8 DEFINITION OF KEY TERMS

There are three areas that are defined in this section: firstly, terms relating to the concept of the organisation, secondly terms relating to the concept of the virtual worker (standard, nonstandard, virtual knowledge worker), and lastly terms relating to the concept of performance management.

The study takes place against the backdrop of how the structure of organisations has changed since the beginning of the 20th century till the present day. The term "bureaucratic organisation" is used when referring to organisations that comply with traditional structures and management approaches, while the term "modern organisation" is used for organisations of the present day. The term "virtual workplace" is defined as an extension of the modern organisation. The details are given below.

- **Bureaucratic organisation:** the type of organisation where ownership is split from management, and the managers become "officials" responsible for an "office". Each office has legal authority, must adhere to rules, works within a specific area of skills, adheres to pre-agreed supervisory hierarchy, and all

decisions are confirmed in writing (Weber, 1947:8–9). Typical examples were the large factories of the late 19th and early 20th century.

- **Modern organisation:** Globalisation, together with the advances in ICT, has set the stage for societies of organisations, interorganisational networks of multinational corporations, virtual workplaces and boundaryless organisations (Ghoshal & Bartlett, 1990:603; Schilling & Steensma, 2001:1149, Walsh, Meyer & Schoonhoven, 2006:665). "Boundaryless" does not only relate to interaction between various independent organisations, but also to geographic location, type of work contract, approach of the manager, and structure of work in these organisations (Cappelli, 1999:154; Scott, 2004:10).
- **Virtual Workplace:** "[A] workplace where the time and location can be chosen and technology will be the key enabler for connectivity and collaboration. Time will be chosen in terms of a schedule ('when' work is performed) and proportion ('how many hours' are spent working virtually). Location can vary between the main office location, a satellite office location (this could also be a customer site), home and any other non-traditional working place where technology enables connectivity (for example a coffee shop with wireless connection)" (Luyt, 2007:13).

In the domain of the modern organisation, and with the growth of information and communication technology, new ways of work have become feasible. Reference is made to "nonstandard workers", meaning that their previous way of working was standard, and they are now working in a nonstandard way. In the context of using information technology, many new types of jobs were created that were based more on knowledge as the commodity, rather than a specific tangible product or deliverable, as in factory work. Thus the concept of a knowledge worker was born. The fact that these knowledge workers could work remotely from a central office and collaborate via information technology gave rise to the term "virtual knowledge worker". These terms are now explained in more detail, and how they apply in the study:

- **Standard work(er):** Standard work is linked to elements of the "Weberian bureaucracy" such as a lifelong career in the organisation, implying a long-term relationship with the organisation (*i.e.* a strong employee-organisation

relationship). The contract for the standard worker in a bureaucratic organisation was fixed employer location, direct control by management and fixed hours (Ashford *et al.*, 2007:76).

- **Nonstandard work(er):** Broschak *et al.* (2008:3, 4) define the term nonstandard work as a work arrangement which includes non-permanent contracts, as opposed to standard work, which is defined as a “full-time work for an open-ended duration, performed at an employer-owned location and under the employer’s administrative control”. Other terms used for these types of nonstandard worker include contingent workers, temporary workers and contract workers. Although the research does not necessarily refer to virtual work, activities of the nonstandard worker could potentially be performed away from the appointed manager. Where individuals specifically work away from their manager as virtual workers, terminology for these workers includes telecommuter, teleworker and mobile workers, to mention but a few (Ashford *et al.*, 2007:165; Cascio, 2000:85).
- **Knowledge Worker:** This is somebody who trades in knowledge. In other words, these are individuals who engage on a cognitive level with work, and even though they may produce tangible results or deliverables in the form of reports, computer programs, analysis and the like, the work actually may stop when the individual leaves the organisation. In addition, two similar deliverables are often difficult to compare in terms of their quality (Davenport, 2005:10; Drucker, 1999:149).
- **Virtual Knowledge Worker:** Knowledge workers who work geographically remotely from the traditional workplace (Ashford *et al.*, 2007:69; Luyt, 2007:13) are as a result “...removed from the direct sphere of influence of management and co-workers” (Jackson *et al.*, 2006:219). When considering the definition of the virtual workplace above, types of virtual knowledge workers can be defined in terms of when work is performed, how many hours are spent working remotely (in relation to the total hours worked), the location used and finally the type of contract. Virtual work is seen as working outside the main office at least one day a week (Illegems & Verbeke, 2004:319).
- **Telecommuter:** Telecommuting is working away from the main office location, of which home could be one of the options, while being connected via

technology (Cascio, 2000:85; Duxbury and Higgins in Schweitzer & Duxbury, 2006:105). In this sense the terms “telecommuter” and “virtual worker” are seen as synonyms in this study. Cascio (2000:85), however, emphasises the point that the individual does not have face-to-face contact with his or her manager and colleagues, except through the technology, which would preclude locations such as regional offices or customer sites, while the current study does include those locations as part of the telecommuting or virtual work definition.

From a definitions perspective, the term “performance management” (as opposed to management of performance) is very important. Traditionally, performance management has been seen as a way to ensure continuous improvement of employees and is normally completed on a bi-annual basis.

- **Performance Appraisal:** Performance appraisal is the process of evaluation whereby the performance and behaviour of the individual is compared with the previously stated objectives of the job. This is to ensure that the behaviour is still directed towards the overall objectives of the organisation (Cascio, 1998:40; Grobler *et al.*, 2006, 262; Miner, 1992:379). The individual must be both effective in achieving the behavioural expectations (Latham & Wexley, 1994:3) and efficient or productive (Latham & Wexley, 1994:45). In the context of the socialisation process, the evaluation of performance will give an indication whether the individual has adapted to the culture and processes in the organisation (Ivancevich & Matteson, 2002:79). Synonyms of the term performance appraisal include performance review, performance evaluation, merit evaluation and employee evaluation (Grobler *et al.*, 2006:262).
- **Performance Management vs Management of Performance:** Performance appraisals fall within the broader concept of performance management, which forms part of an organisation's human resource management processes. Performance management covers the total process of performance, and ranges from the appraisal tools to goal setting, evaluation, development and continuous feedback (Grobler *et al.*, 2006:262; Latham & Wexley, 1994:3; Williams, 2007:23). Performance *per se* should be separated from the outcomes or results of performance, which are seen as effectiveness (Cascio,

1998:43). The focus of the study was on the management of performance of virtual knowledge workers, which does not necessarily imply using only a formal performance management system.

- **Information Systems:** These can be defined as systems that support collaboration, communication and socialisation, as well as the measurement of performance, and may include HR systems such as the Enterprise Resource Planning (ERP) systems, SAP. Limburg and Jackson (2007:146) investigated the use of information systems to support the management of remote workers.

Some additional terms that have been used in the context of this research, which are not necessarily common terminology, are:

- **Virtual performance:** is used to indicate the performance where the individual is working remotely from the manager;
- **Virtuality:** is used to indicate the virtual status of the individual;
- **Teamness:** refers to the sense of teamwork, and relates to the cohesion and interdependence amongst team members which is created through the communication of feelings, sensory information, and roles and identities in written or verbal communication (Knoll & Jarvenpaa, 1998:10).

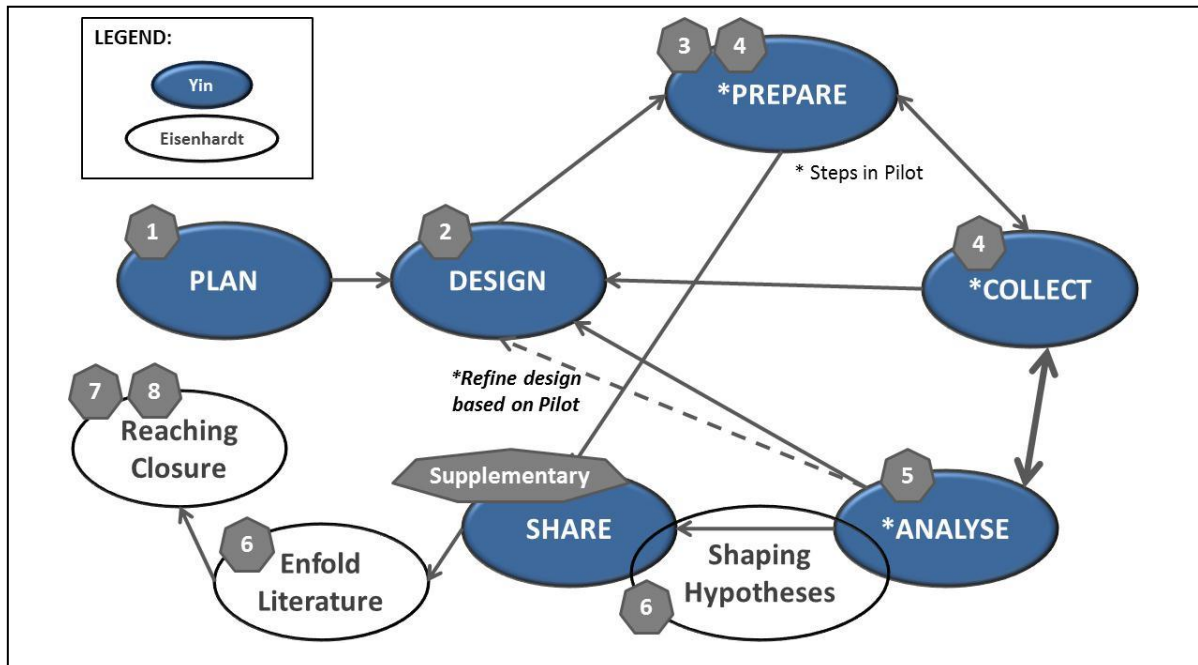
The list of acronyms, as well as a summary of other terminology used in the document, is given in Appendix A –Terminology.

1.9 THESIS STRUCTURE

Since the core data analysis technique used for the study was content analysis, based on the principles of grounded theory, the first three chapters do not follow the traditional sequence of “Introduction – Literature Review – Methodology”. The approach rather uses the case study process as basis (Eisenhardt, 1989:533; Yin 2009:1). In addition, the chapter sequence has taken guidance from the grounded theory approach, which is an inductive approach, requiring therefore only a minimalistic literature review up front. The sequence of the chapters has been

mapped on the case study process of Figure 1-2, and the overview of the chapters is given below the diagram.

Figure 1-2: Case study process



Source: Eisenhardt (1989:533); Yin (2009:1).

The proposal presented to the Research Committee of the university was part of the *plan* and *design* steps in the case study research, and the result of that planning is contained in Chapters 1 and 2 of this document. Chapter 1 also gives the rationale for the research, based on existing literature. Chapter 2 provides the research approach and design, and includes the philosophical considerations and decisions made regarding the type of research, strategy of enquiry and research approach.

Then follows the initial literature review in Chapter 3. In keeping with the principles of constructivist grounded theory research, the aim of this literature review was not to do an exhaustive search on management of performance of virtual knowledge workers, but rather to gain sufficient material to create interview guides and questions for the online questionnaires to be used in the research. This was part of the *prepare* step, in which the protocol for approaching each case was also created (Refer to Appendix D – Case Study Protocol). The protocol contains the instruments,

processes and procedures for approaching a case; this aided the reliability of the study (Yin, 2009:79).

The protocol was refined by executing a pilot study in which the first iteration of *collect*, *analyse* and *share* took place. The detail of the pilot study and how the protocol was applied to this study is provided in Chapter 4, as part of the execution of the research methodology. Chapter 4 also contains a detailed description of the data collection and analysis methods and how these were used to document the multiple-case study. The *collecting and analysing* of the data took place iteratively for each case, with the individual case analyses being now available as supplementary documentation. Chapter 5 contains the results of the *analyse* step for the study as a whole (also referred to as the cross-case analysis and data synthesis). *Sharing*, or member checking, was done through reviewing the individual case descriptions with each company representative respectively.

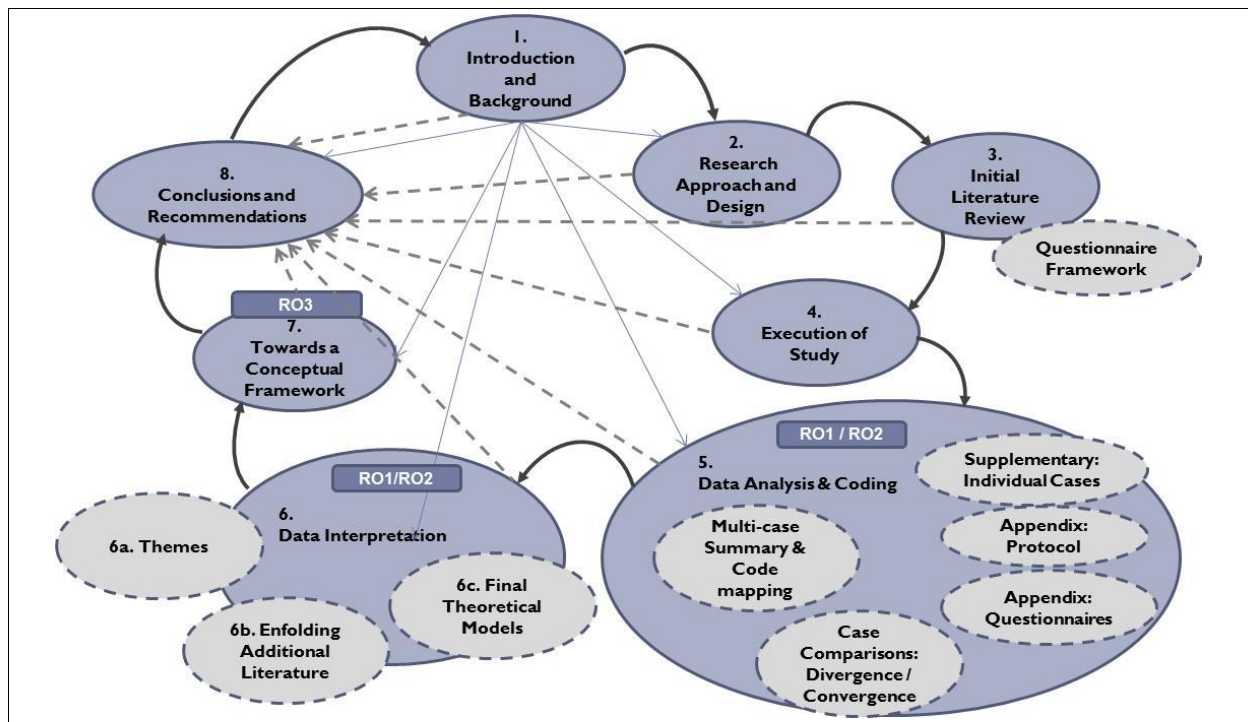
The *shaping of hypotheses as part of the interpretation of the data* occurred only after selective coding, as per the grounded theory process, had been started. This could only be done effectively when all interviews for all the cases had been completed; and is therefore described in Chapter 6. During the interpreting of the data, additional literature was reviewed, which led to the *enfolding of the literature* as part of the interpretation phase, with the final theoretical models prepared and presented in Chapter 6. The propositions relating to these models were then listed in Chapter 7. The combination of the final model and the related propositions form the conceptual framework. The last step of the process was *reaching closure*, and is documented as part of the findings, recommendations and future views in Chapter 8. The detailed chapter map is given in Figure 1-3.

The appendices include:

- Appendix A – Acronyms, formal definitions and terminology used
- Appendix B – Questions and question guides for the semi-structured interviews of the managers as well as HR and IT representatives
- Appendix C – Online questionnaires and related email templates
- Appendix D – Case study protocol elements

- Appendix E – Initial code lists and network diagrams
- Appendix F – Enlarged diagrams of theoretical models for readability
- Appendix G – Instructions for accessing and using the supplementary documentation such as the ATLAS.ti analysis files and individual case studies

Figure 1-3: Detail chapter map



1.10 SUMMARY

Chapter 1 has given the background and motivation for the research, and has set the stage for the investigation, analysis and description of the ongoing management and measurement of performance of virtual knowledge workers from the perspective of the manager. The embedded, multiple-case study process described above will now be followed, with the next chapter, Chapter 2, giving a detailed explanation of the rationale and philosophies underlying the decisions made regarding the research approach and design.

CHAPTER 2

2 RESEARCH APPROACH AND DESIGN

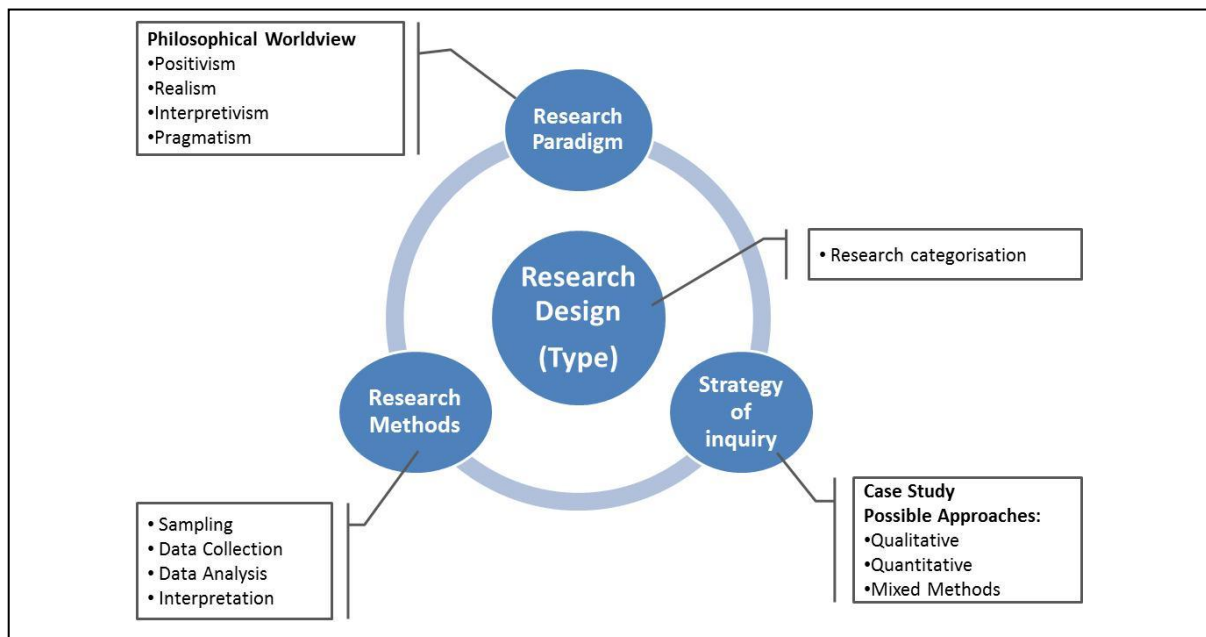
2.1 INTRODUCTION

The purpose of this chapter is to describe the research design selected for the study. The chapter not only gives the actual research design, but also explains the rationale or approach that guided the decisions that were made in order to arrive at the specific design. The aim of the research decisions has been to ensure alignment between the purpose of the study, the research objectives, the research paradigm, and the research design. The research design has driven the structure of the thesis document as well as the sequence in the research process.

One of the underlying factors in selecting a specific research design is the concept of the research philosophy. The term research philosophy, or philosophy of science, is used to encompass the concepts of how knowledge is developed and the nature of that knowledge within a particular research setting (Saunders, Lewis & Thornhill, 2009:107). Creswell (2009:5) also refers to the term "philosophical worldview". This chapter gives a background to the types of research philosophies, and how these link to the researcher's preferred research paradigm, in turn affecting the design decisions made.

In addition to the research paradigm, a research design encompasses a *design type*, the *strategy of enquiry* and the *research methods* (Cresswell, 2009:5; Kotzé, 2010b:4). These elements are shown in Figure 2-1. Each of these elements will be described in more detail in the sections of the chapter below.

Figure 2-1: Research design elements



Source: Cresswell (2009:5) (Adapted)

The research setting and selection of cases, and the entrée and establishing of researcher roles are described next, since these are important for a case study approach. This chapter will also explain the elements of the embedded, multiple-case study design, with focus on the embedded units of analysis, and summarise the sample sizes and data collection and analysis methods applied. Even though data analysis is closely linked with the execution of the study, the strategies for textual and numeric data analysis will also be addressed as part of the research methods in this chapter. The interrelationship between the research type, the strategy of enquiry and the research methods will be highlighted, and the reasons for the specific choices will be substantiated.

Two additional components that relate to design are considered in this chapter, namely quality and ethics. *Quality* is especially important in the context of qualitative designs, which have traditionally been seen as lacking in rigour (Golafshani, 2003:597; Guba & Lincoln in Guba & Lincoln, 1982:246; Morse, Barrett, Mayan, Olson & Spiers, 2002:2). Secondly, *research ethics* is about being responsible in how we do research, and always taking the moral high ground. Even though the research falls under the ethical guidelines of the University of Pretoria, the ethical issues of the particular design are considered in more detail in the last section of this chapter.

2.2 RESEARCH PARADIGM AND PHILOSOPHY

In deciding on the research philosophy and paradigm used for this research, it was important to start by considering the different types of research philosophies. The types of research philosophy include positivism, pragmatism, realism and interpretivism (Saunders *et al.*, 2009:108). Each research philosophy has a certain *ontology* (what assumptions are being made about reality), an *epistemology* (how knowledge is created, and what truths can be established), and an *axiology* (how values influence the perception and interpretation of realities) (Saunders *et al.*, 2009:119). Ponterotto (2005:126) also includes rhetorical structure (formulation of the report) and methodology as part of the philosophy.

A research philosophy is important since it helps the researcher understand how he or she is approaching their own research study, and it also assists in understanding the studies of other researchers. Positivism is mainly associated with being able to extract an absolute truth from quantitative data (Saunders *et al.*, 2009:113). Realism is still closely associated with the philosophy of natural science, in that "what we experience through our senses portrays the world accurately" (Saunders *et al.*, 2009:114). Interpretivism brings in the social component of the human being, namely that there is a level of interaction between the researcher and participant that can shape the findings (Saunders *et al.*, 2009:115). Finally, pragmatism is a combination of philosophies, which holds the view that it is possible to work with potentially conflicting assumptions regarding the nature of reality (ontology) as well as variations in how knowledge can best be reproduced (epistemology) (Saunders *et al.*, 2009:109). This implies that the situation will dictate which philosophy is most relevant to follow, much as a chameleon would take on the colour of its environment.

Certain research methodologies and designs are more compatible with particular philosophies than others. Therefore, the research methodology is often selected on the basis of the particular philosophy that is favoured by the individual researcher on the one hand, or the methodology that is more often used within the specific area of science on the other hand. It is, however, important that the research philosophy selected, as well as the research methodology, ultimately supports the achievement of the purpose of the research. The basic tenets of each philosophy are given in

Table 2-1. Positivism and Realism are often used in the so-called hard sciences, where laboratory settings or controlled experiments are possible. Interpretivism and Pragmatism are often associated with the social sciences, where real-life situations need to be analysed.

Table 2-1: Research philosophy summary

	Positivism	Realism	Interpretivism	Pragmatism
Ontology	Objective, independent of social actors	Objective, independent of human thoughts	Subjective, socially constructed	Multiple views, choose best representative view.
Epistemology	Facts and observable data	Facts and observable data, But sensations also play a role	Social phenomena, situational	Integrate perspectives to interpret the data
Axiology	Value free Researcher independence	Value laden Researcher bias	Value bound Researcher part of research	Values play large role
Methods	Quantitative	Quantitative	Qualitative	Mixed
Metaphor	Natural Scientist	Realist	Social Actor	Chameleon ^(a)

Source: Saunders *et al.* (2009:119) (Adapted)

Note: (a) The word “chameleon” is not a word used by this source, this is an interpreted metaphor associated with the description given.

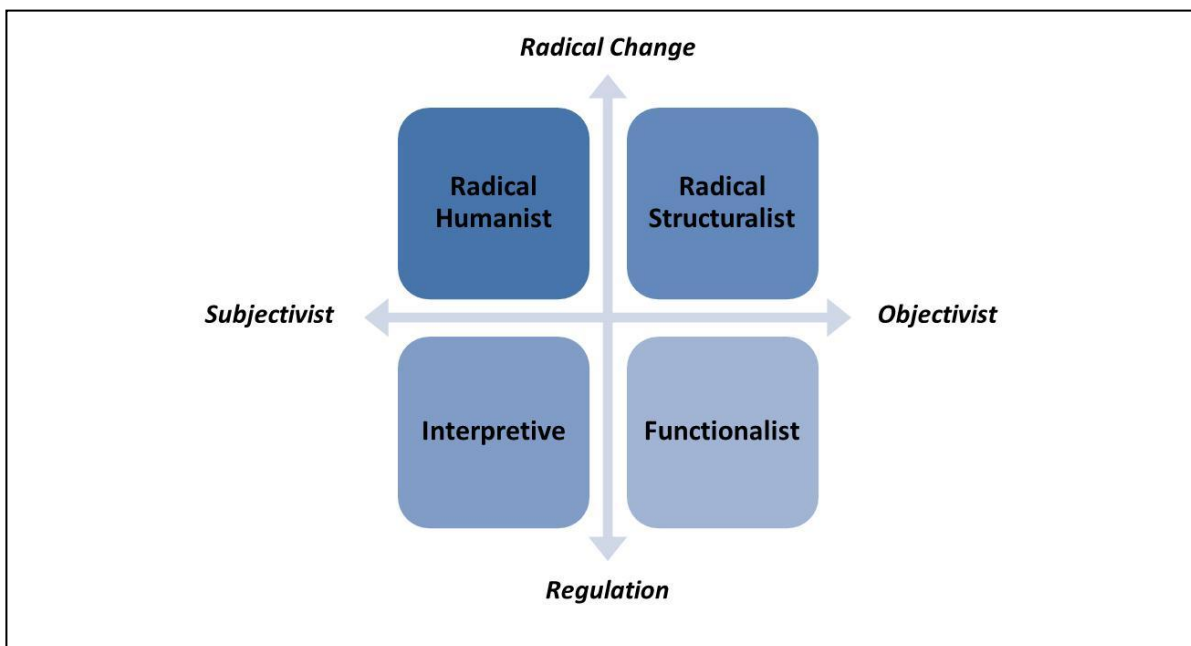
The research philosophy which resonates most closely with this researcher is that of pragmatism. This is based on the underlying belief that in some cases an absolute truth can be extracted based on facts and figures (which is why a quantitative component was included in the study in the form of questionnaires), while on the other hand the social context needs to be taken into consideration (which is why a qualitative component was included in the form of semi-structured interviews). Since the problem manifested itself in real life, namely in the organisational context, the strategy of inquiry selected was a case study with mixed methods as the approach to data collection and analysis.

The researcher was also very involved with the particular topic in her own management environment at the time, and therefore brought with her a set of values that was also applied to the research. This relates to the axiology associated with an interpretivist philosophy, in that the researcher, in being part of the research process,

consciously needs to evaluate what the participant is saying without contaminating it with own values and experiences, to ensure trustworthiness of the data.

As a further progression from research philosophies, research paradigms have been described in the literature. A research paradigm is "a way of examining social phenomena" (Saunders *et al.*, 2009:118) or a set "of interrelated assumptions about the social world" (Filstead in Ponterotto, 2005:127). In this context, the research paradigm can be seen as a combination of the research philosophies that can be applied to a specific research problem. Burrell and Morgan (in Saunders *et al.*, 2009:120) define four paradigms based on two axes. The first axis is regulation *versus* radical change, and the second axis relates to the subjectivist *versus* objectivist ontological perspective. This is shown in Figure 2-2. In this model, both the radical humanist and radical structuralist paradigms imply changes to the status quo. However, the first does so from a subjectivist ontology, while the latter does so from an objectivist ontological perspective. In addition, the radical structuralist paradigm also correlates with the Critical-Ideological paradigm described by Guba and Lincoln (in Ponterotto, 2005:129), which is normally used in cases where the current situation is challenged by introducing change and measuring success.

Figure 2-2: Research paradigms for analysis of social theories



Source: Burrell and Morgan (in Saunders *et al.*, 2009:120)

On the regulatory side of the model, where the current status quo is retained, the interpretive and functional paradigms exist. In the objective-functionalism paradigm, the organisation would be treated as a laboratory in which an experiment was being executed. The paradigm adopted for this research, however, has been subjective-interpretivism. This was done, firstly, because the aim of the study was to determine the current way in which the performance of virtual knowledge workers was managed and measured, and not to change or improve the performance or the management thereof. Secondly, the subjectivist approach implied that the context was important, and needed to be interpreted in relation to both the researcher and the participants' approaches and backgrounds.

The overall philosophy of pragmatism was still relevant in that the mixed-methods approach was used to uncover the status quo of the situation.

2.3 INQUIRY STRATEGY AND BROAD RESEARCH DESIGN

2.3.1 The Research Type

The research type is a way of categorising the research (see Table 2-2). It firstly consists of the nature or purpose of the research, secondly the type of research, and then there are five dimensions or elements which assist in further categorising the design (Kotzé, 2010a:3; Leedy & Ormrod, 2010:223; Mouton, 2001:149).

Table 2-2: Research type options and selections summary

Type of Category	Options	Chosen for study
Type of research	Basic (pure/fundamental) or Applied research	Applied
Nature of research - Relationship to theory building / Purpose	Exploratory (Theory building); Descriptive (Describe relationships); Explanatory (Theory testing); Evaluative (Action Research).	Descriptive with an exploratory element
Design Type: - Data collection or not	Empirical; Non-empirical	Empirical
Design Type: - Origin of data	Primary data; Secondary data	Primary
Design Type: - Type of data	Numeric (quantitative) data; Textual (qualitative) data	Both numeric and textual data

Table 2-2: Research type options and selections summary (Continued)

Type of Category	Options	Chosen for study
Design Type: - Context / Environment / Degree of control	Non-experimental, quasi-experimental, experimental	Non-experimental
Design Type: - Time frame / horizon	Cross-sectional or longitudinal research	Cross-sectional

Source: Kotzé (2010a:3); Leedy and Ormrod (2010:223); Mouton (2001:149)

The *type of research* chosen is applied research, since the results can be applied in a practical, management situation (Saunders *et al.*, 2009:8), which is the problem experienced in managing the performance of virtual knowledge workers. The *nature of the research* (or purpose) is a combination of descriptive and prescriptive, with an element of the exploratory, since the extent of the problems and associated theory in managing the performance of virtual knowledge workers needs to be established. According to Kotzé (2010a:5), the exploratory purpose is used "[in] applied research, to gain a preliminary understanding of the nature, context, potential impact and possible causes of, as well as the possible factors contributing to an organisational problem". The research objectives were also framed to support the nature of the research, namely to *critically review* the management of virtual performance, and to *describe the characteristics* of managers, individuals and their performance where the performance of virtual knowledge workers was being managed. The study further *explored* how the organisational context, as well as the approach of line managers, affected the performance of virtual knowledge workers. Lastly, the objective of *creating a conceptual framework* links to the prescriptive component of the research. The combination of an exploratory and prescriptive purpose of research is supported when using a case study strategy of inquiry (Mouton, 2001:149).

The *design type* of the research is further categorised by five additional elements or dimensions. Since *data collection* did take place, the study can be categorised as being empirical. Secondly, the *origin* of the data is primary data, since new data were collected for analysis. Documents relating to policies and examples of performance appraisals were also used to a lesser extent, and even though they were not in the form of a dataset, they can be defined as secondary, or previously collected data. Thirdly, the *type of data* collected was both numerical and textual. The numerical data relate to the coded answers of questionnaires, including certain numeric

answers such as number of hours, age, and number of times an item was completed. Textual data were derived from interviews, documents, and open-ended questions in the questionnaires. Since the collection of data happened as part of a real-life situation, where the *context* was not manipulated, the study is further categorised as being non-experimental. Finally, in terms of the *time frame*, the study is classified as cross-sectional and not longitudinal, implying that the data were collected in one single time horizon per case, with no full re-collection of data done in a subsequent period (Saunders *et al.*, 2009:256).

2.3.2 Strategy of Inquiry

To direct the research process, the case study strategy of inquiry was selected for this study from a list of more than 20 different strategies of enquiry available (Mouton, 2001:143), including surveys, action research and experiments. The definitions of the case study strategy of inquiry range from simple definitions of it as an in-depth analysis of a specific real-life situation (Dul & Hak, 2008:4; Eisenhardt, 1989:534), to the much more complicated and complete definition that Yin (2009:18) has distilled from 30 decades of research, given in Table 2-3.

This detailed definition refers to the complexities created by the large variety of variables that were present in the analysis and the need for comparing findings through a form of triangulation, and brings in the concept of theoretical sampling for collection of data. Theoretical sampling applies to cases where the theoretical hypotheses have been stated up front. Table 2-3 now gives the full definition of Yin (2009:18) in columns 1 and 2, and shows in column 3 how this research complies with the definition.

Table 2-3: Case study definition and application to study

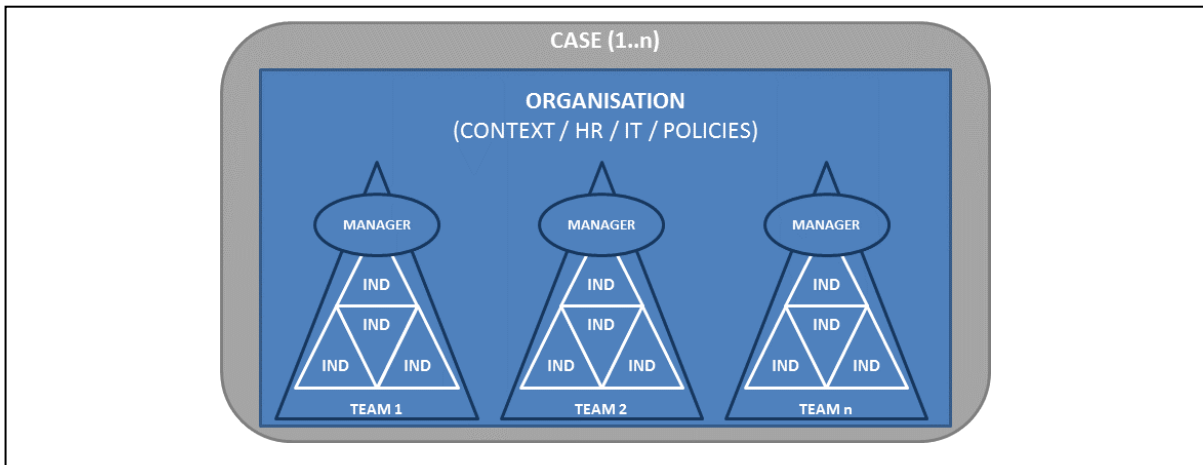
Component of the definition	Definition	Application to this study
Scope: "A Case study is an empirical enquiry that..."	"...investigates a contemporary phenomenon in depth and within its real-life context, especially when..."	Phenomenon is "managing the performance of virtual knowledge workers". Real-Life context: Within the organisations that they work.
	"...the boundaries between phenomenon and context are not clearly evident."	Relationships between the organisation, the organisation type and the type of work individuals perform, could all have an impact on the findings.
Technical: "The case study inquiry..."	"...copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result..."	As shown in the Impact Parameter Model, many parameters impacting the performance of the individual were found.
	"...relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result..."	Interviews, surveys, and secondary documents were used for data collection.
	"...benefits from the prior development of theoretical propositions to guide data collection and analysis."	Constructivist grounded theory; Research not framed by hypotheses or propositions; Data drove the themes and theory proposed.

Source: Yin (2009:18)

Where the research of Jackson *et al.* (2006:219), which reviewed virtual workers and their performance, only used a single case, this research employed five cases in a multiple-case design strategy of inquiry. Each case was represented by a preselected Information and Communication Technology (ICT) or related company, in which an in-depth study of the management of performance of virtual knowledge workers was conducted. Within each individual case, the approach to the problem was analysed from different perspectives, namely from a team level, which included the manager and the individual team members; from the management and individual team members level as separate units of analysis; and also from the organisational level. This ensured that a holistic picture (or 360 degree view) of the "real-life" situation was obtained. Since multiple units of analysis were included within the case, it is classified as an embedded case study. The details of the units of analysis are given in the section 2.4.3 "Elements of the Embedded, Multiple-Case Study Design".

More than one case was included. Dul and Hak (2008:4) refer to this approach as a comparative case study, while Yin (2009) refers to this typology as multiple-case design. The preceding definitions have been used to classify this study as an *embedded, multiple-case study design*. The inclusion of multiple cases was used, among other reasons, to allow for comparison between the cases, and assist with offering theoretical insights about the phenomenon. At the same time, three main levels of analysis were included to allow for triangulation of the data. In Figure 2-3, the *case* is the company as a whole; the *team* is a combination of the manager (first level) and the individual team members (second level); and the *organisational level* (third level) is represented by HR and IT representatives, and the company policies.

Figure 2-3: Case study components

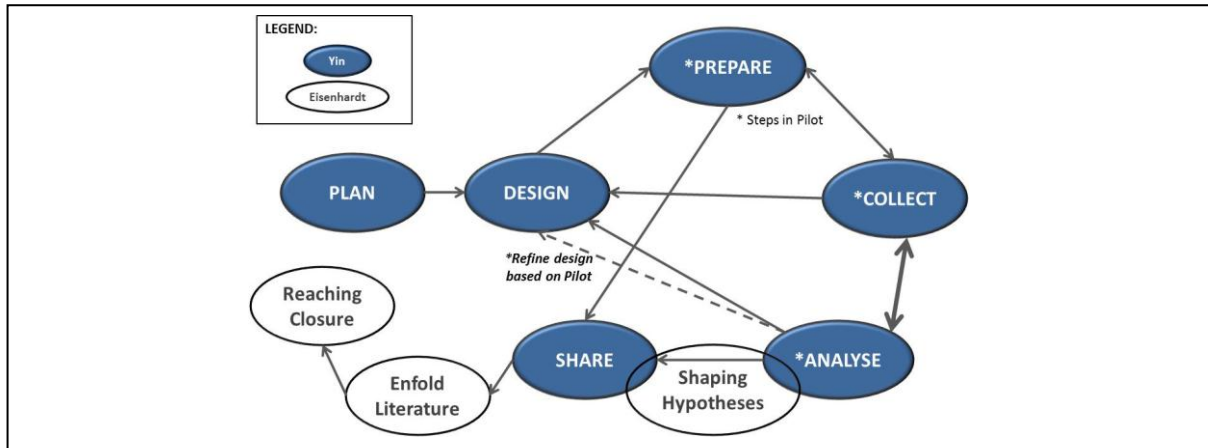


Note: IND = individual

Building new theory through case methodology has not always been acceptable in research circles. In the preface to his book on case study research, Yin (2009:ix) states that case studies have traditionally been seen as having a low scientific value, since they normally take place in non-laboratory settings. Yin therefore calls for rigour in case study research. He proposes a methodological process that should be followed in a rigorous way which will enable scientific acceptance of the findings. The process is seen to be linear, yet iterative. The call for rigour in case study research was also made by Eisenhardt (1989; 1991), who used Yin's original works of 1981 and 1984 to develop her concept of building theory from cases through a theory-building framework. The process of Yin (2009:1) is given in Figure 2-4, and enhanced

with some of the additional elements of Eisenhardt (1989:533). This was the process followed in this research undertaken in this study.

Figure 2-4: Case study process



Source: Eisenhardt (1989:533); Yin (2009:1)

As shown in Figure 2-4, the need for the research was established during the *plan* and *design* phases, at which time the research approach and design were completed. The next step was to *prepare*. In this step the questionnaires and the protocol for approaching each case were created, using the initial literature review as inputs. The protocol contains the instruments, processes and procedures for approaching a case and aids with reliability of the study (Yin, 2009:79). The protocol was refined by executing a pilot study in which the first iteration of *collect*, *analyse* and *share* took place. The execution of *collecting and analysing* of the data took place iteratively for each case. *Sharing*, or member checking, was done through reviewing the individual case descriptions on organisational level.

The *shaping of hypotheses* occurred only after selective coding, as part of the grounded theory process, had been started. This could only be done effectively once all interviews for all the cases had been completed. At this stage additional literature was reviewed, and the *enfolding of the literature* was also done as part of the interpretation of data. The last step of the process was *reaching closure*, where the final framework, findings and recommendations were documented. As described in Chapter 1, this process was used as a basis to sequence the chapters for this thesis.

2.3.3 Research Approach

The strategies of inquiry used in research design are divided into three categories, namely qualitative, quantitative and mixed methods approaches, depending on the overall approach to data collection and analysis (Creswell, 2009:12; Mouton, 2001:143). Teddlie and Tashakkori (2009:4) also refer to this classification as "communities of researchers", since there has been a definite split of researchers into the two camps of qualitative and quantitative research. The strategy of enquiry used in this study was mixed methods. Mixed Methods can be defined as combining both qualitative and quantitative methods. The aim of this approach is to strengthen the findings by either combining, connecting or embedding the different data sets and findings at various stages of the research process (Creswell, 2009:4; Denscombe, 2010:135; Leedy & Ormrod, 2010:144; Teddlie & Tashakkori, 2009:339).

Even though case study research was traditionally seen as a qualitative approach only (Cresswell, 2009:12; Dul & Hak, 2008:4; Mouton, 2001:143), Eisenhardt (1989:533,538) and Yin (2009:19) both promote the use of mixed methods in case study research. This means that a richer data analysis and better framework for theory building can be established. This study used the case study as the strategy of inquiry. Data collection and data analysis were done using both qualitative and quantitative approaches, meaning that the research can be classified under a mixed methods approach.

Denscombe (2010:135) states that mixed-method research is normally associated with the research philosophy of pragmatism. The paradox in mixed methods is that qualitative and quantitative research approaches are often seen to be at two opposite poles, the first being used in exploratory studies, while the second is mainly used in explanatory studies, thereby following very different processes in research design and methodology (Creswell, 2009:208). It is therefore not surprising to find that Mixed Methods as a formally accepted approach is only a very recent addition to the research arsenal (Creswell, 2009:204; Teddlie & Tashakkori, 2009:62).

Three of the issues that should be considered in a mixed methods approach are the *timing*, *weighting*, and *mixing* of the qualitative and quantitative methods (Creswell,

2009:206; Denscombe, 2010:135, Teddlie & Tashakkori, 2009:31). From a *timing* perspective, in the current study the pilot for the multiple-case study strategy was sequential, and used the outputs of the qualitative data to refine the questionnaires, being the quantitative component. The sequential timing was continued for the rest of the multiple-case study, since qualitative and quantitative data were collected and analysed in sequence. From a *weighting* perspective, the qualitative data received a higher priority than the quantitative data. The focus was on the interviews, which resulted in more textual than numeric data being collected, thus the weighting of the qualitative analysis was higher than that of the quantitative analysis.

Finally, the literature also refers to how and when the *mixing* takes place. In other words, how the two methods relate to each other in terms of data collection and analysis. According to the guidance of Creswell (2009:207), the qualitative and quantitative methods were used simultaneously, but not necessarily by combining the two sets of data in the same dataset. Secondly, triangulation occurred by comparing the results of the quantitative analysis with the results of the qualitative analysis. So the mixing only happened during the analysis and enfolding of literature phases, both on the case and the inter-case level, where findings were being analysed and interpreted. Creswell (2009:213) refers to this as a concurrent triangulation design. The detail of exactly how the timing, weighting and mixing of methods was implemented for data collection and analysis can be found in Chapter 4.

2.4 DESIGN: RESEARCH METHODS

2.4.1 Research Setting and Selection of Cases

The target population for companies selected as "cases" was from the Information and Communication Technology (ICT) and related sectors. In other words companies either delivering IT or ICT-type services, or using these ICT services or providing consulting regarding these services. The sampling of the companies was judgemental or selective. This is a non-probability type of sampling where the selection of who or what to include is done by the researcher. This technique was used with the aim of including companies where the phenomenon of virtual work was

present, thereby negating the limitation of this technique of being seen as unrepresentative (Saunders *et al.*, 2009:236).

In terms of the selection process, there were firstly two companies who had volunteered to participate because of their interest in the topic, as well as the challenges they were facing with managing their current virtual knowledge workers. The company in which the researcher was employed at the time was also included, as well as another ICT company that afforded its employees flexibility based on the type of services being delivered. Two other companies that were contacted declined to participate. The one company felt that the information that would be requested was too confidential, and the other company felt that it did not support virtual work sufficiently.

The final representivity of the sample group regarding the topic under consideration was high. A total of 86% of the individuals surveyed across all of the cases were classified as virtual knowledge workers (working away from their manager for more than one day per week). Therefore the sample was found to be representative of the virtual worker phenomenon.

The qualitative strategy of enquiry also allows for the extension of the sample if data saturation has not been achieved, or if the sample is found to be non-representative in any of the other parameters such as company size and/or existence of virtual work policies. Data saturation occurs when no new concepts or categories emerge from new data. Saturation shows that data collection is complete (Goulding, 2002:69; Smith, 2004:28). In this regard, after collection and initial data analysis, one additional company was added to determine whether a larger company which had a more established virtual-work guideline would prove any different. However, after the first two interviews in this company it was already found that data saturation in terms of the themes identified in the first four companies (*i.e.* cases) had been achieved.

All five companies signed letters of agreement to participate in the study (refer to the example letter in Appendix D – Case Study Protocol, Figure 13-1 for page 1 and Figure 13-2 for page 2). Pseudonyms were used for the names of the companies to protect their identities and keep them anonymous. The first company entered was

used as the pilot study, and has been called Alpha. The additional company that was added at the end, where differences were tested in relation to the rest of the findings, was named Delta. The other companies were called Echo, Foxtrot and Tango respectively.

2.4.2 Entrée and Establishing Researcher Roles

An individual, or company representative, was identified in each of the companies which had volunteered or which were selected for participation. These individuals were the initial point of contact, and the protocol to be followed in their company was discussed with them. In this regard, initial meetings were held with all five of the companies, and they agreed to the methodology proposed for the research. The company representative was also used to assist in identifying the divisions and teams that were included in the research, as well as identifying the organisational representatives for HR and IT. The company representative was required to do the initial introduction of the research to all of these parties, and explain to the individuals the commitment of the organisation to being involved in this study. An example letter was provided to the company representative. It was found that when the companies had volunteered from an operational perspective, it was easier to identify and gain access to the managers and their teams, while with those companies that were approached through the organisational hierarchy, and that used HR to identify the teams, the entry was much slower and there was more difficulty in getting the right teams identified.

2.4.3 Elements of the Embedded, Multiple-Case Study Design

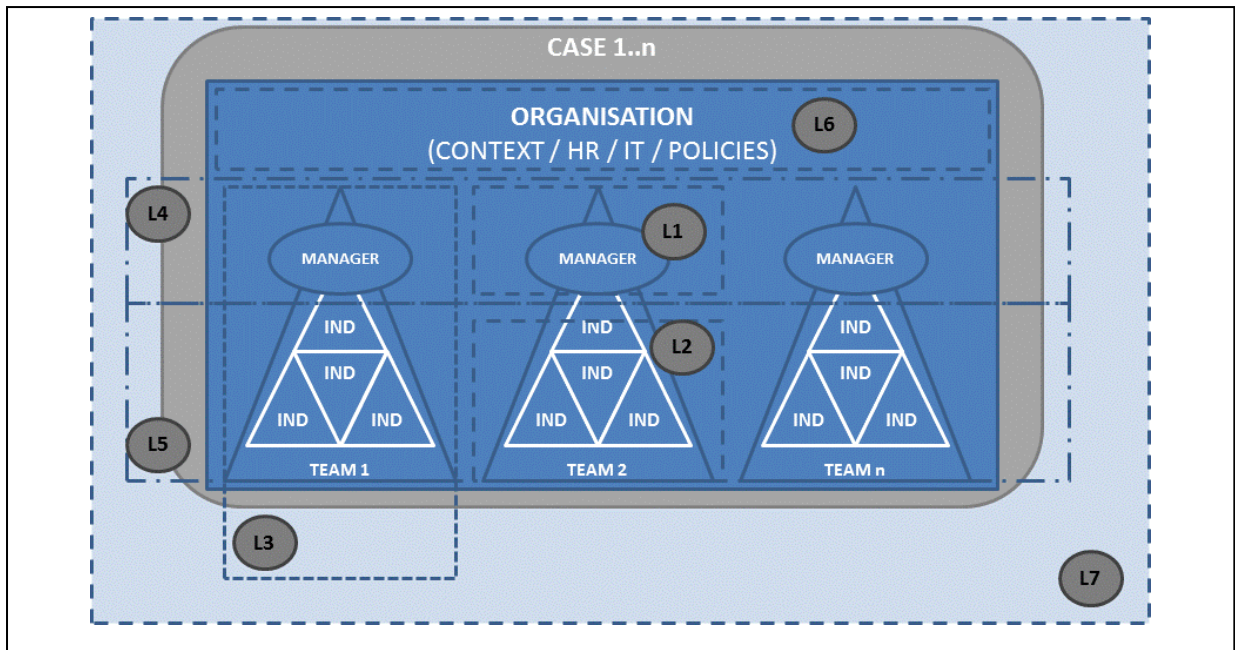
As described under the strategy of inquiry, an embedded, multiple-case study design was used. The word *embedded* implies that there was more than one unit of analysis within a single case, while *multiple* indicates that more than one case study (or company) was included, so that comparisons could be made between cases. From a terminology point of view, each case was related to a specific ICT company, which is identified by "L7" on the diagram, and the word "company" relates to the case as a whole. The word "team" is seen as the combination of the manager and the individual

team members. The term "organisation" is used to describe the unit of analysis representing the organisational level within the company or case.

The units of analysis are listed and described below, and are represented in Figure 2-5 as L1 to L7.

- L1 – **Manager of team**: Views and opinions of a manager regarding the management of the performance of virtual knowledge workers.
- L2 – **Individual team member**: The perception of an individual team member regarding virtual work performance and their perception of how the managers are managing their performance.
- L3 – **The Team**: The combined perceptions of the individual team members of how they are managed, compared with how the manager thinks he or she is managing the individual team members.
- L4 – **Managers combined**: Line management's approach to and support for managing the performance of virtual knowledge workers within the organisation.
- L5 – **Combination of all individual team members surveyed into one dataset**: Individual employees' (virtual knowledge workers') way of working in the organisation by combining all the teams' surveys of that organisation together in one dataset.
- L6 – **The organisation**: The context or supporting environment that the company (or case) provides in terms of managing the performance of virtual knowledge workers, obtained through the views of an HR representative, an IT representative and content analysis of documents and policies on organisational level.
- L7 – **The case**: This unit of analysis represents the company as a whole, which was important for initial sampling and also for final write-up of the case.

Figure 2-5: Embedded units of analysis in a single case study



Note: IND = individual

Data collection was only performed on three levels, namely organisation level, manager level and individual team member level, represented by L6, L1 and L2 in Figure 2-5. A summary of the sampling and data collection methods for these three levels is given in Table 2-4. Each level of sampling is described in more detail after the table. The interrelationship of the three data collection units is given in Figure 2-6. The assumption was that all three components would have an effect on the ultimate performance of virtual knowledge workers. The semi-structured interviews and the individual questionnaires included questions linking to these components.

Figure 2-6: Interrelationship of units of data collection

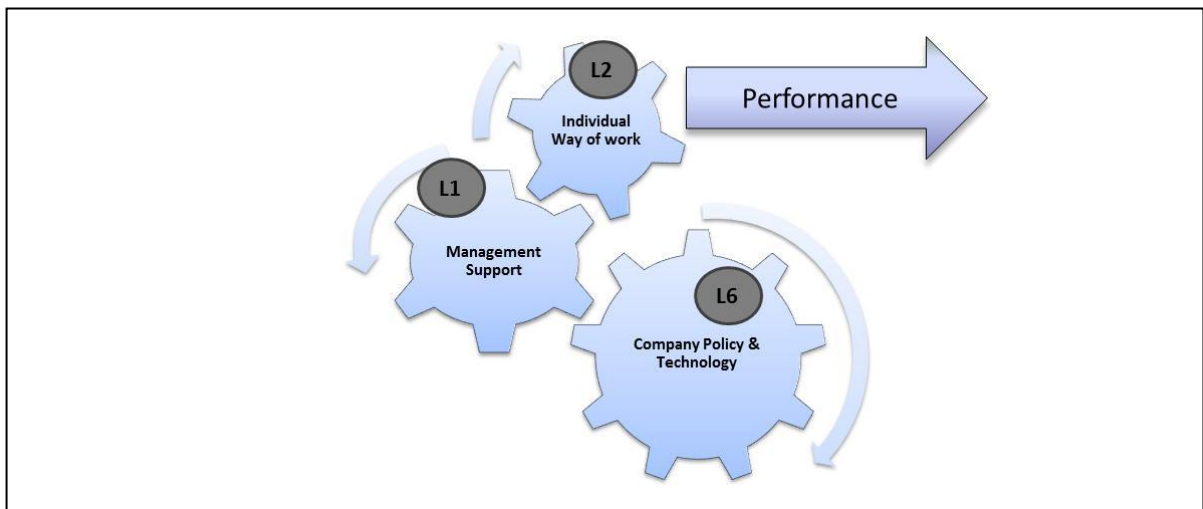


Table 2-4: Summary of sampling, data collection and data analysis

Level of sampling	Sampling	Data Collection	Data Analysis
Company (Case)	Selective and self-select. (Total of 5 companies)	Primary data, except where indicated.	As per other levels
Team	Selective. (Total of 29 teams)	Online / paper questionnaire with comparable questions for both manager and individual team member.	Descriptive statistical analysis
Manager	The manager of the selected team (one-to-one relationship with the team) (Total of 29 Managers)	Semi-structured interviews on site at the company Secondary data: Previous performance appraisals of individual team members	Content analysis
Individual Team Member	Census: All individuals in the selected team. (Total of 163 responses)	Online Questionnaire	Descriptive statistical analysis
Organisation	Selective: HR Representative (1 per company) IT Representative (1 per company) (Total of 10 company representatives)	Semi-structured interviews with representatives on site at the company Secondary data: Policies Lists of systems Performance appraisal examples	Content analysis Document content analysis

In the company, the *teams were selected based on selective sampling* with the help of the company representative. Since it was important that the teams should include virtual knowledge workers, the definition of this term in the context of the study was explained to the company representative to assist with the selection process. The preferred number of teams and the team sizes were also communicated to the company representative. The manager of the team could be either the line manager or the project manager, as long as he or she was directly responsible for the team members in terms of the achievement of their goals. The individual team members could work as part of a team (collaboration required) or as individuals (no specific collaboration required) in the team.

A *census approach* was used for all individual team members in the selected team, meaning that all individuals in that particular unit or team would be included in the research (Zikmund, 2003:369). The perceptions of the individual team member formed part of the unit of analysis on this level, and *online questionnaires were used for primary data collection*. The decision to use online questionnaires in favour of doing focus groups was twofold. *Firstly*, the survey questions were created based on the initial literature review, as some information did exist regarding managing the performance and virtual workers in general. The literature was therefore used to construct some of the questions, and code answers for easy and quick analysis afterwards (Zikmund, 2003:175). The literature used to this end and the initial question framework are presented in Chapter 3. *Secondly*, because questionnaires have pre-coded answers, they are quick and easy for respondents to complete. This was important, as the individual knowledge workers were normally under considerable work-delivery pressure, and had limited time to spend on the questionnaires, as was mentioned in pre-interviews with the respective company representatives.

The disadvantages of questionnaires are that the options are often pre-determined and could therefore preclude novel answers that might be of interest to the study. To counteract these disadvantages, some of the questions made provision for an “other” option, especially where lists of options were provided. Three open-ended questions were also added at the end of the questionnaire, which were used extensively by the individuals, and which were included as part of the content analysis process.

On *organisational level*, *selective selection of a representative of both an HR and IT representative* was done for each company (or case). This is in line with the overall sampling strategy for qualitative research. It was not deemed necessary to include the Group HR Manager or Chief Information Officer (CIO), as their time is normally limited, and the information to be obtained was not necessarily of a strategic nature, but rather of an operational nature. Once again semi-structured interviews were held with the representatives chosen.

The execution of the data collection and analysis is described in Chapter 4.

2.4.4 Textual and Qualitative Data Analysis

A core analysis technique used for the text-type data of transcribed interviews is content analysis, which starts by grouping together answers to the different questions, and continues by systematically reading through them to identify patterns and themes which can be categorised into what are known as “coherent categories” (Taylor-Powell & Renner, 2003:2). This can be done from a predefined category list determined from the literature review, which would match a deductive approach to analysis, which ensures that a new situation matches the existing theory (Leedy & Ormrod, 2010:32; Taylor-Powell & Renner, 2003:3).

Alternatively, one can use the categories that emerge to build a new model, through an inductive approach to theory building (Leedy & Ormrod, 2010:33; Potter in Burden & Roodt, 2007:11). Glaser and Strauss (1967:28) developed an inductive approach to qualitative analysis which they called grounded theory. The principle of this approach was to start with no codes, and as the text was read and reread, codes would emerge. In this way theory could be created from data. Since the data was obtained from a real-life situation, it can be said that the theory was grounded in real-life experiences: therefore the term “grounded theory” was used (Shurinck in Burden & Roodt, 2007:11).

Grounded theory has undergone iterative development, which is important since each iteration is linked with a specific research philosophy (Mills, Bonner & Francis, 2006:2). The original form of grounded theory, as developed by Glaser and Strauss (1967), was pure in two aspects. Firstly, there was the *clean slate* approach to literature and codes, to ensure that the researcher was not contaminated by existing theory. Secondly there was the principle that *the truth* would emerge from the data, meaning that there was only one real “pre-existing” truth hidden in the data. These two principles are linked to a positivist philosophy.

In the evolved theory which was proposed in the 1990s, the concept that a pre-existing truth did not exist, and that a truth would emerge from the context and the specific participants, became more accepted (Corbin & Strauss, 2008:50; Mills *et al.*, 2006:3). This started leaning towards a more constructivist approach, which was

formalised by Charmaz (in Mills *et al.*, 2006:7) into what is known today as constructivist grounded theory. A key principle of this approach is that the researcher becomes a co-author who assists in reconstructing meaning from the information provided by the participants. In addition, it is seen as acceptable to have some literature review inputs as a starting point or to "stimulate thinking" (Mills *et al.*, 2006:4). From an ontological point of view, constructivism is based on the relativist approach, which states that truth exists only relative to a context. From an epistemological point of view, constructivism supports the subjective relationship between the researcher and the participant (Mills *et al.*, 2006:2). This fits in with the overall subjectivist-interpretivist paradigm of this researcher, as described earlier in this chapter. This implies that the truth of the current situation needs to be found relative to the context. For the purpose of this study, the constructivist grounded theory approach was therefore used for data analysis.

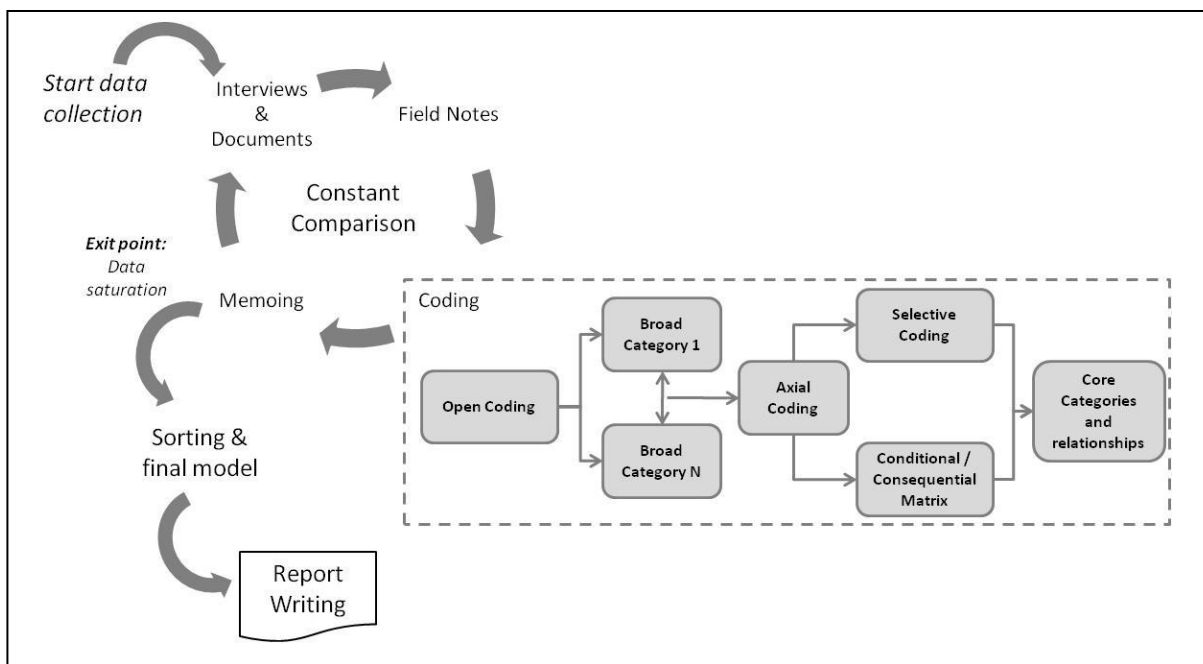
As a further level of detail as part of the case study process, Burden and Roodt (2007:13) propose the creation of a roadmap for the constructivist grounded theory approach. The general roadmap starts with data collection in the form of interviews and collection of relevant documents ("*Collect*" phase in the case study process). During the interview, additional field notes or memos need to be made, to ensure that any relevant contextual data is also captured (Burden & Roodt, 2007:15; Goulding, 2002:65). In this study, for the sake of clarity, the notes made during or just after the interviews are referred to as *field notes*, while the additional notes made during the coding process are referred to as memos (or *memoing*). In this way, memos were used to document additional properties of the emerging categories, and helped to keep a link with the original context of the text, so as to ensure that the intent of the participant was accurately represented, in line with recommendations by other researchers (Charmaz in Mills *et al.*, 2006:7; Goulding, 2002:65; Smith, 2004:29).

Coding, as described by Goulding (2002:77), is "the conceptualisation of data by the constant comparison of incident with incident, and incident with concept, in order to develop categories and their properties". A process is normally followed whereby the coding moves through different and ever greater levels of abstraction to arrive at the underlying theoretical framework. The different steps of coding in a grounded theory

approach are described as part of the execution of the study in Chapter 4 and forms part of the “Analyse” phase of the case study process.

The cycle of data collection, field notes, coding and memoing is normally repeated as part of the constant comparative method in which similarities and differences are compared across the different interviews and cases (Glaser & Strauss, 1967:106; Goulding, 2002:169; Smith, 2004:25), until such time as data saturation is achieved (Goulding, 2002:69; Smith, 2004:28). This is represented by the iteration between “Collect”, “Analyse” and “Share” of the case study process. Data saturation is the exit point at which sorting of information can take place and the final theoretical model can be fully documented (Smith, 2004:29). This links to the “Shaping Hypotheses” and “Enfolding Literature” stages and finally the “Reaching of Closure”. The grounded theory roadmap is represented diagrammatically in Figure 2-7.

Figure 2-7: Grounded theory roadmap



Source: Burden & Roodt (2007); Mills *et al.* (2006); Smith (2004)

The coding of the text can be done in a manual way, by making notes on printed documents and transferring these to post-it notes on walls to give a more visual effect. Coding can also be done programmatically through a tool such as ATLAS.ti. Burden and Roodt (2007:15) suggest a combination of the two methods. For the

purpose of this study, only ATLAS.ti was used. The detail of how the process was executed is described in Chapter 4.

2.4.5 Numerical and Quantitative Data Analysis

Statistical analysis is normally used for quantitative data, such as that collected in a questionnaire. Statistical analysis can range from simple descriptive statistics which are used to describe the different variables that are being analysed (Saunders *et al.*, 2009:591; Zikmund, 2003:736), to the more sophisticated statistical significance testing, which is used to show that differences between sub-groups in the data are not appearing through chance alone, by using correlation coefficients obtained through linear regression (Saunders *et al.*, 2009:601; Zikmund, 2003:402,551). To do this, a hypothesis is normally formulated relating to the differences between two groups in relation to a pre-determined variable (Zikmund, 2003:520). These tests could also be used to correlate answers in the different question components with one another, or used to draw inferences regarding the population.

Since the responses of each team constituted a very small sample size, which rendered sub-groups such as those of virtual vs. non-virtual, age-group and employment status even smaller, it was difficult to ensure that the data was sufficiently complete for the statistical testing to be accurate. Therefore it was decided not to include the statistical significance testing. In addition, from a mixed methods perspective, the presentation of the descriptive statistics is closer to the qualitative descriptions of the textual data, and gives a better coherence in terms of the description of the study results as a whole.

The online survey tool, Lime, was used to create the online questionnaires, and Excel was used for the descriptive analysis component. The detail of how the questionnaires were constructed, as well as the data collection and analysis, is provided in Chapter 4.

2.5 ASSESSING THE RIGOUR OF THE RESEARCH DESIGN

2.5.1 Trustworthiness in Qualitative Research

Qualitative researchers have often been accused of insufficient rigour in terms of their data analysis (Golafshani, 2003:597; Guba & Lincoln in Guba & Lincoln, 1982:246; Morse *et al.*, 2002:2). As Morse *et al.* (2002:2) state, "Without rigor, research is worthless, becomes fiction, and loses its utility". Kidder and Judd (in Yin, 2009:40) state that the four measures of quality used in most social research are *construct validity*, relating to appropriateness of measurement instruments; *internal validity*, relating to causal relationship, which is only applicable to explanatory or causal studies; *external validity*, or generalisation of the findings; and *reliability*, meaning repeatability. While the terms *reliability*, which implies consistently getting the same results (Zikmund, 2003:740), and *validity*, which implies that the correct object is measured (Zikmund, 2003:743), are used in the quantitative research realm, rigour in qualitative research seems to centre around the term of trustworthiness (Golafshani, 2003:602; Morse *et al.*, 2002:5). Guba and Lincoln, (1982:246-247) expand this to *credibility*, *transferability*, *dependability*, and *confirmability*. The research design described for this study is now evaluated according to these concepts.

Credibility or truth value relates to whether the findings of the study actually represent reality (Guba & Lincoln, 1982:246), also known in quantitative studies as internal validity (Kotzé, 2010c:8). From a credibility approach, the advantage of the case study inquiry is that a detailed analysis of each situation (or company) is conducted. The case study and mixed-method approaches allow the collection and analysis of similar data from different perspectives, which allows for the triangulation of data. Triangulation ensures the credibility of the data of any particular case, meaning that the results of each analysis level are cross-checked with another level in the same organisation, making sure that the results correlate (Yin in Dul & Hak, 2008:4). This was applied extensively in the research, by collecting data on organisational, team and individual level. In addition, the individual case descriptions were confirmed with the respective company representative, as part of the member checking approach.

The term *transferability* refers to how generalisable the results are (Guba & Lincoln, 1982:246; Kidder & Judd in Yin, 2009:40), and is known as the external validity of the data. The fact that multiple cases are included allows for the comparison of the different cases (i.e. a comparative case study), to show similarity of results across the different cases. This also links to the concept of data saturation, where each new case does not bring new concepts. Similarity of results across these cases implies that results are potentially transferable (or generalisable) and could be applied to non-evaluated cases as well. In this regard, the definition relating to the virtual knowledge worker is important, so that the virtual knowledge workers across companies (cases) are comparable. This has been a drawback in previous studies, since various terms have been used for virtual workers, including teleworkers, remote workers and mobile workers, as well as the term non-standard worker, which includes many different scenarios of remote work (Broschak *et al.*, 2008:6; Davenport, 2005:27). Eisenhardt (1989:533) promotes the use of a theory-building framework, which includes analysing data within the case to determine initial theories, and then performing pattern matching between cases (referred to as "cross-case pattern matching") to test the generalisability of the theory. The framework also includes the step in which the literature needs to be enfolded ("enfolding literature" as indicated in Figure 2-4) to ensure that similarities to and differences from existing literature and theory can be clarified. Including multiple cases means that the results can be verified across cases, making the results more generalisable, and facilitating the building of theory.

Thirdly, the *dependability* (or reliability) of the study needs to be reviewed. This would imply that the study can be reproduced or replicated under similar circumstances and in a similar context but at a different time (Guba & Lincoln, 1982:247; Kotzé, 2010c:8). To make the study dependable, all procedures, techniques and processes that are followed need to be documented in sufficient detail. Yin (2009:79) promotes the use of a case study protocol, which contains the instruments, processes and procedures for approaching a case, and ensures that each case is approached and executed in the same way. This has been included for this study. In addition, on the data analysis level, the tool ATLAS.ti was used to ensure transparency in terms of coding and analysis.

Confirmability is the last term to contribute to the concept of trustworthiness in qualitative studies. This relates to how objective the research is (Guba & Lincoln, 1982:248; Kotzé, 2010c:8). This can be difficult in qualitative research, especially in the subjectivist-interpretivist philosophy, where objectivity may not always be possible, as the researcher is inherently involved with the research subject, and the values of the researcher play an important role in the data collection and interpretation (Ponterotto, 2005:131). Ponterotto (2005:131) adds that it is important for the researcher to review his or her values up front, and clearly document them, and in so doing acknowledge them, since this type of research can never be totally value-free. Field notes, memos and a research diary were used to this end.

Table 2-5: Trustworthiness (rigour) in research design

Qualitative term	Quantitative term	Application in the research design
Credibility	Internal validity	Within-case triangulation Member checking
Transferability	Generalisability (External validity)	Definition of virtuality Cross-case pattern matching (Selective coding)
Dependability	Reliability	Case study protocol ATLAS.ti for data analysis
Confirmability	Objectivity	Researcher reflections, field notes and memos.

2.5.2 Sources of Bias

A further element that needs to be reviewed and understood in terms of the quality or trustworthiness of the research design is the concept of bias. Bias or inaccuracies in the data can affect the dependability and transferability of the results (Saunders *et al.*, 2009:326). There are many sources of potential bias which are inherent in the design elements chosen for this study, such as selection or sampling, data collection mechanisms, which include interviews and questionnaires, as well as the overall strategy of enquiry, which is the case study.

Firstly, the case selection used judgemental or selective sampling, which is a non-probability sampling mechanism. It is possible that companies with more diverse examples of virtual knowledge workers and their management could have been excluded. Especially in the companies that volunteered, a self-selection bias could

have applied. This type of bias occurs when individuals who feel strongly about a matter volunteer to take part in a research study, giving an inaccurate representation of the actual occurrence of the phenomenon (Zikmund, 2003:178). In this case, it was an advantage to the research, since these companies who participated did include workers who were allowed to work remotely from their managers, and this allowed an important insight into the challenges experienced, and methods used for managing these virtual knowledge workers.

Secondly, in terms of data collection, it is known that the semi-structured interview can create interviewer and response bias. As described by Saunders *et al.* (2009:236), interviewer bias is caused by the way that the interviewer asks the questions, or by own beliefs that the interviewer consciously or subconsciously brings into the interview. This may cause interviewees to answer the questions in a certain way, or give answers that they believe the interviewer wants to hear. Further to interviewer bias, response bias is where the interviewee only declares a part of the total picture. This could be due to many reasons, including confidentiality of certain facts, fear of additional probing questions or time constraints. Morse *et al.* (2002:10) refer to the concept of "investigator responsiveness" and state that "Research is only as good as the investigator. It is the researcher's creativity, sensitivity, flexibility and skill in using the verification strategies that determines the reliability and validity of the evolving study." Since the investigator or researcher is normally the interviewer of the subject, variation in questioning may occur depending on how the questions are answered by the interviewee.

In the current study, to counter interviewer bias and response bias, questions were designed to be as open-ended as possible by asking "Why" and "How" questions, to ensure that the interviewer was not leading the interviewee into a pre-determined response. In addition, an interview guide with core questions was designed for use in all the interviews, to ensure that the core questions were all asked in a consistent manner. The aim was, as a minimum, to cover the questions on the interview guide. If additional questions needed to be asked, they were added during the interview. Where answers needed additional clarification or if all questions were not covered during the interview, the interviewee was re-approached at a later stage via email or additional meeting.

Response bias could also have been experienced during data collection on the individual level, namely with the online questionnaires. The individual answering the questionnaire might not have spent enough time reading the questions, which would lead to inaccurate answers. The individual might also try to complete the questionnaire as quickly as possible, rather than truthfully answering the questions. Individuals could also simply ignore the link as “just another questionnaire” that would take up their already pressured working time. The assistance of the manager was used to introduce the questionnaire, and the questionnaires were available for the individuals for up to three months to allow sufficient time for the individual to answer the questions at a time convenient for them. The highest response rates were normally achieved in the first two days after introducing the questionnaire. Some individuals also answered during the night, which attests to the “always online” mind-set that applies to these types of worker.

2.6 RESEARCH ETHICS

Research ethics is being responsible about how we do research, and always taking the moral high ground. It is about ensuring that we do not seek to obtain answers at all costs, by respecting the rights of those that we include in the study. In this regard it is always important to follow the deontological view, which purports that the end will never justify the means (Saunders *et al.*, 2009:183). Although there are many ethical elements to take into consideration for empirical studies, the three most important ethical elements applicable to the current study and the collection of primary data are initial permission and voluntary participation; confidentiality and anonymity; and the researcher's objectivity and integrity (Saunders *et al.*, 2009:188). These three elements were important because the case study strategy of inquiry was followed, requiring in-depth analysis of each case, as well as direct interaction of the researcher with the subjects of study through interviews and questionnaires. The three selected elements will be discussed in more detail, while the other elements are tabulated in summarised form in Table 2-6.

Table 2-6: Additional ethical elements for primary data

Term	Applicability to Primary Data
Copyright	Permission obtained when previous questionnaires used. References provided when questions from previous research used.
Plagiarism	Relevant citations given of any direct quotes and concepts to be used from previous research. All quotations used from interview data clearly marked. Individuals not mentioned to retain anonymity.
Financial incentives	No incentives, financial or other, used to solicit participation.
Physical or psychological harm	No physical harm possible. No psychological stress, unless filling in a questionnaire or interview participation was stressful to an individual.
Informed consent	The questionnaires requested the consent of the individual participating and disclosed the purpose of the study. An informed consent form was also signed for each interview.
Data storage	The fact that research data would be stored and archived for 10 years was disclosed to the organisation.
Data Fabrication	Once data of the interviews had been coded and consolidated on organisational level, this was disclosed to the organisational representatives, to ensure that they agreed with the organisational representation.
False reporting	Every effort was made to ensure that reporting was correct, and representative of the actual situation. This links closely to the concept of trustworthiness of data, already discussed.

Source: Kotzé (2010d:14) (Adapted)

In looking at the three key elements identified from an ethical perspective in more detail, the first element of *permission and voluntary participation* had already been considered during the study's design phase. This was done through identifying an individual in the company who could be approached for an in-principle agreement on behalf of the company. These individuals were kept up to date as the research methodology was refined. The final permission by the company to conduct the study in that organisation was obtained in writing. (Refer to Appendix D – Case Study Protocol, for the Organisational Permission letter template.)

The fact that the organisation had given permission for the study to take place did not, however, necessarily indicate voluntary participation of all individuals within the company. Any individual had the right to decline participation, even if the company had given permission for the study. The individual could decide on participation at the point when an interview was requested, or when a questionnaire was distributed. Refer to Appendix D – Case Study Protocol, for the informed consent for interviews, and Appendix C – Online Questionnaires, for the consent related to the electronic

questionnaires. Both the organisation as well as the individual could withdraw at any stage of the research process.

During the data collection and analysis, consideration needs to be given to *confidentiality and anonymity* (Saunders *et al.*, 2009:188). Confidentiality refers to the fact that certain information should not be disclosed, such as trade secrets, information relating to competitive advantage and information that could place the individual at a disadvantage by sharing it. Keeping information anonymous implies that it should not be possible to identify the source of the data. From an anonymity perspective, the names of interviewees were not included in quotes used from the interview, and they were represented in such a way that a specific individual could not be identified. On the questionnaire level, no names were requested, but the answers of each team would be stored together, so that these could be triangulated with responses from the manager's interview and shortened questionnaire.

From the aspect of *confidentiality of data*, information was never discussed across levels in the same company, such as discussing team answers with the manager, and was only reported as a final consolidated result for the company to the company representative. The answers of each individual (manager and team member) were in that sense confidential. On the organisational level, the name of the company was not linked to the case, but a pseudonym was rather used, although the context of the organisation was given (e.g. industry, local or international, size) to be able to position the companies in relation to each other. (Refer to Appendix D – Case Study Protocol, for how anonymity and confidentiality were applied during the coding process.)

In addition, the *researcher's objectivity, integrity and honesty* were of importance throughout all the phases of the research study. The aspects of integrity and honesty were even more important for the case study research strategy, since in this type of study the researcher is directly involved in interviews as well as collecting secondary data. The objective of the case study was to do a detailed review of the phenomenon in each organisation, potentially sensitive information was revealed to the researcher. The sensitivity of the information was also based on the fact that the companies taking part in the study were in some cases competitors of each other. The

researcher was fully aware of this, and actively managed the potential conflict of interest. The researcher was and remains bound by ethical standards of the research process, which includes non-disclosure of any information obtained if it could compromise the anonymity or confidentiality requirements, as well as the agreement not to use any information obtained for other than for academic purposes.

Where the companies, however, required it, the researcher also signed additional non-disclosure agreements specific to those organisations. In accordance with the element of objectivity, the researcher used field notes and reflections to ensure that the analysis represented the findings of the case study, and not the researcher's own working situation, which also included the management of virtual knowledge workers.

From a secondary data perspective, there were some elements that needed to be considered (Kotzé, 2010d:14). Secondary data included previous performance appraisals and policy documents. In this regard, there were certain companies that required the signing of an additional non-disclosure agreement (as mentioned above), since this was deemed to be confidential corporate information. It was also decided not to include the policies and any other secondary documents as part of the ATLAS.ti document dataset, to ensure that confidentiality in this regard was maintained. Only relevant portions of the documents were quoted.

2.7 SUMMARY

Chapter 2 has described the research paradigm, research type, strategy of inquiry and research approach. The study used a constructivist grounded theory framework for the overall approach. Within this framework, the research design consisted of the mixed methods research approach, in which numerical data was collected through questionnaires, and analysed using quantitative methods such as descriptive statistics. Textual data was collected via interviews and document review, and analysed using the qualitative methods of content analysis and the constant comparative coding method. The mixing of these methods was important in the context of the case study strategy of inquiry, since it provided a more complete picture of the total case, and was used as part of triangulating the findings within

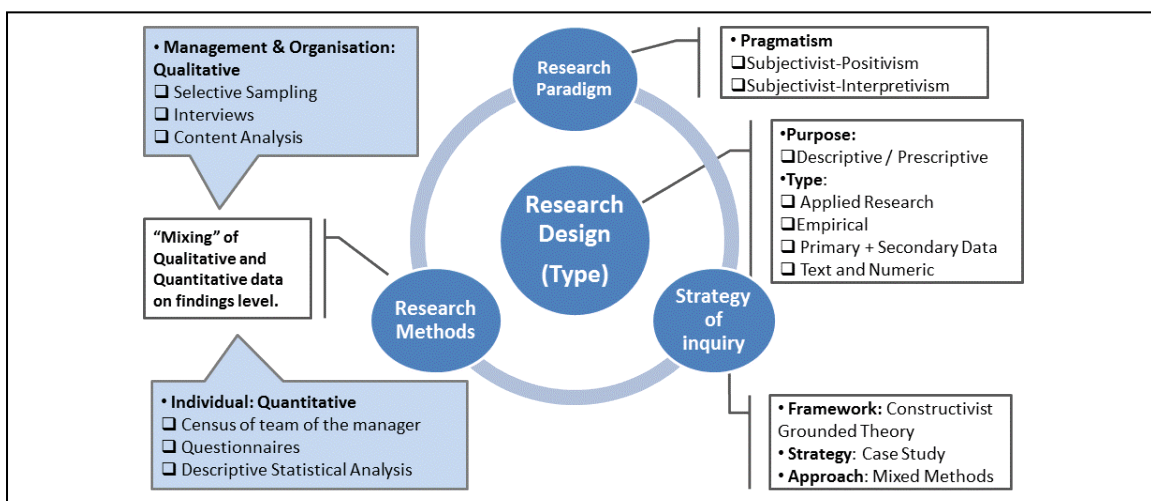
each case. The multiple-case study strategy of inquiry also allowed the identification of both similarities and differences between cases, which aided in the building of theory.

Furthermore, the case study strategy of inquiry supported the in-depth analysis of these real-life situations, which in turn supported the overall nature of the research (exploratory and descriptive), as indicated in the objectives set for the research. This was a good fit with the subjective-interpretivist paradigm adopted for the research. This paradigm supports descriptive research and a subjectivist ontological approach, implying that the context in which the research takes place is important.

Finally, pragmatism, as the selected research philosophy, is a combination of philosophies which holds the view that it is possible to work with variations in assumptions regarding the nature of reality (ontology), as well as variations in how knowledge can best be reproduced (epistemology) (Saunders *et al.*, 2009:109), and therefore advocates the mixing of methods in order to support this worldview (Denscombe, 2010; Mouton, 2009).

The elements of research design used for this study, in terms of the selection of the research paradigm, the strategy of enquiry, research methods and design type, are shown in a combined view in Figure 2-8.

Figure 2-8: Research design elements: summary



Source: Cresswell (2009:5) (Adapted)

For the design, the quality or rigour aspects related to qualitative research have been defined as credibility, transferability, dependability and confirmability. The three most important ethical elements applicable to the current study and the collection of primary data were identified as the initial permission and voluntary participation, confidentiality and anonymity and the researcher's objectivity and integrity.

This chapter has answered the questions “what?” and “why?” for the research design. The “how?” or execution of the design will be discussed in more detail in Chapter 4, while a summary of quality and ethical issues encountered during execution will be discussed in Chapter 8 as part of the closure. The initial literature review will, however, be presented next in Chapter 3, to set the context and describe the guiding framework that was used in the data collection instruments.

CHAPTER 3

3 INITIAL LITERATURE REVIEW

3.1 INTRODUCTION

The purpose of this chapter is to present the literature reviewed pertaining to the performance management and management of virtual knowledge workers. The review revealed that a great deal of focus was placed on performance management as a human resource management process, and not so much on aiding the manager on a day-to-day basis. In managing virtual knowledge workers specifically, various practitioners' guides existed, while empirical research tended to be very contextual and related only to specific hypotheses that the researchers were testing. These did not necessarily relate to the performance of virtual knowledge workers on a broader level.

Thus, in keeping with a constructivist grounded theory approach, the review was used to assist with creating a framework for the research inquiry, particularly for the content of the interview guides and the online questionnaires. According to Mills *et al.*, 2006), as part of the constructivist grounded theory approach it is seen as acceptable to have some literature review inputs as a starting point to "stimulate thinking" (Mills *et al.*, 2006:4), and to use this basic framework for further analysis.

In summary, the literature review gives a historical perspective of performance management and performance appraisals, their objectives, the systems involved, and issues experienced. These paragraphs contain older references, as the aim was to trace some of the historical origins of this HR management function. This chapter also discusses performance and measurement of virtual knowledge workers, and how this differs from the more traditional approaches. Thereafter, the discussion covers the theories that are affected by this different way of work, including

socialisation, the psychological contract, self-efficacy, goal-setting and management control. The chapter concludes with a short review on how information systems are used in the context of managing virtual knowledge workers.

3.2 CONCEPTS OF PERFORMANCE MANAGEMENT

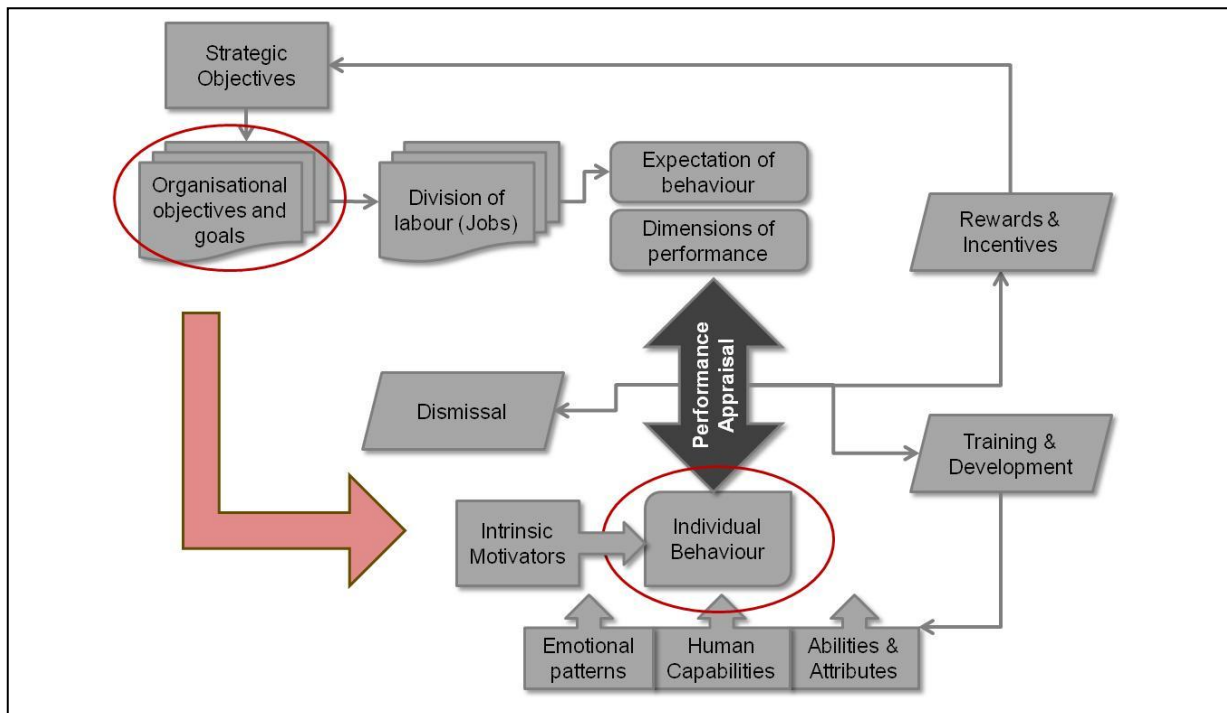
3.2.1 Traditional Approaches and Historic Overview

This section uses mainly practitioners' guides and books by subject matter experts such as Cascio, Latham and Wexley, and a Harvard Business School review to provide a broad overview of the concepts and approaches which have traditionally been used in performance management.

3.2.1.1 Objectives and uses of performance appraisals

Organisations can be seen as complex systems in which "a system is a collection of interrelated parts, unified by design, to attain one or more objectives" (Cascio, 1998:33). The strategic objectives of the organisation are broken down into smaller organisational objectives or goals. To achieve these goals, it is necessary to define multiple jobs, each with their own expected behaviour. The performance of individuals is evaluated against expected behaviour, and used to determine if the overall strategic objective is still being achieved through the combined effort of all individuals (Latham & Wexley, 1994:4; Miner, 1992:379). This is represented diagrammatically in Figure 3-1.

Figure 3-1: The context of performance appraisals



Source: Miner (1992:379) (Researcher's interpretation of written explanation)

According to Latham and Wexley (1994:5), the two most important objectives of the performance appraisal (more recently included as part of the performance management process) are motivation (counselling) and development (training for knowledge and skill) in order to improve productivity. In addition to these two objectives, performance appraisals are also used as inputs to various other human resource (HR) related processes, such as promotions, financial rewards, transfers, creating career development plans, finding strengths to build on and having written support for poor performance in terms of legal action or disciplinary inquiries. However, the measurement should always be aligned with organisational goals (Cascio, 1998:40; Harvard Business School, 2007:1).

In addition to the HR-related functions, Cleveland, Murphy and Williams, as well as Lawler, Mallinger and Cummings (in Latham & Wexley, 1994:8), state that the performance agreement is used to ensure that there is a mutual understanding of what needs to be delivered, and that there is no misunderstanding regarding the expected standards of performance or behaviour. This seems to be a physical representation of what is generally known as the psychological contract, which according to Rousseau and Tijoriwala (1998:681) is "an individual's belief in

reciprocal obligations arising out of the interpretation of promises", and therefore not necessarily a written or explicit agreement. The question relevant to this study is therefore whether the psychological contract is becoming more explicit in the context of virtual work. The reality of the appraisal process is that it has to be done, it will have consequences. It is also becoming increasingly difficult in the face of increasingly more complex organisations and environmental factors (Cascio, 1998:59).

3.2.1.2 Approaches to and types of performance appraisal

To measure performance or evaluate it in terms of expected behaviour, a job analysis must be done (Miner, 1992). Industrial engineers have tools for determining optimal work methods, facilities and working conditions, while HR specialists determine the behaviour that is needed to perform optimally in a given job (Latham & Wexley, 1994:59). Job analysis is often conducted via the critical incident technique (CIT) (most favoured), job elements, position-analysis questionnaire (PAQ), ability requirement scales, functional job analysis, task inventory, threshold trait analysis and task analysis (Latham & Wexley, 1994:61).

Once the job analysis has been completed, the approaches and criteria for measuring performance can be put in place. Trait scales are often used as they are easy to create, and can be applied across different organisational functions and levels. They include traits such as loyalty, dependability and decisiveness (Latham & Wexley, 1994:47). However, ratings are often subjective or invalid (Austin & Vollenova, 1992 in Latham & Wexley, 1994:50) and do not always stand up to scrutiny in a court of law (Latham & Wexley, 1994:50).

The next approach is related to one of the objectives of the performance appraisal, called motivation. Miner (1992:79) lists under motivational practices and their theories the topics of goal setting (including management by objectives or MBO), work redesign, organisational behaviour changes and reward systems. It is therefore not unusual for goal setting and management by objectives to be seen as integral evaluation items during performance appraisals. Although MBO was initiated in the 1970s, during the 1980s MBO was seen as the "preferred method of assessing an

employee's contribution to the organization's bottom line", according to Bretz and Milkovich in Latham and Wexley (1994:50). The big advantage of MBO is that it emphasises goal setting and feedback for a completed activity, which is measured in terms of time and quality instead of personality traits. These measures are normally more tangible, which lessens subjective judgement or evaluation regarding behaviour (Latham & Wexley, 1994:53). One criticism is that the individual does not always have control over cost, which could be influenced by team impact, environment impact or context impact (Latham & Wexley, 1994:51). Latham and Wexley (1994:170) promote the concept of goal setting, but outside of "cost only" goals. As goals give direction by focusing activity, they ensure that effort is expended on the correct activity. They also found that difficult goals are often pursued with greater persistence.

There are also behaviour-based approaches that rate the individual not on the trait, but on whether the behaviour can be observed or not, such as "working well with co-workers" (Grobler *et al.*, 2006:264). The behavioural indexes state explicitly what the individual must do to be productive (Latham & Wexley, 1994:57).

In the literature various different types of appraisal instruments can be found, as listed below.

- Forced-choice scales created by the US Army after World War II, first mentioned by Sisson in 1948 and expanded by Cozen in 1955 (in Latham & Wexley, 1994:77)
- Behaviourally Anchored Rating Scales (BARS), refined in the nursing profession in 1963 (Smith & Kendall, in Latham & Wexley, 1994:78)
- Behavioural Observation Scales (BOS), created by the American Pulpwood Association in 1968 (Latham & Wexley, 1994:78)
- Mixed standard scales (MSS), used to respond to behavioural items in terms of whether the employee is better than, equal to or worse than the behavioural item, described in 1972 by Ghiselli (in Latham & Wexley, 1994:98)

3.2.1.3 Issues with performance appraisals

There are, however, many problematic issues relating to performance appraisals, but as Latham and Wexley (1994:1) put it "performance appraisal systems are a lot like seatbelts." They may not be liked by all, but they are necessary. Thornton and Zorich (in Cascio, 1998:61) split the performance appraisal into two stages. The first is observation, which includes detection, recall and recognition of specific behavioural events, and the second is judgement, where information is evaluated, integrated and categorised. It is often in this second stage that managers are seen as unfair judges and subordinates feel uncomfortable in participating in the discussions, as they may feel that there is an unspoken "political" agenda. In addition, the judgements are often seen as biased or lacking objectivity, and this ultimately causes a breakdown in trust (Cascio, 1998:58; Culbert, 2008; Harvard Business School, 2007:2-3; Latham, Almost, Mann & Moore, 2005:80; Latham & Wexley, 1994:1). When managers are not objective enough, or when what is *not* said in the appraisal interview is actually more important than what is said, the review can be more damaging than energising (Harvard Business School, 2007:35; Williams, 2007:22).

In some cases it has been found that the appraisal instrument measurements were invalid because they were not linked to the organisational goals (Harvard Business School, 2007:35; Latham & Wexley, 1994:1). This could be as a result of the managers not having spent time on defining the goals in sufficient detail, or due to external factors. Deming (in Latham & Wexley, 1994:3) had a significant impact on the quality movement in Japan during the 1980s. He speculated that the system is often not taken into consideration when measuring outcomes. Cascio (1998) agrees that this could become a barrier, since the individual often does not have control over the total organisational system.

3.2.1.4 Some suggestions for change

In *Managing performance to maximise results* (Harvard Business School, 2007:19), the statement is made that "[m]ost effective performance appraisal systems...exhibit...(1) ongoing, two-way exchanges of feedback; regular coaching between manager and employee; (2) separation of conversations devoted to

professional development and compensation decisions; and (3) explicit links between performance goals and high-level company objectives".

As the first element, namely "ongoing, two-way exchanges", suggests, there is a recommendation for a more continuous approach, with review sessions that are held regularly, rather than only once or twice a year (Harvard Business School, 2007:37). Culbert (2008) refers to these as *preview* sessions, rather than *review* sessions. This can be achieved through a collaborative coaching approach, where the manager works in partnership with the employee, rather than playing the role of the judge (Carney, 2007:51; Williams, 2007:30). What is also important about the coaching approach is that the employee needs to take more accountability and responsibility in defining and driving different objectives (Allen, 2007:44; Gary, 2007: 73; McGregor, 1957:135). In Theory Y, McGregor (1957:127) proposes that "By arranging organizational conditions and methods of operation, management's task is to allow people to achieve their own goals by directing their own best efforts towards organizational objectives."

This was encapsulated in his now famous Theory Y, which is linked to the concept of internal control and self-direction (McGregor, 1957:134). Johnson (2007:97–103) also refers to the power of self-efficacy, in that employees must believe that they can achieve goals, and that a personal interest should be incorporated, which will bring a personal or intrinsic motivation, rather than an external motivation from company perspective only.

The second element of the Harvard Business School quote: "separation of conversations devoted to professional development and compensation decisions", contains a suggestion to unbundle the different functions of the review process, so that development, performance, remuneration and career planning are done as separate exercises. It is even suggested that discussions around poor performance be held only when necessary and in order to cover legal requirements (Harvard Business School, 2007:37). In this way, a clear distinction is made between achievers and poor performers, and issues can be addressed openly as they occur (Gary, 2007:73).

The third element of an effective performance appraisal, stated as "explicit links between performance goals and high-level company objectives", indicates that performance appraisals can be improved by ensuring that the measures are reliable and valid. For the measures to be valid, they need to be aligned with the objectives, which in turn need to be clear and link with the organisation's goals (Allen, 2007:44; Brinkendorf & Dressler, 1990:63; Carney, 2007:51; Johnson, 2007:97-103). To achieve this, Latham and Wexley (1994:66-69) suggest retesting measures at more regular intervals, ensuring that there is inter-observer reliability, that scales show internal consistency, and that there is content, predictive and construct validity. There have also been suggestions that not only the manager should be an appraiser, but that there should be a 360 degree review, which could include employees, peers and subordinates, as well as customers (Latham & Wexley, 1994:111; Grobler *et al.*, 2006:279). A caveat for 360 degree reviews is that one needs to find qualified "judges" to assess people's performance according to the agreed goals, especially where the goals relate to less tangible outputs (Carney, 2007:54; Latham *et al.*, 2005:80). Moreover, self-evaluation can work if used in conjunction with other evaluations as a type of triangulation (Miner, 1992:389).

Another way of linking the organisation's strategic goals to individual performance objectives is the Balanced Scorecard, which was developed by Norton and Kaplan (1992). The improvement over normal "goal-setting" was that the objectives were split over four "balanced" perspectives, rather than just focusing on costs, as with the Management by Objectives (MBO) approach. The four perspectives include a financial perspective; internal or process perspective; innovation and learning for value creation; and customer or shareholder perspective. Each objective is given a measurement, target and initiatives. Even though this approach is a definite improvement over the so-called non-balanced measures, it is still subject to interpretation and "judgement" by the manager. The balanced scorecard is still seen as something that is used in a bi-annual appraisal, and not necessarily on an ongoing basis.

3.2.2 Performance Management of Virtual Knowledge Workers

As stated in the introduction, and as confirmed by the literature review on traditional performance management, performance appraisals have many inherent drawbacks. These problems are now being amplified in the case of virtual knowledge workers, because the manager does not see them on a regular basis, and their contracting arrangements may differ. The question is whether research has been conducted on the management of performance of virtual knowledge workers, and the related linkages to the issues and improvements identified in the paragraphs above.

Even though many individuals have made statements to the contrary (Drucker, 1999:142; Davenport, 2005:45), according to Reddin (1988:33), "[i]t is a popular myth that the effectiveness of many knowledge workers cannot be measured". In a book published as early as the late 1980s, Reddin (1988:33) promotes the use of output-oriented performance management. He states that even the work of knowledge workers can be defined in output terms, such as how many times the advice of a knowledge worker has been accepted, or how many times this advice has actually led to an improvement in the current situation. Von Hoffman (2007:153) calls this the measuring of ideas. He adds that the individuals themselves should be asked what they think their job and contribution entail, and that this should not be only left to peer review. He also states that corporate culture can determine how well knowledge workers are accommodated, especially from a learning perspective (Von Hoffman, 2007:158).

Piccoli *et al.* (2004:372) did a study in which a total of 201 students were included in an experimental design to determine the impact of managerial controls on the effectiveness of virtual teams. The students were divided into work teams of three to four individuals each. Half of the teams were subjected to behavioural controls such as filing of regular reports, structuring work and other work control procedures, while the other teams had to regulate their own work (i.e. were defined as self-directed). Although they found that there was no significant difference in performance between self-directed and behaviour-controlled virtual teams, they did find that there was a higher individual satisfaction in self-directed teams. However, the most effective teams were self-directed teams where there were specific individuals who took on the

role of structuring and co-ordinating the team efforts. These “emergent leaders” facilitated communication and ensured that individual roles were understood. In general, the recommendation was that the application of behavioural control practices could be counter-productive or ineffective in virtual teams (Piccoli *et al.*, 2004:374)

This view is supported by the empirical study of Jackson *et al.* (2006), which focused on the fact that virtual knowledge workers are normally seen as self-driven, and proposed a self-monitoring, rather than a management control approach. This is based on the concept of an external panopticon or "all-seeing eye", which was introduced by Jeremy Bentham, and based on the original work of Foucault, to institute ongoing surveillance in prisons (Jackson *et al.*, 2006:221). This research by Jackson *et al.* is a detailed, single case study of a highly successful Scandinavian engineering company. The study was performed in the development planning division, which had 150 full-time and 200 part-time employees. The study looked at direct control, such as task allocation and quality control, indirect controls such as job descriptions, and then the creation of an inner panopticon, which can be used as inherent motivation of virtual knowledge workers. Data was collected through seminars, focus groups and interviews at management and knowledge worker level.

The case study found that professionalism does become a type of "inner panopticon", which drives the virtual knowledge worker to keep on working (i.e. stay on task), even though no visible external control is exercised (Jackson *et al.*, 2006:232). This links strongly to one improvement that has been suggested for traditional performance appraisals: the individual should be given more accountability, and the manager should just act as a sounding board or coach, without being seen as exerting direct control (Allen, 2007:44; Gary, 2007:73; McGregor, 1957:135). Jackson *et al.* (2006:241) also recommend further research linking the inner panopticon to technology as supporting tool. In addition, Piccoli *et al.* (2004) proposed research in a real-life situation as opposed to their experimental design including only students.

The more recent literature regarding the management of dispersed teams was only reviewed after data collection and analysis, and enfolded in chapter 6, to ensure that

the inductive process and not deductive process for the constructivist grounded theory was followed.

3.2.3 Other Research Related to Framework Questions

While searching for pre-existing items to include in the online questionnaires, some additional studies were found with links to virtual work and/or job performance in general. These were reviewed and the relevant questions contained there-in were used to extend the conceptual framework.

In a study reviewing factors contributing to virtual work adjustment, one of the findings was that the longer individuals had been working virtually, the more comfortable they would become with their independence (Raghuram *et al.*, 2001:392). The study by Raghuram *et al.* (2001) also found that setting of clear evaluation criteria improved the adjustment of virtual workers because it provided some independence to the virtual workers for managing their own performance according to the set criteria. In this regard, work independence also contributed positively to virtual work adjustment (Raghuram *et al.*, 2001:396). Trust was also found to be a significant factor relating to positive virtual work adjustment or telecommuter self-efficacy (Raghuram *et al.*, 2001:396; Raghuram *et al.*, 2003:196). In another study it was also found that when individuals trust their managers, they are more likely to follow the organisational directives (Taylor & Carroll in Raghuram *et al.*, 2001: 287).

Further to this, Broschak *et al.* (2008) conducted a study to determine the relationship between work arrangements (specifically nonstandard work vs. standard work arrangements), work attitudes and job performance. Performance was defined on three levels: reaching of a monthly performance expectation set by their manager; their score on their last performance appraisal as a rating from 1 to 5; and regular engagement in extra-role behaviours at work (Broschak *et al.*, 2008:23). The researchers found that in most cases, the performance of the nonstandard workers, such as retention part-time workers and agency temporary workers, was better than the performance of their peers in full-time employment or standard work

arrangements, especially where the agency worker had the opportunity to transition into full-time employment. On the other hand, the commitment of standard workers who were given flexibility to work part time did not improve significantly.

As a control variable, the researchers controlled for dependence on others as well as for work independence, which was established respectively by determining how often individuals were interrupted by others, and how often they could work without the need to collaborate with others. They wanted to determine how much the type of work arrangement lent itself to extra-role behaviours (as one of the performance measures), rather than the inclination of the individual towards helping others. To capture these variables (i.e. “other’s dependence” and “work independence”) they used specific questions which had been created by Pearce and Gregersen (in Broschak *et al.*, 2008:38). It was decided to include these questions in the current study, because a higher degree of dependence could reduce the number of days that an individual could spend working remotely from managers and others.

A study completed by Christen, Iyer and Soberman (2006, 147), re-examining the relationships between job satisfaction, job performance (or outputs) and effort (input in work relationship) through agency theory, found a “significant positive effect of job performance on job satisfaction”. Although the research was not conducted in a virtual situation, the questions interrogating job satisfaction were included in the current study.

In looking for additional parameters that could be used in questions relating to how performance is measured, the five performance objectives of cost, speed, quality, flexibility and dependability, as part of an operations management approach, were included (Pycraft, Singh, Phihlela, Slack, Chambers, Harland, Harrison & Johnston, 2000:63). These are listed in Table 3-1. An additional column has been added as interpretation of how these measures could be applied to knowledge workers.

Table 3-1: External effects of the performance objectives

Performance Objective	Definition	Operations	Knowledge Worker Application
COST	High total productivity	Low price, high margin	Cost vs selling price of knowledge delivered
SPEED	Fast throughput	Short delivery lead time	Number of knowledge products delivered in certain time period (i.e. productivity)
QUALITY	Error-free processes	On-specification products/services	Delivered according to standard (What is the standard – peer review; externally set level; professional qualification?)
FLEXIBILITY	Ability to change	Frequent new products and services	Innovative solutions; problem-solving capability; novelty of the solution – recipe or novel solution
DEPENDABILITY	Reliable operation	Dependable delivery	Keep on delivering Others depend on the output – contribute to many knowledge products of others.

Source: Pycraft *et al.* (2000:63), last column interpretation for this study.

The questions contained in the above-mentioned studies that were deemed suitable to extend the framework of questions for the current study have been included in Table 3-3.

3.3 THEORIES AFFECTED BY NONSTANDARD WORK

Since the work contract and way of work for virtual knowledge workers is changing, it stands to reason that many long-standing theories about work and work motivation will be affected (Broschak *et al.*, 2008:3-4). This includes socialisation (Barley & Kunda, 2001:87; Broschak *et al.*, 2008:18-19), psychological contract (Rousseau & Tijoriwala, 1998:679), self-efficacy (Staples *et al.*, 1999:758-776), goal-setting (Locke & Latham, 2006; Locke *et al.*, 1988:23;) and management control (Jackson *et al.*, 2006:220).

Ashford *et al.* (2007:67) use the three "attachments", as defined by Pfeffer and Baron (in Ashford *et al.*, 2007:68), including geography ("Physical attachment"), control ("Administrative attachment") and length of contract ("Temporal attachment") to define a nonstandard worker. Nonstandard work can thus be deemed to be work where control of the individual is low, due to the fact that the individual no longer

works in the same geographical location as the manager or organisation, and the career of the individual is no longer guaranteed (i.e. any contract is not necessarily a long-term engagement with the organisation). An important distinction that is made is that the work will only be deemed to be nonstandard if the work was traditionally done in a standard way. For example, an artist would not be seen as a nonstandard worker, as they have always worked away from their direct managers (Pfeffer & Baron in Ashford *et al.*, 1977:74; Staples *et al.*, 1999:773). Types of work that are encompassed by the term of nonstandard work include contingent work, alternative employment, temporary work, independent contractors, telecommuting, market mediated and freelancers (Ashford *et al.*, 2007:66; Connelly & Gallagher, 2004:960).

Table 3-2 gives a summary, based on this literature review, of the impacts that the nonstandard worker paradigm has on various theories, and how the nonstandard paradigm differs from the standard worker paradigm in the context of organisational behaviour (OB).

Table 3-2: Nonstandard versus standard workers

Dimension	Definition	Nonstandard Worker	Standard Worker	Theoretical mechanism	OB Theories affected
Temporal attachment	"Extent to which workers expect employment to last over the long term."	Responsible for own career	Lifelong career in company	Affects worker's expectations of the future; "To impress superiors for getting ahead".	Organizational citizenship; Citizenship behaviour; Impression Management; Performance Management
Administrative attachment	"Extent to which workers are under the organization's administrative control."	Lesser control	Full control	Affects whether workers classify themselves as organisational members (Perceived vs. actual group membership); To belong and identify; "Strong individual motive to fit in"	Social identity Theory; Self-categorisation theory; Organisational identification literature; Socialisation literature; Social Exchange

Table 3-2: Nonstandard versus standard workers (Continued)

Dimension	Definition	Nonstandard Worker	Standard Worker	Theoretical mechanism	OB Theories affected
Physical attachment	"Extent to which workers are physically proximate to the organization."	At home, coffee shop, branch office, client site; "Make meaning by drawing on their self-knowledge and culturally available meaning units"	On site; "...workers come to understand the meaning and value of their work... (through interaction with others)"	"Affects levels and quality of interaction"	Mental models link to paradigm and mindset
Temporal - Micro level	Type of hours	Variable hours; Flexible hours	Fixed hours; Fixed Start and end times	Affects whether workers are deemed to be "contract" or temporary workers - type of contract	Employment contracts
Psychological attachment	Identification with the company	Construct identity as professional and entrepreneurial.	Strongly identified	Internalisation of organisational values	Organisational culture; Culture literature; Psychological contract

Source: Ashford *et al.* (2006:69-74) (adapted)

3.4 INFORMATION SYSTEMS AND PERFORMANCE

Information systems that are used to gather and process employee information in organisations are called human resource information management systems (HRIMS) (Grobler *et al.*, 2006:39). These systems are used to store performance appraisal and skills development information of employees, in order to use it in developmental and promotional decisions. This information is, however, not of much use to the manager who needs to manage the performance of virtual knowledge workers on a day-by-day basis, since the information is not updated on a daily basis.

Knoll and Jarvenpaa (1998:2) conducted a study in which students who had not met each other before, and who were located across countries and universities, needed to produce a combined deliverable. The study found that virtual collaboration,

electronic socialisation and virtual communication skills, as well as the extent to which procedures, guidelines and rules were agreed between the team members, became important for the successful completion of the deliverables. When collaborating, teams needed to manage conflict effectively, agree on procedures and processes connected to deliverables, and synchronise their timing, especially where work needed to be performed across time zones. They also need to learn new electronic socialisation skills to ensure that group norms were set, participation was ensured and the sense of teamwork and interdependence, defined by the term “teamness”, existed. This “teamness” is defined as a sense of teamwork and interdependence and relates to the cohesion and interdependence among team members which is created through the communication of feelings, sensory information, and roles and identities in written or verbal communication. On the communication side, team members needed to ensure that they communicated the intended meaning of their messages, a large portion of which could be influenced by language, culture and the type of technology used. The new netiquette conventions for online communication were especially important to consider during both electronic communication and socialisation. Team members needed to learn to cope with the new style of communication, in particular when some users exhibited less emotional restraint when communicating electronically.

Other IT systems such as email, collaboration tools, knowledge bases and even social networking tools are used to exchange information, collaborate on mutual deliverables, and determine work in progress (Palmer, 1998:77). The concepts of communication, collaboration and socialisation, among others, can also be used to categorise these IT technologies that managers and their teams use during remote interaction.

A study by Limburg and Jackson (2007:146) focused specifically on how workflow management systems (WFMS) can be utilised to manage remote teams which have to collaborate on deliverables while not working in the same location. Workflow management systems support business processes by keeping information relating to decisions flowing between potentially remote individuals (Limburg & Jackson, 2007:147). These authors have categorised these control approaches into behaviour, output, input, peer and self control. Behaviour control relates to individuals’

performing exactly to the agreed standard or procedure. Managers need to closely monitor individuals to ensure that they perform up to standard. In output control, the end results or outputs are measured according to targets that were set up-front, with the specification of expected results being important. Input control relates to ensuring that the right individuals are selected, that the individuals are trained, and that the goals of the business unit and individual are aligned with organisational goals (Limburg & Jackson, 2007:148). The impact of colleagues and other managers, or even the professionalism of the individual, is part of the concept of peer control, while self-control is directly related to the amount of autonomy and discretion an individual has in deciding on his or her actions (Limburg & Jackson, 2007:149). The study found that WFMS could be used for more than just collecting performance management data. WFMS were even effective in peer control and self control scenarios (Limburg & Jackson, 2007:165). Thus research suggests that the type of systems used at the different organisations should play an important part in managing the performance of virtual workers.

The current study will therefore review what information and communication systems were used to track and enable performance of individuals and teams.

3.5 INITIAL FRAMEWORK AND QUESTIONNAIRES

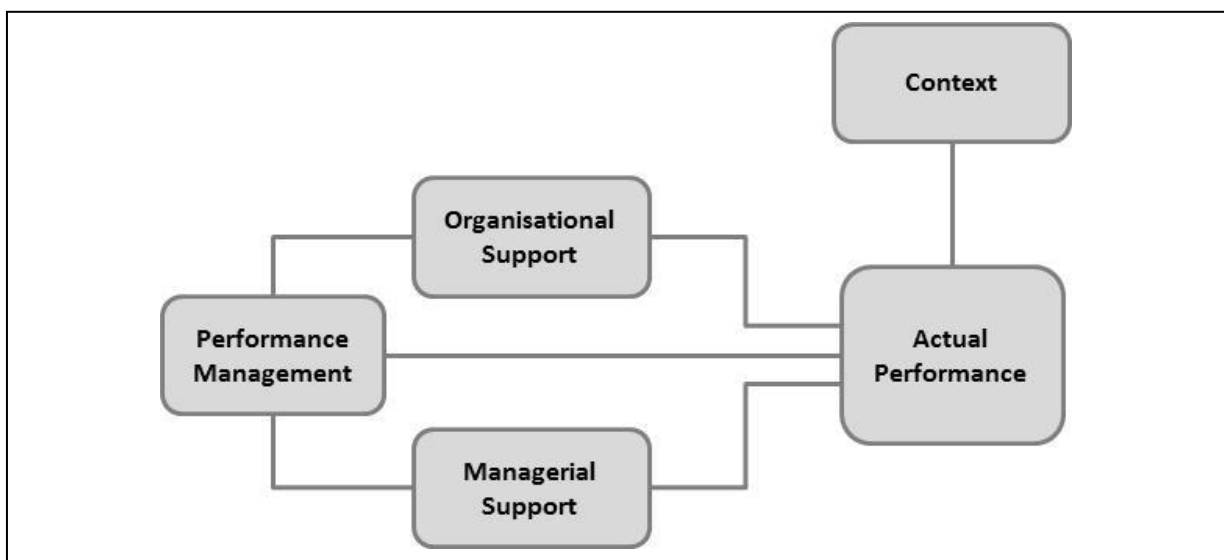
3.5.1 Framework

Based on the review of performance management and virtual knowledge workers, a basic conceptual framework was created primarily for establishing and grouping the content of both the interviews and questionnaires. This framework is shown in Figure 3-2. The diagram indicates that certain relationships may exist between the components, which would ultimately affect the performance of the individual. The components are listed below and they are based on elements identified in the initial literature review:

- Performance Management: How is the performance of virtual knowledge workers managed?

- Organisational Support: How is management of performance of virtual knowledge workers supported by Human Resources and Information Technology on an organisational level?
- Managerial Support: What additional elements does the manager contribute towards managing the performance of virtual knowledge workers?
- Context: Are there any other contextual parameters that also influence the performance of virtual knowledge workers?
- Actual Performance of the virtual knowledge worker: This represents the outcome based on all the “inputs” received.

Figure 3-2: Basic conceptual framework



3.5.2 Individual Questionnaire Components

The initial basic conceptual framework was used to create the sections or components for both the semi-structured interviews and the questionnaires. These components are shown in Figure 3-3. For the online questionnaires, the first component represented the demographics of the individual, such as contract status, age, and years employed. The aim of the second component was to gain an understanding of how performance is managed by the manager from the individuals' perspective. The third component focused on the manager's support. In other words, what does the manager do to influence performance? Organisational support was the fourth component. This started looking at organisational factors that could influence

the individual or team. Component five reviewed how the individuals perceive their own success, linking to the concept of self-efficacy. The last component reflected on any other external factors that could influence or moderate the actual performance. The final individual questionnaire is given in Appendix C – Online Questionnaires.

Figure 3-3: Questionnaire and semi-structured interview components

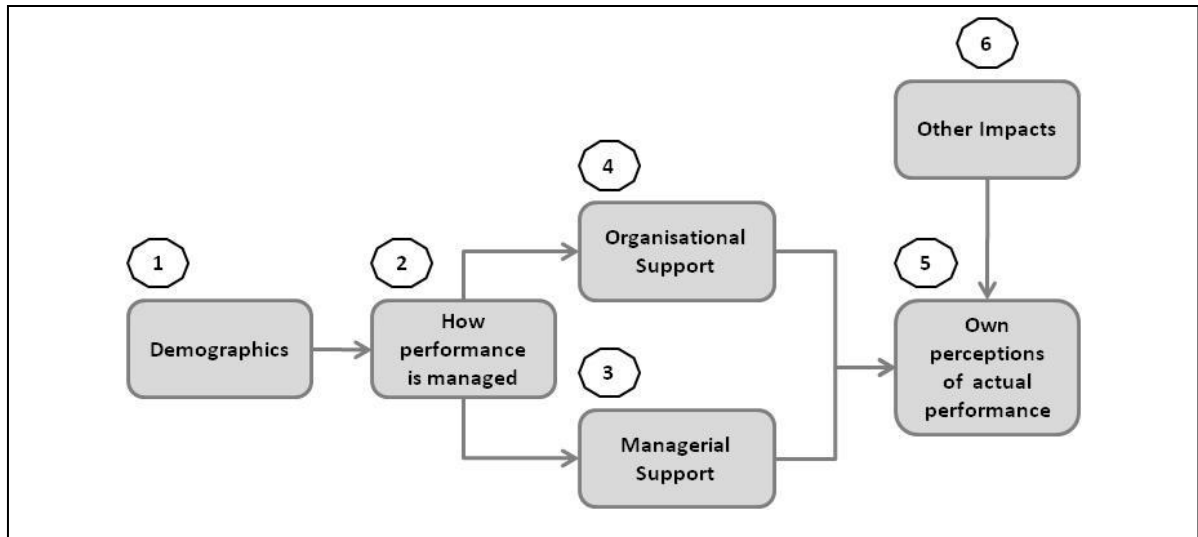


Table 3-3 contains those questions that were specifically obtained from the literature review, as included above. The first column gives the link to the research objective (RO); the second column gives the questionnaire component; the third column provides the source reference; the last column contains the questionnaire item.

Table 3-3: Questions with specific literature references

RO	Questionnaire Component	Reference	Question
C	(1) Demographics	Tenure - the longer working virtually, the more comfortable the individual will be with the independence. - (Raghuram <i>et al</i> , 2001:403)	How long have you been working as virtual knowledge worker (i.e. remote from manager)?
			Years
			Months

Table 3-3: Questions with specific literature references (Continued)

RO	Questionnaire Component	Reference	Question
RO1	(2) Management of Performance	<p><i>Original Hypothesis: (H2)</i> <i>"Clarity of evaluation criteria will be positively related to employee adjustment to virtual work". (Raghuram et al, 2001:386,403) (Questions of the study included.)</i></p> <p><i>Study Hypothesis: Clarity of evaluation criteria (given by the manager) will positively relate to virtual knowledge worker performance.</i></p>	<p><i>Please select the most appropriate answer for each statement. (Likert)</i></p>
			There are objective criteria whereby my performance can be measured.
			It is easy to measure and quantify my performance.
			The measures of my job performance are clear.
RO2b	(2) Management of Performance	<p>Original Hypothesis (H3) "The more an employee's manager utilizes effective remote management and working practices, the higher the employee's remote work self-efficacy." (Staples et al., 1999:758-776)</p>	<p><i>Please select the most appropriate answer for each statement. (Likert)</i></p>
			My manager communicates goals and sets priorities with me.
			My manager assesses my performance based on the results I achieve rather than how I spend my time.
RO4	(8) Other Impacts	<p>Job satisfaction, job performance, and effort: a re-examination using agency theory. (Christen et al., 2006:148)</p>	<p><i>Please select the most appropriate answer for each statement: (Likert)</i></p> <p>I have a lot to say about how to do my job.</p>
			How satisfied are you with the amount of control you have in your work?
RO1 / RO3a	(2) Management of Performance	<p>Defining productivity e.g. number of products in certain duration; quality - products are of certain "standard"; complexity of the products (high/low); novelty of the products (new / recipe; amount of money that can be made with the outcome; independence required for the work. (Culbert,2008)</p> <p>Matrix (Davenport, 2005)</p> <p>Operations Manual</p> <p>Performance objectives (Pycraft et al., 2000)</p>	<p>How is your performance measured? / How would you like your performance to be measured?</p>
			Time spent working
			Number of products produced/delivered in given time
			Quality of work produced
			Level of customer satisfaction
			Management perceptions only
			Meeting financial targets
			Meeting objective criteria
			Progress on allocated tasks
			Novelty of solutions produced
Complexity of solution produced			
Other			

Table 3-3: Questions with specific literature references (Continued)

RO	Questionnaire Component	Reference	Question
RO2b	(5) Managerial Support	Original Hypothesis H3 “Interpersonal trust will be positively related to employee adjustment for virtual work / telecommuter self-efficacy” (Raghuram <i>et al.</i> , 2001:403; Raghuram <i>et al.</i> , 2003:196)	<i>Please select the most appropriate answer for each statement regarding your manager. (Likert)</i>
			I trust my manager.
			My manager trusts me.
RO2b	(5) Managerial Support	Manager and freedom given (Luyt, 2007)	<i>Please select the most appropriate answer for each statement regarding your manager. (Likert)</i>
			My manager allows me to work flexible hours.
			My manager allows me to select my location of work.
RO2b	(5) Managerial Support	Inner Panopticon (Jackson <i>et al.</i> , 2006)	<i>Please select the most appropriate answer for each statement regarding your manager: (Likert)</i> The amount of control my manager exerts over my day-to-day activities is acceptable.
RO2b	(5) Managerial Support	Original Hypothesis (H3) “The more an employee's manager utilizes effective remote management and working practices, the higher the employee's remote work self-efficacy.” (Staples <i>et al.</i> , 1999:758-776)	<i>Please select the most appropriate answer for each statement regarding your manager. (Likert)</i>
			I have been trained by my manager to work remotely.
			My manager uses available information technology tools effectively.]
			My manager supports my information technology needs with equipment, financial support, and training.
RO2b	(7) Own perceptions of success	Inner Panopticon (Jackson <i>et al.</i> , 2006)	<i>Please review the statements below and select the most appropriate answer: (Likert)</i> My manager does not have to monitor me in order for me to perform up to standard.
RO4	(7) Own perceptions of success	Other dependence on individual (Question by Pearce & Gregersen, in Broschak <i>et al.</i> , 2008:38)	<i>Please review the statements below and select the most appropriate answer. (Likert)</i>
			I am frequently interrupted by requests for information from others in my team.
			In my job, I am frequently called on to provide information and advice to others in my team.
			The way I perform my job has a significant impact on others in my team.

Table 3-3: Questions with specific literature references (Continued)

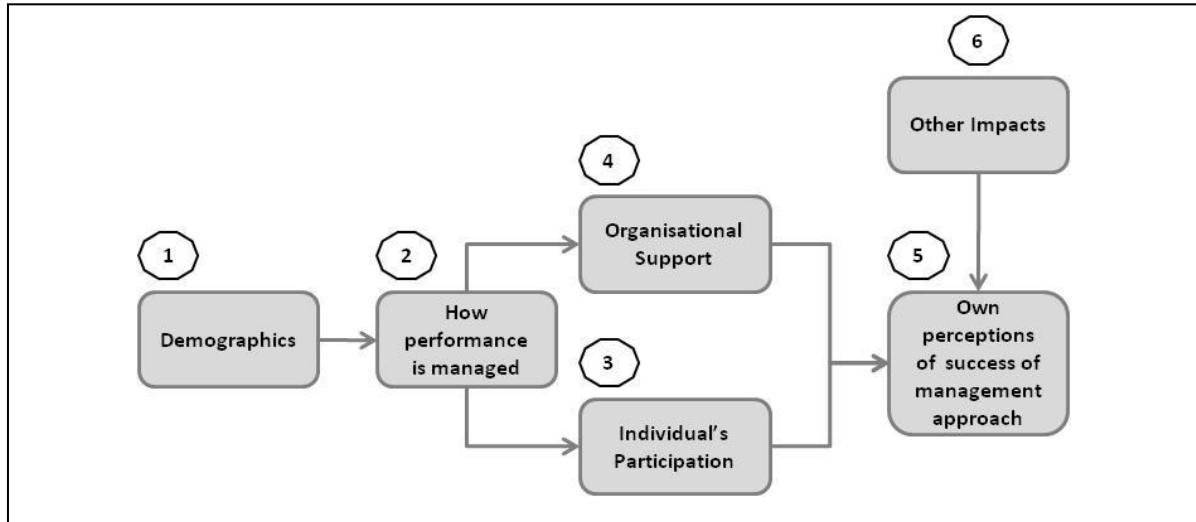
RO	Questionnaire Component	Reference	Question
RO1	(7) Own perceptions of success	Original Hypothesis: "Work independence will be positively related to employee adjustment to virtual work." (Raghuram <i>et al.</i> , 2001:392,386) Questions used as created by Sims, Szilagyi & Keller 1976 (In Raghuram <i>et al.</i> , 2001: 403) Study hypothesis: Work independence will negatively relate to the perceived amount of management control. (The more work independence the less management control is appreciated or needed.)	<i>Please review the statements below and select the most appropriate answer (Likert)</i>
			My performance does not depend on working with others
			To perform my best, I need to work independently.
RO4	(7) Own perceptions of success	Self-efficacy (Staples <i>et al.</i> , 1999:758-776)	<i>Please review the statements below and select the most appropriate answer: (Likert)</i> I believe that I can achieve the goals I set for myself.
RO4	(7) Own perceptions of success	Original Hypothesis (H8): "High levels of employee self-efficacy on remote work-enabling tasks will be related to employees' positive perceptions of their performance." (Staples <i>et al.</i> , 1999:758-776)	<i>Please review the statements below and select the most appropriate answer. (Likert)</i>
			I believe my own performance and deliverables are according to standard.
			I believe my manager thinks that my performance and deliverables are according to standard.
			I believe my colleagues and team members think that my performance and deliverables are according to standard.

3.5.3 Semi-structured Interviews

The semi-structured questions for the direct manager (line manager or project manager) of the individual team members were also divided into components similar to those used for the individuals. These are shown in Figure 3-4. The components include demographics, how performance was managed, organisational support, how individuals participated in ensuring performance (instead of "managerial support") and what the perceptions of the manager were of how well this management approach worked for the individual team members. The contextual parameters were

considered as part of other impacts. On the organisational level, similar semi-structured interviews were held with both an HR and an IT representative. The final instruments are given in Appendix B – Semi-Structured Questionnaires.

Figure 3-4: Semi-structured interview components



3.6 SUMMARY

At the time of completing the initial literature review, focus was placed on performance management in general. The literature review yielded some empirical studies and many practical guides and books relating to performance management objectives, approaches, issues and suggestions for change. The literature review on virtual work and telecommuting was more focused on the definition of the term “virtual work”, since the typology of the virtual worker seemed to be an issue. The search also found the new term “nonstandard worker”, which referred to work with low degree of physical attachment, as the latest in a string of terms used for more mobile workers.

In terms of literature regarding the management of performance of virtual workers specifically, the studies of Piccoli *et al.* (2004), Jackson *et al.* (2006) and Limburg and Jackson (2007) were quite relevant in that they looked at different control mechanisms and tools for virtual teams and virtual individuals. The need for additional research was, however, highlighted when it came to the sample groups. Piccoli *et al.* (2004) employed an experimental design using students, while Jackson

et al. (2006) included a single case study only. The current study therefore addressed the gap regarding the understanding of management of the performance of remote individuals by including a more extensive sample group from a real-life situation, and by considering a broader spectrum of parameters that could potentially impact on virtual performance.

The initial literature review did not include search terms relating to the management of geographically distributed teams (González-Navarro, Orengo, Zornoza, Ripoll & Peiró, 2010:1478; Malhotra, Majchrzak & Rosen, 2007:61; Matlala, 2011:73) and e-leadership (Avolio, Walumba & Weber, 2009; DasGupta, 2011) which has become more prominent in recent years. Such references have been enfolded in the data interpretation in Chapter 6. As stated by DasGupta (2011:30), “Finally, some newer technological innovations are in progress to support the e-leadership movement. There does not appear to be any serious disagreement amongst scholars on e-leadership; there are only working variations in research focus. There is agreement that this is a new field and that more research needs to be conducted.”

In keeping with the principles of grounded theory research, the data collection and analysis was first completed before the additional literature review was enfolded in Chapter 6. From the literature, an initial conceptual framework was created, around which the semi-structured interview questions and the questions for the individual questionnaires were drawn up.

The execution of the study will now be discussed in Chapter 4.

CHAPTER 4

4 EXECUTION OF STUDY

4.1 INTRODUCTION

The purpose of this chapter is to describe how the study was executed. The first essential element for reliable execution in a multiple-case study is a protocol, since it provides a framework and a guide for what needs to happen and how it needs to happen in each case study. This increases the reliability of the study by ensuring that the same procedures and methods are followed for each case (Yin, 2009:79). A protocol consists not only of the research instruments, but also decisions on how to use them and other supporting documentation regarding the research process. These elements will be further described in this chapter.

The second element of execution that this chapter discusses in more detail is the pilot study. As supported by Yin (2009:92), the pilot study was not a pre-test, but a complete case and was used to refine the case study protocol and the sequencing of data collection and analysis, and to refine the questions for both the semi-structured interviews and the individual team-member questionnaires. The details of how the pilot was executed are provided in this chapter. The pilot was also documented as a full case study and is available in the supplementary documentation.

Data collection consisted of both interviews and questionnaires. This chapter gives the final number of interviews and responses and the sequence in which they were collected, as related to the different units of analysis in the study. Challenges and procedures followed during the data collection stages are also discussed. The protocol was used extensively during data collection.

The next section in this chapter relates to data analysis. As described under the design, an important consideration for data analysis is the extent of mixing of data obtained through the different data collection methods and the extent of mixing of analysis methods in analysing the data. These elements, including the analysis techniques used for both textual data (interviews) and numerical data (questionnaires), are discussed in more detail. The protocol was extended during this stage to include elements of the data analysis components.

All of the effort is worth nothing if the analysis and findings are not documented sufficiently and as completely as possible (Pratt, 2009:856). The last section of this chapter explains how the elements of analysis were consolidated to be able to describe each case as a within-case analysis, and ultimately the multiple-case study as a cross-case analysis and data synthesis. Similar headings were used for the individual cases and the cross-case analysis in Chapter 5.

4.2 THE PROTOCOL

For the purpose of this research study, the protocol was not formally written up in one document, since only one researcher was taking part, but a directory was created on the computer in which all the components of the protocol were copied. The importance of the protocol was to ensure consistency between the cases in terms of both data collection and analysis. The protocol was created in two stages. The first was for the data collection, which included setting up of the interviews and facilitating the interview process itself, as well as the administering of questionnaires. Then a second stage was created for data analysis on both the qualitative and quantitative side.

The components of the protocol that related to the interview phase included:

- an email to the company representative to assist in selection of managers and teams;
- a spreadsheet for keeping track of company details such as the names of the managers, their contact numbers, interview dates and individuals reporting to

the managers, as well as the interview statistics (interview duration, number of direct reports and number of respondents);

- template letters for the managers and the HR and IT representatives;
- informed consent forms;
- the interview schedules for the managers and HR and IT representatives;
- a spreadsheet with three sheets each containing the selected interview questions for the semi-structured interviews (interview guide), which could be printed for the interview file;
- a directory structure for each case; and
- a template for field notes in MS Word for each case.

The protocol elements were used to create a hard-copy interview file at the start of each case, in which the spreadsheet with contact details, manager letters, informed consent forms (either the signed copy or some extra forms), interview schedule and semi-structured questions were placed sequentially. The high-level information pertaining to the research study was also printed and added to the file for reference. The file content and examples of the protocol elements are provided in Appendix D – Case Study Protocol, with the interview file layout provided in Table 13-2. This is the file where handwritten notes were made during the interviews, and where post-interview notes and personal reflections were made on conclusion of, or as soon as possible after the interview.

The interview protocol was extended through the online questionnaires by adding initial emails, reminder emails and “thank you” emails, which were part of what the online questionnaire tool provided for questionnaire maintenance. Even though each team received its own questionnaires, these were copied from a base questionnaire, which included the standard administrative emails. Refer to Appendix C – Online Questionnaires, for examples of these emails.

At the time when the textual analysis started, the protocol was once again extended to include a standard way of reviewing transcriptions, guidelines for coding and types of memos to use in the ATLAS.ti tool. For the questionnaire analysis, the first case

study was used to create a detailed spreadsheet template for the descriptive analysis. This template was thereafter used for the analysis of the questionnaires for each of the cases. The data analysis procedures which were applied per case have been included in 2.4.4 Textual and Qualitative Data Analysis, while the execution of the data analysis techniques are described in Section 4.5 Data Analysis

4.3 THE PILOT

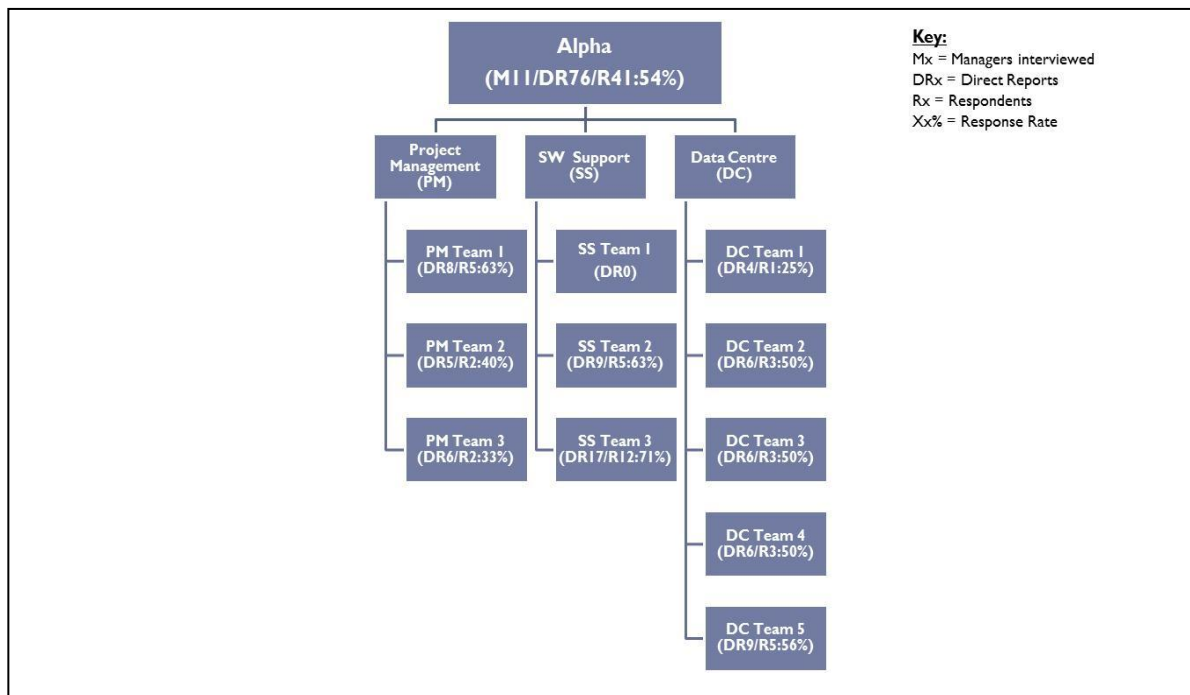
The online questionnaire was initially tested on a small group of individuals who were virtual knowledge workers, but unrelated to the study. Feedback from these individuals was incorporated before the survey was administered to the teams who formed part of the pilot study. The semi-structured question guide was tested on one manager as a test interview, including the initial 14 questions. This took one hour. The manager commented that it was important to ensure that the concept of the “virtual knowledge worker” was understood by the managers, so that they would be clear about who would be classified as such. The importance of explaining the background and definitions used for the study was then added to the protocol. The wording of the questions and their sequencing were also refined. These two tests also proved that the conceptual framework created was workable and ready for execution, and could be used for the pilot study.

The first case study was run as a pilot study to test the protocol and questionnaires and to make any adjustments before the next case was started. To this end, all the data was collected (interviews and questionnaire) and a high-level data analysis was completed. Reflections on the process were updated in the protocol, and changes to questions were incorporated in the online questionnaires and semi-structured interview schedules. The reason why a pilot study was executed was firstly because detailed questionnaires covering all the items of interest did not exist for the team level. So the pilot was used to test the questionnaires for reliability, validity and sensitivity (Zikmund, 2003:300). It also identified some additional questions required for the manager and organisational level interviews. The pilot afforded the opportunity, in the light of the complex case study design, to test the execution and identify improvements for streamlining the process (and protocol) at an early stage in

the research process. The questionnaires were not adapted after the second case study had started, to ensure that the cases, especially on the quantitative data level, were sufficiently comparative.

The company with which the pilot was completed was called Alpha. Eleven teams in total were included. The teams belonged to three business units. The first business unit was Project Management, where three managers were interviewed. The second business unit was the Software Support unit, where three managers were interviewed. The third business unit was the Data Centre, where five managers were interviewed. On the individual level, a total of 76 questionnaires were sent out, of which 41 usable responses were received. This gave a response rate of 54%. The teams and their response rates are shown diagrammatically in Figure 4-1.

Figure 4-1: Response rates for teams in Alpha



During the pilot, there were two sets of adjustments made to the questionnaires, in order to ease the capturing of data, and not necessarily because of inputs from the managers' interviews. During consolidation of the survey data, the versions were added to each team's data, and the mapping of deleted and added questions was done. The researcher made some changes to the sequencing of the questions in the

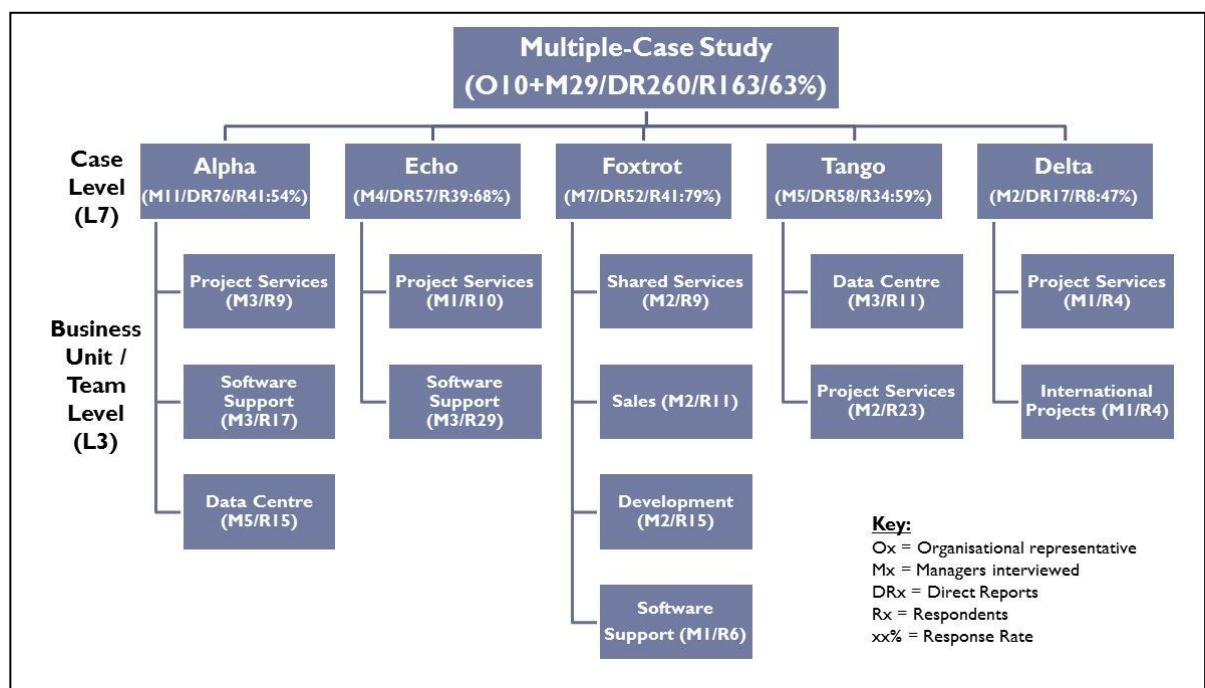
semi-structured interviews, to ensure that the questioning flowed more naturally, and added the actual recording of the request for permission to record. In the subsequent cases, managers were also requested to pre-warn their team members of the questionnaires, so that these would not be seen as an arbitrary email that could be deleted. This resulted in a higher response rate than that obtained in the pilot study.

4.4 DATA COLLECTION

4.4.1 Response Rates

A total of five companies were included as cases for the multi-case study. For anonymity, they were named Alpha, Echo, Foxtrot, Tango and Delta. Figure 4-2 shows the combination of teams in the individual case studies. The numbers in the diagram are used to give the total number of managers interviewed (M=29), the total number of organisational representatives interviewed (O=10, or 2 representatives per company), the total number of direct reports (DR=260), the total number of respondents (R=163) and the final response rate as a percentage (63%).

Figure 4-2: Response rate per company



For Alpha, eleven teams in total were included, and they belonged to three business units in one of the divisions. The first business unit was project services, from which three managers were interviewed. The second business unit was the software support unit, from which three managers were interviewed. The third business unit was the data centre, from which five managers were interviewed. On the individual level, a total of 76 questionnaires were sent out, of which 41 usable responses were received. This gave a response rate of 54%.

Four teams were included in the Echo case in the support services business unit, namely one project services team and three support teams. For these teams, a total of 57 questionnaires were sent out. Thirty-nine usable responses were received, of which 39 were complete. The completed responses gave a response rate of 68%.

The Foxtrot case included nine teams, namely two shared services, two development, one support and two sales teams. For these teams, a total of 52 questionnaires were sent, out of which 41 usable responses were received. This gave a response rate of 79%.

Five teams were included in the Tango case, namely two project services and three data centre services teams. For these teams, a total of 58 questionnaires were sent out, from which 34 usable responses were received. This gave a response rate of 59%.

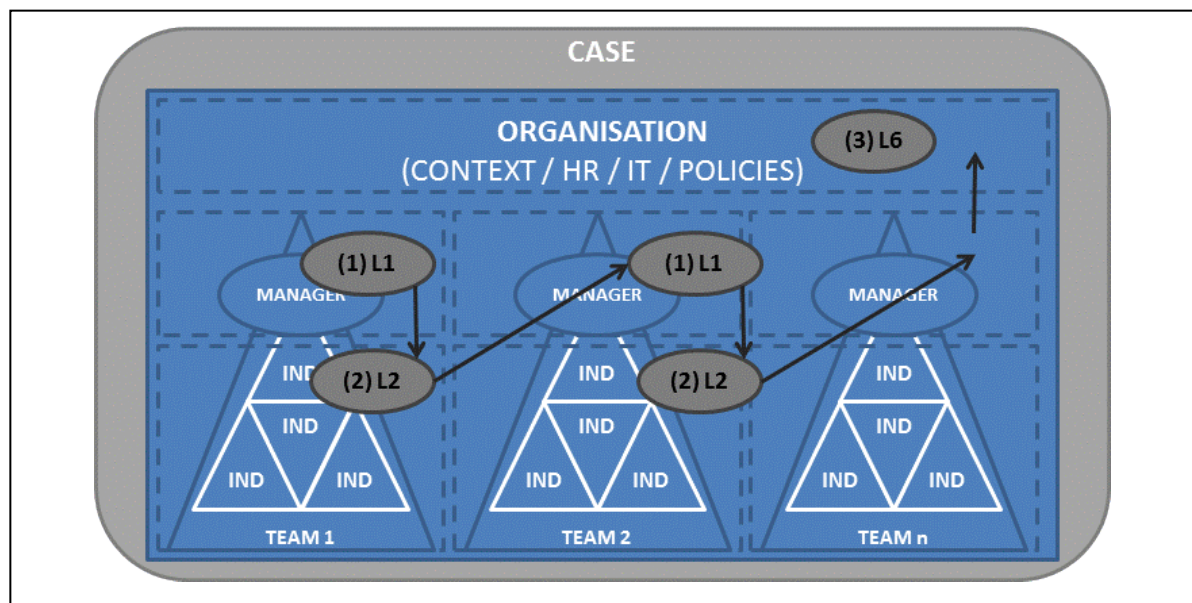
Lastly, for the Delta case, only two teams were included, namely one project services team and one international projects team. For these teams, a total of 17 questionnaires were sent out, of which eight usable responses were received. This gave a response rate of 47%.

4.4.2 Data Collection: Sequencing

As indicated in the design, the timing or sequencing of data collection is important for mixed method studies (Creswell, 2009:206; Denscombe, 2010:135, Teddlie & Tashakkori, 2009:31). Data collection was not necessarily done sequentially per level

in Alpha (i.e. strictly manager, individual, organisational). For example, the organisational-level interview with the IT representative was done first, then the manager interviews and finally the interview with the HR representative. In terms of the collection of the data on individual level, the interview with the manager was always held first, and thereafter the individual questionnaires were sent out. The data collection sequencing is shown in Figure 4-3.

Figure 4-3: Data collection sequence



The sequencing of data collection in the other case studies was similar, with the sequence of manager and organisational level interviews depending on the diaries of the individuals, but the online questionnaires to the individuals reporting to the manager were always sent out only after the manager interview was complete. Even if information regarding the policies was known beforehand (i.e. if the HR interview had occurred before the manager interviews), the aim was still to ask the manager in an objective way about the existence of those policies, to ensure that the actual perception of the manager was recorded.

It was also possible to do the data collection on a case-by-case basis. In other words, all the interviews of one case were completed before the interviews of the next case started. This facilitated a logical flow and coherence of thought for each case. Although questionnaires were sent out directly after the manager interviews, they

were not necessarily closed before collection on the next case started. This was possible because distinct questionnaires (although similar in the questions asked) were sent to each manager's team members.

4.4.3 Data Collection: Interviews

The bulk of the data collected was through the semi-structured interviews conducted with the managers and organisational representatives. To guide the conversation, the semi-structured interviews used the questions that had been created based on the initial literature review. This is in line with the constructivist grounded theory approach (Mills *et al.*, 2006:4–5).

The interview schedule was used to provide an agenda for the interview, and this agenda allowed some time to give the manager additional background on the study and create the ground rules before the actual interview started (manager example in Figure 13-9). Once the background items were completed, consent was asked for the interview to be recorded to ensure reliability and validity. The interview, and later the affirmed consent to record, was recorded on two devices which acted as backup for each other. This proved to be prudent, as in a few cases one of the two devices did not record. There was only one instance in which an individual did not agree to the recording, so more extensive notes were made during the interview and the edited notes were sent back to the individual for corrections. These notes were also imported into ATLAS.ti.

A decision was made at the start of the research to hold all the interviews in English to ensure that no additional translation would be necessary. At the start of the interview the individuals were requested that the interview be done in English. Even though consent was given in all cases, since the business language is normally English, there were times when the individuals did prefer to interject a word or saying in Afrikaans. The researcher also found that the conversation flowed more easily with Afrikaans speakers if she switched to Afrikaans at the beginning or end of the interview. When the data was analysed it did seem that in general the correct meaning was transferred by the vocabulary used in the interview. Only some

grammatical corrections were made during transcription; the wording used as such was not changed. Although a family of documents was created for "Afrikaans" vs. "English" managers, no specific comparative analysis between these two subgroups was done.

An interview guide was used during the interview (refer to the example interview guide in Table 11-1 in Appendix B – Semi-Structured Questionnaires). The questions were constructed in an open-ended way, and allowed for additional inputs from the interviewee, or extension of the questions depending on the answers received. In this regard, some optional questions were placed on the interview guide as well. General notes were also made in the interview file during the interview. This helped to keep track of interesting points that needed further exploration.

In addition to the notes made during the interview, the researcher used the printed interview schedule and interview guide to keep some post-interview notes pertaining to the setting and general mood of the interview, as well as other observations made during the interview (Burden & Roodt, 2007:15). These handwritten post-interview notes were later conveyed to the field-notes document for that case, where initial interpretive notes were added. The field-notes document was later used as a review of the formal first-level analysis and coding completed in ATLAS.ti. This compared the initial thoughts that the interview had elicited with the actual coding, and assisted with additional memoing.

Two mechanisms were used for interviews, namely face to face and remote via teleconference or Skype. In total, eight of the 39 interviews were done via telephone or Skype. In general, it was easier to ask the questions in precisely the way in which they were formulated, since they could be read from the interview guide without losing eye contact with the manager. The managers who were interviewed via this method also seemed comfortable with using the medium, and sharing was perceived to be open and honest. One drawback was that in some cases the network connection was interrupted quite often, leading to interruptions, and re-asking of the questions. Secondly, it was more difficult to capture the attention of the person being interviewed to make an additional comment or if an additional question needed to be asked.

The IT and HR representatives were asked, in addition to the semi-structured interview, to evaluate from an HR and IT perspective existing policies relating to performance management, flexible work hours and support of virtual workers. Not all companies were willing to supply these policies, since they were seen as confidential in nature. As regards HR, the focus was placed on obtaining only the objectives of the performance management policy, and obtaining the wording and the name of the policy that contained flexible work hour principles. As regards IT, only the extent of policies for virtual work was discussed during the interviews. None of the policies or other documents obtained during the interviews were integrated into the dataset in ATLAS.ti. The information obtained on this organisational level was used as a comparative context for the answers received at both managerial and individual team member level.

On completion of each interview, an email was sent to thank the manager, and confirm any detail that was still outstanding, such as name lists of direct reports and examples of performance appraisals.

4.4.4 Data Collection: Questionnaires

The sequence of data collection normally started with the data on managerial level, at which time the name lists for the individuals were obtained. The data for the individual level (per manager) was only collected after the manager's interview, and this data collection normally ran in parallel with all the interviews held for the case, and even for some weeks after the interviews had been completed, to allow sufficient time for individuals to participate.

To facilitate the descriptive statistical analysis of the data, various question constructs were included. In the questionnaire, *radio buttons* indicated single choice, *multiple-choice tick-boxes* indicated that more than one answer could be selected without ranking or rating required. The multiple-choice and single-choice options were created as nominal or categorical data, which could be analysed through cross-tabulation tables such as those described by Zikmund (2003:521). In addition, pie

charts were created for single-choice options, to show the percentage distribution of the categories in the data set, while various column charts were used to visually represent the analysis of multiple-choice questions, in some cases sorted in descending frequency of selection. The 5-point *Likert scale* was included for opinion-type questions (Saunders *et al.*, 2009:378), with ratings ranging from “Strongly disagree” and “Disagree” to “Agree” and “Strongly Agree”. A neutral rating of “Neither disagree or agree” was also added to complete the mid-point of the scale. The ordinal data in the Likert scale questions was averaged on the first level of analysis. That is, descriptive statistics were applied to all these questions (mean, mode, average, standard deviation), and counts were completed for each rating selected, so that the percentage “agree vs. disagree” could be calculated for each respective data set. *Free format (n/t)* indicated either **n**umerical or **t**ext entries that could be made. The entries for numerical data were limited, and options were rather presented as categorical data (such as age in years), while free-format text entries were added as “Other” in multiple-choice questions, as well as a limited number of open-ended questions to allow for some flexibility in answers on the individual level.

The questionnaires were created in an online survey tool called Lime, which allowed for the answers to be captured online, instead of on paper. The answers could also be exported from Lime directly into a spreadsheet on closing the survey. A separate but identical survey was created per team, so that the individual team members’ answers could be analysed in relation to the specific manager. Although the questionnaire was closed and tokens were generated for each individual email address, the questionnaire was anonymous and no information regarding the token or individual was saved with the responses.

Lime also facilitated the process of sending reminders to those individuals who had not yet responded. This was possible because tokens had been created per individual, and it was normally done 10–14 days after the initial invitation had been sent out, and then again 14 days later. A maximum of four reminders was sent, and no specific cut-off date for closure was given. Some of the surveys remained open for four to five months.

An additional, shortened online questionnaire was also given to the manager, which contained a small subset of the individual team member's questions, but rephrased for the manager's point of view. This was used to allow for more accurate statistical comparison of manager and individual team members' perceptions.

One drawback of LIME was that individuals were not able to save and continue with questionnaires later, even though it was a function purported to exist in the tool. Three individuals contacted the researcher in this regard, and requested assistance with completing the survey. In two cases it was possible to extract the data already filled in, and have the individual complete the last answers on a spreadsheet. In the other case the individual needed to start over again, and the duplicate record was deleted. Another drawback of LIME was that some duplicate entries were created in the process of sending reminders. This seemed to have happened when the individual had completed the entry using the first link, and the tool generated a new link and token for the same individual when the reminders were sent. It was possible to identify those entries and remove the duplicate. The first entry of the individual was deemed to be the correct one and was kept, while the second entry was deleted.

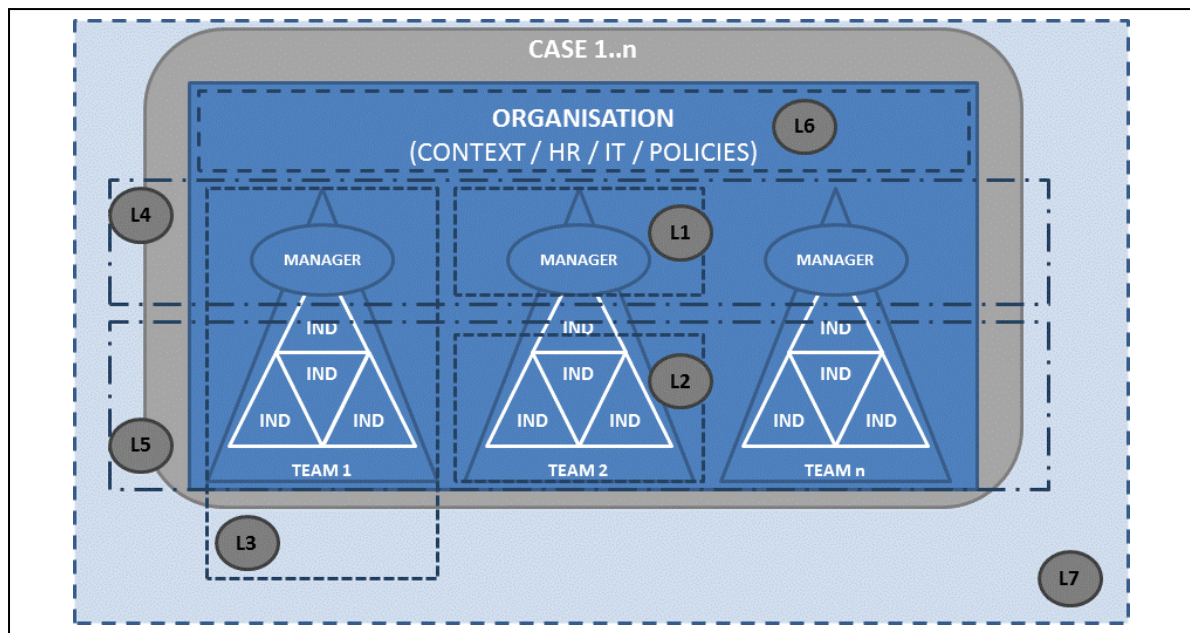
The introductory emails, full questionnaires, and reminder emails can be found in Appendix C – Online Questionnaires for both the individual team member and the managers.

4.5 DATA ANALYSIS

4.5.1 Levels and Sequence of Analysis

Although data was only collected on three levels, namely at manager, individual team member and organisational level, seven embedded units of analysis were identified for the data. Each unit of analysis implies a specific analysis method to be followed, and a specific extent of mixing of the qualitative and quantitative methods. These levels, linked to the units of analysis, are shown in Figure 4-4.

Figure 4-4: Levels of analysis



As confirmation of the terminology used in this document, L7 is the case, in other words a summary of findings relating to the company as a whole. The word “team” (L3) refers to the combination of the manager and the individual team members, while organisational level (L6) is represented by the HR and IT representatives, as well as the policies and other documents. The other levels of analysis, together with the analysis methods, are listed in Table 4-1. Where more than one method is listed, it shows the mixing between the qualitative and quantitative methods.

Table 4-1: Levels of analysis per case

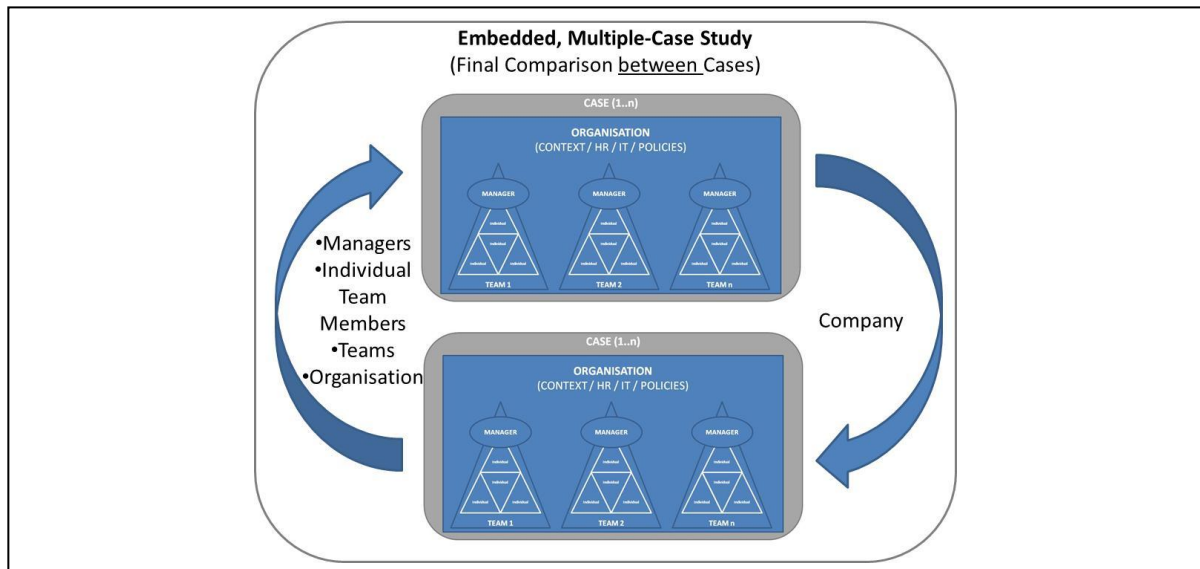
Level	Level Description	Analysis Method	Analysis and Mixing Notes
L1	Manager of Team	Open Coding	Qualitative analysis of semi-structured interview through constructivist grounded theory process. (ATLAS.ti)
L2	Individuals in team	Descriptive statistics	Describing the specific team members by combining all responses of individual team members in one dataset. (Excel)
		Open Coding	Qualitative methods used for answers to open-ended questions. (ATLAS.ti)
L3	The team	Relating L1 and L2 data to each other. Triangulation	Using visual inspection to link what managers mentioned in the interviews with the questionnaire answers. (Word)

Table 4-1: Levels of analysis per case (Continued)

Level	Level Description	Analysis Method	Analysis and Mixing Notes
L3	The team (cont.)	Descriptive statistics	Comparing manager answers to questionnaires with related questions answered by individuals in one dataset (Excel)
L4	All managers combined	Axial coding	Making sense of the codes; pictures to show categorisations (ATLAS.ti networks and Word) All managers for the case in one dataset (ATLAS.ti)
L5	All teams combined	Descriptive statistics	Creating one dataset of the questionnaire responses for the company to obtain organisational view. (Excel)
L6	Organisation	Open Coding	Descriptions of the company and feedback from HR and IT representatives (ATLAS.ti)
		Triangulation	Comparison with answers of managers.
		Descriptive statistics	Comparison with answers of individuals.
L7	Case	Selective coding Descriptive statistics	Merging of the findings for the company. (Word) All interviews in one dataset. (ATLAS.ti) All individual and manager questionnaires in one dataset (Excel)

The analysis of each case, where the data obtained per company were analysed and documented, uses all of these levels of analysis to describe the case. The final level of analysis is where the cross-case analysis and data synthesis takes place, as shown in Figure 4-5. This cross-case analysis is described in the main document in Chapter 5.

Figure 4-5: Cross-case analysis



4.5.2 Data Analysis for Interviews

4.5.2.1 *Coding of the interviews*

As part of the qualitative research approach followed for this study, analysis methods relating to the constructivist grounded theory were employed for the textual data. To this end, the data analysis of the interviews was done through a process of comparative coding of the interview transcripts. Coding, as described by Goulding (2002:77), is “the conceptualisation of data by the constant comparison of incident with incident, and incident with concept, in order to develop categories and their properties”. A process is normally followed whereby the coding moves through different and ever greater levels of abstraction to arrive at the underlying theoretical framework.

In a study where pure grounded theory is used, the researcher normally starts with a “clean slate”. In other words, starting with no codes at all, and then identifying initial concepts from the transcripts through a process of open coding, in which concepts are identified in words, phrases or sentences (Burden & Roodt, 2007:15; Goulding, 2002:170; Smith, 2004:27). Since in this study an initial literature review was performed to create a framework of questions, a basic list of codes was created based on the concepts covered in the questionnaire components and questions that

were asked in the interviews. This formed a descriptive framework (Yin, 2009:162) as starting point for the open coding.

The next step after open coding is to identify a set of broad categories that are compared with one another to determine links between ideas as well as sub-categories (Burden & Roodt, 2007:15; Mills *et al.*, 2006:5). This step is called *axial coding*. From there, the researcher can move to *selective coding*, which is an abstract level of analysis. The conditional or *consequential matrix* is also mentioned as an additional analysis tool in the coding phase (Goulding, 2002:87; Mills *et al.*, 2006:5). The final step of coding is where the *core categories* are identified. How these steps were executed for this study is now explained.

A single hermeneutic unit was created in ATLAS.ti for the coding analysis in this study, into which the basic framework of codes was loaded (refer Appendix E – Initial Code Lists and Network Diagrams). This was used in the pilot study to code all the interviews of the managers, as well as the IT and HR interviews. The codes covered basic concepts such as “HR Policies”, “IT Policies”, “Management: Approach”, “Organisational Support”, “Performance: Handling non-performance”, “Performance: Specific Deliverables”, “Performance: Metrics”, “Performance: Quality”, “Selection” and “Team Composition”. During coding of the first set of transcripts, there were already new codes added that did not necessarily fit in with the initial conceptual framework. These were initially marked as “NEW”, but re-coded for the subsequent cases to become part of the full coding structure.

Quotations that were linked to the codes were initially selected on the basis of a single word, a sentence or a whole paragraph. It was found that selecting more of the paragraph was better in order to contextualise what was said, especially when viewing the quotation in isolation from the full text. Selecting whole sentences or paragraphs also assisted in the correct identification of co-occurring codes through ATLAS.ti’s analytical and reporting functions.

As new transcripts were added, the method of constant comparative coding was used (Gibbs, 2007:50; Goulding, 2002:77); in other words, each new transcript and piece of text was compared with the codes, and with other pieces of text that were

coded in the same way. To this end, the code-comment function of ATLAS.ti was supportive, in that each time a new code was created, the reason for using the code and type of concepts to be linked with the code could be added to the code comment. The interviews in the pilot study were used to evolve a more complete coding structure for the research. In terms of the coding structure that evolved, there were certain principles followed: for *selecting the words* for the codes; the *full naming convention* used; and following an *iterative process* of higher and lower levels of abstraction for codes. These principles are now discussed in more detail.

For the first principle, relating to the selection of the words to use for a code, Gibbs (2007:44) indicates three possibilities, namely descriptive codes, which simply use one or more of the words that were used in the text; code categories, which start grouping the quotations into concepts; and analytical codes, which already start identifying some underlying reason. A combination of descriptive and category-type codes were used for the phase of open coding. An example of a descriptive code in the context of a specific deliverable would be “Report”, while a category-type code in the context of metrics would be “Yes-No”.

Secondly, the naming convention used not only the word or category as part of the code, but also prefixed it with a “grouping” code, as proposed by Archer (2012:25). Examples include “Performance: Specific Deliverable: Report”, “Performance: Specific Deliverable: Timesheet”, “Performance: Metric: Yes-No”, “IT Technology: Communication”. The full list of codes is available in Appendix E – Initial Code Lists and Network Diagrams. This facilitated working with the codes in ATLAS.ti from a practical perspective in terms of sorting and finding codes, but also from a first level of abstraction (axial coding) which was integral to the naming convention, rather than using the family or super-code structure also provided by ATLAS.ti for this purpose. The disadvantage was that a total code list of more than 700 codes was created.

In terms of the iterative principle followed in the third principle mentioned, the coding started with the initial framework on a category level, such a “Performance: Manage Non-Performance” and “Performance: Metrics”. Once this first pass of coding was completed for the interviews of the pilot study, it became apparent, by interrogating the “groundedness” of the codes, that certain codes were over-used. In ATLAS.ti, the

groundedness of a code is automatically calculated and shows how many quotations in the text have been allocated to that particular code. The next step was therefore to create sub-codes to give a better understanding of what was happening in the code. For example, “Performance: Manage Non-Performance” was broken down into its sub-components, such as “Performance: Manage: Non-Performance: Timing”, “Performance: Manage Non-Performance: Face-to-face”, “Performance: Manage Non-Performance: Get Facts”, and more. As additional cases were added to the hermeneutic unit in ATLAS.ti, additional codes were added that extended the framework, or a finer breakdown of existing codes was done when the groundedness of existing codes became unmanageable (typically above 40).

All of the interviews for each of the cases were first processed (i.e. added to ATLAS.ti and coded in full) before progressing to the next level of abstraction. (The protocol for processing each case and each interview is provided in Appendix D – Case Study Protocol.) In progressing to the next level of abstraction, a network diagram was created for the codes that had already been grouped on the basis of their naming convention, such as “Manage: Performance” on the higher level, and then “Manage: Performance: Specific deliverables” on the next level. In doing so the *axial coding was extended* in showing the relationships between the codes in a diagrammatic form.

An example of a code network is shown in Figure 4-6. This contributed to the “density” of the codes, as automatically calculated by ATLAS.ti for the number of other codes that this code was linked to. As a next step, the codes that had many sub-codes on one diagram or network were then further grouped into higher-level categories or interpretive codes as part of the *selective coding step* in the grounded theory approach. Additional place-holder codes (empty codes showing groundedness of zero but with a high density) were added to the network diagrams for this purpose, and the relevant codes were linked to that code.

Table 4-2 summarises the concepts and steps in the grounded theory approach, and how these were executed in the study, as well as the application of ATLAS.ti for those steps. The families of ATLAS.ti were used more for filtering and sorting than

specifically creating themes, while the facility of super codes was not used at all, but replaced by place-holder codes.

Table 4-2: Execution of grounded theory principles

Grounded theory terminology	Process in study	ATLAS.ti component used
Open coding	Conceptual framework Code types: descriptive and categorical	Code lists and auto-coding Code comments Groundedness of codes
Axial coding	Naming convention Iterative approach high-low-high Linking codes on diagrams (Code networks)	Network diagrams Code densities
Selective coding	Linking codes to place-holder codes Category codes in tables (Code lists and code summaries)	Place-holder codes Extended network diagrams
Themes	Grouping quotes for themes	Memo families Code families
Memoing	Documenting themes Elements per company Manager way of work descriptions Quote comments	Memos
Other	Sorting and filtering	Document families Code families
Other	Further code usage / analysis	Code Co-occurrence Matrix Word count report (Excel) Quotation count report (Excel)

An example of a code network and a code table respectively is provided in Figure 4-6 and Table 4-3.

Figure 4-6: Example: Code network

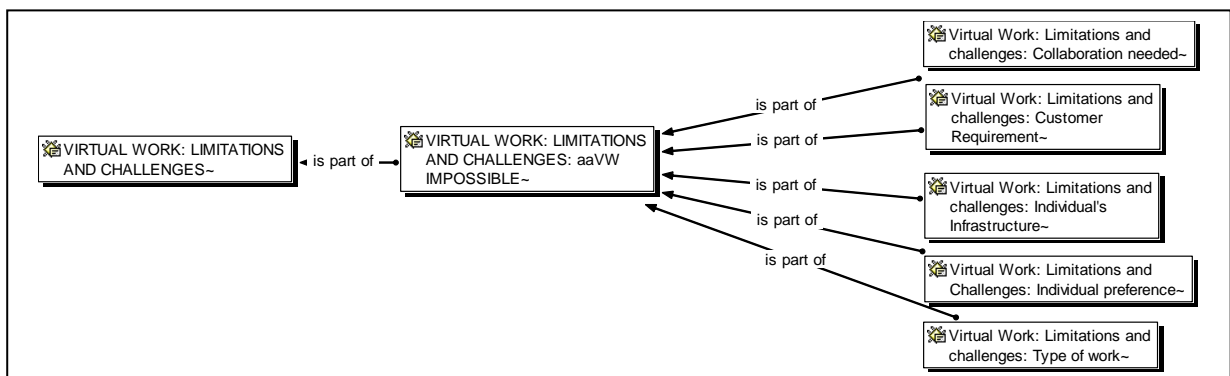


Table 4-3: Example: Code list: Limitations and challenges

Description	Code	Impossible	Possible	Addressed by (Category)
Not feeling part of the organisation	Belongingness {8-2}		X	Manager
Challenges with building and maintaining a relationship.	Building Relationship {11-3}		X	
After-hours work expected Workaholic syndrome	Always online {12-1}		X	Individual
Reduced availability when remote	Availability {4-1}		X	
Too much data to transfer	Bandwidth {3-1}		X	Organisation
Corporate culture not supportive of remote workers.	Corporate Culture {2-1}		X	
Combined problem solving, design or development needed.	Collaboration needed {19-1}	X		Impossible
Preference of individual not to work virtually.	Individual preference {5-1}	X		

The numbers in brackets as part of the code will be described in more detail in the next section.

4.5.2.2 Analysis techniques: Groundedness and density

Various analysis techniques available in ATLAS.ti were used to analyse the codes in order to move through the different levels of abstraction, or from open coding and axial coding to selective coding. These are listed in Table 4-2 and are described in more detail below.

The first element used to review the code was the groundedness and density of the code, which are both calculated automatically in ATLAS.ti. The groundedness of a code shows how many quotations in the text have been allocated to that particular code, while the density of a code represents the number of other codes that this code is linked to.

When codes are shown in the tables in Chapter 5, the numbers in brackets {x-y} indicate the approximate groundedness (x) and density (y) of the code. The reason why these are described as “approximate” is that some of the codes were still changing as the document evolved, which implies that the numbers in the document may differ from what the final and actual number in ATLAS.ti would be. Where there is a difference between the document and the final ATLAS.ti web site created as part of the supplemental documentation, ATLAS.ti will have the correct number.

In addition, using quantitative techniques to describe qualitative data is not seen as advisable (Pratt, 2009:857), therefore the groundedness numbers were not used as absolute numbers, but where the groundedness was especially high in relation to the other codes for a specific area of analysis, this indicated a leaning towards the concept that the specific code represented. For example, in Table 4-3, it is clear that in terms of the sub-codes created for the code “Virtual work: Limitations and challenges”, the challenge “Collaboration needed {19-1}” was much more pertinent than “Availability {4-1}”. This can be seen from the fact that the groundedness of the first code was 19 and the groundedness of the second code was only 4. By looking at the codes with higher groundedness, or where the groundedness of one code differs significantly from the code with the next-highest groundedness, the chances of a theme emerging with that code is very high. Techniques used to verify the authenticity of the groundedness included reviewing the quotes again, splitting codes into lower-level sub-codes and cross-checking the use of the code across cases with the quote count report provided by ATLAS.ti.

The density of a code was automatically increased as network diagrams were built. The network diagrams were used to group the codes into additional code categories and analytical groups. On the selective coding level, a code with zero groundedness and a high density shows that this is a core category code. If codes have both a high groundedness and a high density, it implies that they are important in identifying the final themes.

4.5.2.3 Analysis techniques: Co-occurrence tables

In some cases it was decided not to split the code into lower-level sub-codes. This was done where a full set of other codes already existed, such as for the co-occurrence of “Selection: Manager Criteria” and “Performance: Individual Characteristics”. ATLAS.ti would produce a matrix in Excel, and where the intersection cell in the table had a value (called the coefficient value), it showed that both the manager criteria and the individual characteristics codes were applied to the same quote (Table 5-28). By interrogating the co-occurrence table, the specific characteristics that a manager would use for selection could thus be found. The magnitude of the value, which was between 0 and 1, also showed the intensity of the match. The higher the value, the more intense was the match or co-occurrence. The calculation for the coefficient is given as “[$n_{12}/((n_1 + n_2) - n_{12})$] where n_{12} is the co-occurrence frequency of two codes c_1 and c_2 , n_1 and n_2 being their individual occurrence frequencies” (Garcia, 2005). An example of a calculation is shown below.

<p>$N_1 = 51$ for C_1 “Selection: Manager Criteria” $N_2 = 13$ for C_2 “Performance: Individual Characteristics: Maturity: Seniority” $N_{12} = 4$ $C = N_{12} / ((n_1+n_2) - n_{12}) = 4 / ((51+13) - 4) = 4/60 = 0.06667 = 0.07$</p>
--

Garcia (2005) also indicates that the calculations may produce faulty values where overlaps of quotations for the different codes are not absolute, or where a low coefficient might not represent the importance of the number of overlaps sufficiently. Therefore, the numbers (and any subsequent column totals) have not been used as absolute values with the aim of quantitative comparisons, but rather just to give an indication of the prevalence of the co-occurrence in relation to other code co-occurrences for the specific selection.

4.5.2.4 Analysis techniques: Other counts

Two other analysis techniques in ATLAS.ti were used regarding counts of concepts during the analysis phase and as described in Chapter 5. The one feature is a word-count report that ATLAS.ti provides which can be exported to Excel. The word-count report was created after all the interviews with managers, HR and IT representatives

had been imported, as well as the answers that individuals gave to the open-ended questions in the online questionnaires. The word-count report does not depend on any codes, and simply counts each and every word used in the hermeneutic unit. An extract from the word-count table is given in Table 4-4. The numbers at the top (P2, etc.) indicate the different document instances. The total in the last column would be the total for that word across all the documents loaded in the hermeneutic unit. Where the count is higher, it could indicate a preference for a word that could lead to a theme. This analysis technique was used in analysing the usage of “control”-type words as shown in Figure 5-20 in Chapter 5.

Table 4-4: Word count extract example

Words	P 2	P 4	P 5	Pxxx	P 55	P 56	Total
STANDARD	7	5	4	xx	3	0	91
STANDARDISATION	0	0	0	xx	0	0	1
STANDARDISE	1	0	0	xx	0	0	6
STANDARDISED	0	0	0	xx	0	0	2
STANDARDS	2	0	2	xx	0	0	21
TRUST	1	0	0	xx	2	0	118
TRUSTED	0	0	0	xx	0	0	7
TRUSTING	0	0	0	xx	0	0	5
TRUSTS	0	0	0	xx	0	0	1
TRUSTWORTHY	0	0	0	xx	0	0	2

The quotation count matrix was used to give a view of the spread of code usage across the different companies and interviews, and as a check to determine whether codes were allocated reliably across the cases. In Chapter 5, the quote count was only represented in terms of the groundedness numbers. The full code list and quote count table can be found in the supplementary documentation. An example of a few rows from this table is provided in Table 4-5.

Table 4-5: Quote count extract example for “Virtual work reason”

Code	Alpha	Echo	Foxtrot	Tango	Delta	Total
Individual: Benefit/privilege	7	5	5	9	2	28
Customer: Geography	4	0	9	5	0	18
Organisation: Cost Saving	4	1	1	3	0	9
Organisation: Company Structure	0	0	5	0	3	8

Table 4-5: Quote count extract example for “Virtual work reason” (Continued)

Code	Alpha	Echo	Foxtrot	Tango	Delta	Total
Work Type: Projects	4	1	0	2	1	8
Customer: Working day	1	5	0	0	0	6
Work Type: General	2	0	2	1	1	6
Customer: Time Zones	0	1	3	1	0	5

4.5.3 Data Analysis for Questionnaires

Quantitative principles were used for the analysis of the responses received via the online questionnaires. The first step was to close each questionnaire and download the data in a comma-delimited format that could be opened in Excel. Then the data was consolidated into a single dataset for each case, where clean-up of the data was performed, and additional calculated fields added. Lastly, each question or set of questions was analysed to produce the relevant graphs or percentages. These case datasets were used to do the L3 (team) and L5 (cross- team) analysis and comparisons.

4.5.3.1 *Closing and downloading the responses*

The Lime online survey tool provides a mechanism whereby the response data can be downloaded to an Excel spreadsheet. Each individual questionnaire (per team per company) was exported to its own spreadsheet in both a full descriptive and an abbreviated format. The full descriptive format would contain the full questions and the full words per question, such as the word “Yes”, “No” or “Uncertain” for a question such as “Are you a virtual worker?” In the abbreviated format, Lime had automatically substituted numerical codes for all words, as shown in Table 4-6. In addition, in questions where the individuals could select multiple answers from a list, all items marked (or selected) would be coded with “1” and all those not selected would be coded with “0”.

Table 4-6: Question category coding

Type	Yes / No	Likert	Satisfaction
Coding	0 = No 1 = Yes 2 = Uncertain	1 = Strongly Disagree 2 = Disagree 3 = Neither disagree or agree 4 = Agree 5 = Strongly Agree	1 = Extremely dissatisfied 2 = Dissatisfied 3 = Somewhat dissatisfied 4 = Somewhat satisfied 5 = Satisfied 6 = Extremely Satisfied

4.5.3.2 Data consolidation and cleansing

Once all of the data per team had been exported, the responses of each team were copied into one single Excel spreadsheet or dataset per company. The first step was to review the entries for completeness. Those entries that were marked by Lime as incomplete, but had only missed the open-ended answers, were kept as “complete”. Those responses in which more than half of the questions had been answered were also kept, since comparisons could still be done on the remaining fields. There were four responses in this category. Percentages per question were always calculated based on the number of responses for that question and not the total number of responses. The other incomplete entries were deleted from the dataset. A total of 163 entries were kept for analysis.

The next step was to add various calculated fields in the data. The letter and number (D2) in Table 4-7 indicates the question code in the spreadsheet. The next column shows how the new value is calculated and the last column gives an example. The purpose of the calculated fields was to add more detail around virtual work.

Table 4-7: Calculated columns

Input Field (s)	Calculation	Example values
D2[1] –Years employed D2[2] – Months employed	D2[1+2] Total months = D2[1] * 12 + D2[2]	1 year and 2 months = 14 months
D5 – Days away from manager	D5 Convert hours to days D5 / 8	40 hours = 5 days
D5 – Days away from manager	D5-1 Virtual worker = IF D5>1 Then "YES", Else "NO"	1 day away from manager = NO 2 days away from manager = YES

Table 4-7: Calculated columns (Continued)

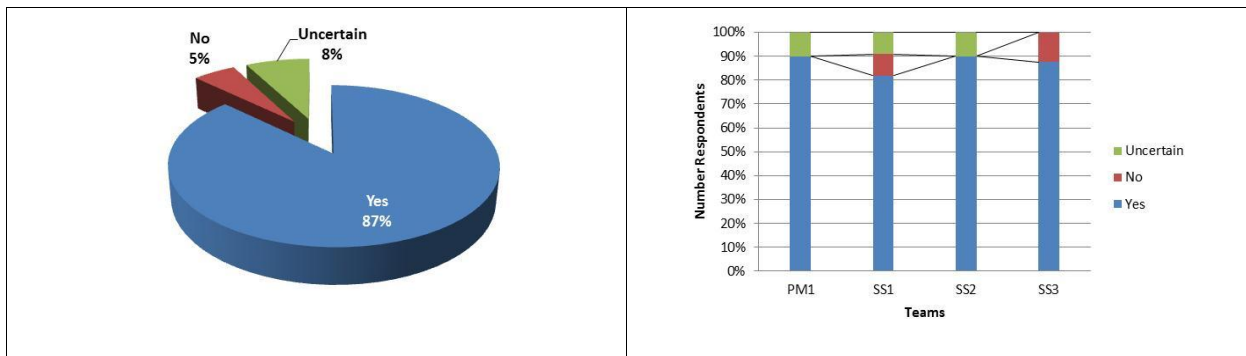
Input Field (s)	Calculation	Example values
D5-1 Virtual worker Yes/No D7 – Location were most work performed when away from manager	D7+D5 Away from manager and location combined IF D5-1 = "YES" THEN IF D7 = "Home" THEN IF D5>4 THEN "Home worker" ELSE "House" ELSE D7 ELSE "Traditional"	Virtual worker = YES Location <> Home = Location where most work performed
D5-1 Virtual worker D10 – Virtual work perception	D10-1 IF D5-1 = "YES" THEN IF D10="Yes" THEN "Similar-Virtual" ELSE "Calc-Virtual" ELSE IF D10 = "No" THEN "Similar-Non" ELSE "Calc-Non"	Virtual worker = YES Virtual work perception = NO = Calc-Virtual
D11[1] –Years as virtual worker D11[2] – Months as virtual worker	D11[1+2] Total months = D11[1] * 12 + D11[2]	1 year and 10 months = 22 months

In addition to the responses from the individuals, the responses for all the managers were also copied into the dataset of the case. The response of a manager could be linked to the specific team because the manager responses were not anonymous. Similar clean-up and calculated fields were added. In addition, the questions of the managers were mapped to those of the individuals so that the respective answers could be compared from both an individual and a manager’s perspective.

4.5.3.3 Data analysis and graphing

Each question or related set of questions was now analysed in a separate sheet in the workbook. Descriptive statistics were used. For simple categories that were analysed on L5 (i.e. all individuals of the case dataset combined), a pie chart was used to show the percentages of a category in relation to the total dataset. An example is shown in the left-hand side of Figure 4-7. Where teams or business units were compared, a “100% stacked column” chart was used as shown in the right-hand side of Figure 4-7.

Figure 4-7: Example graphs on case level (L3/L5)



Where comparative questions were asked, such as question MP3 and MP3b, as shown in , the number of times the option was chosen for the total dataset was counted for both the perception and preference questions. The answers per category were then sorted in order of descending preference, and displayed on a clustered column chart. The managers' answers were then counted and mapped on the same chart, but on a secondary axis. By using the secondary axis on the graph, the managers' responses, which were obviously much fewer than the responses of the individuals, were plotted in relation to the scale of the individuals. The example is shown in Figure 4-8. The abbreviations used for the graphs in relation to questions MP3 and PM4 are shown respectively in Table 4-8 and Table 4-9.

Figure 4-8: Example clustered column chart

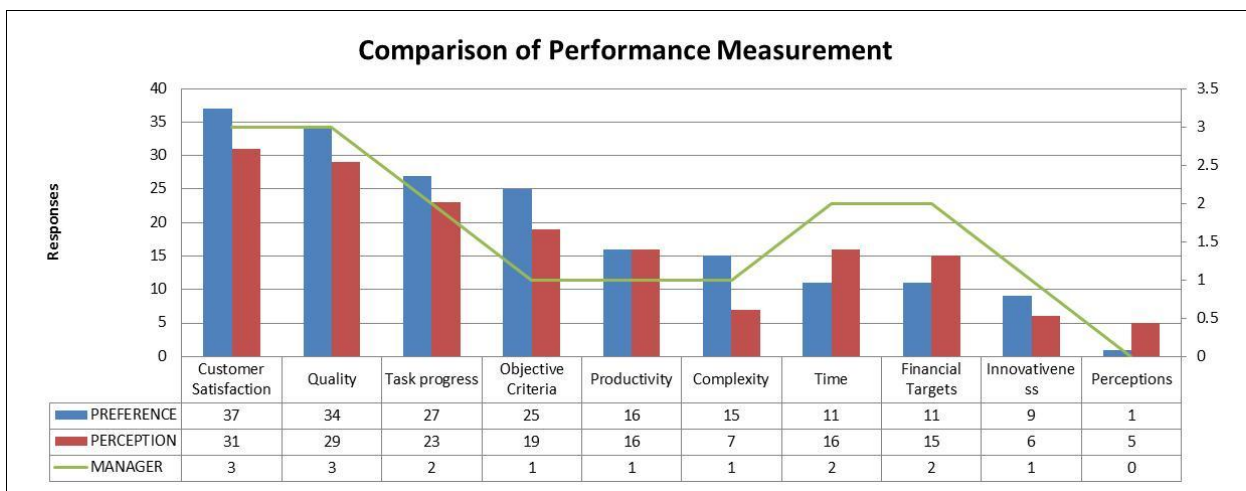


Table 4-8: Question to graph abbreviation mapping (MP3)

Question code	MP3 How is your performance measured? MP3b How would you like your performance to be measured?	Graph abbreviation
MP3(b) [1]	Time spent working	Time
MP3(b) [2]	Number of products produced/delivered in given time	Productivity
MP3(b) [3]	Quality of work produced	Quality
MP3(b) [4]	Level of customer satisfaction	Customer Satisfaction
MP3(b) [5]	Management perceptions only	Perceptions
MP3(b) [6]	Meeting financial targets	Financial Targets
MP3(b) [7]	Meeting objective criteria	Objective Criteria
MP3(b) [8]	Progress on allocated tasks	Task progress
MP3(b) [9]	Novelty of solutions produced	Innovativeness
MP3(b) [10]	Complexity of solution produced	Complexity

Table 4-9: Question to graph abbreviation mapping (MP4)

Question code	MP4 How is your attendance measured or checked? MP4b How would you like your attendance to be measured or checked?	Graph abbreviation
MP4(b) [1]	Agreed start and end times	Start & End
MP4(b) [2]	Agreed total number of hours per day	Hours / Day
MP4(b) [3]	Presence Tool	Presence Tool
MP4(b) [4]	Shared Calendar	Shared Calendar
MP4(b) [5]	Workflow in emails	Email Flow
MP4(b) [6]	Online availability	Available online
MP4(b) [7]	Not measured or checked explicitly (based on trust)	Trust

For questions that used a Likert scale, such as “There are objective criteria whereby my performance can be measured”, a percentage was calculated for the “Agree”, combining “Strongly agree” and “Agree”, vs. “Disagree”, combining “Strongly disagree” and “Disagree” vs. “Neither disagree or agree”. An example is shown in Table 4-10. The rounded percentages were transferred to the case description document.

Table 4-10: Calculations for Likert questions

Statistical measure	Calculated value	Percentage of total
Median	4	
Mode	4	
Variance	0.69	

Table 4-10: Calculations for Likert questions (Continued)

Statistical measure	Calculated value	Percentage of total
Standard Deviation	0.83	
Strongly Disagree	Count If 1 = 1	2.6%
Disagree	Count If 2 = 1	2.6%
Neither	Count If 3 = 6	15.4%
Agree	Count If 4 = 23	59.0%
Strongly Agree	Count If 5 = 8	20.5%
TOTAL	39	100%
Total Agree		79.5%

4.5.3.4 Company comparison

After all of the cases had been analysed and documented separately, a single dataset was created in Excel which combined all the responses of the individuals and separately all the responses of the managers. Each response was still marked with the original company, team, business unit and version of the questionnaire used.

Two main types of analysis were done: those related to general categories or yes/no questions, and those that related to Likert-type questions. On the cross-case level, both of these types of questions were analysed in the same way. The totals per category were copied from the company's data sheet into a summary sheet as shown in Table 4-11.

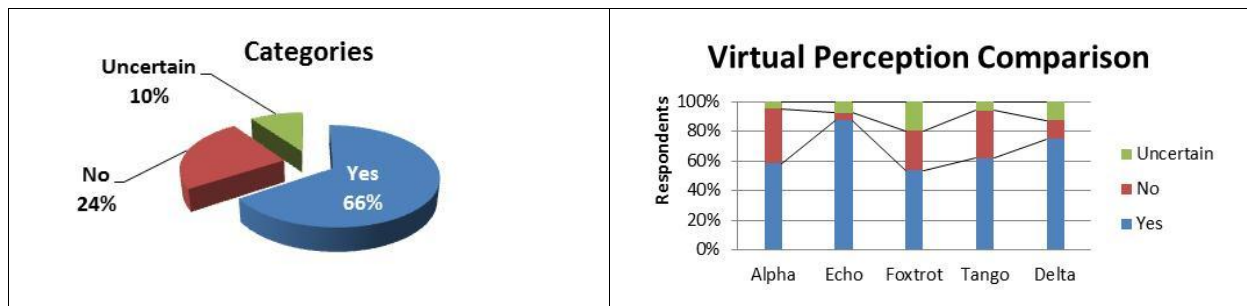
Table 4-11: Response counts for virtual status perception

	C1	C2	C3	C4	Check sum
	Company	Categories			
		Yes	No	Uncertain	
R1	Alpha	24	15	2	41
R2	Echo	34	2	3	39
R3	Foxtrot	22	11	8	41
R4	Tango	21	11	2	34
R5	Delta	6	1	1	8
R6	TOTAL	107	40	16	163

The totals for each category column (R6 for C2, C3 and C4) were used to create a pie chart that showed the percentage split per category for the total group of

respondents across the cases (163 in total). This is shown in the left-hand side of Figure 4-9. Then a comparative column chart was created using a “100% stacked column” format, where each company is represented in its own column, with the categories making up the different parts of the stack. This was done so that the magnitude (or percentage) of the responses per category for a company could be shown relative to the percentage for that category in the other companies. The company comparisons are shown in Chapter 5, while the actual percentages per company per category are available in the respective case descriptions in the supplementary documentation.

Figure 4-9: Virtual status perception graph example



4.6 DOCUMENTING THE WITHIN-CASE AND CROSS-CASE ANALYSIS

4.6.1 Purpose of the Supplementary Case Document

The purpose of the supplementary case document was to provide a comprehensive analysis of each company, since a decision was made to document only the combined and cross-case themes in the main document as part of a cross-case analysis and data synthesis approach (Yin, 2009:156). This is a decision which is relevant to multiple-case studies and is one of the approaches that can be used to document the study (Yin, 2009:175)

While analysing and documenting each case, the researcher had already highlighted elements contributing to the cross-case themes and the final framework and included them in the case description. This acted as a conceptual worksheet for the multiple-case review, as described by Stake (2006:49). These elements were integrated into

the cross-case analysis of Chapter 5 and the data interpretation as provided in Chapter 6 of the main document.

Each individual case description is divided into four main sections, namely organisational description, team demographics, management of performance and parameters affecting performance. These sections have been used to answer Research Objective 1, “How is performance of virtual knowledge workers managed?”, and Research Objective 2, “What parameters affect performance of virtual knowledge workers?”. The organisational description, management of performance and parameters affecting performance sections have been transferred to the main document as part of the cross-case analysis in Chapter 5.

4.6.2 Using Quotes to Confirm Analysis

In both the within-case analysis and cross-case analysis, selected quotations are used to substantiate the statements made and the coding used. To enable cross-referencing with the original transcript, the primary document number and its paragraph number are linked to each quote. This is represented by, for example, “P8 (250)” which indicates that the quote was obtained from primary document 8, paragraph 250. The specific company pseudonym is not necessarily included; this is to maintain a certain level of anonymity. It is especially omitted where quotes are representative of the study as a whole. Where quotes are specific to a company, the case pseudonym will be stated in the preceding text. In addition, where a set of codes are described in a preceding paragraph, the quotes representing the different codes will be grouped together in one quote block, but the different types of quotes will be separated by quote headings given in bold (e.g. “Training not needed”/”Training needed” as shown below). Answers provided by individuals as part of the open-ended questions in the online questionnaires will also be marked by a similar quote heading (“Individual confirmation in open-ended questions”)

An example of a list of quotations is given below, showing the notations used.

|| **Training not needed:**

“I’ve never trained any of my guys on stuff like that. And I think my expectation is that if

you're in the Software Support business scene you should have an understanding of the new technologies coming out." P8 (250)

Training needed:

"I only just discovered OCM <Office Communicator> myself last year for the first time when I attended a company meeting here in Johannesburg and the guy said, "Listen, are you on OCM?" I said, "OC what?" And then I discovered OCM." P5 (272)

Individual confirmation in open ended questions:

"People in the organisation need to be trained to understand the concepts of working from home and giving people accountability for deliverables, rather than micro-managing people." P57 (42).

4.6.3 Describing The Organisational Level (L6)

This section describes the organisational level of each company in more detail and represents level 6 of the analysis. Information obtained through the HR and IT representatives' interviews as coded in ATLAS.ti, as well as information available from the policies, is pertinent to this level. The perceptions of managers regarding performance management, virtual policies and HR and IT support are also compared in this section, as obtained from the open coding of the interviews. In addition, relevant descriptive statistics from the individuals' questionnaires are included to describe the organisational level. These include questions such as "Does the organisational culture support virtual work?" and "Does the technology provided on organisational level support virtual knowledge workers?"

4.6.4 Describing the Teams (L3/L5)

The team is the combination of the manager and the individuals reporting to the manager. In terms of response analysis, where multiple discrete teams were included for one area of the company, the teams were combined in their functional areas to represent the different "business units". When results in the supplementary documentation and Chapter 5 refer to team results (as in "team level" of analysis or L3 and L4 analysis), the results will include all the teams in that functional area, rather than results per discrete team. So all the individual responses from the team members are copied into one dataset, but still categorised per team and per business unit. The aim of the descriptive statistics in this section is to give a view of the demographics of the individuals in the teams, and to establish their status as virtual knowledge workers.

For the L3 description of the team, inputs from the manager interviews were used to describe the teams in terms of key deliverables, way of work and location. As indicated, this is normally done as a combination of teams into a business unit, rather than for discrete teams. In the same way, for the L1 unit of analysis, the manager was never really described as an individual, but rather on L4, as part of the views of all the managers in the company, or as part of all the managers for a business unit, which is a combination of teams.

This section (“Describing the Teams”) was only included for the individual case descriptions in the supplementary documentation.

4.6.5 Describing the Virtual Work Context

It was important to first describe the virtual work reasons, advantages, limitations and challenges, before further analysing how performance was being managed. This created the context in which the management of performance of virtual workers was taking place. One of the elements that was important in this context was the virtual status of the individuals participating in the study. The “virtuality” (or virtual status) of participants was calculated based on the number of days they spent away from their manager. If they spent more than one day away from their manager, the virtual status of “YES” was given, in other words they were deemed to be “removed from the direct sphere of influence of management and co-workers.” (Jackson *et al.*, 2006:219).

4.6.6 Describing the Management of Performance (L3/L4/L5)

The purpose of this section is to analyse how managers are managing the performance of their virtual knowledge workers. To achieve this, the data gathered on the management level was combined (L4) through additional axial coding, and similarities and differences between the respective teams and business units were determined (L3) at within-case analysis level, and similarities and differences between cases were determined at cross-case analysis level. At the same time, the questions asked in the online questionnaires were consolidated in one dataset (L5),

grouped per business unit/team and later case, and the resulting graphs were correlated with the relevant qualitative data, supporting the principles of triangulation.

4.6.7 Parameters Affecting Performance (RO2)

Three different levels of influence are documented. The first is from organisational level to teams (RO2a). The data from the interviews, as one dataset, was used to determine these impacts through open coding and axial coding.

The second level of influence is from the managers to their team members (RO2b). This could be as a result of the kind of persons the managers are, their approach to management, their assumptions regarding remote work, and the way they manage non-performance. These possibilities have been coded through open coding and axial coding.

The third level of influence is from the individuals' side (RO2c). The data used for this comes from the interview data from the managers and from the answers provided in the open-ended questions asked in the online questionnaires.

4.7 SUMMARY

In the execution of this embedded, multiple-case study research, a protocol was created and used for the collection and analysis of data. The interview component of the protocol included email examples, template letters, interview schedules, semi-structured question guides and field-notes templates. These were all copied into a directory structure and replicated per case. Additional email templates were created in LIME, which assisted in the administration of the online questionnaires. A separate questionnaire was sent to each team. The analysis component of the protocol included procedures and steps to follow for processing (or coding) of each transcript, as well as how to use the memos for capturing additional notes, and initial steps in coding. The pilot study in Alpha was used to refine the protocol and questionnaires.

The ATLAS.ti tool was used to process and code the transcripts. The coding started at open coding and progressed through various levels of abstraction to achieve axial and selective coding. This was done using a specific naming convention in the codes that included the broader categories, and linking codes on network diagrams, as well as adding place-holder (selective coding) codes to group lower-level concepts together. The reporting and analysis functions of ATLAS.ti were also used extensively to review and analyse the data. Analysis was done on L1 (manager level) and L4 (combined managers for a business unit or for the company as a whole). The answers to the open-ended questions of the individuals' questionnaires were also imported as documents per team into ATLAS.ti. This assisted in correlating the information from the team with that from the manager as part of L3 and L5 of analysis.

For the analysis of the online questionnaires, the data was downloaded into spreadsheets per team, after which the teams were combined in one dataset for the company, which represented L5 of analysis. The managers' online questionnaire responses were also added to the same spreadsheet, representing L4 of analysis, and enabling L3 analysis, where teams or business units were compared with one another. Various descriptive methods were used to analyse the data, including pie charts, 100% stacked columns, clustered column charts and percentages for "agree vs. disagree" on Likert-scale questions. All the individual responses and manager responses were combined into one dataset for the final company comparison.

As part of the write-up of the multiple-case study, it was decided that the main document would only be used to document the cross-case analysis and synthesis. Each case was therefore documented as a separate supplementary document, and contained the analytical description of the case from an organisational, team and manager point of view. This description covered Research Objective 1: to investigate how performance of virtual workers is being managed. The parameters affecting performance were also described, and covered Research Objective 2: to describe which parameters affect performance. This same structure was also used for Chapter 5, following here, which contains the cross-case analysis and data synthesis for the multiple-case study as a whole.

CHAPTER 5

5 DATA ANALYSIS AND CODING

5.1 INTRODUCTION

This chapter contains the data analysis and relevant coding in the form of a cross-case analysis and synthesis of the data in relation to the first two research objectives for the study.

The chapter firstly positions the five cases in relation to each other, especially in terms of their implementation of virtual work policies and guidelines, and their general approach to performance management. This case-level data is also presented in a cross-case format, summarising the analysis across the cases, and showing where divergence and convergence was found.

RO1: To critically review the current state of knowledge and understanding of how the performance of virtual knowledge workers is managed.

To achieve Research Objective 1 (RO1), the data analysis looks firstly in more detail at virtual work reasons, arrangements and advantages, and also limitations and challenges. Secondly, the management of performance where individuals are working remotely from their manager (i.e. virtual performance) is described in terms of how managers manage virtual performance; specific deliverables and their metrics; technologies assisting with the management of virtual performance; and the main challenges in managing virtual performance. The concepts of quality and knowledge work are also redefined in the context of the five cases.

RO2: To analyse and describe how the organisational context and the approach of managers affect the performance and outputs of virtual knowledge workers.

Lastly, to achieve Research Objective 2 (RO2), the analysis and coding of the parameters affecting the management of performance from an organisational, managerial and individual level are discussed.

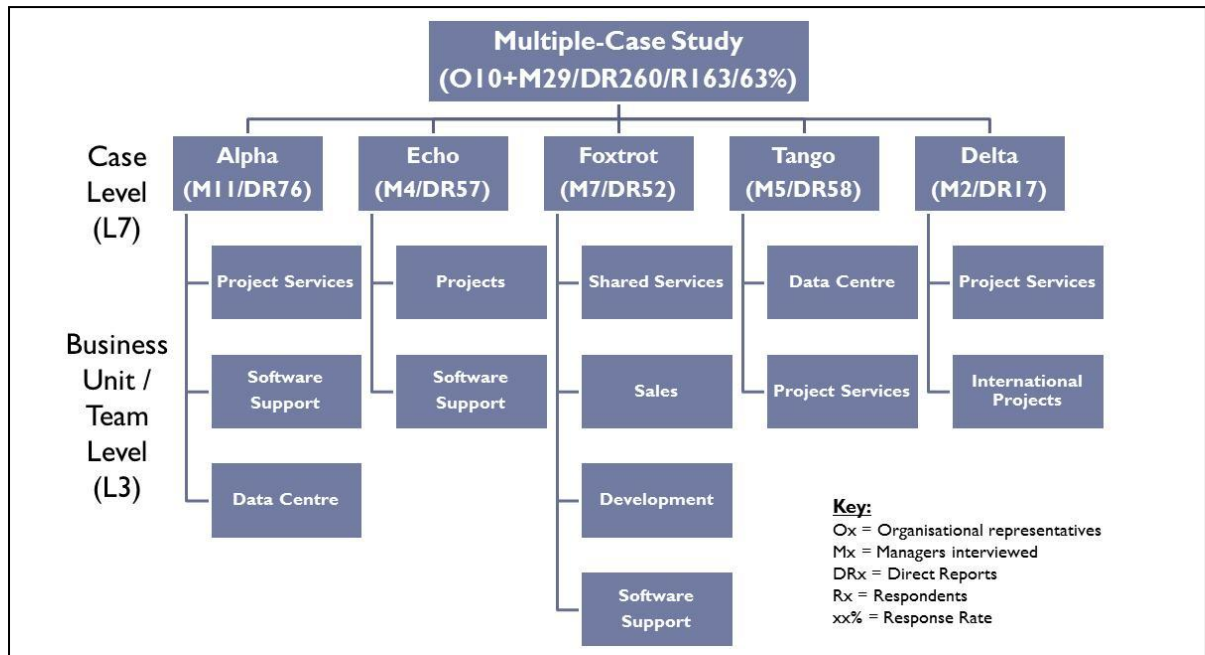
The complete case studies for each company can be found on the additional disk provided, as explained in Appendix G – Supplementary documentation. The initial code list and network diagrams are provided in Appendix E – Initial Code Lists and Network Diagrams, with the detailed code lists also part of the supplementary documentation. All relevant code tables and their descriptions are provided as part of Chapter 5.

5.2 CASE LEVEL SUMMARIES

5.2.1 Introduction to the Companies

As mentioned in Chapter 4 on the execution of the study, five companies were included as cases for the multiple-case study. For anonymity, they were named Alpha, Echo, Foxtrot, Tango and Delta. Figure 5-1 shows the combination of teams in the individual case studies. The numbers in the diagram are used to give the number of organisational representatives interviewed (O=10), the number of managers interviewed (M=29), the total number of direct reports (DR=260), the total number of respondents (R=163) and the final response rate as a percentage (63%). This is shown graphically in Figure 5-1 on the next page. To set the context of the different cases, each company is described after the figure.

Figure 5-1: Companies, teams and study size



Alpha is a company that provides information and communication technology (ICT) outsourcing services in a broad range of industries, nationally and on the African continent. The company has been in existence for more than 30 years. At the time of the study, Alpha employed around 4500 individuals. The study covered three business areas in one of the divisions, and included a total of 11 teams and their managers. Questionnaires were sent to 76 individuals and a response rate of 53% was obtained. The coverage of Alpha by the study in terms of managers interviewed and questionnaires sent out was 1.8%.

Echo Group is a group of companies that offers information technology products and services, including outsourcing, in various industry verticals. It consists of a holding company and a group of independent business units or companies that have been acquired over a period of time. The company as such has been in existence since the 1990s, and when the data was gathered in July 2011, the company consisted of about 30 sub-companies, employing approximately 3200 employees. The study focused on one of the sub-companies, namely Echo Services, which had been brought on board in 2003 and had a total of 250 employees at the time. Four teams and their managers, including 57 individuals, were included in the study. This

represented 24% coverage of Echo Services and 1.9% coverage of Echo Group. For ease of readability, the name “Echo” will be used when referring to this case.

Foxtrot is a South African company with global reach that was formed in 2006, and is primarily a software company, developing turnkey software solutions for the enterprise resource planning market internationally. Deployment and support services are also offered, but form only a small component of the company. Foxtrot is part of the Foxtrot Group, which was established in the late 1980s, when its main focus was doing bespoke software development. In 2011, when this research was performed in the company, Foxtrot employed 70 people in seven countries. In comparison, the Foxtrot Group employed 850 individuals. The research focused only on the sub-company, and included nine teams, consisting of nine managers and 52 individuals who received the online questionnaires. The coverage of Foxtrot by the research was therefore over 80%.

Tango is a global company that provides information and communication technology outsourcing to customers across South Africa and the world. The policies originate from the international parent company, and these are then adapted for the specific countries. Tango South Africa, which was established in the late 1990s, consisted of 2500 employees at the time of the study, and the company’s culture was described as being entrepreneurial and fast growing. When acquisitions and mergers take place, the culture of the acquired companies is assimilated into the more flexible style of Tango. The study included five teams in total, from the project services and data centre services business units. Questionnaires were sent to 58 individuals and a response rate of 59% was obtained. The coverage of the total South African company in terms of individuals and managers included in the study was 2.5%

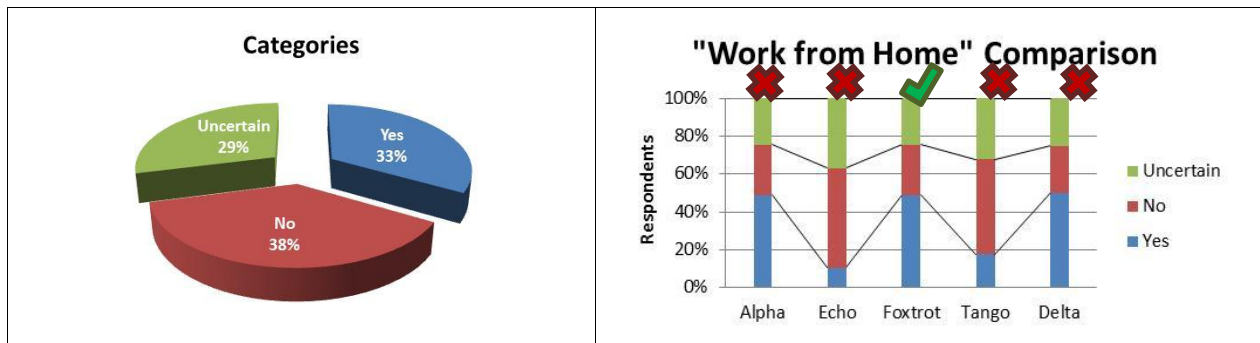
Delta is a global professional services firm with an international administrative parent company. It consists of various member firms or subsidiaries which are each an independent company. It offers its customers advisory and consulting services on various industry and cross-industry fields. This study was approved for one of the subsidiaries in South Africa, consisting of 700 people at the time of the study, but the information regarding the policies obtained was applicable to all the South African companies (3500 employees in total) and their relationship with the parent company.

Only two teams were included. A total of 17 questionnaires was sent out and a response rate of 47% was obtained. The one team was a global team, and did not fall under the South African company. This gave a unique view in terms of global flexibility. The other team fell under the subsidiary under investigation. The coverage for this subsidiary in terms of the one team was therefore 1.3%. This small selection was chosen to determine whether there was any significant difference in relation to the previous four case studies. Although Delta in South Africa does not have a specific policy for work from home, it does have a flexible work guideline that can be used by managers and individuals to assist in identifying the most appropriate flexible work style for the specific situation, including work from home. Examples of these differing flexible work styles were found in the two teams. Overall, performance management in the organisation seemed to require more involvement from various levels of management and was more comprehensive than had been found in the other case studies. However, for virtual work on ground level, the same management approach, limitations and challenges and reasons for virtual work existed. It was therefore decided not to broaden the interviews after the first two had been concluded.

5.2.2 Perceptions Regarding Policies

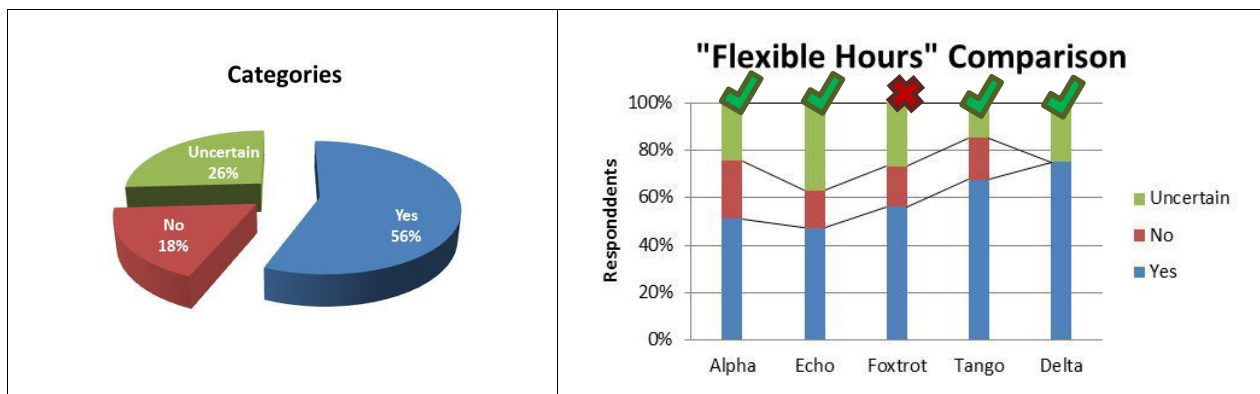
The individuals were asked two questions in the online questionnaires about their perceptions as they related to organisational level. The first question related to the existence of a “Work-from-home” policy. Foxtrot was the only company where an official “Work-from-Home” policy existed in draft format, while Delta had extensive flexible work guidelines which also allowed for the work-from-home scenario. Nevertheless, a considerable number of individuals in all the companies indicated that such a policy did exist. This misperception may have occurred because in all of the companies individuals were allowed a more flexible work style at the discretion of their managers. The comparison between the companies is indicated in Figure 5-2, with the red crosses and the green tick indicating respectively where the work-from-home policy did not and did exist.

Figure 5-2: Individuals’ perceptions on “Work from Home” policy



As for the flexible work hours policy, most individuals did agree that the policy existed, which was in fact the case in most companies, except for Foxtrot. In most cases, the employment contract or “Terms and Conditions of Service” policy made provision for spending the core hours at the office, and the rest at home or away from the office, as long as the hours worked made up 40 hours per week. This is represented in Figure 5-3, with the red cross and the green ticks indicating respectively where the flexible hours policy did not and did exist.

Figure 5-3: Individuals’ perceptions on “Flexible Hours” policy



Some individuals also indicated in the answers to the open-ended questions that they would prefer more guidelines in terms of virtual work, and that managers should have more power to make changes in policies.

“The organisation must endorse virtual work environment and enable the worker technologically and structural to perform at his maximum level anywhere at any time.” P18 (80)

“Improve the working between line and HR business partners - where line have the empowerment to change policies if need be” P51 (92)

From a managerial level, in Alpha, Echo and Tango, managers seemed to be unsure whether policies actually existed, or the extent thereof, on the organisational level. For these companies, all of the teams had created their own internal rules and guidelines, either documented or non-documented, for managing virtual work. As such, teams were not learning from each other, and it seemed as though there was a lot of duplication of effort. In some cases, managers also called it “remote office”, since it not only included work from home, but working from alternative sites. In Delta, where the guidelines on organisational level did exist, the managers were aware of the policies, and chose to implement them as required in their teams. In Foxtrot, a much smaller organisation, all the managers were fully aware of what was allowed and not allowed, and what policies existed and did not exist. It seems that larger companies have more layers that could potentially obscure the policies and decisions made on higher levels, while in a smaller organisation, the lower levels of management are more in touch with the executive level and what drives the organisation.

The implementation of virtual work in all the case studies (where virtual work was allowed and applied) was very dependent on a senior employee (CEO, COO or Business Unit Manager) being the champion for promoting virtual work.

Senior executive support

“And I think the great thing about the way we work is that the champion of this whole initiative is our COO. He has been adamant; he said that he has worked differently since he was an audit trainee. I think it’s just that independent nature. But for instance if he wants to watch his kid play cricket it’s in his diary and nothing moves.” P55(82)

5.2.3 Performance Management

The only company in which no performance management policy or formal performance management process existed was Foxtrot. However, there was still an annual process whereby the line or project manager would review the performance with the CEO, in order to decide on increases. (Because the line managers work so closely with the individuals, they have a very good understanding of what the actual contribution of the individual is. In addition, each individual brings his or her own

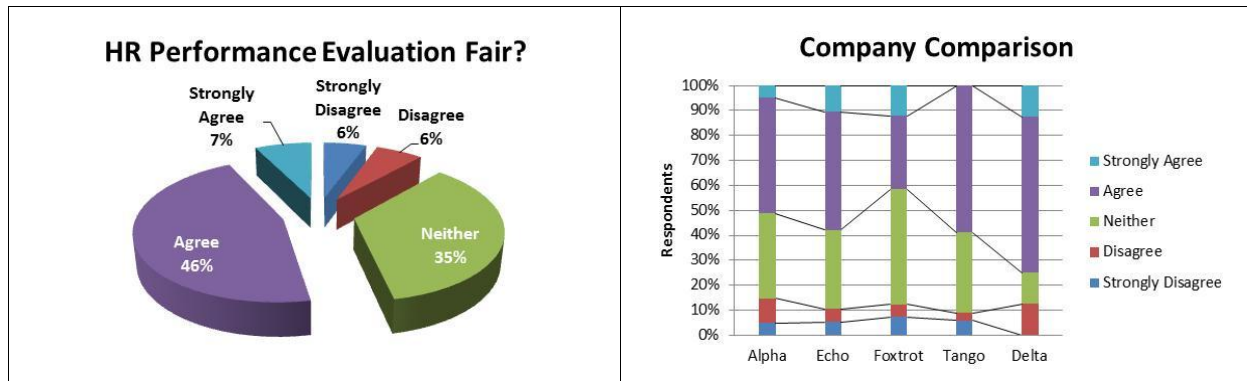
unique talents to the table, which makes the use of a standard rating sheet impractical.)

“Having all the different kinds of personalities and people working for us, each one with their strengths is very, very hard doing such an appraisal, and saying this guy did not do that and that, so he does not qualify for a specific thing.” P31 (485)

In Alpha, Echo and Tango, the managers mostly perceived the formal performance management system as additional administration. All the managers had their own internal measures whereby performance was managed on a more regular basis, and directly linked to the deliverables for the customer. (This is discussed in more detail in section 5.4.1 Managing Performance.) In general, managers did not require assistance from HR to define key performance indicators (KPIs) for either co-located or virtual workers. HR managers felt that the formal performance management was necessary, and that the performance management process could assist individuals in identifying development gaps, especially where this was affecting customer service levels. In Delta, the performance management culture seemed to be much more embedded, with multiple layers of reviewers adding inputs to the performance review system, and a formal system of mentors being implemented separately from the line management function.

To further evaluate the relationship between the individuals on operational level and their perception of the organisational level, individuals were asked if they believed that the HR procedures to evaluate their performance were fair. Just over half (53%) of the individuals across the cases did agree, but there was large group that was uncertain (35%), while 12% disagreed. The answers per category (Likert scale) and the company comparisons are given in Figure 5-4.

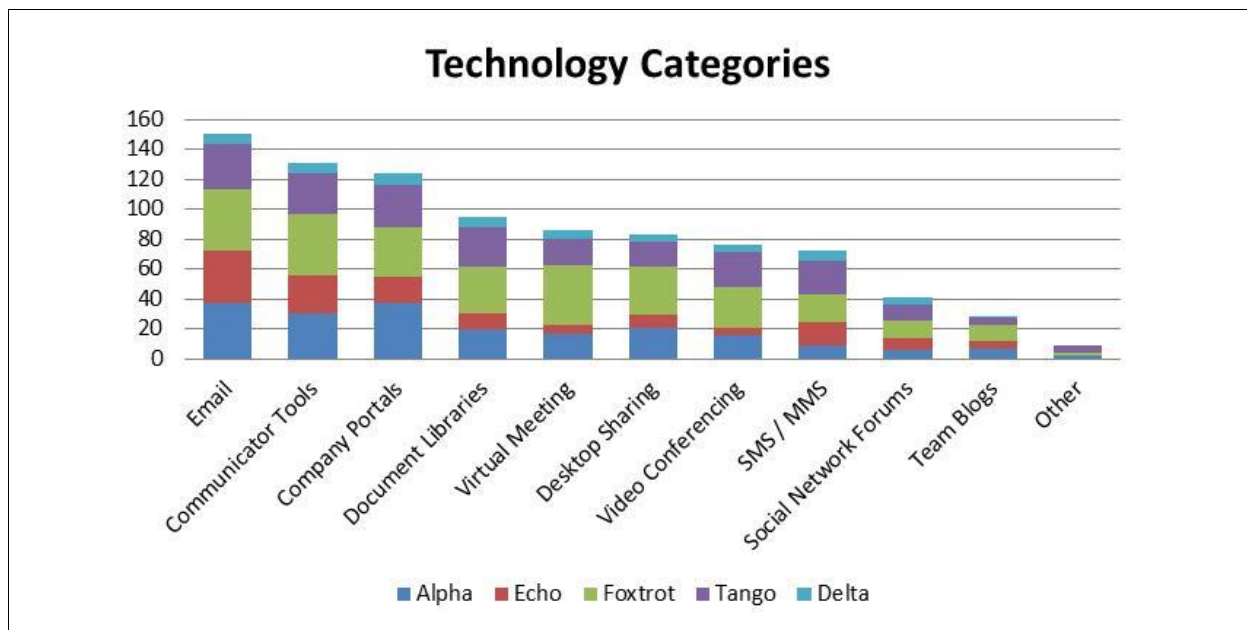
Figure 5-4: Are HR procedures to evaluate performance fair?



5.2.4 Perceptions Regarding Technology

Individuals were asked what IT systems their company provided to enable their performance while working remotely. The top three systems selected were email, communicator tools and company portals. Tools supporting virtual meetings were also selected by many respondents in Foxtrot. This is shown in Figure 5-5.

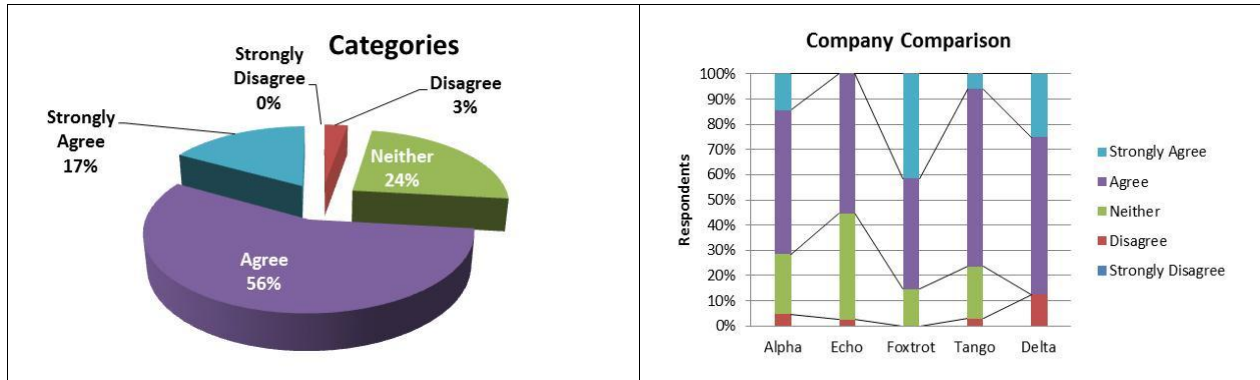
Figure 5-5: Technology for virtual workers (Case comparison)



In a further question, individuals were asked if the IT systems provided were sufficient to support virtual knowledge workers. Most individuals agreed (56%), with Echo having the most respondents who neither agreed nor disagreed, because they

felt that desktop sharing and video conferencing were not supported sufficiently. The onsite network was also mentioned as a technology aspect that needed attention. This is shown in Figure 5-6.

Figure 5-6: Organisational technologies supportive of virtual work?

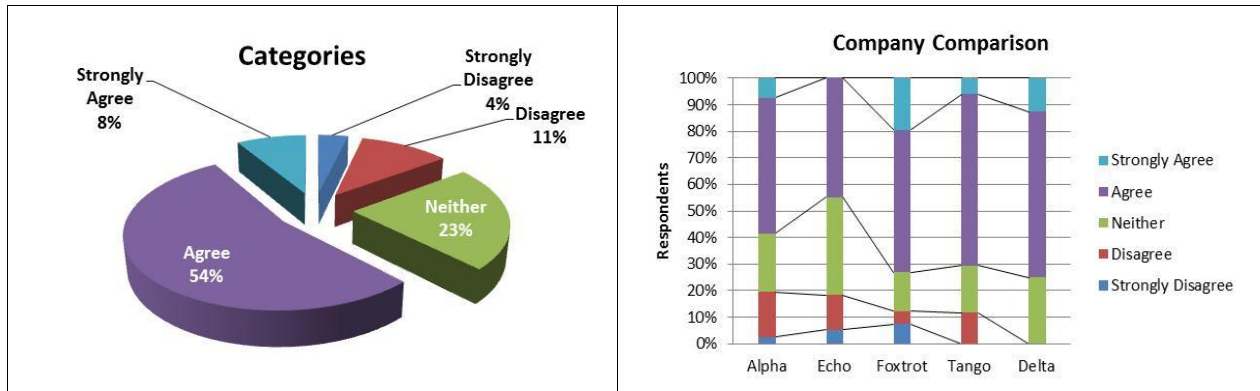


The major requirement mentioned by managers across the companies for IT systems was the need for additional bandwidth, to allow for more effective video and voice conferencing over the internet. The element of video was mentioned as especially important, enabling managers to see the individual in cases where a personal visit would not be possible. High-quality video is often needed to see specific expressions of individuals. Unfortunately, this is not only a company limitation, but a general South African limitation. Managers also indicated that they needed more integration between different systems, such as call management and billing systems, to make the tracking of time in relation to billing much easier and reduce administration time.

Even though the perception of the IT representatives was that everything was in place for virtual workers, the managers often felt that they were getting only basic support. This could be due to the complexity of IT technologies and interconnectivity requirements between the company's private network, the customer networks, where individuals are often working on a permanent basis, and the internet, which is used when connecting from home via ADSL or 3G. In this regard, individuals also mentioned the requirement for better connectivity. In some cases, individuals even felt that they had better connectivity and facilities when working remotely than when working on the company's network. On the company networks, there are always additional security policies in place regarding social sites, external connectivity, and protecting the limited bandwidth that is available.

Individuals were also asked whether they had received any training from the organisational side on the use of tools that support virtual work. As can be seen in Figure 5-7, of the total respondents, 62% agreed, while 15% disagreed and 23% neither agreed nor disagreed. Echo showed the most individuals that disagreed.

Figure 5-7: Training received for use of IT technologies?



Through the interviews it was established that in most cases, companies were not giving technology training, since these were all technology-based companies, and individuals were expected to be technology-literate. How to use the technology would normally be documented, and then this training manual would be made available for perusal.

Training not needed:

“Because it’s a IT company people are used to using IM *<instant messaging>* for instance on the internet and they’re all technical, most of them, and we work on the assumption that they’ll be able to use the tools that we roll out.” P14 (58) (IT Representative)

“I’ve never trained any of my guys on stuff like that. And I think my expectation is that if you’re in the Software Support business scene you should have an understanding of the new technologies coming out.” P8 (250) (Manager)

Although most managers believed that training was not required, there were some cases where the use of the tools could have become more pervasive had the individuals known about it sooner. Also, technology training might benefit the company by making virtual workers more effective. Some managers provided their own regular training sessions with individuals and would include technology training as well.

Training needed:

“I only just discovered OCM <Office Communicator> myself last year for the first time when I attended a company meeting here in Johannesburg and the guy said, “Listen, are you on OCM?” I said, “OC what?” And then I discovered OCM.” P5 (272)

Individual confirmation (open ended questions):

“People in the organisation need to be trained understand the concepts of working from home and giving people accountable deliverables, rather than micro-manage people.” P57 (42).

5.2.5 Company Summary

As a summary of the companies, the pertinent parameters describing the companies have been listed in Table 5-1. The companies do differ in size and in terms of the elements covered by the research (refer to “Research Coverage” in the table below). The specific differences between the companies are that Tango and Delta both have international parent companies. Delta is the only company with additional and extensive virtual work guidelines. Foxtrot is the only company with a virtual work policy, although this is in draft and only for its US branch. Foxtrot is also different in other ways because it is a small company, therefore the HR and IT functions are small and focused; no performance management policy exists, although the company as such is performing well; in terms of systems it is the only company included that makes extensive use of enterprise versions of various cloud software, and it gives an allowance for laptops.

Table 5-1: Company summary and comparison

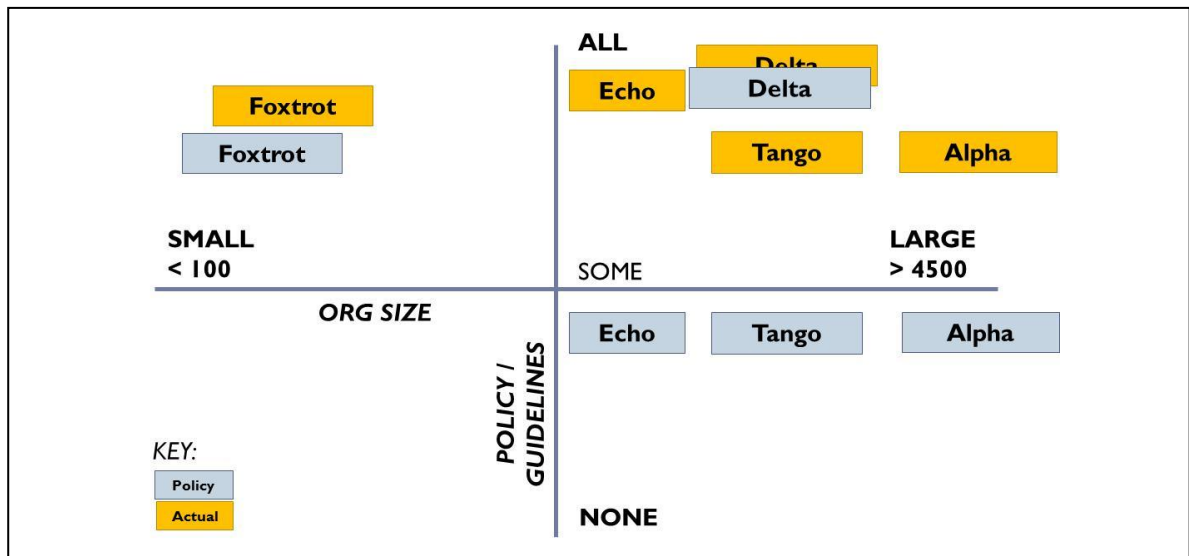
Parameter	Alpha	Echo	Foxtrot	Tango	Delta
Strategy					
Industry	Outsourcing	Outsourcing	Development	Outsourcing	Consulting
Design					
Parent Company	South Africa	South Africa	South Africa	International	International
Number of Employees	4500	3200	70	2500	3500
HR Function	Shared Service	Shared Service	Central	Shared Service	Shared Service
Performance Management	Formal	Formal	Informal	Formal	Formal
IT Function	Shared Service	Shared Service	Distributed	Shared Service	Shared Service

Table 5-1: Company summary and comparison (Continued)

<i>Parameter</i>	<i>Alpha</i>	<i>Echo</i>	<i>Foxtrot</i>	<i>Tango</i>	<i>Delta</i>
<i>Policies</i>					
<i>Performance Mng policy</i>	Yes	Yes	No	Yes	Yes
<i>Work from home policy</i>	No	No	Yes	No	No
<i>Flexible work hours policy</i>	Yes	Yes	No	Yes	Yes
<i>Flexible work guidelines</i>	No	No	No	No	Yes
<i>Laptop policy</i>	Corporate	Corporate	Allowance	Corporate	Corporate
<i>Corporate Systems</i>	Enterprise	Enterprise	Cloud	Enterprise	Enterprise
<i>Organisational level supportive of virtual work (% Agree)</i>					
<i>Organisational culture</i>	51%	66%	90%	65%	88%
<i>Technology</i>	71%	55%	85%	77%	88%

In summary, the policy in relation to the actual way of work has been plotted per company on Figure 5-8 and combines the existence of organisational policies regarding virtual work in relation to the size of the company. It shows the company in terms of the policy existence (light blue block), as well as the company in relation to its actual way of work (orange block). Where the blocks are close together, there is little difference, and where the blocks are further apart, there is more difference between the way of work and policy.

Figure 5-8: Organisational positioning: Policies, actual way of work and size



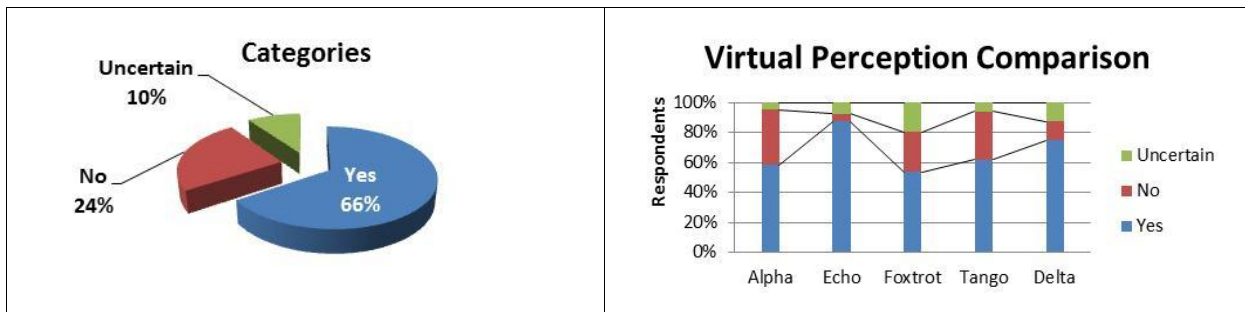
5.3 VIRTUAL WORK (CONTEXT)

RO1: To critically review the current state of knowledge and understanding of how the performance of **virtual** knowledge workers is managed.

5.3.1 Virtual Status in Companies

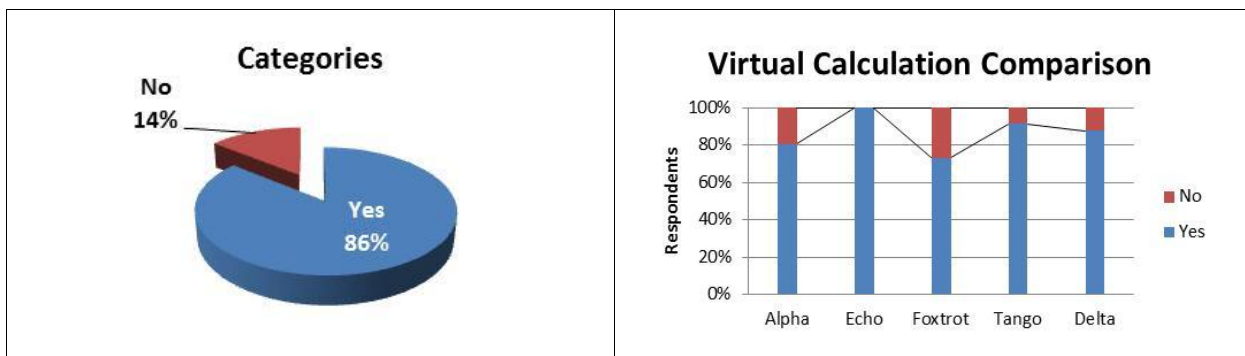
The individuals were asked (in the online questionnaires) if they deemed themselves to be virtual workers. The graphic representation is given in Figure 5-9 and shows that in Echo proportionally more individuals agreed that they were virtual workers. All four Echo teams included were spending minimum time in the office, and the managers were giving them freedom to choose their location and hours of work, without the individuals having to ask permission on a daily basis. In the other companies the perception of virtual status differed per team, depending on the type of work. In addition, individuals working on customer site did not necessarily deem themselves to be virtual workers.

Figure 5-9: Virtual status perception



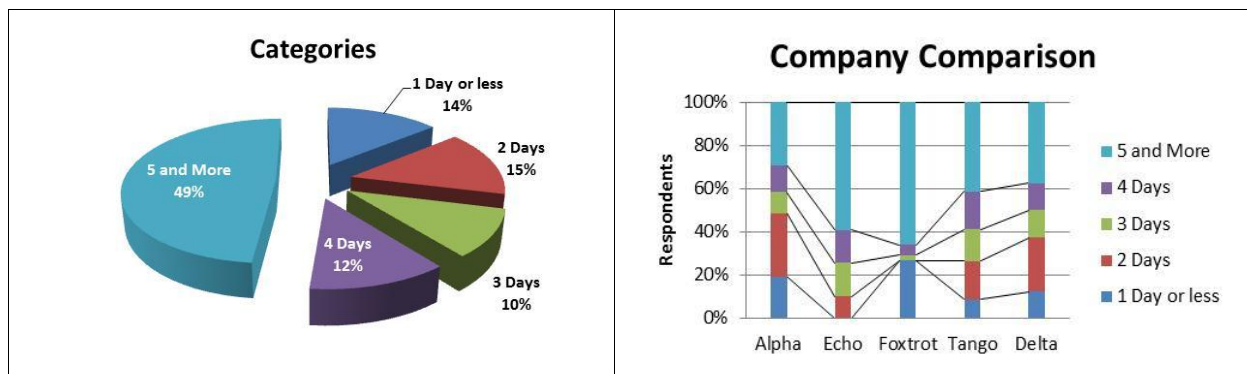
In terms of the calculated value for virtual work status, as shown in Figure 5-10, over 80% of the individuals across all companies qualified as virtual workers. The virtual status was allocated where individuals were working away from their manager more than one day per week. Echo was the only company where all of the individuals could be regarded as virtual workers, while Foxtrot had the most individuals that did not qualify as virtual workers. These were specifically in the development teams that spent most of their time at the main office location.

Figure 5-10: Virtual status calculation



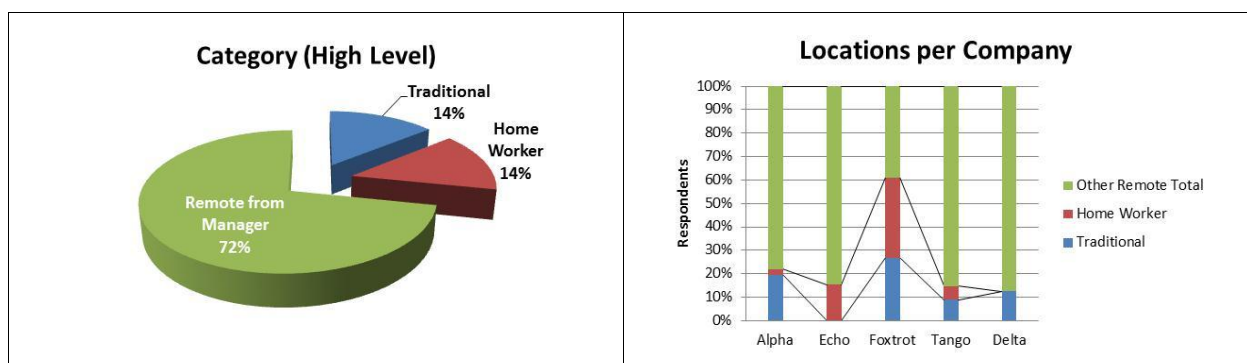
When comparing the number of days per week that individuals spent away from their manager, 49% of all the employees spent five days and more (some individuals may work over weekends as well) away from their manager per week. This was especially true for Foxtrot and Echo. The category spread and company comparison is given in Figure 5-11.

Figure 5-11: Days away from manager per week



An analysis was done to determine where individuals spent most of their time. This showed that 14% of all individuals fell into the “Traditional worker” category, in other words spending most of the time in the same office location as the manager, which is normally the main office location. When respondents spent four days or more per week at home, they were classified as *home workers*, and 14% fell in this category. Foxtrot had the highest percentage of home workers. The remaining “Remote from Manager” individuals amounted to 72% of the respondents. So in total 86% (72% + 14%) of individuals actually worked remotely from their manager. This is represented in Figure 5-12.

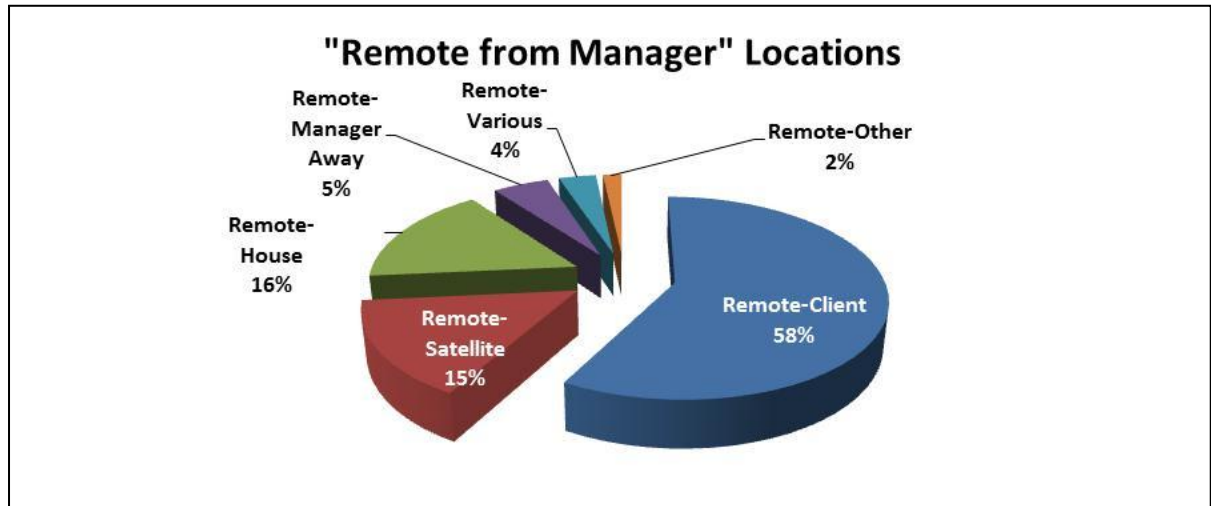
Figure 5-12: Locations per company



The “Remote from Manager” category was further analysed (Figure 5-13), and it was found that most of those individuals would be working on the client site. Then there were individuals working from satellite offices. The individuals classified as “Remote-House” worked from home two to three days a week. There were also some individuals who were classified as “Remote-Manager Away” because their manager actually worked in a different country or province. This was the case with both Foxtrot

and Delta. “Remote-Variou” was used where individuals used more than one location to work from, and “Remote-Other” included own office or was unspecified.

Figure 5-13: Remote locations for individuals (detail)



5.3.2 Virtual Work Reasons and Advantages

During the interviews, the question was asked as to why the manager allowed individuals to work virtually. The common view of working virtually seemed to be allowing individuals to work from home, although the definition of virtual work makes provision for a much broader range of work away from the manager and colleagues on a more regular basis (Ashford *et al.*, 2007:69; Luyt, 2007:13, Jackson *et al.*, 2006:219). The reasons given for virtual work in this section combine the findings of the individual cases, and look at virtual work from the broader perspective of individuals working remotely from their manager. This includes individuals who are allowed to work from home, working from another site and working on the client’s site. In Table 5-2 the code for “Virtual work: Reason” has been further categorised for location, as well as whether that scenario is deemed to be a privilege or a necessity. In addition, the codes for “Virtual work: Reason” and “Virtual Work: Advantage” have been linked, to show that specific scenarios of virtual work give specific advantages. The reasons for virtual work are described in more detail after the table.

Table 5-2: Code list: “Virtual work: Reason” and “Virtual work: Advantage”

Description	Code for “Reason”	Location	Privilege / Necessity	Codes for “Advantage”
Giving the individual flexibility, work-life-balance, cost and time saving.	Individual: Benefit {33-1}	Home	Privilege	Personal Flexibility Productivity Saving Money Saving Time
The type of work allows working remotely.	Work type: General {7-1}			
Customer in different time zone from organisation. Work supported centrally.	Customer: Time Zones {7-1}			
Customer working day longer than 8-to-5 Customer expectations changing.	Customer: Working day {6-1}			
Availability after hours.	Work type: Standby {3-1}		Necessity & Privilege	
Individual working in different location from organisation’s office. Individual relocated.	Individual: Location {5-1}	Home Other Office	Necessity	Extra skills available Staff Retention
The organisation trying to save costs by allowing individuals to work remotely or not visiting remote individuals that often.	Organisation: Cost Saving {11-1}			Saving Money
Multiple customer locations. Remote from organisation’s offices.	Customer: Geography {19-1}			Manager mobility
Global company distribution. Following customer distribution.	Organisation: Company Structure {9-1}			Manager mobility; Extra skills available
Customer wanting the individuals on site.	Customer: Service requirement {4-1}	Client Site	Necessity	Manager mobility.
Activities on projects that have to be performed on the customer’s site.	Work type: Projects {10-1}			

Example Codes: “Virtual work: Reason: Customer: Geography”; “Virtual work: Advantage: Manager Mobility”

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

One of the key reasons for allowing individuals to *work from home* is the benefit and flexibility that it gives to individuals, given that the type of job allows this. In this regard, it is given as a type of reward or incentive, and may be seen as in some way compensating for the long hours the individual is often expected to work. In Foxtrot and Tango it has also been seen as a strategy for retention, where there were examples of individuals who relocated but still wanted to work for the company.

Advantages benefit both the individual and the organisation, and include cost savings for the individual, flexibility in hours, increased productivity at home, staff retention and being able to use it as an incentive.

P53 (226) “If the client and the project allows for it, I do have people working from home at times. Because sometimes also in the client environment and the open plan office environment, especially if you are doing number crunching and a lot of analysis and data analysis, it’s actually more beneficial when you are not in a noisy or busy environment, and I send them home to go and do it there. Then they are staying in contact by mainly email and telephone, it’s not really anything else.”

A second reason for allowing individuals to *work from home* is the customer requirements which are driving the requirement for longer working days. This includes the customer’s expectations around extended business hours, requirement for support on critical systems after hours, work that can only be done in customer off-peak times, as well as operational activities that need to happen before the business day commences. In most of these cases, work outside of traditional office hours is needed, which can more easily be done from the comfort of an individual’s home, provided that the necessary connectivity exists. The advantages of allowing individuals to work from home when there are customers that need service in extended hours include the fact that the individual can manage a more flexible personal schedule during the day, and be available after hours when the additional requirements arise, and that the organisation can save costs on travel and office space. For Foxtrot and Tango, there are also customers in multiple time zones that need to be serviced from a central location. In addition, in the case of Foxtrot, individuals would be working from home on a permanent basis to service customers in the different time zones, since it would not be cost effective to set up an office in each country where there are customers. An additional advantage of allowing individuals to work from home when there are customers in multiple time zones is that individuals can be appointed on the basis of their skill and not their location.

“I don’t think it’s only that. If it was only for me, I could get up at 4 o’clock I could get up and support wherever that may be. It is just, Foxtrot is a global company, and I am the manager, so it’s not like I can only hire; so it’s only partly the reason. But you cannot hire in Atlanta and sit in an office, or hire in SA. We are a global company and we hire people everywhere.”
P34 (77)

Individuals *working remotely from their manager* and not necessarily at home included those working on the *customer site or those working in regional or satellite offices*. The customer site is normally a requirement from the customer, and could include the type of work to be performed, customer projects being completed or the fact that the customers want to see what they are paying for. Individuals working in regional offices are based on the organisational structure, which in many cases follows the customer geography. In this case, when managers are working at the main office location, and regional visits are reduced, the advantages for the company include cost saving.

An important *distinction for virtual work reasons*, especially where the individual is being allowed to work from home, is whether it is a given as a *privilege or a necessity*. This distinction is also shown in Table 5-2. Where the code has been marked as a necessity, it implies that there are customer requirements or geographic implications that necessitate individuals working virtually. In the case of a privilege, the manager could more easily recall the individual should non-performance become evident, while in the case of a necessity, it is often not possible for the manager to recall the individual, and other means would need to be found to ensure the individual's performance is up to standard. Management of non-performance is also explored in more detail in Section 5.4.2 Managing Non-Performance.

|| "Why it has become virtualised, because we had no choice. Europe is a big continent, and people travel a lot, and you know, I mean in our line where there is a traditional office, where everyone is in the office, it won't work." P36 (383)

In the case where it is *both a necessity and a privilege*, such as for code "Work type: Standby", managers are making a trade-off. The individual should or could actually come into the office, but because it may be in the middle of the night or the customer is expecting longer coverage (e.g. early morning or later in the afternoons), it makes sense to allow individuals to do this work from the comfort of their homes, rather than drive into the office at odd times of the day, which might also be a security risk.

5.3.3 Virtual Work Arrangements

Virtual work arrangements concern the agreements, activities and performance measures that relate to working away from the manager. They are linked to the reasons and locations identified under “Virtual work: Reasons”, but the processes that the manager has associated with the arrangement are now added. The types of arrangement include work from home, regional or satellite offices, at a client site, at various locations and not being able to work virtually. The list of codes and their groupings are shown in Figure 14-1 (Appendix E), which indicates how the codes have been related to each other using the ATLAS.ti analysis tool. The detailed descriptions of the five different scenarios are given below.

The *work-from-home arrangements* include schedules for fixed days, fixed hours, occasional instances or permanent work from home. For *fixed days*, a schedule would be set up and individuals could choose two days between Tuesday and Thursday to work from home. The days normally need to be agreed up front, and specific tasks or deliverables need to be achieved for those days. Individuals pre-book the days on a calendar or schedule. Detailed task lists are set up in most cases and individuals need to show progress against the task list when returning from the home-work days. The *fixed hours from home* is also a once-off agreement that is set up when the arrangement starts, and does not have to be re-agreed per occurrence. This relates to a specific number of hours per day that an individual will work from home, normally due to operational requirements or to cover customer time zones. This arrangement also includes specific tasks that need to be performed while working from home that will be checked by the manager, or will show in service level reports. This arrangement is also often used to miss peak traffic. In general the individual is still expected to be in the office on a daily basis. The “in-office” hours are also normally captured on a roster.

The third option in working from home is the *occasional model*. Here the individual needs to obtain permission for each instance of working from home, and reasons could include looking after a sick child, or some other personal matter that needs to be attended to, or completing a project that needs more focused attention. The last option for working from home is the *“permanent” model*, where the “place of work” is

the individual's home. Here it is important for the individual to remain in contact through regular meetings and other collaboration tools, and in the organisations where there are examples of this type of arrangement, the individual normally needs to visit the main office location once a month for a three- to four-day period. For all cases of working from home the individual needs to show that he or she is online (e.g., through Office Communicator) and must be reachable by telephone or email. Where fixed customer support hours exist, the individuals also need to be available at home for those fixed schedules, and may not plan their day in a flexible way.

"We have a fixed arrangement with a couple of people that can work from home. There are people that work from home permanently that come in once a week for a meeting, there are others that only spend 2 or 3 days a week at home. For example on Mondays and Fridays they have to be in the office. They can work from home Tuesday, Wednesday and Thursday." P46 (97)

"No, there is no rule. People need to be available, whether you are doing your work from home or from somewhere else, you need to be available. And if you are on standby, you need to be in half an hour's travel from the office or from the client that you support. So you cannot go a 1000 km away and try and work from the beach, because sooner or later; you might get away with it for a while, but sooner or later you are going to be caught out. If you break that trust then you have a major issue. But then again it comes back to responsibility and ownership." P46 (355)

For individuals *working in regional or satellite offices*, the agreement is normally done once-off, and there are less strict rules on task lists and other measurables, since there are normally other managers at the office where the individual is working. Individuals working in the main office location while their manager is working from home or in a different country are also managed through tracking tasks on process lists, or tracking of calls on the call management system.

"I think the fact that a project manager doesn't work on one project at a time. They work at different clients and on different projects, so, the assumption would be that, because of that, they have to deliver something and it's impossible to look over that person's shoulder all the time, because where is he? He's today here, tomorrow there." P4 (64)

"...we obviously got additional customers in the Johannesburg area that *we manage remotely in any case*. So the consensus was that if we had a team lead up in the north to manage all of the clients up there, it would work well, and that is how the structure started forming." P47 (65)

There are also arrangements where the *individual works in multiple locations*, in other words a combination of home, client and satellite offices. This is dependent on the type of work, such as projects, or where the individual needs to service multiple

customers, and is normally reserved for more senior resources. The expectation is that the individual will be contactable at all times, and that regular feedback is given in terms of activities. In one case (Foxtrot), a central calendar needed to be updated by all individuals to indicate their location at all times. (Feedback as an individual responsibility is discussed in more detail under Section 5.5.3 Individual Parameters (RO2c).) Flexitime has also been grouped under “Various”, since the individual could either start working from home until a certain time, and then travel to the office, or all of the work could happen at the office, but at times when the manager might not necessarily be there.

“If the client and the project allows for it, I do have people working from home at times. Because sometimes also in the client environment and the open plan office environment, especially if you are doing number crunching and a lot of analysis and data analysis, it’s actually more beneficial when you are not in a noisy or busy environment, and I send them home to go and do it there. Then they are staying in contact by mainly email and telephone, it’s not really anything else.” P53 (226)

Non-virtual, flexible work arrangements, in which individuals do not necessarily work from home or away from their manager, include reduced work hours, resulting in a corresponding drop in salary. This arrangement might also imply the same work hours but a reduced working week, implying that the individual works longer hours Monday to Thursday, and then takes off Friday or part thereof. There are also certain cases where individuals would not work virtually, depending on the kind of role they are fulfilling, their own preference for working in the office, or where the privilege of remote work has been revoked (or never allocated from the beginning) by the manager.

Other: Reduced Portfolio

“We only ask for that if there is going to be a reduction in pay, somebody is taking a reduced portfolio, then definitely we have a contract.” P55 (52)

Other Flexi- days: Process

“I think where we formalise it more is some people for instance work from Tuesday to Friday, but, and they tend to be in a more structured role, where they would be required to put in the 8 hours a day. So what they would do between Tuesday and Friday is put in 40 hours, because obviously we also have timesheets. So people work longer hours and then take half-day. So it really is around flexibility.” P55 (46)

5.3.4 Virtual Work Limitations and Challenges

During the interviews, managers mentioned various limitations and challenges for virtual work in general, without necessarily being prompted to do so. These were split into two categories: firstly limitations that prevent virtual work and cannot be overcome, and secondly challenges that could potentially be overcome through specific interventions, additional effort or a change in mindset.

As a summary, Table 5-3 first lists all the codes that were used for challenges where it should be possible to overcome these (marked in the column “Possible” with an “X”). These are further divided into four categories. The first are issues that managers should address, such as building relationships and additional communication; secondly issues that individuals could address by being more participative or sensitive to the fact that remote management and work need more focus on accurate feedback; and lastly items that need to be addressed on organisational level such as additional bandwidth and resolving connectivity issues (which is also inherently a South African problem). The fourth set of challenges, such as increasing the frequency of contact, eliminating misunderstandings and the duration employed, the manager and individuals should address together. (Refer to Appendix E for the code network in Figure 14-3.)

The second part of Table 5-3 shows the codes that are classified as making virtual work impossible, marked in the column “Impossible” with an “X”. These include when there are specific customer requirements, when the infrastructure and connectivity does not allow it, or when the individual’s job is of such a nature that physical presence is required. The code for “Collaboration needed” has also been included in this grouping, since managers in all the companies agreed that when close collaboration is needed between individuals, such as on projects, for development, or in resolving problematic issues, it is preferable to have the individuals together in one room. The bandwidth in South Africa is also not supportive enough to allow these types of activity to be done through interactive video and voice-over-IP (VOIP). (Refer to Appendix E for the code network in Figure 14-3.)

Table 5-3: Code list: “Virtual work: Limitations and Challenges”

Description	Code	Impossible	Possible	Addressed by
Not feeling part of the organisation.	Belongingness {8-2}		X	Manager
Challenges with building and maintaining a relationship.	Building Relationship {11-3}		X	
Difficulty in getting the same message to everybody at the same time and making sure it is understood.	Change Management {6-3}		X	
The organisation (and others) tending to forget the individual.	Forgotten {4-2}		X	
Manager at home and individuals at the office.	Manager availability {2-2}		X	
Mindsets of managers that people who work from home do not deliver.	Mindset {1-1}		X	
Making work visible to next level management.	Visibility of work performed {1-3}		X	
After-hours work expected Workaholic syndrome.	Always online {12-1}		X	Individual
Reduced availability when remote.	Availability {4-1}		X	
The manager feeling less in control by working remotely.	Control {1-6}		X	
Indication that there are too many distractions at home that can decrease productivity.	Distractions at home {1-1}		X	
Always easier when seeing other person's expression.	Handling of issues {10-1}		X	
More management time needed when individuals work remotely.	More management needed {5-17}		X	
Extra work created due to individuals not communicating correctly.	Written communication skills {1-1}		X	
Too much data to transfer.	Bandwidth {3-1}		X	Organisation
Limited network connectivity.	Connectivity {14-1}		X	
Corporate culture not supportive of remote workers.	Corporate Culture {2-1}		X	
Issues relating to extra costs (e.g.. communication, printing, etc.) Need "Give and take" vs. policy.	Extra Costs {6-1}		X	
Not sufficient workflow in the systems.	Workflow {1-1}		X	

Table 5-3: Code list: “Virtual work: Limitations and Challenges” (Continued)

Description	Code	Impossible	Possible	Addressed by
Difficulty in establishing regular contact when individuals are working remotely.	Frequency of contact {3-3}		X	Manager Individual
Misunderstanding when communicating.	Misunderstandings {1-2}		X	
Issue when individual has not been employed long – relationship.	Short duration employed {1-2}		X	
Combined problem solving, design or development needed.	Collaboration needed {19-1}	X		Impossible (Cannot be addressed)
Customer wanting individual on site.	Customer Requirement {24-4}	X		
Preference of individual not to work virtually.	Individual preference {5-1}	X		
Printer and scanning requirements, office space.	Individual's Infrastructure {5-1}	X		
Physical interaction with devices or people required.	Type of work {19-1}	X		

5.4 MANAGING VIRTUAL PERFORMANCE (RO1)

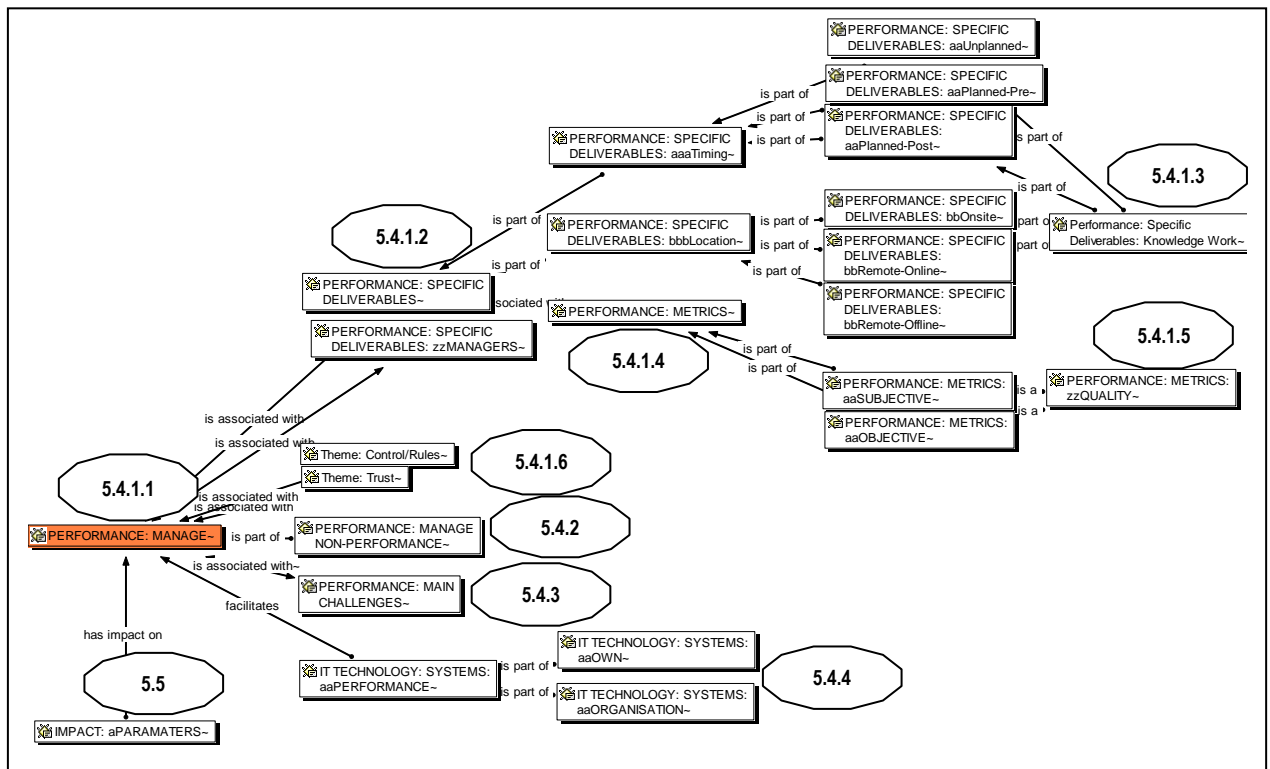
RO1: To critically review the current state of knowledge and understanding of **how the performance of virtual knowledge workers is managed.**

5.4.1 Managing Performance

In this study the managers were asked questions about how they managed the performance of the individuals in their team, especially those working remotely. The code network in Figure 5-14 shows how the management of performance starts with the general process that managers use to manage performance (Performance: Manage) and then splits into deliverables with their related metrics (Performance: Specific Deliverables; Performance: Metrics; Performance: Specific Deliverables: Managers) and tools used to monitor and measure (IT Technology: Systems: Performance). In addition, the importance of managing non-performance was also highlighted (Performance: Manage Non-Performance). Challenges encountered while managing the performance of remote or virtual employees were shared

(Performance: Main Challenges). There were also various contextual and external parameters that impacted on performance and the management thereof (Impact: Parameters). The numbers in the diagram indicate the section number in which the specific set of codes is described in more detail.

Figure 5-14: Code network: Managing performance (High level)



5.4.1.1 Code category: “Performance: Manage”

Managers were asked in the interviews specifically how they managed the performance of individuals working remotely. As a starting point for categorisation of the way managers manage, the codes that were used for the interview data that related to the management of performance have been linked to the four phases that Deming proposes as part of his Total Quality Management theories, namely “Plan-Do-Study-Act” or PDSA cycle (Moen & Norman, 2006:8). The importance of the Deming PDSA cycle is that it is a cycle, and the last step needs to feed information into the first step to ensure improvement. A similar type of process can be found in the project management process groups proposed in the Project Management Body

of Knowledge or PMBOK (PMI, 2004:42), namely initiate, plan, execute, as well as monitor and control.

The following mapping from PDSA to the PMBOK process groups applies, with the numbering showing the sequence of activities (Network diagram in Appendix E Figure 14-4):

- (1) Initiating (PLAN)
- (2) Planning (PLAN)
- (3) Executing (DO)
- (4) Monitoring (STUDY) and (5) Controlling (ACT)

According to the first set of codes, namely initiation (detail in Table 5-4), most managers buy into and use the organisational performance management process to create individual performance appraisals for their employees. This is ultimately linked to the strategy of the organisation. One manager in particular said that he followed a very detailed process to arrive at the objectives, deliverables and performance measures for his team. There were, however, some managers who did not agree with the time having to be spent on the formal IPA process. They did not necessarily use this as a starting point for setting of performance measures, but rather kept measurements fluid in terms of customer requirements. Standards and the standard way of work that the individuals should be achieving were also important during the stages where the overall objectives or goals were defined, especially when the quality of work needed to be evaluated when individuals were working remotely. One manager went through an especially detailed process to align the team goals with the goals of the organisation and make sure that individuals bought into that. This process in itself was a very positive experience for the team members, as reflected in these two quotes by the manager.

“So the third exercise we did, or process that we went through was to set goals for each and every team, so it was surprising when we did a survey and how few people knew what the goals of our team should be or are. So that was important too, because without goals there are no ways you can setup a proper KPI or proper performance agreement for the team.”
P12 (29)

“But what did come out of this thing is that people actually went to the trainer or they phoned me and asked can they speak directly to the trainer. They said, first of all, the willingness to go through this programme - and myself, I initiated it, and the Senior Manager approved it and the trainer conducted it - was just amazing that they thought that the company was just

the next best thing since sliced bread. I chased a little bit, because of decisions, but it has changed people's personal lives, which I was quite chuffed about. And the confidence with which they went about their daily tasks.” P12 (47)

Table 5-4: Code List: “Performance: Manage: Initiate”

Description	Code	Category
The relationship of the day-to-day performance management with the IPA.	IPA Link {71-2}	IPA
Do not like the formal performance systems.	IPA Link: NOT {16-1}	
A process followed to establish all aspects of performance management	Process {26-3}	Process
Strategy identified or confirmed as part of the performance management process.	Process: Strategy {14-3}	
Goals identified as part of the performance management process.	Process: Goals {14-3}	
Reference to standard way of work.	Standard WOW {5-2}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

The second set of codes relate to the step of planning (Table 5-5). They are an extension of the “initiate” codes, in that this is the next level of creating a more detailed framework of objectives, tasks, checklists and deliverables, as well as targets or measures that the individuals should be achieving in general, or specifically while they are working remotely for the agreed period. Deliverables are normally closely linked to the customer service and service level expectations, or project deliverables, and assist in the “output-based” management approach that various managers support, especially for remote employees. Most of the managers have expressed the importance of the initial and planning stages in being able to create the framework and setting of specific measures for team members working in a remote situation. In Foxtrot, during the planning stages, the allocation of project tasks is done in collaboration with the developers, so that it is not only the manager who decides on who will be doing what work. Also, once the deliverables have been set, the manager needs to trust the individual to deliver according to the agreement.

“So I believe, and that is perhaps more the way that I work as well, and how I would like to be managed as well. I believe that if you assign a deliverable to somebody and you are clear what your expectations are, and what your deliverable dates need to be, and that you need to trust the person to do that what they need to do to actually accomplish that.” P44 (68)

Table 5-5: Code List: “Performance: Manage: Plan”

Description	Code	Category
Right management structures in place	Implement optimal structure {2-1}	Structure
Creating lists for monitoring later	Checklists and Evidence {15-2}	Framework
Framework for performance management	Framework	
Customer impact on planning	Customer requirements {13-3}	Customer
Softer issues and process agreement	Set Expectations {14-2}	Expectations

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

The third element of execution is small (detail in Table 5-6), since the manager responsibilities have been coded and analysed separately. The first code linked to “execute” is involvement. The level of involvement of the manager differs depending on the situation. For example, the manager may get more involved in resolving customer problematic issues, especially if the customer wants to escalate the issue to a higher authority. This is also linked to management by exception, and will become evident in regular reports. Also, the manager will get more involved if the individual’s behaviour or outputs are not acceptable. Hands-on managers may be more involved as a matter of their personalities, and not as a matter of trying to micro-manage. Managers may also make use of peer reviews to make sure that the outputs of individuals are on track, or allow individuals to show what they have been doing. This becomes part of the manager’s panopticon in terms of mechanisms of additional surveillance. Elements of reward and incentives are also linked to the “execute” category, and these were indicated by managers as being important, but not always available or possible to give. Most of the managers also agreed that it was important to differentiate the way in which they managed different personalities. This is explored in more detail under the manager’s approach to virtual management in Section 5.5.2 Managerial Parameters (RO2b).

Table 5-6: Code List: “Performance: Manage: Execute”

Description	Code	Category
Level of involvement of the manager in solving problems (customer or individual level)	Involvement {10-2}	Involvement
Ensuring the individuals are allocated correctly and not "bored"	Keep individuals allocated {4-1}	
Only becoming involved if issues are raised. Not monitoring the whole time.	By Exception {8-1}	

Table 5-6: Code List: “Performance: Manage: Execute” (Continued)

Description	Code	Category
Using peer review to manage the individuals.	Peer Review {9-1}	Management Panopticon
Performance improved by giving incentives - "enticing" individuals. Setting targets to reach. Paying per instance.	Incentive {3-2}	Incentives and Rewards
What rewards are given for good performance?	Reward {16-1}	
Letting individuals show what they have done.	Show and tell {1-1}	Individual contribution
Manager differentiating approach based on personality or other differences between individuals.	Differentiation {19-2}	Differentiation
Manager persists with preferred management approach and not necessarily differentiating.	Differentiation: Not {1-1}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

The fourth element of *monitoring* contains most of the codes (See Table 5-7). This shows where the focus of the managers currently seems to be, since this is where it needs to be determined whether the individuals are actually working and performing. The category for “monitor” includes obtaining of feedback, reports, dashboards, tracking of tasks and delivery dates, as well as correcting where deliverables are not up to standard. The frameworks and task lists that were previously agreed on are important measures to check against, especially where specific tasks or activities were allocated for the period that the individual would be working remotely, as in the “fixed-days-from-home” arrangements. Some managers use instinct or intuition in terms of knowing that the employees are staying on task, and a strong theme evolved across the cases for the fact that true performance actually manifests itself over time.

“I think gut-feel plays a role, for me, I like to use my gut. I know one of my current reportees is over-allocated and he’s not performing as it should be. It’s now for me to go and try and assist that person.” P4 (142)

“Since I cannot really observe them myself, I have to infer based on conversations and cues, and you know, the ways I can measure them, which are somewhat limited a times over a short term. Yet over a long term, you know it all manifests in a pretty complete picture.” P35 (178)

Also, one manager mentioned specifically that one cannot trust a single feedback element only; one needs to look at the total picture that is being established over the measurement period.

“So over the years I have put a lot of things in place that make it easier to track things, etc. [...]...but also doing this kind of reporting, I go into the tickets, I can see who is getting the compliments, you know. So it's that kind of you get a perception based on many different data points throughout your working year, of how people are doing.” P34 (501)

Managers also monitor individuals by such means as seeing if they are available online, which is facilitated by some collaboration software, or else by seeing a flow of emails, or activities that are happening. Regular communication is also important, to show that the individual is available and busy working. (How individuals would like their attendance to be measured and the link to trust is shown in Figure 5-23.) The manager will also use formal feedback (such as customer surveys) and informal (verbal) feedback regarding individuals, to determine the state of performance. This is once again part of the management panopticon that can be established when individuals are working on customer site or at regional or satellite offices.

“But it's very obvious when someone's busy, usually. As I think I said earlier. Most of the folks that come on, they're busy and it's obvious. Because things just come up. I always call it the dust they kick up. So someone who is very active and they're contacting a lot of companies and talking to a lot of people, and they're doing demos. And you know networking, and “prospecting” and all that stuff. There is just naturally a lot of dust that is kicked up.” P35 (190)

Table 5-7: Code List: “Performance: Manage: Monitor”

Description	Code	Category
Monitoring or measuring to compare with other individuals, standards or expectations set.	&Compare {16-2}	Comparisons
Open dashboard to show results of monitoring and measuring.	&Compare: Public {5-2}	
Monitoring and measuring with a view to correcting.	&Correct {16-2}	Action taken Feedback
Written feedback from others.	Feedback: Formal {7-2}	
Subjective feedback from others.	Feedback: Informal {11-2}	
Poor performance cannot be hidden in the long run.	Actual becomes apparent over time {13-2}	Intuition
Manager using perceptions; anything that cannot be measured objectively.	Gut feel {4-2}	

Table 5-7: Code List: “Performance: Manage: Monitor” (Continued)

Description	Code	Category
Not monitoring availability, rather using something else (flow of information).	Availability - not {3-1}	Availability
Available = Online = Presence = Contactable.	Availability {14-2}	
Monitoring email flow and content of emails to customers.	Email flow and content {7-1}	
General interaction between the manager and the individual, which could be face to face, email or telephone.	Regular Communication {22-5}	
Specifying deliverable and date, not <i>how</i> or <i>when</i> individual hours need to happen, or exactly how many hours needed to perform the job.	Delivery Dates {5-2}	Tasks and time
Performance managed through task and activity tracking.	Task & Activity tracking {19-2}	
Time tracking of overtime, billable hours, etc. This is very important for (a) reward and (b) customer billing.	Time Tracking {11-1}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

Control is the fifth element, and also the second part of “Monitor and Control” in the management cycle (Table 5-8). Even though the “meeting” codes have been linked to the “control” category specifically, the regular meetings are often used to plan new activities, monitor whether they have been completed, and make recommendations for change (i.e. control) where required. The regular meetings with the individuals are also used to link the performance of the individual to the key performance indicators of the individual performance appraisal (IPA). In some cases, where the manager has line managers reporting to him or her, the manager would also prefer to “skip a level” in order to get involved and control the performance and outputs of individuals on the lowest level of execution. Re-prioritisation is also important if there are too many tasks and the individual needs to be assisted in making the choices.

Trust also becomes important as opposed to specific control mechanisms. Managers often mentioned the importance of trust in a virtual work situation. This is explored further in section 5.4.1.6 “Control and trust”.

|| “...I can't micromanage over this distance. So there needs to be a good trust relationship.” P48(271)

Table 5-8: Code List: “Performance: Manage: Control”

Description	Code	Category
Formal meetings with individual	Meetings: Individual {30-2}	Meetings
Formal team meetings	Meetings: Team {43-2}	
Manager wants to be involved in one level down.	One level down {4-1}	Involvement
Managing outputs: something tangible.	Outputs {27-1}	Outputs
Re-prioritisation when too many activities occur.	Prioritise {9-1}	Re-prioritisation

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

As part of the meetings, the frequency was also mentioned Table 5-9. The regularity of the meetings and how formal they are depends on how hands-on the manager is, the type of deliverables, imminence of the deadlines, and the seniority and the needs of the individuals. The manager will often use the meetings to build the relationships with the individual and within the teams as well, communicate company changes or use them as an opportunity for training. Both communication and building relationships are important in a virtual world, where individuals could often feel neglected or excluded from the corporate life. As part of the “differentiation” theme, managers also allow their team members to decide on frequency of meetings, especially in the remote situation.

“...So he wanted to talk on a daily basis. It’s a little bit stressful for me, but that’s what he wants. Whereas Joan in Europe, was quite happy touching base once a week. So I was really flexible and I left it up to them. I said, you know what I am here, I prefer to have weekly meetings, but you need to tell me if you want the meeting or not, it’s your agenda. So I definitely had to manage them differently.” P54 (140)

Table 5-9: Code List: “Performance: Manage: Interval”

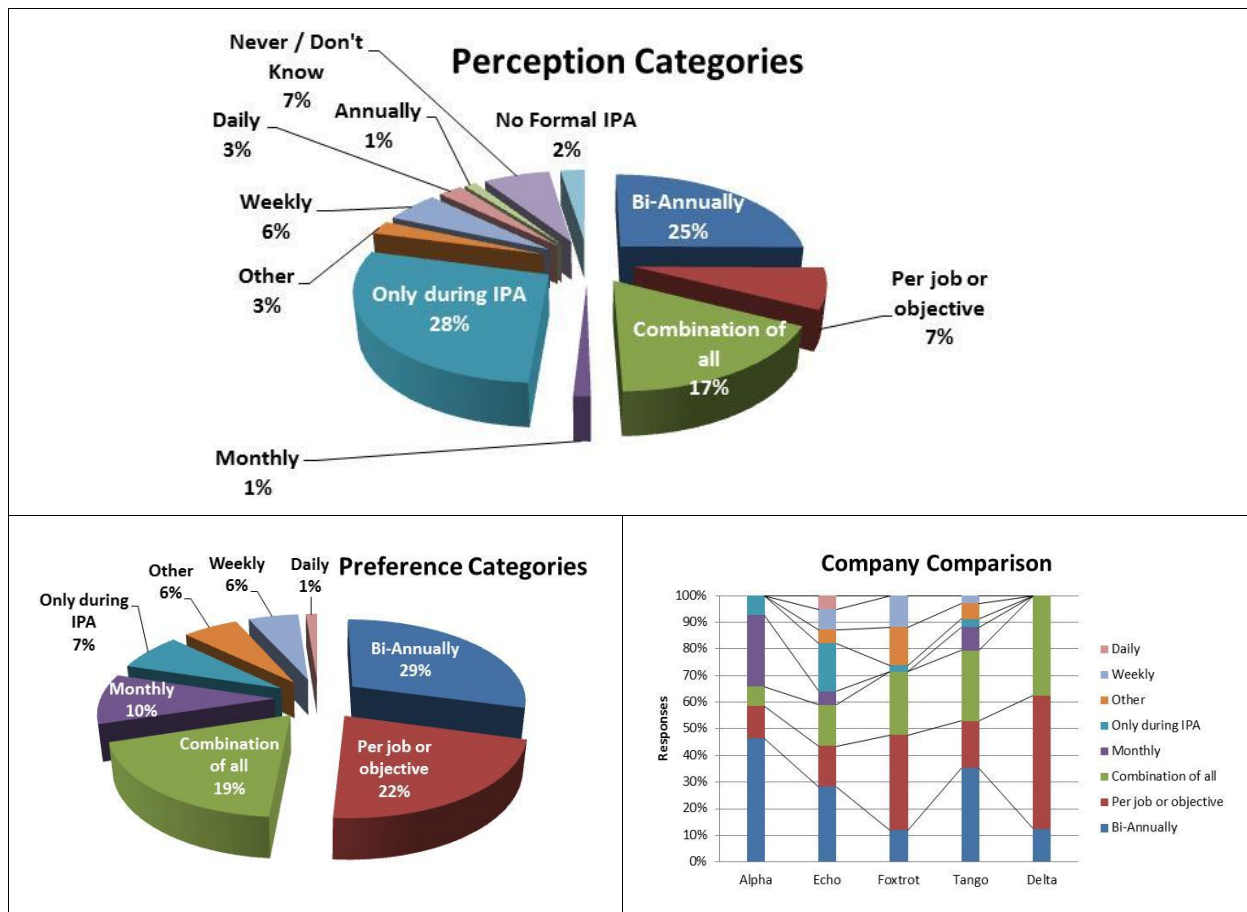
Description	Code	Category
Active involvement with the individual Daily contact (Informal).	Daily/Continual {14-2}	Regular
Requirement for monthly meeting.	Monthly {8-1}	
Once a year.	Annually	
Every three months.	Quarterly	
Spot checks; exceptions.	Intermittently {4-1}	Irregular
Review at end of each project.	Per project {6-1}	Per objective

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

Related to the frequency of meetings which were mentioned by the managers, individuals were asked to select the frequency with which they perceived that their

performance was being measured, and as a second question the preference or frequency with which they would like their performance to be measured. The perception, as shown in Figure 5-15, was generally that this was either done during the individual performance appraisal (IPA), bi-annually or a combination of all. However, some individuals in Foxtrot and Echo felt that they were never measured or did not know when they were being measured. In terms of preference, the preference for being measured during the IPA only was much lower, with more preference for being measured per job objective. In Alpha, Echo and Tango, the preference still remained for a bi-annual review.

Figure 5-15: Performance measurement frequencies



In the open-ended questions, many individuals, when asked what could be done to manage or measure their performance on a day-to-day basis more effectively, indicated that it would not be possible or effective to measure daily. This corresponds with the fact that only 1% of the total responses relating to the measurement frequencies were for daily measurement. There were also some individuals who did

see the benefit of daily follow-up meetings or conversations. The difference could be in the understanding of how formal the daily performance management should be; formal or just limited to being in contact on a daily basis.

Against daily review

“The nature of my work makes it difficult to measure day to day. A view of daily progress on milestones would be the closest you can get on monitoring performance.” P18 (21)

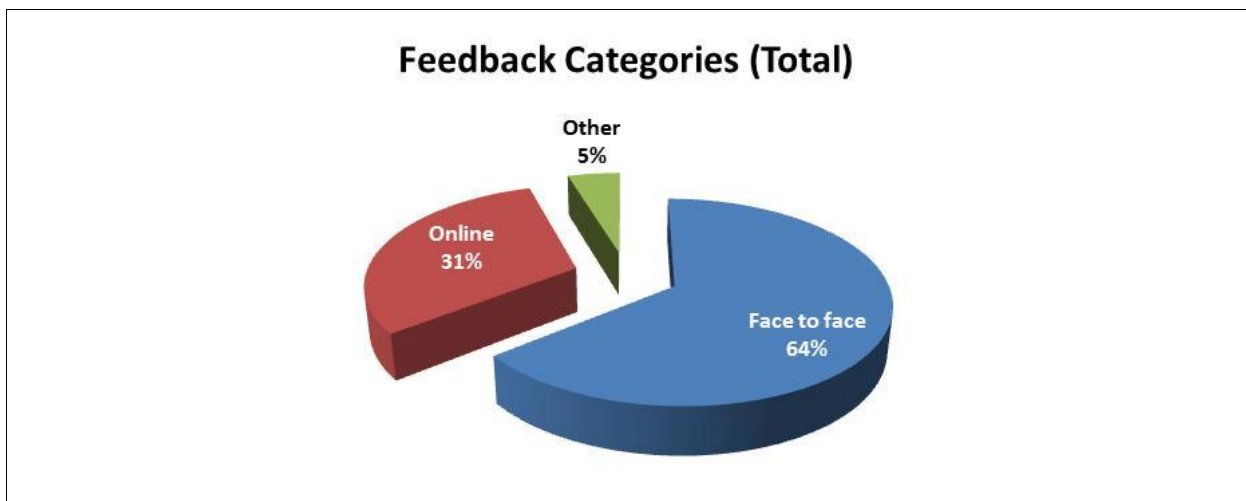
“Don’t believe day-to-day progress is as important as measuring progress on defined tasks. Detailed timesheets as is currently required is counter-productive in my opinion.” P42 (28)

For daily review

“Daily follow-up from management level. To ensure management involvement and avoid surprises.” P27 (25)

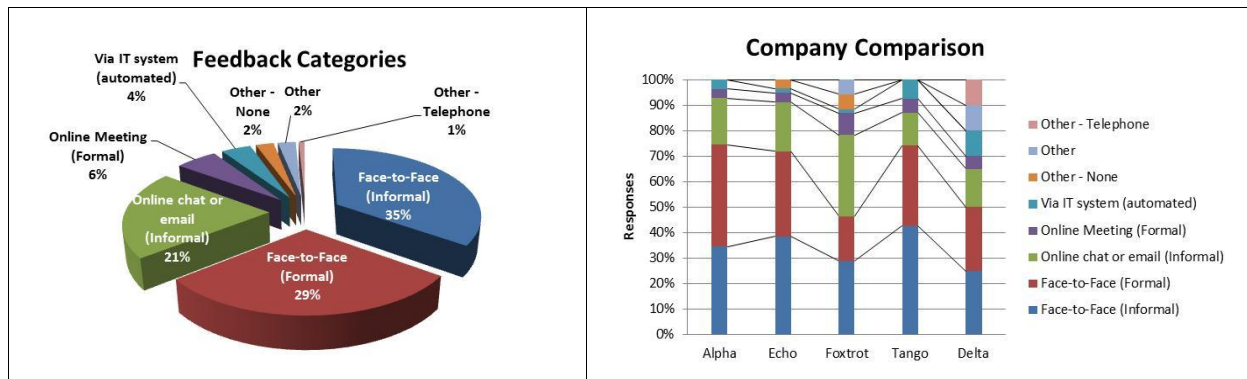
Individuals were also asked how they received feedback from their manager. The mechanism whereby managers gave feedback was mostly face to face (64% of the responses in the total data set confirmed this as shown in Figure 5-16), even when individuals worked away from their manager.

Figure 5-16: Manager feedback mechanism/location (High-level)



Managers indicated in the interviews that they preferred face-to-face feedback, and especially the visual clues it gave. It was only when there was no option of face-to-face contact because of geographical distance, or to ensure that contact with large teams could take place more regularly, that managers would hold online meetings. As can be seen in Figure 5-17, online meetings were most prevalent in Foxtrot.

Figure 5-17: Manager feedback mechanism/location (Detail)



5.4.1.2 Specific deliverables

In the context of managing the performance of virtual workers, individuals were required to provide specific deliverables. The actual deliverables did not differ between co-located and remote workers, and could broadly be divided into *technical deliverables* (those that were required to fulfil the customer service from a technical perspective, like software code, projects and operational deliverables), those that were more *administrative in nature* (like timesheets and status reports used for measurement and monitoring), and those that were related to *knowledge work* (documenting new procedures or lessons learnt or so-called meta-deliverables). As part of the code analysis from a virtual work perspective, the codes have been allocated both “timing” and “location” categories. The location and timing elements can be used to assist the manager (and individuals) to plan deliverables for remote work, and categorisation might differ depending on the specific deliverable or situation.

The *timing category* is used to indicate if the deliverable is planned or unplanned, with unplanned activities often being more difficult to do remotely, since they can happen at any time. Unplanned activities include incidents, special customer requests, meetings arranged at short notice and service delivery issues that need to be resolved. “Planned” timing has further been split into “pre-planned” and “post-planned” deliverables. *Pre-planned* deliverables include proactive work according to checklists and pre-agreed task lists, and need to be done on a regular basis. Projects, regular timesheets and following process have also been included in this category. *Post-planned* implies that this can be planned, but is dependent on another

activity to be completed first and does not have its own regular schedule; in other words, a specific date cannot be set beforehand. Examples of this are where a report needs to be written within two days after each incident has occurred, and feedback to the manager after important meetings. (Figure 14-6 in Appendix E shows how the timing aspect is applied to the codes.)

The *location category* is used to indicate where the deliverable can be performed. The main split is between “remote” and “onsite”, with the remote category further split between online and offline type of deliverables. On-site deliverables are such that they cannot be completed remotely, such as interaction with a physical device, or with the customer, while with most of the “remote” deliverables it would also be possible to do them in the office (or on site) as well. For those deliverables being done remotely, some deliverables can be done offline, in other words no connectivity to the organisation’s network is needed, while others need connectivity to a company portal or other resources. Remote offline deliverables include completing documents, writing reports and planning (creating plans) and filling in project management documents.

Where deliverables have been coded as both remote online and onsite, the deliverable could be partially completed remotely (given that connectivity exists) and may have to be partially completed in person (or on site). Examples of the on-site component might be if something breaks to the extent that it cannot be configured remotely any more, and access to the physical device is needed; or if the customer wants to see the individual; or it would be better to give the feedback in person; or if collaboration is required (e.g. with software development or resolution of service delivery issues). (Figure 14-7 in Appendix E shows how the same codes have been split into the location categories in a code network.)

Table 5-10 shows the combined view of how each code relates to location and timing at the same time. The table shows, among others, that it is not a given for any of the unplanned activities to happen only “onsite”. If the right connectivity exists, then even the unplanned activities could be completed remotely. The location was used to sort the table entries.

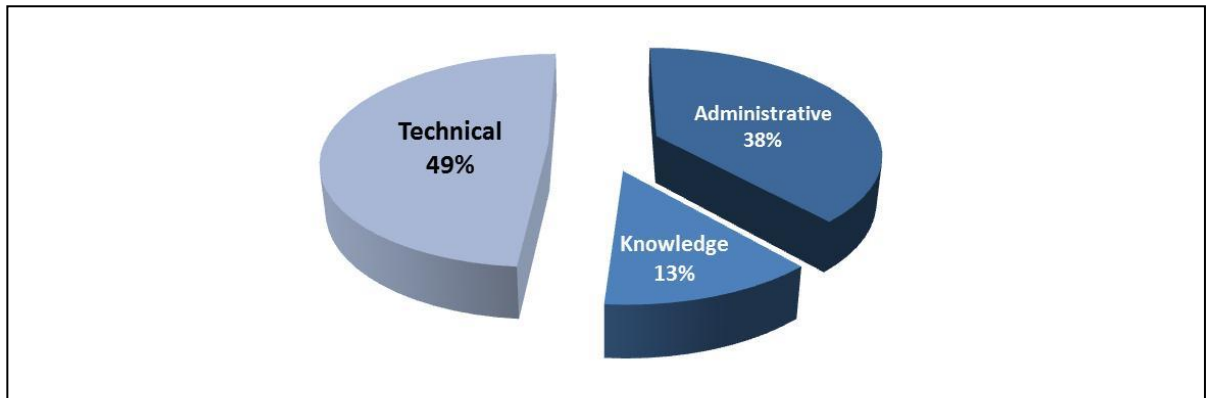
Table 5-10: Code List: “Specific Deliverables” (Location and Timing)

Codes	Type	Location			Timing		
		Onsite	Remote-Offline	Remote-Online	Planned-Post	Planned-Pre	Un-planned
Consulting	T						
Intervention	T						
Physical Devices	T						
Project	T						
Manage Supplier	A						
Product (S/W: Sale)	T						
Break-fix	T						
Manage Incidents	T						
Manage Alerts	T						
Manage Service	A						
Follow Process	A						
System Availability	T						
System Capacity	T						
System Quality	T						
Task List	A						
Data Captured	T						
Customer Value	T						
Feedback	A						
Product (Software)	T						
Product (Test)	A						
Optimisation	T						
Knowledge Work	K						
Config Changes	T						
Checklist	A						
Report	A						
Report: Dashboard	A						
Survey	A						
Product Docs	K						
Test Results	A						
Timesheet	A						
Documentation	A/K						
Graphics	T						
Marketing Material	T/K						
Output	T						
Proposal	T/K						
Project Mng. Docs.	A						
Plan	A						

Type key: (A) = Administrative or measurement; (T) = Technical; (K) = Knowledge work

The number of deliverables categorised as technical, administrative and knowledge items have been represented in a pie chart to show the relationship between the types of deliverable used by the managers. From the categorisation, the technical and knowledge deliverables make up 62%, while the administrative deliverables make up 38%.

Figure 5-18: Split of deliverable types



There was evident a trend in especially Echo and Foxtrot, but also in Tango, where the managers were both managing a team and doing the technical work. This has both a positive and a negative impact on managing the performance of remote team members. The positive impact is that the manager understands the work technically, and can relate much more easily to the complexity and metrics involved in setting performance measurements for team members. The negative side is that the manager may become “distracted” by the technical delivery, and not spend sufficient time in managing the relationships, performance and communication of the team members, as required in a remote situation. One manager mentioned specifically that the mindset and focus of a manager needed to change to be much more relationship-orientated.

“Have managers focus more on management specific tasks and not have to divide time between development, customer support, sales and actual management. With too many responsibilities management always falls by the wayside and subsequently not every resource is used to maximum potential. Management in itself should be considered a job, management appropriately skilled in people skills and personnel development, and required to collect and process the data required to increase performance without having to focus on other activities concurrently.” P39 (93)

“So it’s definitely different. But also now I’m in a line-management position, so you have to think, it’s a very different mind-set that you have to have, so. Definitely my management

style has changed. [...] I sometimes flip around between the Expressive and the Driver, depending on the situation that I'm in. So, when I'm very task-orientated, when I'm on a project and there's strict deadlines, so I'll go into that mode, but I found myself here, being in this position, I'm completely out of that mode and I'm completely into the Expressive mode and more the people-orientated, managing the people mode. It's a very different, it's actually who I am, actually." P45 (403)

5.4.1.3 Defining knowledge work as a deliverable

Knowledge work in the context of the study included documents, reports, customer value adds and process improvements. In Alpha and Tango there was also a good deal of focus on process improvement, as well as lessons learnt both in the context of projects completed and problems resolved. The one manager in Alpha also stated quite specifically that this sharing needed to be informal, and that it should be something "fun" or at least not seen as "work". In Alpha and Tango, individuals see knowledge work as "documentation" and in general, technicians do not want to document. They perceive this as outside the scope of what they should deliver. This may imply that one of the *manager responsibilities* would be to sift through the informal "sharing" and formally document the useful pieces in the right location. Also, in these companies "knowledge work" is not necessarily measured or rated as part of the IPAs.

"So they did express that if there is somebody you know some place, or more than a place, because they have access to a file base, but a physical knowledge base - what did you do today. (Interviewer: Something that works.) Yes. And a bit more informal. It's more like chat room, not really a chat room, but a place where you can post "I figured out how to do this". Most of the engineers in the data centre, especially all of mine, hate documentation. Like, that's why I say more informal kind of thing - you chat and you post things - you know, almost a newsgroup, that kind of thing. P10 (288)

In Delta, however, knowledge work, or the delivery of written contributions, is seen as much more acceptable and part of the day-to-day deliverables that individuals are measured on as part of the formal performance reviews.

"Then we have additional things that look around firm contribution. So different things that they are doing inside the firm, and whether it is writing proposals, thought leadership pieces, research, internal projects. We have quite a lot of internal forums and impact days and outreach programmes, whichever of those that they contribute in are also measured. It's basically just whether they are doing it or not. And the measure is really just to determine how engaged they are in the firm. Or are they just here doing projects and nothing else." P53 (91)

Various IT systems are used to save the knowledge deliverables in, such as SharePoint document portals, error databases and configuration management databases. It does not seem that blogs are used extensively for knowledge sharing.

“So putting a blog there, you might, again, only have the 10% passionate project managers who contribute and communicate and use that forum or that type of technology to share information and best practices.” P5 (278)

The code network associated with knowledge work is given in Figure 14-8 in Appendix E, and the list of codes with a short description is given in Table 5-11.

Table 5-11: Code list: “Specific Deliverable: Knowledge Work”

Description	Code	Category
Database with error messages.	Database {8-1}	Remote-Online Onsite Planned-post Unplanned
Documented information.	Documents {15-1}	
Creation of pictures in document or for marketing.	Graphics {2-1}	
Process improvement. Continuous improvements. Thought Leadership.	Improvements {5-1}	
Sharing knowledge and information (formal, not necessarily written).	Knowledge share {14-1}	
Fulfilling training. Learning new information.	Learn {1-1}	
Lessons learnt on projects. Building on best practice. Knowledge Article.	Lessons Learnt {7-1}	
Mentoring of others based on your area of expertise. Knowledge sharing.	Mentorship {1-1}	
Using or logging onto the knowledge portal.	Portal usage {3-1}	
Code or software in which business rules are encapsulated.	Software Programs {1-1}	
Creating new ideas as a team.	Team work {2-1}	

5.4.1.4 Metrics and measurement

To determine whether a piece of work has been delivered according to expectations, it needs to be measured. In this regard, managers have also indicated the importance of measuring the right thing. If you want to measure the team’s performance, make sure that the measures are not on individual level.

“And I found that if you compensate people, and not only compensate, but if you measure people based on for example, the number of tickets etc., that they are processing, then they are always going to go for the easy ones. There is going to be a fight on who is picking up the easiest ones the quickest. So it’s not about the customer, it’s about volume. P34 (519)

Managers also mentioned that when measuring an individual, one must make sure that the quantity is not to the detriment of quality.

“So, I think the main reason we have just not done it again. We wanted to change the metric a bit. We don’t want to; we are ultimately with a development, we are not chasing total lines of code, because it’s easy to write a lot of lines of code, but it could still be absolute rubbish.”
P32 (181)

The metrics used for measurement of deliverables have therefore been divided into *objective (specific, measurable)* and *subjective (perception)* type of metrics. The manager is often involved in, and expected to set, performance measures for the individuals. The manager should therefore have sufficient experience in the technical field to be able to define “good” measures or to assess the quality and correctness of the measures that the individual might propose. The more measurable the deliverables are, the more easily the manager can allow the individual to work remotely. Items categorised as both objective and subjective are objective if there is a benchmark number that can be used to compare them with. They become subjective if this “benchmark” does not exist and measurement depends on the opinion of the manager or other evaluator. An example is “productivity” and number of products delivered. The definition and measurement of quality will be discussed in more detail in paragraph.

The codes shown in the network are listed in Table 5-12. The codes are linked to the subjective/objective category and then sorted in groundedness order (i.e. the number of times the codes was used in the coding phase). The type of codes most used were “Yes-No” indicators, counts, meeting of service levels, and achievement of delivery dates. (The network diagram is available in Appendix E, Figure 14-5.)

Table 5-12: Code List: “Performance: Metrics”

Description	Code	Objective / Subjective
Activity successful or delivered: Yes/No.	Yes-No {59-1}	Objective
Counting number of items completed.	Count {56-1}	
Service level achievement measured by whether the percentage was achieved. (Total Number - Missed SLA)/Total Number * 100 > 92%	Meet Service Level {32-1}	

Table 5-12: Code List: “Performance: Metrics” (Continued)

Description	Code	Objective / Subjective
Planning and setting target dates by which the deliverable should be ready.	Delivery Date Achieved {30-1}	Objective (cont.)
Not exceeding budgeted cost (as in project). Profitability (Cost vs Revenue). Achieving sales targets.	Financial (Profitability) {17-1}	
Formal customer satisfaction surveys. Achieving service levels as per agreement.	Customer Happy: Objective {12-1}	
Percentage plan vs complete. Sales: Year-to-date figures: Planned vs Actual	On schedule {8-1}	
Survey or checklist with calculated rating. All the items on the checklist within the stated parameters (i.e. no errors).	Checklist adhered to {7-1}	
Number of hours used of total hours. How many used for billable work.	Utilisation {7-1}	
Throughput or flow of activity. Movement (emails flowing; calls reducing).	Throughput {4-0}	
"Number of days after promised delivery.	Delivery Date Aging {3-1}	
Number of deliverables in a specified time. The more products in a specified time, OR, the shorter the time to deliver a specific product (compared with a "benchmark" or average team time), the higher the productivity. ; Could be related to hours billed to customer; "Availability" as a measure of productivity.	Productivity {20-1}	Objective / Subjective
Using a pre-agreed scale (e.g. 1 to 5) to allocate a rating to the work.	Rating {19-1}	
Timesheet accuracy. Percentage of devices correctly installed. Completeness - all issues logged, all risks raised, document comprehensive. Percentage of questions answered correctly.	Accuracy Percentage {11-0}	
Specific positive verbal customer feedback. No negative feedback received.	Customer Happy: Subjective {19-1}	Subjective
Informal feedback about the individual from the customer or from others; All is "ok" if hearing nothing.	Noise Levels (Perception) {3-1}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

Table 5-13 contains the co-occurrence table generated for the “Specific Deliverables” in relation to the “Metrics” codes. Where the intersection cell in the table has a value (called the co-efficient value), it shows that both the deliverable and metrics codes were applied to the same quote. The magnitude of the value shows the intensity of the match. The table can therefore be used as a look-up table to determine what metric was used for a specific deliverable. The last column in the table indicates if the deliverable was also measured in terms of a quality metric, the detail of which can be

found in Table 5-16. The “Total” column at the bottom of the table is a total for the column of the metric, and shows the total calculated intensity for that metric in relation to all the deliverables. In this regard, it would show that “Accuracy Percentage” has the highest intensity (0.55) in relation to the other metrics in the table. The co-efficient is calculated as $c := n_{12}/((n_1 + n_2) - n_{12})$. (n_{12} = co-occurrence frequency of two codes c_1 and c_2 , n_1 and n_2 being their occurrence frequency).

Table 5-13: Co-occurrence of “Specific deliverable” and “Metric”

Code: "Specific Deliverable"	Accuracy Percentage	Checklist adhered to	Count	Customer Happy: Obj	Customer Happy: Subj	Delivery Date Achieved	Financial (Profitability)	Meet Service Level	Noise Levels (Perception)	On schedule	Productivity	Rating	Utilisation	Yes-No	Quality
Break-fix	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	N
Checklist	0	0.1	0.01	0	0.03	0	0	0	0	0	0	0	0	0.06	Y
Config Changes	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	N
Consulting	Only quality metric allocated														Y
Customer Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	Y
Data Captured	0.07	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Documentation	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Feedback	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0.03	N
Follow Process	0	0	0.03	0	0	0.02	0	0	0	0	0	0	0	0.01	Y
Intervention	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0	N
Manage Alerts	0	0	0.03	0	0	0	0	0.03	0	0	0	0	0	0	Y
Manage Incidents	0	0	0.11	0	0	0.02	0	0.07	0.06	0	0	0	0	0.01	N
Manage Devices	Only quality metric allocated														Y
Manage Service	0	0	0	0	0	0.03	0	0.03	0	0	0	0	0	0	Y
Manage Suppliers	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0	N
Marketing Material	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Optimisation	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	Y
Output	0	0	0.04	0.04	0	0	0	0	0	0	0	0	0	0.07	Y
Plan	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	N
Product (Software)	0	0	0	0	0	0	0	0	0	0	0.03	0	0	0.01	Y
Product (SW.Sale)	0	0	0	0	0	0	0.05	0	0	0	0	0	0	0	Y
Product (Test)	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	N
Product Docs	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0	Y

Table 5-13: Co-occurrence of “Specific deliverable” and “Metric” (Continued)

Code: "Specific Deliverable"	Accuracy Percentage	Checklist adhered to	Count	Customer Happy: Obj	Customer Happy: Subj	Delivery Date Achieved	Financial (Profitability)	Meet Service Level	Noise Levels (Perception)	On schedule	Productivity	Rating	Utilisation	Yes-No	Quality
Project	0	0	0	0	0	0.04	0.03	0	0	0.13	0	0	0	0.04	Y
Project Mng Docs	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Proposal	0	0	0.02	0	0	0	0.05	0	0	0	0	0	0	0	Y
Report	0.08	0	0.05	0.03	0	0.02	0	0.05	0	0	0	0	0	0	Y
Report: Dashboard	0.13	0	0	0	0	0	0	0	0	0	0	0	0	0.03	Y
Survey	0	0	0	0.13	0	0	0	0	0	0	0	0.09	0	0	Y
System Availability	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0.06	Y
System Capacity	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0.07	N
System Quality	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0.03	N
Task List	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0.03	N
Test Results	0.07	0	0	0	0	0	0	0	0	0	0	0	0	0	N
Timesheet	0.11	0	0.06	0.04	0	0	0	0	0	0	0	0	0.15	0	Y
Total	0.55	0.1	0.44	0.24	0.03	0.25	0.13	0.3	0.06	0.13	0.03	0.09	0.15	0.52	

The metric that co-occurred with the code for knowledge work with the highest intensity was “Quality: Perception”. The other codes are listed in Table 5-14.

Table 5-14: Co-occurrence: “Knowledge Work” and “Performance: Metrics”

Code: "Knowledge Work"	Accuracy Percentage	Count	Yes-No	Quality: Fit for Purpose	Quality: Knowledge shared	Quality: Perception	Quality: Project
Database	0	0.02	0	0	0	0	0
Documents	0.04	0.03	0	0.03	0	0	0
Graphics	0.07	0	0	0	0	0.25	0
Improvements	0	0.02	0	0	0.14	0	0
Learn	0	0	0.02	0	0	0	0
Lessons Learnt	0	0	0.01	0	0	0	0.06
Portal usage	0	0.02	0	0	0	0	0
Team work	0	0	0	0	0	0.11	0
Total	0.11	0.09	0.03	0.03	0.14	0.36	0.06

In addition to the answers received from managers in the interviews, individuals were asked in the team online questionnaires how they perceived that their performance was being measured (“perception”) and how they would like their performance to be measured (“preference”). In a shortened online questionnaire, managers were asked a similar question on how they measured performance. The preference of the individual respondents, analysed in a single dataset, was firstly to be measured on quality, thereafter on customer satisfaction, objective criteria and task progress, in that sequence. This corresponds to the individuals’ answers in the respective cases. From a visual inspection of frequency mapping, there also seems to be a high correspondence of the preference of the individuals (as a total data set) with the answers of the managers. The three related graphs can be seen in Figure 5-19.

Figure 5-19: Performance measurement method preference

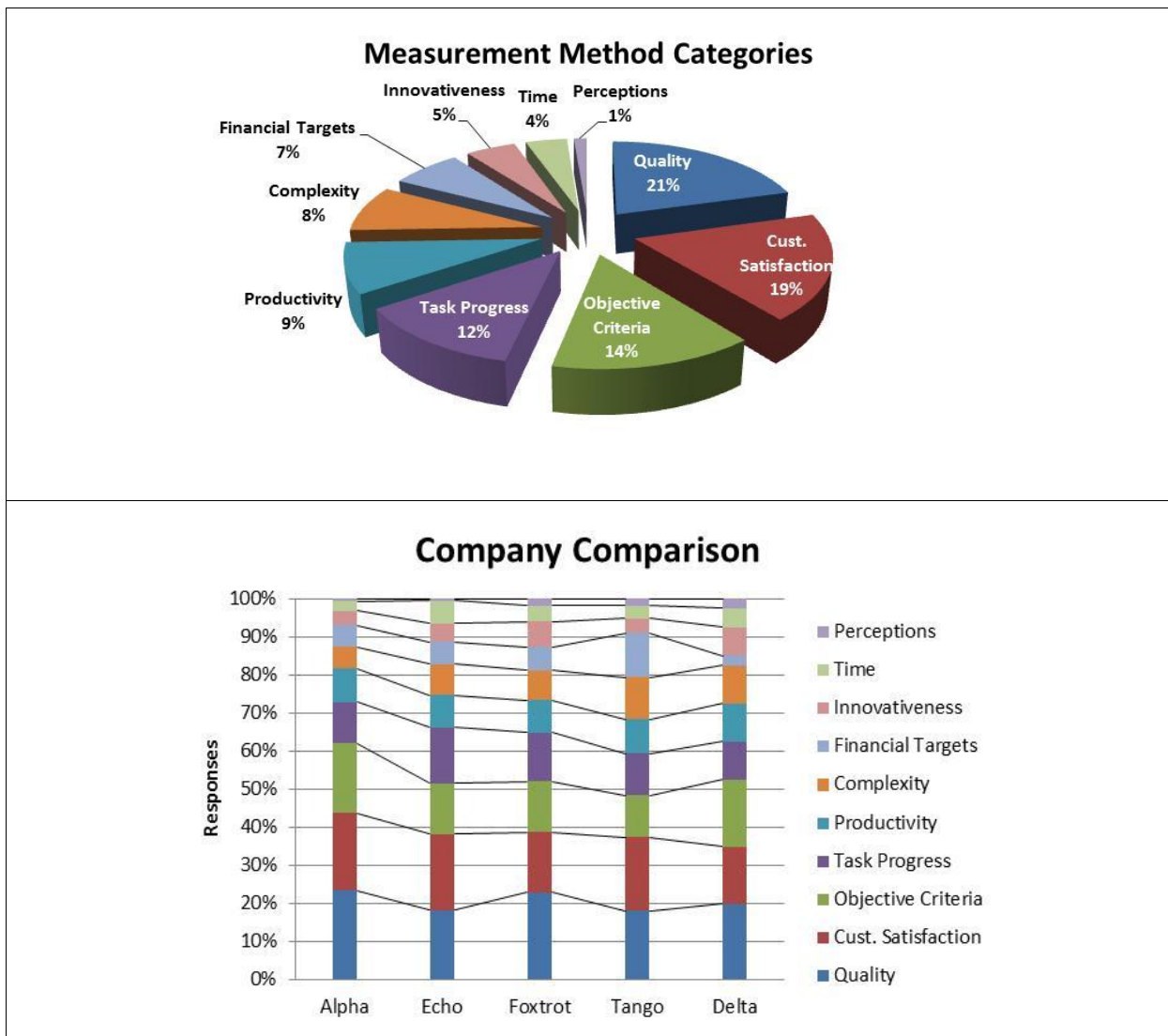
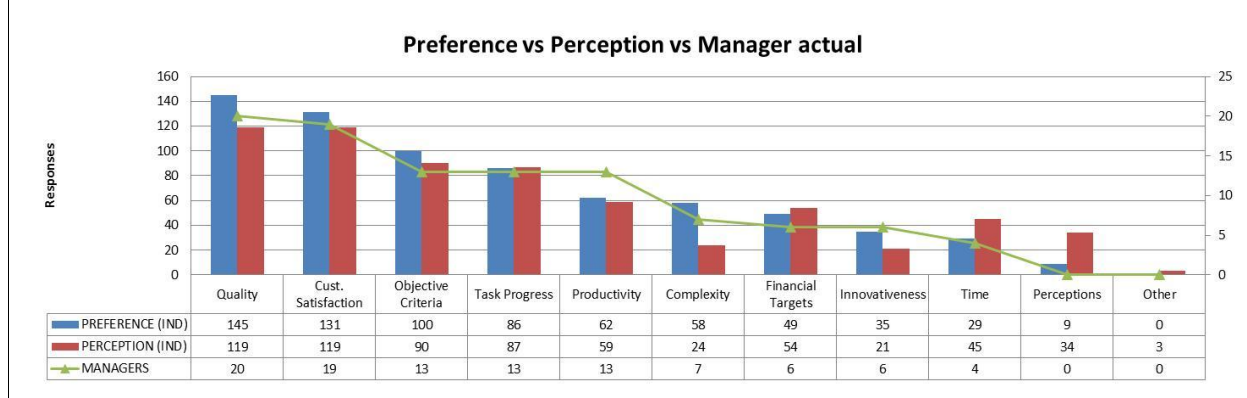


Figure 5-19: Performance measurement method preference (Continued)



5.4.1.5 Defining the quality of deliverables

Managers were asked how they would define quality of the work being performed, especially in the context of using this as an additional metric or way of evaluating the work of individuals. The codes and their descriptions are given in Table 5-15. In general, managers found it difficult to define quality. In some cases peer reviews were used. On the whole, quality relates to correctness and attention to detail regarding the deliverable; the value add that the deliverable is giving; whether the process was followed or correct templates used; positive feedback from the customers and meeting their expectations; the type of information and knowledge that is being shared by the individual; communication being correct and professional, timing related; embodiment of the values of the organisation; and lastly perceptions. There seem to be many objective and measurable items that form part of quality deliverables. However, when looking at the client requirement in determining a quality contribution, the question arises of determining what the actual requirement is, and how this can then be met or exceeded.

“It needs to meet and exceed the client expectations. The trick is really to find out what is the client looking for and what would meet their expectations. So it’s very much a balancing act between exceeding what the client expects and really understanding what they want. Because often what they say they want and what they do want is not the same thing. So it’s really working closely with the client and then translating that into stream and individual expectations.” P53 (232)

The quality measures should be part of the expectations that the manager needs to set up front with the team members. The different companies differed in the description of quality only to the extent that different products were being delivered.

Table 5-15: Code list: “Performance Metrics: Quality: Definition”

Description	Code	Category
Being accurate with predictions - monetary predictions. ; Being accurate with information in a document - cannot necessarily be counted. (Peer Review needed); Incidents addressed correctly.	Accuracy {11-1}	Deliverable correct and attention to detail
Number of requests successfully completed.	Success rate {1-1}	
Attention to detail.	Detail {3-1}	
Correct grammar and language usage. "spick and span" ; Also in written communication - correct addressing of the customer.	Grammar/Language {7-1}	
Enhancing functionality; Informed; well thought-through. ; Adding value (to customer; to service offering); Innovative.	Enhancing {9-1}	Value add
Fit for purpose or in other words "it works". ; Does not over-promise. ; "Proper" documentation. ; Addressing the right target audience (Report).	Fit for Purpose {16-1}	
Performance related to software program running efficiently, or providing result in acceptable timeframe. (Transaction response time.) ; Efficiency in sale process.	Performance {9-1}	
Definition of quality for a project specifically. In time, scope and budget.	Project {12-1}	
Thinking about the total system and not just one instance. ; Coding for all eventualities (good error handling) ; Keeping the total system in mind when designing a solution. ; Complexity of the solution.	Systems Thinking {4-1}	
Following the stated methodology.	Project: Follow methodology {2-1}	Process followed
Checklist or Audit values all above a certain agreed rating ("Green").	Checklist {1-1}	
How is performance benchmarked? Reference to benchmarking. ; Following the processes and standards prescribed by the industry frameworks such as ITIL; Using the framework or document template that was provided.	Standards {39-1}	
Following the process.	Way of work {6-1}	
Building a long-term customer relationship - the customer is willing to interact.	Customer relationship {1-1}	Customer (Panopticon)
Meeting customer requirements or expectations. Customer is happy.	Meet Customer Expectation {13-1}	
Other individuals or peers that review the work giving the go-ahead.	Peer review {8-1}	Peer review (Panopticon)
Number of inputs received. Contributions made to planning.	Inputs received {1-1}	Knowledge / information
Sharing of information, of knowledge specific to one individual, with others. (Could be verbally or via formal documentation.) ; "Customer" could also be the manager (i.e. delivering what was promised).	Knowledge shared {3-1}	

Table 5-15: Code list: “Performance Metrics: Quality: Definition” (Continued)

Description	Code	Category
Professional in communication, timeliness, and returning calls.	Professional behaviour {2-1}	Professional / Communication
Engaging with the right parties; Inclusivity. Including documentation and reporting.	Right communication {5-1}	
If less time is taken then this is seen as higher quality. I.e. quality = productivity. (Especially if the solution is complex); Delivering in a timely manner or on time. (Keeping the same code) ; Meeting deadlines (Does not show difficulty in setting and then achieving those deadlines).	Time {10-1}	Timing
Company values - adherence to and feeling comfortable with the values.	Values {1-1}	Values
Not first-hand, feedback received. ; General perception or gut feel.	Perception {8-1}	Perception

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

One can also see that normally not only one quality measure is considered at a time. In the statement below there are many aspects relating to quality. The first entails a basic standard of spelling, grammar and format, and peer reviews are used to check this. Secondly, the contribution must be short and to the point and the key message needs to stand out. Thirdly, this statement embodies the subjectivity of quality, in that it depends on the expectations of the specific manager.

“I have a rule that I don’t get anything that has not been checked by somebody else, specifically around spelling, grammar, format, because sometimes you are too close to it, to the deliverable, to actually see that. And also asking the question ‘So what?’; because we have to get a key message across to the customer in a short space of time. [...] But it often goes through quite a few iterations, especially if they have not done this before, or if they are new working with me. Because each project manager works differently. So it’s also getting used to who you are working with and what they expect.” P53 (240)

Managers were also asked if they made comparisons between team members regarding their quality of delivery. Most managers indicated that no direct comparisons were made, although it did seem to happen on a subconscious level. Moreover, only items that are actually measurable or factual can be compared.

“Each one has a different value in the chain that we do, so it’s a bit difficult to compare them. What I do compare is the common stuff, like the finances, the reporting, the production of a report, not the content obviously.” P47 (200)

While coding “Specific deliverables”, the metric or definition of quality was often used for the same phrase or quote. Those co-occurrences of quality metric and specific deliverable are given in Table 5-16. By selecting a deliverable in the left-hand column, and then looking at the heading of the column against the blocks with values in the table, one can determine the type of quality measurement identified during the interviews for that deliverable.

Table 5-16: Co-occurrence of “Specific deliverables” and “Metrics: Quality”

Code: “Specific Deliverable	Accuracy	Checklist	Customer relationship	Detail	Enhancing	Fit for Purpose	Grammar/Language	Inputs received	Knowledge shared	Customer Expectation	Peer review	Perception	Performance	Professional behaviour	Project	Project: Methodology	Right communication	Standards	Success rate	Systems Thinking	Time	Values	Way of work		
Consulting	0	0	0	0	0.1	0	0	0	0	0.07	0	0	0	0	0	0	0.17	0	0	0	0	0	0	0	
Customer Value	0	0	0	0	0.15	0	0	0	0	0.11	0	0.08	0	0	0	0	0	0	0	0	0	0	0	0	0
Report	0.05	0	0	0.03	0.03	0.07	0	0	0	0	0	0	0	0	0	0	0.03	0.02	0.04	0	0	0	0	0	0
Product (Software)	0	0	0	0	0	0.03	0	0	0	0	0	0.05	0.05	0	0	0	0	0	0	0	0	0	0.08	0	
Project	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0.07	0	0	0.02	0	0	0	0	0	0	0
Manage Devices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.17
Survey	0	0	0	0	0	0	0	0	0	0	0	0	0	0.17	0	0	0	0	0	0	0	0	0	0	0
System Availability	0	0	0	0	0	0	0	0	0	0	0	0	0.15	0	0	0	0	0	0	0	0	0	0	0	0
Report: Dashboard	0.07	0	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Product Documentation	0	0	0	0	0	0.04	0.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5-16: Co-occurrence of “Specific deliverables” and “Metrics: Quality” (Continued)

Code: “Specific Deliverable	Accuracy	Checklist	Customer relationship	Detail	Enhancing	Fit for Purpose	Grammar/Language	Inputs received	Knowledge shared	Customer Expectation	Peer review	Perception	Performance	Professional behaviour	Project	Project: Methodology	Right communication	Standards	Success rate	Systems Thinking	Time	Values	Way of work	
Documentation	0	0	0	0	0	0.03	0.05	0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0
Manage Alerts	0	0	0	0	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manage Service	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09
Optimisation	0	0	0	0	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Output	0.04	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Data Captured	0.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Follow Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0.06
Marketing Material	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Proposal	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Product (Software: Sale)	0	0	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Timesheet	0	0	0	0	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Checklist	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0
Project Mng Docs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0
Total	0.24	0	0	0.03	0.51	0.33	0.13	0	0	0.37	0	0.13	0.2	0.17	0.07	0	0.2	0.12	0.04	0	0	0.08	0.32	

Note: $c := n_{12} / ((n_1 + n_2) - n_{12})$. (n_{12} = co-occurrence frequency of two codes c_1 and c_2 , n_1 and n_2 being their occurrence frequency).

5.4.1.6 Control and trust

During the interviews, the words “control”, “standards” and “rules” seemed to be mentioned very often. Particularly in the companies providing outsourcing services to their customers, strict service levels needed to be adhered to and industry standards in service delivery applied. ATLAS.ti provides a function whereby a word count for all documents included in the hermeneutic unit can be done. Thus it was possible to test the perception regarding the use of these “control”-type words across the different cases. This showed that the word “standard(s)” (with its variants “standardise” and “standardisation”) was used 122 times in the documents that were transcribed. The words “control(s)” and “controlling” were used 94 times and the word “rule(s)” was used 79 times. This is opposed to the total count for the word “choice/choose” (and similar) which was used 27 times, and “free/freedom” which was used 39 times. However, the word “trust” (and variants, including trusted, trusting, trusts and trustworthy) was used 134 times.

The graphs in Figure 5-20 show firstly the word frequency in descending order for control-related words, and secondly how many times the word was used in each company in relation to the other companies.

Figure 5-20: Counts for “control”-related words

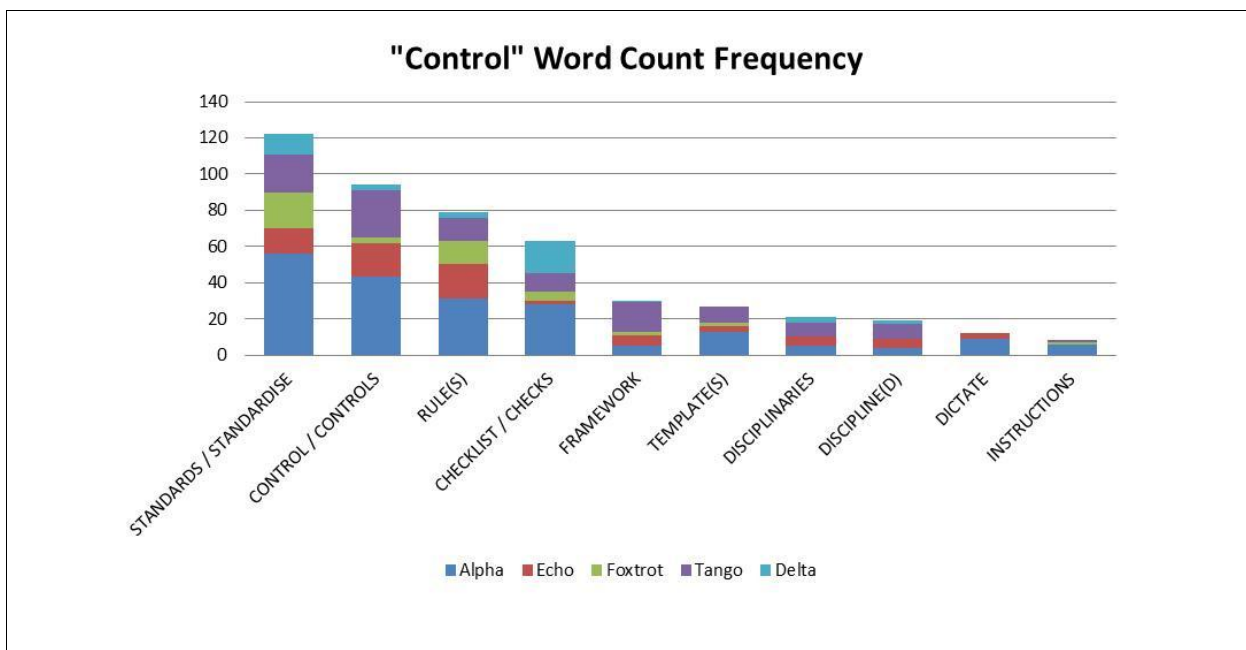
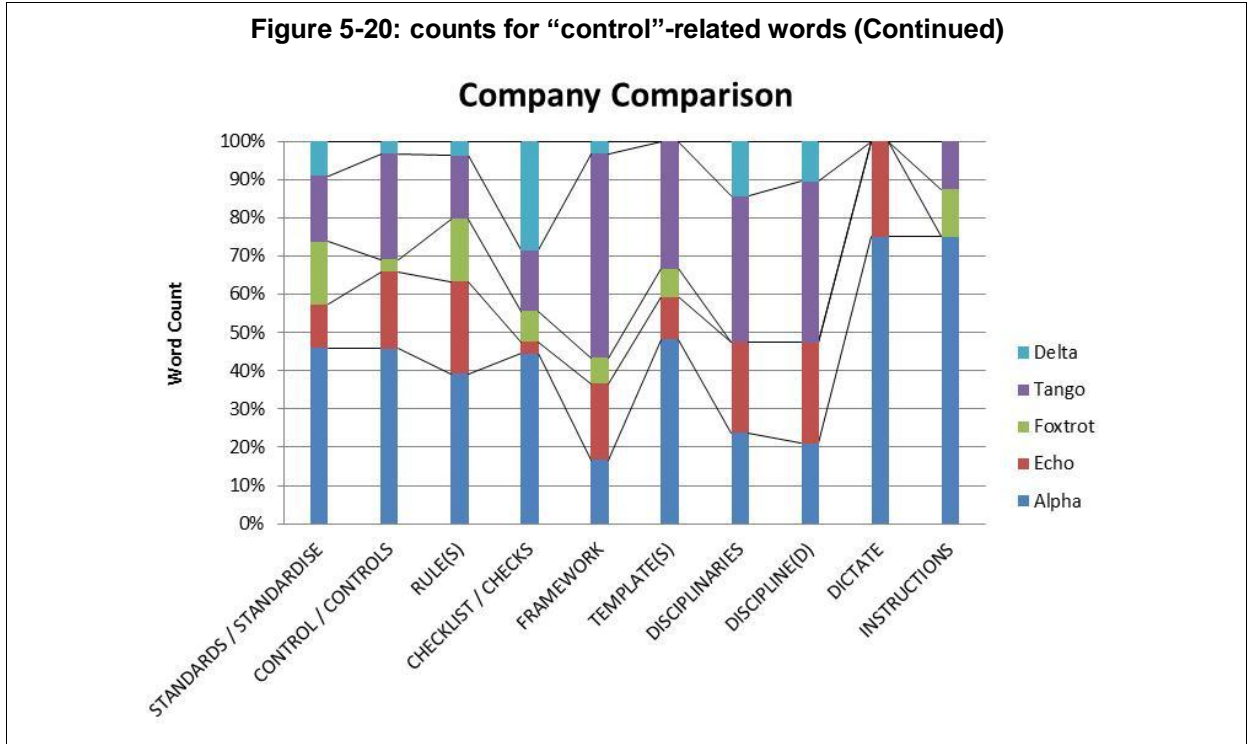
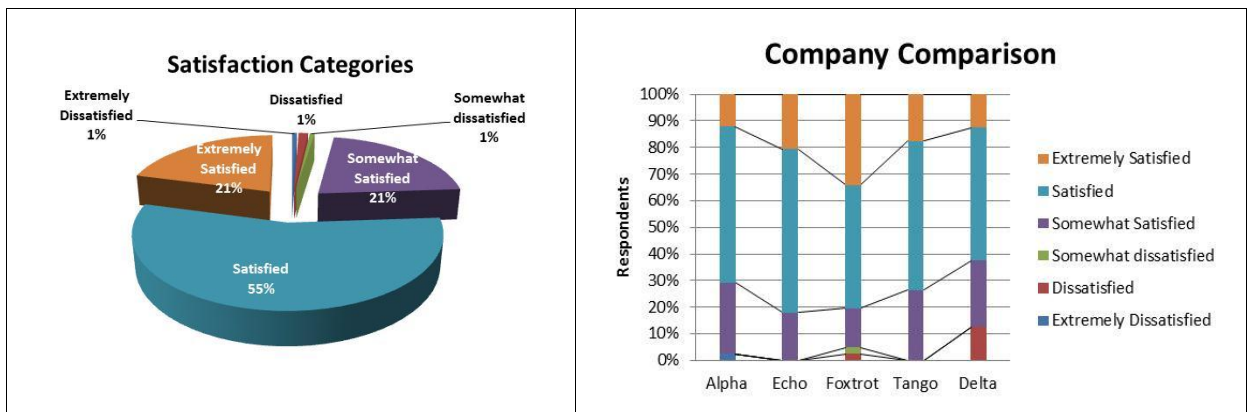


Figure 5-20: counts for “control”-related words (Continued)



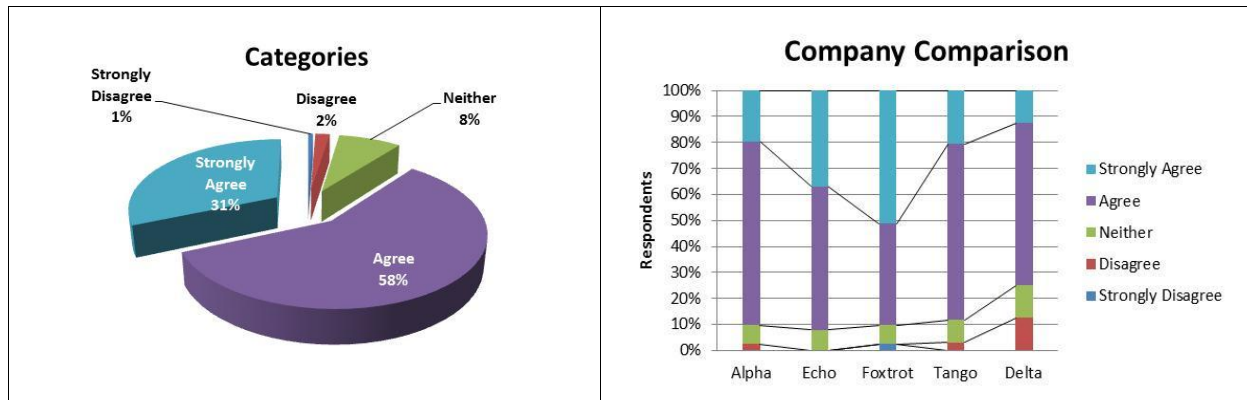
In pursuance of the question of control, individuals were asked various questions on control. Individuals were also asked how satisfied they were with the amount of control that they had over their work. When combining all three categories for “satisfied”, the majority of the individuals were satisfied (97%, of which 76% were “Extremely satisfied” and “Satisfied” combined) and only 3% indicated dissatisfaction. Individuals who indicated dissatisfaction were in Foxtrot and Delta. Echo was the company where most of the individuals were “Extremely satisfied” and “Satisfied”. This is shown in Figure 5-21.

Figure 5-21: “How satisfied are you with control”



The third question on control asked the individuals if the amount of control that their manager exerted over their day-to-day activities was acceptable. Eighty-nine percent (89%) of the individuals agreed, while 8% did not agree or disagree, and 2% disagreed. This is shown in Figure 5-22.

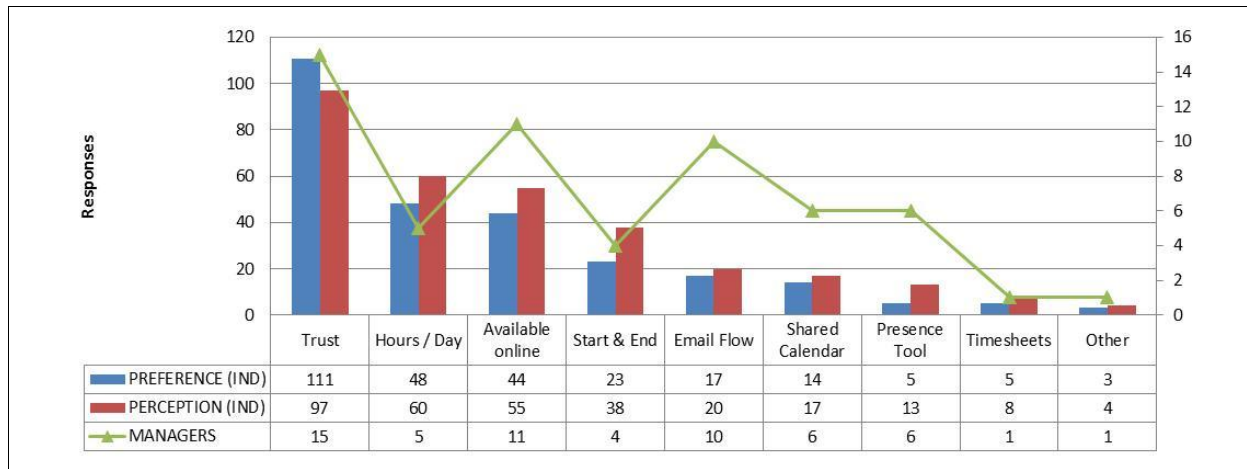
Figure 5-22: “Control by manager acceptable”



From these three questions it seems that individuals in general feel that they have control over their work, and that the managers are not exerting too much control, in spite of the number of times the managers actually mentioned the word “rules” and “standards” in the interviews.

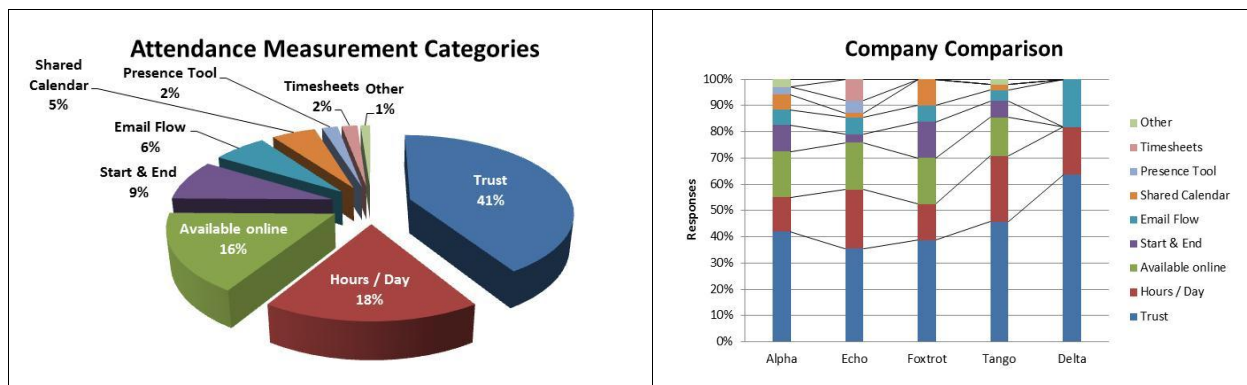
In the online questionnaires, a comparison was also drawn between how individuals would like their attendance to be measured, as opposed to how they perceived that their attendance was being measured. The managers were also asked how they measured or checked the attendance of individuals. The comparison based on the combined dataset across all companies is shown in Figure 5-23. In general, individuals wanted their availability to be measured more on trust and less on all the other categories. Managers said they used trust the most, but also availability online and email flow to determine if individuals were “available” while working remotely.

Figure 5-23: Attendance measurement: Preference vs. perception (Total)



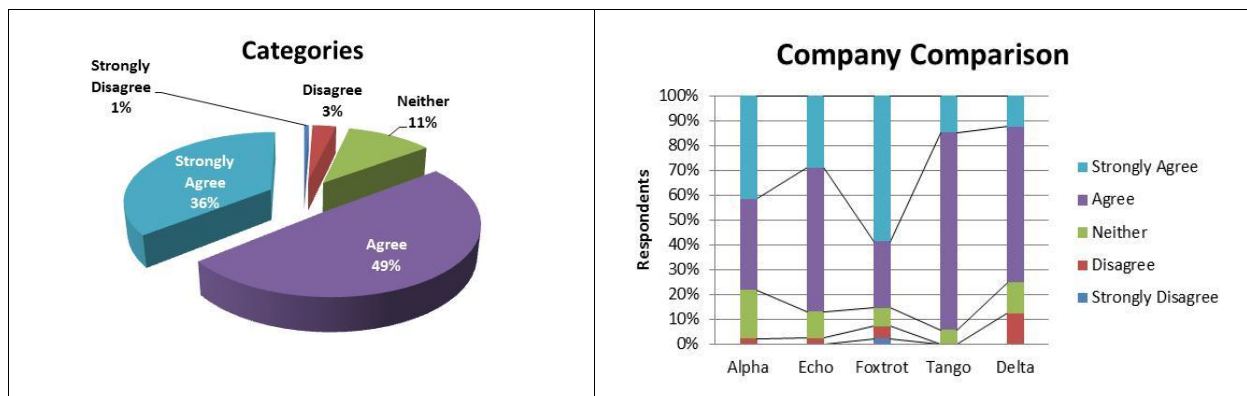
The preference of the individuals was further analysed, with the second-highest preference for hours per day and third-highest on availability online. The company comparison of preference is also given in Figure 5-24.

Figure 5-24: Attendance measurement preference



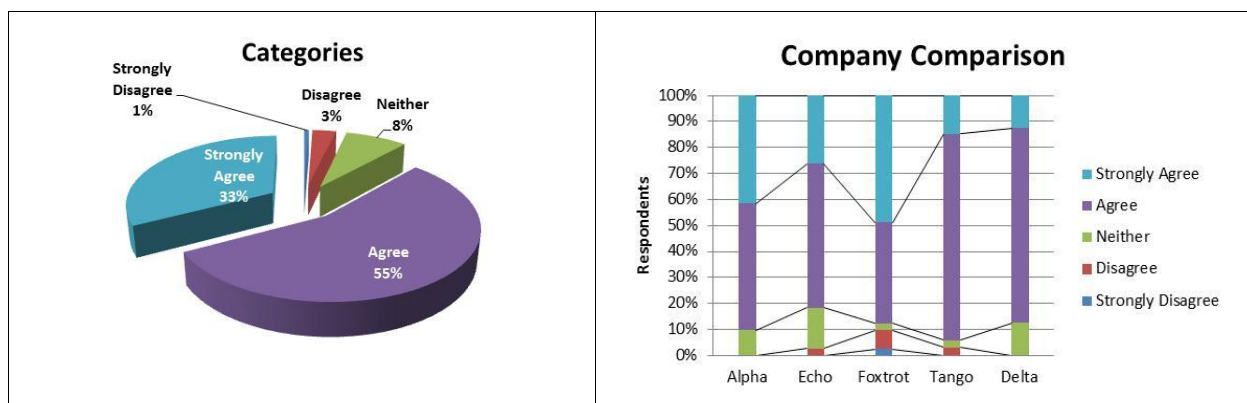
Individuals were specifically asked if they trusted their manager. Eighty-five percent (85%) of all individuals agreed that they trusted their managers. The highest measure of trust was found in Tango. In a similar online question to the managers, all of the managers agreed that their team members trusted them, except for one manager who neither agreed nor disagreed. The answers of the individuals are shown in Figure 5-25.

Figure 5-25: “I trust my manager”



Individuals were also asked if they thought that their manager trusted them. Eighty-eight percent (88%) of the individuals agreed, while in a similar online question to the managers, all of the managers indicated that they trusted their team members. The answers of the individuals are shown in Figure 5-26.

Figure 5-26: “My manager trusts me”



From these two questions there seems to be a gap between how managers trust (all managers trust their team members) and how individuals perceive this trust (perceived as somewhat less trusting).

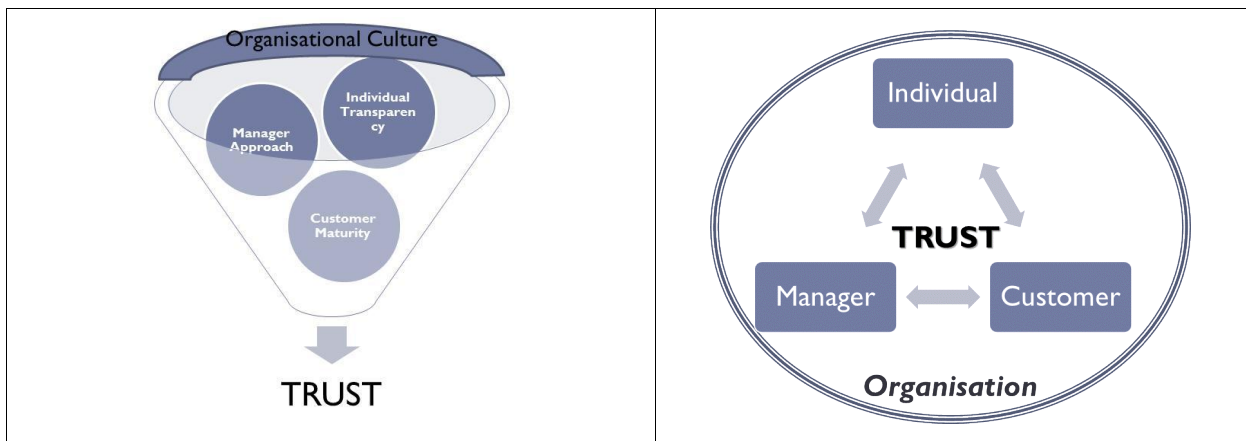
Trust also plays an important role during performance feedback. Some managers do feel uncomfortable with the feedback process, and feel that the formal performance appraisal gives the opportunity to bring non-performance and performance items to the table. Here the trust that is built up between manager and individual is important, so that a trusted individual would benefit from open and honest feedback. The manager needs to learn to translate perception (“gut feel”) into objective feedback,

and the individual needs to learn to reflect on comment given, rather than dismiss negative criticism as necessarily untrue.

“I think if we did some kind of a performance appraisal. I am not sure what we would do? Let me put it this way, I think from a performance perspective, I have a relatively good idea of how people are performing. I can tell you who in the team I think is kind of underperforming, and I can probably give you reasons why. I can tell you who is working, and although they are working and working all the time, but their results are not all that good. But I don't think it's easy for me to translate in a way that they would understand that. So I think that some kind of a performance appraisal would probably be good for them to see the results, and for them to see “oh, this is what they think of what I am doing”. P32 (459)

In consolidating the aspects relating to trust, four parties have emerged in the trust relationship, namely the manager, the individual, the customer and the organisation. The manager’s approach is important and includes his or her actions as enabler. The customer needs to become mature through experiencing good service from remote individuals. The individual’s contribution is transparency in activity through maturity and skill. These three elements exist within the organisational context, which could either enhance or diminish trust through the organisational culture and leadership, as in Figure 5-27.

Figure 5-27: Triangle of trust (including the organisational impact)



5.4.2 Managing Non-Performance

Managers also indicated how they managed non-performance. Managers seemed to want to do it as soon as possible, especially if there was a negative impact on the customer’s service. In this case the customer would also expect that the individual would be suitably reprimanded. The preference for handling these non-performance

situations was to have a meeting face to face, but it was often necessary to do this via telephone or other online medium. There were, however, some cases in which the manager actually preferred the remote situation when conveying difficult messages, since it was found to be easier to get the message across while not seeing the expression of the individual.

“It’s very nice to sit across a table and see a person’s body language to try and read that. But on a telco it’s quite nice, the part I enjoy is that I don’t know how the people are reacting to what I am saying, which has two things. I have to articulate very well what I want to say so that I am sure that I get my point across. And I don’t really see the guy who would potentially shrug their shoulders or throw their hands in the air. I don’t see that, so I carry on saying what I am saying. So people sense on the receiving end, people seem to listen to someone on the phone rather than interrupt you while you are talking. There are two ways and I prefer that because I think you get a lot more said on a telco.” P47 (239)

“And for the same reason of giving feedback. For example I don’t see you so I can give you constructive feedback and I don’t have to feel guilty about it because I don’t see your face on a daily basis.” P55 (194)

The next step is around resolving problematic issues, in which case the managers would obtain the facts, focus on the solution and involve the team where possible. In these cases it may also be easier to get the team together on site. Issue resolution is also facilitated by individuals keeping the managers informed in general, especially if they notice that something seems to be going wrong. The manager could then also “protect” the individual to a large extent from the customer.

“...within a team one of my mottos is, and I suppose the guys are tired of hearing this: “What I don’t know about I cannot help to defend you.” So if you tell me about something, I can always help or defend you or stand up for you.” P47 (206)

The manager will also assist the individual through coaching to ensure that the individual takes accountability and learns from the mistake made. Other actions include following the formal disciplinary process or doing a performance improvement review, or giving the individual a written warning. This is normally when HR would get involved in the process. In a case where the individual has been allowed to work remotely or from home as a privilege, this privilege would be revoked, and the individual would have to work at the main office location, until he or she has shown improvement. Should the individual not be able to cope with the type of work, he or she would be given an opportunity in a different team.

“My job, I do not see my job as monitoring. If a person does not do his job he will be replaced. I am not going to do it for him, he will do it for himself, or she for herself, whatever the case.” P46 (336)

A major consequence of non-performance is that the managers tend to revert to micro-management.

“However, when there is concern, or when I have suspicion about whether someone is really as active or working as hard as I think they should, then I might start to implement some small things where I can start measuring. Where I will say I’d like a list of: what demos did you do this week? What, how many cold calls or prospecting calls did you make? Maybe give me a plan for next week, what your goals are for next week, and then we are going to discuss how you performed against those. So, I only do that as a remediation step if something is not happening as it should be.” P35 (82)

“So I go in with a “You are competent, you will deliver and I will manager your outputs, until you miss deadlines or you give me poor quality”. Then I start becoming a more input-managed manager. So then I want to know where you are, what you are doing, and then I become a lot more hands-on. I kind of in the beginning throw a few activities out to see where the individuals are, and what their skill level is, and how much support they are going to need.” P53 (246)

The list of codes is given in Table 5-17, with the categories as described above also shown.

Table 5-17: Code List: “Performance: Manage: Non-performance”

Description	Code	Category
In some cases, activities need to happen immediately.	Timing: Immediate {14-1}	Timing
Will address later if not that serious. i.e. when have meeting (even if virtual meeting).	Timing: Later {1-0}	
The implication of face to face is that the manager may need to wait before the issue can be addressed.	Face-to-face {7-1}	Location
There is a certain expectation of the customer on how the individual should be handled.	Customer Expectation {2-1}	Customer
When things go wrong, the manager tries to protect the individuals (from the customer).	Protecting {5-1}	
Focus on solution and how to resolve.	Focus on solution {6-0}	Issue resolution
Indication of getting the facts first, before making any judgements.	Get Facts {16-1}	
Whole team is involved to resolve the issue.	Team involvement {3-0}	

Table 5-17: Code List: “Performance: Manage: Non-performance” (Continued)

Description	Code	Category
Want to change behaviour - focus on what went wrong.	Behaviour change {5-0}	Action taken
Coaching approach. Guidance.	Coaching {4-0}	
HR is called in to assist with managing performance that is not up to standard.	HR assistance {4-1}	
Less increase or no increase received	Impact on increase {3-1}	
Performance improvement review - formal process of review and improvement plan.	PIR {5-1}	
Following a formal process, called the disciplinary process, which is normally documented in the company's policies.	Disciplinary process {6-1}	
Either written, which would be part of the disciplinary process, or informal.	Warning {2-1}	
The person is removed from the team, either by the manager or by the individual resigning.	Remove from team {8-0}	
Mostly removing of the "Work from home" privilege.	Remove reward {16-1}	
Checking more regularly. More checkpoints.	Micro-manage {9-1}	Consequence
Adding another management layer.	More managers {1-1}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

There are, however, certain aspects of the manager’s approach that could cause non-performance, which are listed in Table 5-18. The first aspect is *distrust*. Individuals perceive the fact that managers require more detail on time spent as distrust and their performance will decline. In turn the managers employ more micro-management techniques. The objective would be to find a balance between obtaining sufficient metrics for the manager to feel comfortable that the individual is performing up to standard, and cultivating an environment that works on trust. The question needs to be answered “Why measure?”

“They build in so many controls and mechanisms to make sure that this poor soul is actually working from home, that the poor soul who should be working 8 hours now almost feels compelled to work 12 hours just to prove that I actually really did work. Which is defeating the purpose at the end of the day, because you are not making it easier, you are making it more difficult, but whether you are actually managing the productivity when they sit in the office does not come into play.” P49 (355)

Individual contribution:

“Less micro management from team leads and more involvement and compassion from senior management” P17 (132)

“I don't think that doing more of anything can be done for performance to be managed effectively. I would rather see performance management be less intrusive in order for myself to focus more on my work. I find that it can be too much of a distraction sometimes” P17(86)

The second aspect is that if the individual *does not understand the goals and objectives set*, the manager needs to spend more time to ensure that these are understood.

“But, the reality is that even though we have ITIL, people were given tasks by their team leaders and, you know, “Do this” and they wouldn’t know why. They didn’t care about deadlines or timelines. They didn’t care about; it’s a very careless thing to say but it was really an ‘I’ll get to it when I get to it’ instead of having the urgency.” P12 (29)

There could, however, also be a negative impact on service delivery *if the manager is not following the formal performance management process*, and making sure that individuals are suitably qualified according to the customers’ service level requirements. This could result in service penalties that need to be paid on organisational level, but could also impact negatively on the individual if he or she has not been assisted in improving performance.

HR’s perception of managers

“So the processes are there to underlie this. But the quality is not in the process because the performance management is not owned by the management. They see it purely as I need to do Performance Agreements for the company. HR wants me to do employee development discussions, so managers don’t own the process in terms of “why am I really doing this discussion?”” P49 (276)

Individual’s contribution

“People’s feedback, perceptions or your ignorance in not knowing what others think and feel about you, you might think that you are doing your best but the other end might not see or appreciate the effort being put in and you find out too late that there’s something that you need to work on. For me it would be great that if a manager gets a complaint of one faltering it should be raised immediately with the person or collectively without pointing fingers, so that one knows what’s the expectations of others and how to improve oneself.” P18 (42)

Table 5-18: Code List: “Manager: Approach: Impact”

Code	Description
Micromanagement {9-0}	Specific statement of how micromanagement degrades performance. Also too many metrics
Distrust {8-3}	Lack of trust and micromanagement.
Goals and Objectives {4-4}	Understanding or knowledge of the goals, or what is expected of the individual.
Not managing formally {3-0}	Impact on customer commitments if not managing the performance formally (through performance management processes)

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

5.4.3 Main Challenges

In addition to the limitations and challenges that managers mentioned related to virtual work, when asked about the main challenges that they faced in managing remote employees, there were three areas that stood out. *The first was communication*, in other words ensuring that everybody was on the same page the whole time. This could relate to the technical deliverables or to general organisational information.

“Communication, I think, is the single biggest issue. Single biggest problem. And I think communication on a personal level more than a; because it’s easy to send out an email. It’s even easy to tweet twice a day, you know, it’s easy to do that. But the sort of communication on a personal level is a challenge for various reasons.” P20 (139)

“So not just the formal business stuff, but the informal. Someone got engaged. Someone resigned, you know, whatever. We had a big win at a customer, and if we don’t over-communicate then you are going to get people that are surprised by news. And it can make you feel desolate sometimes, or kind of remote if you are surprised by that on a regular basis.” P35 (287)

Communication was found to be especially important when there were many remote workers or when the requirements of the customer were changing continuously. When at all possible, and where intensive collaboration was needed, managers would normally prefer to bring the individuals together.

“Also things change so fast. What you think the client meant after a meeting you have had this morning, you suddenly realise it’s not. And then you need to get everybody on the same page in changing course. And if everybody is all over, it’s quite a challenge getting them all back on the right page. So, and it happens often. They, things change daily. So you need to be able to get that message across and have people shift direction, shift gear, shift focus very quickly.” P53 (270)

Secondly, a major challenge was to build and keep relationships intact, both between manager and individual, and the relationships between the team members, which the manager needed to facilitate. This required a significant amount of effort from the manager’s side. Relationships build trust and build belongingness. Managers with mainly remote teams would often arrange for more social get-togethers than formal online meetings.

“It’s to keep them, it’s really that non-verbal communication, to have because, if you think about it, for example with all the permutations of person C talking to person A and they don’t understand each other, and they disagree to some extent, so I have to constantly, try and improve relationships among all the combination of the ten people that work for me. That’s what’s complicated. Because I know person A and I know person C. I know they are both great people and hard workers. But they don’t understand each other. So think of all the combinations of 10 people, you know, having to deal with each other. You know, everything cannot go through me, they have to deal with each other, and very, very difficult.” P34 (194)

Thirdly, the fact that it becomes *difficult to gauge the individual’s emotional state* when only using telephone or email. Managers indicated the importance of body language to understand the emotional well-being of the individual. In this context, other clues became important, such as a deliverables not being met that would usually have been met, or the fact that managers needed to listen more closely to what the individual was saying (or not saying). Visual clues were also used to assist in building the relationship with the individual.

“I like the interaction. So, I think, my feeling is when you don’t see a person, you don’t really connect to that person, and I’ve, that’s my feeling and I’ve experienced it with myself. If you don’t have that relationship with a person you will work differently. You react differently to that person.” P4 (196)

“But you tend to give more time to the region you are working in. Because now my office is open and anybody can come in. So they will rather come and speak to me here, than somebody that’s working offline. I won’t really know if there is actually a problem. But on this side I can look in somebody’s eyes and see if there is a problem.” P37 (241)

Other challenges mentioned could be categorised as organisational influences, insufficient tools, lack of visibility and differing customer requirements which make a single approach to work difficult.

“We usually have a weekly one-on-one meeting which I have moved to every 2 weeks, and I must say most of the year a lot of the cases, where there is operational pressure, that is the stuff that is the first thing that goes, which is something that we need to address, because it’s a problem. I mean if you weigh up sort of pressure on a delivery side between the client and this, you can always via mail catch up and I ask them to send me a weekly report with just highlighting the status in their areas.” P48 (60)

The list of codes to represent these challenges, are given in Table 5-19.

Table 5-19: Code list: “Performance: Main challenges”

Description	Code	Category
Difficulty in getting the same message across and communicating with a dispersed team.	Communication {18-4}	Communication
This is not necessarily a challenge for the manager, but for the individuals reporting to them. I.e. the individual feels the manager is not accessible enough (but also expressed by the manager).	Accessibility by individuals {1-0}	Relationship
When a new manager starts, getting to know everybody, pointing in the right direction, undoing the wrongs of the past, and building new "team culture" Manager reaching out to the individuals and the teams.	Building way of work {3-0}	
Effort to define the deliverables so that there is no misunderstanding between manager - individual – customer.	Defining the deliverables {1-0}	
When trying to meet everybody, the distribution of individuals makes it difficult.	Distance {2-0}	
Importance of selection and that people can work with the manager.	Initial selection {1-0}	
Not possible to get around to everybody and spend the personal time with each individual. Can create social isolation of individuals.	Large team {1-0}	
Motivating individuals and building team spirit. Sense of belonging / organisational culture.	Motivation {5-0}	
This is not necessarily the visual aspect, but the importance of the relationship and personal "connectedness". Also emotional support.	Relationship {11-0}	
Visual cues help to "connect" and build relationship.	Visual {9-1}	
Impact / Interference from organisational level.	Corporate impact {1-1}	Organisation
Matrix management of individuals - when not performing, who do you contact.	Matrix management {1-0}	
Work pressure - spending more time on issues and customer delivery than being able to have the regular team and one-on-one meetings.	Work pressure {1-0}	Organisation
Having the tools but they fail due to external factors (Suppliers; SA Bandwidth).	Tools Failing {1-0}	Tools
Not having the right tools - for either seeing or connecting to people.	Tools insufficient {1-1}	
The individual "disappears off the radar" and is not contactable. Also "knowing where the individual is". The manager needs to know where the individual is or at least be able to contact the individual.	Individual not contactable {2-0}	Visibility
Challenge is to manage non-performance or "consequence management" consistently. What do you do when you see something going wrong, or is the issue really you are not aware of something going wrong?	Managing non-performance {1-0}	
Feedback not received timeously. Manager not aware of issues.	Not informed timeously {4-1}	

Table 5-19: Code list: “Performance: Main challenges” (Continued)

Description	Code	Category
Differences in client’s impacts mean not able to provide single way of work.	Client Differences {1-1}	Customer

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

5.4.4 Technology and Systems

There are many IT systems used in the day-to-day management of virtual knowledge workers. These include systems that are used for both collaboration and communication, as well as those used specifically to measure and manage performance. In this regard, even systems used for communication may be used to determine how quickly a team member responds when contacted. Table 5-20 gives the list of all the systems that were mentioned during the interviews. Systems providing communication and connectivity were mentioned the most. The last column categorises the systems in terms of those used for the different types of deliverable, namely technical and knowledge, and systems used for administrative or measurement tracking. There are systems that are used for both technical deliverables which automatically provide the administrative measurements as well, for example the call logging, and systems availability type of technologies.

Table 5-20: Code List: IT Technology: Systems

Description	Code	Category
Communication systems such as telephone, email, Office Communicator (OCS).	Communication {61-1}	Collaboration
Technology systems used for socialisation (like Facebook). System where personal information can be shared.	Social Media {4-1}	
Video conferencing, for both formal "venue" teleconference or via webcam. Sometimes use customer’s facilities.	Video Conference {10-1}	
Relates to network (internal) and internet (external) connectivity. Network (internal) or internet (external). For own systems include ADSL. Customer provides connectivity in some cases.	Connectivity {37-1}	Collaboration Technical
Knowledge base, often SharePoint. Place to store documents.	Knowledge Base: {5-0}	Knowledge
Central facility where corporate applications can be accessed. Central point of access or portal which makes other applications available.	Portal {8-1}	

Table 5-20: Code List: IT Technology: Systems (Continued)

Description	Code	Category
Audit trails - what activities performed, by whom, when.	Audits {4-2}	Measure
Systems that are required for collaboration - where individuals need to work together to achieve an end goal. Includes systems used for email and processes.	Collaboration {25-1}	
Custom application for task tracking, leave tracking, location tracking - to assist in knowing where the individual is and if he/she is staying on task.	Custom Application: Own {2-2}	
Even though the company provides Microsoft Office and Excel, the spreadsheets are developed by the manager and not e.g. HR department.	Excel Spreadsheets: Own {5-2}	
Mainly related to the performance appraisal systems. Managers often provide extension for the data provided by the organisational system.	Performance Mng {18-2}	
Tools or systems that aid reporting of measurements, like the call logging systems. Additional report templates. Additional dashboards.	Reporting {6-2}	
Calendar on which the activities / meetings / location can be seen.	Shared Calendar {1-0}	
Health checks, customer surveys.	Survey: Own {2-2}	
Systems to assist in managing tasks such as SAP, Outlook tasks or customer applications.	Task Tracking {12-2}	
Systems to log and keep track of time that are provided on organisational level. Additional timesheets.	Timesheets {8-2}	
Availability also = Presence.	Availability {4-2}	Measure / Technical
Call logging system. Important for incident management and measurement of service levels for incident resolution. May be combined with timesheet system.	Call Logging {12-2}	
Technologies that can measure how much has been used, e.g. bandwidth, disk space, size of mailbox.	Consumption {3-2}	
Using an Enterprise Project Management (EPM) tool. Additional checklists created out of the EPM tool. The EPM tool is provided by the company.	EPM {1-1}	
Monitoring of the environment for the service. Environment Monitoring, not monitoring of the individuals.	Monitoring {4-0}	Measure / Technical
Applications or Business Systems. These are normally systems that are used for transactional processing. Also coding in general "office" applications.	Applications {9-1}	Technical
Various back-end corporate applications, e.g. mail, and active directory.	Applications: Backend {2-0}	
Configuration Management Database (CMDB). Very important in the ITIL sense.	CMDB {1-1}	
Corporate Anti-virus systems.	Anti-virus {1-0}	Security

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

The diagram in Figure 14-9 in Appendix E creates a visual representation of the IT systems that are either provided from organisational level (top part of the diagram), or

that the managers have created themselves (bottom part of the diagram, also suffixed by “Own”). The centre of the diagram shows those systems that are provided from organisational level, but enhanced by the managers for own use, or where alternative own systems were created. Many systems have been extended to suit the needs of the managers, and allow for more efficient reporting in terms of virtual work accomplishments.

As shown in the combined category of “Measure/Technical” above (Table 5-20), IT systems can assist in making the gathering of data and processing of performance-related metrics quicker and more accurate, especially where systems are more integrated and unobtrusive. On the other hand, using too many tools either becomes cumbersome for the individuals, or creates the perception that the manager does not trust the team member.

“I don’t really know how to answer that. But I think our system, our internal system makes it easy because you can actually track the amount of work we’re doing and you can see if the individuals are doing what they say they’re doing. They have customers which they have to service every day. So I think that, I don’t... that makes my life easier. I don’t think it makes me a better manager. But having that tool to my; access to that tool makes it easier for me.” P19 (301)

“Sjoe, there are fancy tools that you can look at exactly what people are doing. But then it also becomes a trust issue.” My manager wants to deploy all these tools to check that I am doing my work.” And I find that that usually just puts the trust level at a very low. Because I mean “We don’t trust in you, you need to check every minute what I do.” P48 (348)

When asking the individuals about day-to-day measurement...

“It should be measured most certainly. We use a Helpdesk tool that assists in tracking and logging time on tasks and calls we are busy on. Although we need to enter the hours worked on a task when completed.” P26 (8)

Some systems that require a lot of effort to populate them in order to obtain the resultant metrics, such as timesheets and tasks lists, are often perceived by individuals as micro-management, since a lot of effort is needed to capture all of this data accurately. Also this links to the perception of individuals being measured on time (hours per day, start and end times and timesheets) (Figure 5-23), whereas they prefer rather to be trusted to deliver the required outputs.

And that is available on this tracking tool. They then either at the end of the day when they've finished or, as and when they've finished the task they go in and they actually fill it out. We explain to them it's not micro-management but it is ensuring that we have, the

maturity is there and that we have the understanding that while you have the privilege we also need you to show and prove that you are doing what you're saying.” P7 (82) “

Managers said that they also realised that systems could break or be manipulated, and therefore should not be seen as the only way in which performance is measured. This links to one manager who used multiple “data points” to evaluate individuals (as mentioned under the codes for “Manage: Performance: Monitor”).

“Yes, they are your biggest help, but they can also be your biggest constraint. Because obviously a tool is something that can break. A client or an agent on a machine stops working. That can affect your availability or your SLA figures like “this”. We actually see that a lot.” P48 (160)

“Because trust plays a huge role in this, in my opinion. You can have systems, but systems can be manipulated. For me trust plays a huge role in this thing. And I believe that when people feel they are trusted, then they would perform better and they would produce more. Definitely.” P20 (395)

“So over the years I have put a lot of things in place that make it easier to track things, etc. [...]...but also doing this kind of reporting, I go into the tickets, I can see who is getting the compliments, you know. So it's that kind of you get a perception based on many different data points throughout your working year, of how people are doing” P34 (501)

5.5 PARAMETERS AFFECTING PERFORMANCE (RO2A+B+C)

5.5.1 Organisational and Contextual Parameters (RO2a)

RO2a: To analyse and describe how the **organisational context** affects the performance and outputs of virtual knowledge workers.

There are parameters that impact on performance which fall outside the control of the manager and the individual. This implies that it does not matter how well the deliverables are planned or measures stipulated, there are aspects that will ultimately affect how performance can be managed. These include organisational factors such as cost cutting, support from executive level for virtual work, and the implementation of matrix management. There are other impacts as well, such as the bigger context of culture in the different provinces, South Africa's status on remote work implementation and other general internal impacts. The paragraphs below will look at these elements in more detail.

From an organisational side, the first element is the *organisational leadership*, its impact on *organisational culture*, and the support that the leadership in general gives for remote or virtual work that will allow it to flourish. In Alpha, Echo and Tango, where specific virtual work policies did not exist, the extent to which virtual work was allowed within the different business units was totally dependent on the senior manager of the business unit.

“Exactly. And that’s one of the key things about Foxtrot, you hit a key note there. There is a great culture here. Coming from the CEO, he is an exceptionally nice person, and there is; he has built a team prior to my coming, a technical function with the company a very, very bright people, very nice people, very personable people, and there is generally a sense of family and caring within the organisation.” P35 (296)

“I don’t think they have an issue. My boss, my boss’ boss, they’re very flexible. They also know that, Tango is not heavy on you have to be here in the office at eight and you have to leave at five type of thing, we, it’s not in our culture. Our culture is you work off-site, you work at home a lot, so you’ll find a lot of people will tell you, “I work a lot until ten-eleven o’clock at night,” you’re going to get that a lot. And they do, because when I’m working, people are answering their emails.” P45 (463)

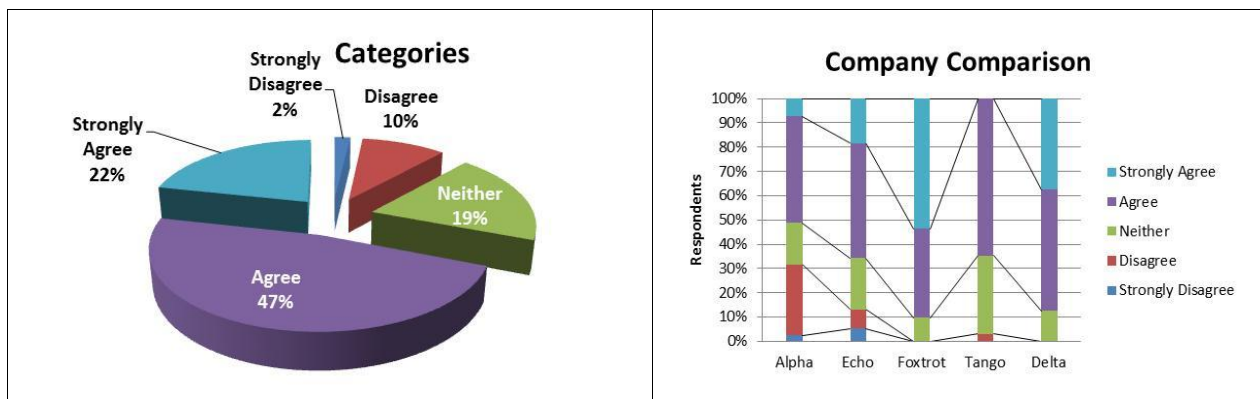
“And I think the great thing about the way we work is that it is the champion of this whole initiative is our COO. He has been adamant, he said that he has worked differently since he was and audit trainee. I think it’s just that independent nature.” P55 (82)

Another impact on leadership level was *the next level up* (from operational level) senior managers. They needed to feel assured that individuals who were working remotely were actually producing. This created the necessity for additional tracking tools and monitoring requirements.

“The bigger question is how I prove to senior management that the guys are busy. So that’s more the challenge to me and we’re hoping that the task tracking and that will fulfil that role.” P9 (329)

Individuals were also asked if they believed that the *organisational culture* supported virtual work. Sixty-nine percent (69%) of individuals agreed, while 12% disagreed and 19% neither agreed nor disagreed. Foxtrot was the company in which most individuals agreed, while close to 50% of the responses in Alpha indicated uncertainty or disagreement. These percentages are shown in Figure 5-28. These responses seem to correspond with the comments relating to the perception of the organisational culture as perceived by the managers.

Figure 5-28: “Organisational culture supports virtual work”



The *organisational design* has an impact on virtual work and management of performance. This can relate to the size of the company, which will have an impact on the levels of leadership required. For Foxtrot and Echo, the business unit was effectively “the organisation”, making the CEO of the organisation also the senior manager for the “business unit”. The other companies all had at least one additional layer of senior management, before reaching the CEO level in the company. In the organisations with the flatter reporting structures, the managers and individuals seemed to be more in touch with what policies allowed, and the vision of the CEO was much more pertinent to the different teams. For the larger organisations, matrix management was also used because of the complexity of how services were being delivered to the customers. This left individuals confused as to whom they should try to “please” in terms of their performance. Having a parent company also had its advantages and disadvantages. On the one hand, additional international skills were available, but on the other hand, rigid procedures and processes were being instituted by the parent company, which did not always support the way of work in South Africa.

Organisational structure:

“A flat organisation structure seems to suit highly skilled knowledge workers well. Power games and politics don't have any place in any professional organisation---let alone one with extreme knowledge application demands. Working in such a relaxed, informal environment makes it easier to meet the complex demands of knowledge work.” P39 (129)

Matrix management:

“I get that from the managers, the project managers. Because they're not going to, the consultants don't, they won't inform you that, you know what, because, it's difficult for them. Let me put it this way; I had a one-on-one last night with somebody and he said to me: “Why do I have five managers?” And I said to him: “Okay, let me explain to you.” Because, he works for me on a project, and he also has, works in the support centre on several customers, now, every customer has a customer service manager, so now he's got five

customer service managers and then his got this project manager and then he's got me, you know. And he said to me: "Why do I have so many?" then I kind of explained to him, "Okay, this is why; how the whole thing works." So, they find it challenging to give you feedback, because sometimes they don't know who do they give feedback to?" P45 (445)

Parent company: (Positive and negative)

"I think it does have quite an impact, because being an International company it's quite prescriptive, and often the timelines and requirements are not well aligned to where the local, to where the business locally is from a priority and life cycle perspective." P49 (30)

"No, I can tell you we are in the fortunate position that we have an International parent so we probably have the latest and greatest and the best available to us, while if it is just a local organisation, you are just bound to what is available in South Africa." P46 (405)

The category of *strategy* includes elements that are related to strategy or policy within the organisation, such as general strategy, having an additional panel that would review performance ratings, being a very process-driven organisation and company-wide interventions such as cost-cutting exercises. The table below (Table 5-21) shows the list of codes relating to organisational level impact, and also indicates which ones had a positive or negative impact in the companies under review. Cost cutting, which would normally have a negative impact, actually had a positive impact on the occurrence of virtual work as such, since managers were forced to hold more online meetings, rather than visiting staff in the regions more often.

Table 5-21: Code list: "Impact: Org level"

Description	Code	Pos.	Neg.	Category
Organisational culture.	Company Culture {42-2}	X	X	Organisational culture
This is for the Leadership of the company as opposed to the direct senior manager of the team.	Exec Level {6-2}	X		Organisational Leadership
Either CEO of company mentioned, or Leader of that particular business unit is mentioned.	Senior Manager {46-3}	X	X	
The way the company is structured will indicate the autonomy individual business units have. Also the size of the company.	Org structures {10-0}	X		Organisational Design
Multiple managers for one individual.	Matrix Management {3-3}		X	
Impact that the project manager in projectised environment has on the individual.	Other managers {11-0}			

Table 5-21: Code List: “Impact: Org level” (Continued)

Description	Code	Pos.	Neg.	Category
Reference to parent company or overseas company that has controlling shares.	Parent Company {17-3}	X	X	Organisational Design
Company Strategy or Business Unit strategy - impact on defining the performance metrics and goals for the team members.	Overall Strategy {3-3}	X		Strategy
Relates to the organisational impact or context the organisation creates in terms of cost cutting and other financial implications.	Cost Cutting {26-3}	X		
Governance process to review the statistical distribution of ratings that managers have given the individuals.	Panel reviewing distribution {1-0}		X	
Following process for the sake of following process. (Tick-box mentality).	Following process only {3-0}		X	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

In addition to the organisational-level parameters described above, various contextual factors affecting performance were mentioned. These include the absence of the visual, geographical parameters, situational parameters, external parameters and metrics.

The absence of the *visual* was once again mentioned as a factor that affects how performance is managed, and how well the manager is able to understand the needs of the individual. To compensate, listening becomes important because of the absence of visual clues. The manager also needs to be observant and sensitive in terms of differences in quality of work coming from the individual. One manager, who was working from home due to the geography of the organisation and its customers, had never seen some of the members on the team, not even in the interview. In these cases a deeper observation and review of multiple inputs became important.

Listen / Observe

“Like if I’m in a conference call with somebody I would listen more carefully to what the guys are saying and if I start picking up the guys voice or he isn’t giving the real facts on the table that I’m aware of, things like that, then I after the meeting I will get on the phone and say: “Hey, what’s happening? Something is not right.” So you need to learn, I think you need to pick up a different type of skill as well - is to listen to people and try to figure out is there something wrong or maybe not.” P11 (185)

Multiple inputs

"Well of course we are trying to see if we can meet up with them. But just from a budget standpoint it's not always possible. So I really rely on three things. Interviewing them over Skype obviously. I send them emails. So I interview every single step of my contact on telephone calls on emails obviously the questions you ask them in the actual interview. I speak to references extensively. I let them do a written evaluation. I get a personality test done by my HR. So it's a multi-step process. And I also, my clues from not the answers to the questions, but how their interactions are. How they communicate; are they on time, things like that; so demeanour and so forth. So I rely a lot on those things, because I do not have the visual or non-verbal communication in a conversation that you have when you sit across from an individual." P34 (58)

Geographical parameters refer to the culture in different regions, the culture in different types of customers, and South Africa as a country not being supportive of virtual work in terms of bandwidth constraints. Time zones also have an impact, in that communication between teams who are distributed over the time zones is much slower.

"Durban and Cape Town - they're on the beach and they sometimes are very laid back. But we're getting them to a point where they need to understand what is urgent as well. I must say, we; in the beginning I battled quite a lot to get documentation and things out of the guys because it's like Douglas Green, it's every other buddy's problem but not his." P11 (173)

"And obviously when we made the decision to open the US office, it had a tremendous impact on the throughput within the development team, and that needs to be managed a bit more formally. Having people in the different regions developing, you do have a project plan or something like that, one can continue work themselves." P31 (117)

Situational parameters or immediate work situation, imply that the performance will be different depending on the situation, for example the type of call, the nature of the problem that needs to be resolved or other work coming in and reprioritisation having to take place. The manager especially needs to assist with reprioritisation.

Level of difficulty

"No, the kind of issues that we do get on our side is usually not easy to resolve, first line is pretty thorough by now, and we taught them all the tricks over the years. The stuff that does get escalated through to the development, is a lot of times, ja, sometimes it's easy, but sometimes it might take days to get it resolved, and for a few reasons." P31 (237)

Prioritisation

"And in that I strongly focus on what is priority, what needs to get done, to focus the team to get the important stuff done. I think we've got a saying in the team. When I say, you know, "die sous en die kool" then we know, we leave... we just do the important parts. We make sure that what we do we do very well, and that takes time. But then you need to know which are the important things to do. So many times there is stuff falling off the table, but it is not the important tasks. So we try to focus our attention. And then I've got meetings with the CEO to make sure I know what is that focus that we need to keep." P30 (210)

Also, *co-located individuals*, in other words those closer to manager, can more readily get access to the manager, by walking into the office of the manager and discussing issues face to face. Another parameter that has been grouped under the situational category is the fact that the individuals need to have fun. This can be facilitated by a more flexible management style, in which the manager makes time for socialising and fun activities and sets less strict measures because the situation will dictate if the measures are relevant. Also if the individuals tend to be self-managed, they work more autonomously. A less proceduralised organisational culture can also support this.

“Yes, yes, it helps on the motivation side, and like I said earlier, we kind of try and hire people who really enjoy programming and technology and stuff. So they are kind of self-motivated to do the stuff because it is fun for them.” P32 (337)

“But my colleagues are awesome, I get on with them very well. We have a really good friendship at work, and we are full of jokes and we have fun. If it’s not fun anymore then; then I won’t do it, it needs to be fun.” P50 (454)

External impacts are from various stakeholders, like the customer, external suppliers, the individual’s personal situation and from other teams. From the customers’ side, they can dictate what performance measures to use, which could be either positive or negative. They could also be using the wrong benchmarks to compare performance against, which would imply that they perceive non-performance, rather than performance. External suppliers could also have an impact if their work is incorrect, but it reflects negatively on the team’s performance. Internal suppliers or teams can also have a negative impact on a specific team’s performance, especially where there is a chain of events or workflow that must be followed to reach the final deliverable to the customer. The last item categorised as external is the individual’s personal circumstances, which could also have an impact on how the individual is performing on a day-to-day basis.

Customer impact

“My role, you must remember in an operations environment, if anything goes wrong at any client, the first place that they look is in the operations environment. And 99% of the time, you find that after investigating an issue, find that it is a client that changed code a while ago it was not tested, or all the conditions was not tested properly. And the problem occurs 2 or 3 weeks after the change was put in. This is really 99% of the problems can be traced back to a change that was made in the last 2 weeks.” P46 (50)

Personal circumstances

“And I think that is that other side of life of a person that you’re not always aware of. What’s

happening in his life - you want to know if his children are doing well at school or receiving certificates. You know things like that. That is also important and I think that factor is sometimes missing from remote management.” P11 (191)

“But, inherently people don’t just slack, and I’ve really found that they don’t slack, you know, there’s normally something, if somebody doesn’t perform, there’s normally something going on and nine out of ten times there’s something at home that’s bothering.” P45 (246)

Using the right *metrics* is also important, and can have an impact on how well the individual is deemed to be performing. This is especially difficult where the manager had to take into consideration individual differences; in other words, not expecting the same level of detail from all individuals. It is also difficult where measures are inherently subjective, and where the products or services are complex. The impact on performance if one is not measuring is that one would not be able to determine when things started going wrong.

The list of categorised codes as described above, is shown in Table 5-22, as well as whether the parameter was described as having a positive or negative impact on performance or the management thereof.

Table 5-22: Contextual parameters impacting on performance

Description	Code	Positive	Negative	Category
Seeing individuals face to face. "Seeing" the emotional state through body language.	Importance of Visual {53-1}	X	X	Absence of visual clues
Region (e.g. Gauteng vs. Cape Town culture); Type of industry (Mining, Retail, and other); SA as country.	General Context {19-4}	X		Geographical
Multiple time zones where customers are. Communication impact.	Time Zones {4-0}		X	
Scarcity of specific skills.	Limited skill availability {2-0}		X	Situational
Co-located vs. remote individuals.	Not in same location as manager {1-0}	X		
The situation dictates.	Situational {5-0}	X	X	
Cyclical requirements of work.	Peak periods {1-0}		X	
Total set of tasks that the individual has.	Other tasks {13-0}		X	
Importance of work enjoyment.	Having fun {5-0}	X		

Table 5-22: Contextual parameters impacting on performance (Continued)

Description	Code	Positive	Negative	Category
Customer can dictate. Customer using the wrong measures. Customer causing issues.	Customer {19-4}	X	X	External
Dependent on other team delivering the work in time. (Internal supplier).	Other teams {8-0}			
Personal factors.	Personal Situation {1-2}		X	
Third party could be a vendor or supplier.	Third Party/External {3-3}		X	
Everybody needs to do everything. Complexity of products.	Complex product {1-0}		X	Metrics
The way that the service is measured.	Complex service {2-0}		X	
Individuals deliver differently.	Importance of Individuality {2-0}	X	X	
Performance difficult to measure (and improve).	Measurements subjective {3-0}		X	
Impact on performance management if not measuring.	Not measuring {1-0}		X	
Supporting technology from HR / organisational point of view to support the internal processes.	HR tools not available {1-0}		X	Technology limitations

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

5.5.2 Managerial Parameters (RO2b)

RO2b: To analyse and describe how the **approach of managers** affects the performance and outputs of virtual knowledge workers.

5.5.2.1 *General managers' approach*

Part of research objective 2 is understanding the impact that the manager could have on the individual's performance through the manager's experience in his or her field, the manager's assumptions about remote work, and who the manager is as a person ("I am" statements made).

The managers' assumptions on remote work have been grouped in six categories. The first group pertains to reasons why remote work is not necessarily supported, the second group pertains to the fact that remote and virtual work is seen as the new way of work and therefore something to encourage; the third group pertains to the fact that there are parameters that need to be kept in mind that will determine who can work remotely, or what kind of work could be performed remotely; the fourth group pertains to general contextual parameters, for example the state of virtual work in South Africa; the fifth group pertains to the management style and way of measurement, while the sixth group is associated with who the manager is and his or her general technical experience. The related code list and descriptions are given in Table 5-23. (The network diagram is available in Appendix E, Figure 14-10)

Table 5-23: Code list: “Manager: General remote work”

Description	Code	Category
Technologies challenging Difficult to change mindset (manager training) Fear of the unknown and not willing to take the risk.	Difficult to learn/Mindset {13-1}	Reasons why not remote
Manager has little experience in virtual work.	Experience-Low {3-1}	
Keeping work at work and home at home.	Home not place of work {1-1}	
Preference for face-to-face interactions	Like face-to-face {5-1}	
Virtuality is de facto for this kind of work (Sales) Nature of the job dictates flexibility.	Accepted way of work {4-1}	New way of work
Advantages of virtual work.	Advantageous {13-1}	
Virtual work as a privilege.	As Privilege {4-1}	
Manager is familiar with virtual work.	Experience-High {29-1}	
Just a way of work that becomes a lifestyle.	New way of work {8-1}	
Technology makes remote work possible (e.g. 3G).	Technology enabling {16-1}	
Different age groups respond differently to remote work.	Age Impact {13-1}	Remote work parameters
Personal differences can affect who wants to (individual's decision) and who would be more suited (manager's decision) to work remotely or from home.	Personal Differences {35-1}	
Hours worked per day. Hours available per day. Time off for time spent.	Timing {5-1}	
Type of work that should <i>not</i> be done remotely.	Type of work {18-1}	
Rules related to who will be allowed (i.e. merit assessment must be above certain number).	Who Allowed {7-1}	

Table 5-23: Code list: “Manager: General remote work” (Continued)

Description	Code	Category
Reasons why organisations still exist.	Purpose of Organisation {2-1}	Contextual
South Africa not as mature as European or American countries.	SA Maturity {19-1}	
The situation will dictate if virtual work possible.	Situational {13-1}	
Measure performance based on outputs.	Easy to measure {1-1}	Management Style
Guilt drives individuals to work when they are at home.	Guilt {1-1}	
Specific management style might be more suited for managing remote workers. Maturity of managers.	Management Style {17-1}	
Remote work will only work if there is trust (manager to individual).	Trust needed {20-2}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

Looking at the personality of the managers or the fundamental “I am” statements made during the interviews, the following two statements illustrate quite clearly and significantly how two managers differ in their approach to virtual work on the basis of their personalities. The fact that the managers understand their own strengths and weaknesses assists them in handling virtual and face-to-face situations respectively. This was found in all the companies of the multiple-case study.

Manager wants contact and face to face:

“I know that sometimes it’s a necessary evil <referring to online tools>, but that is one that I prefer to work around. But not everybody needs to be as connected. For me the strength in who I am and what I do lies in my ability to connect and read people and motivate them where they are at, and when I am removed though some barrier I struggle to make those connections and reading them.” P53 (357)

Contrasted with...

“I am personally an introvert, so I loved working virtually. And not having to engage with people constantly on a day-to-day basis. [...] So in a way you can control the level of interaction that you had.” P54 (52)

“And I personally loved it, again because there was a barrier. To me people stress me out, and I always had this barrier I had email, and I had telephone and it suited my personality style 100%. Also I mean I could give you negative feedback, and this is also maybe going to sound quite harsh, but I did not have to worry about the consequences and look at your sulky face for the rest of the day, you know what?” P54 (164)

All of the managers have extensive experience in their field of work, which helped them to understand the requirements of the task at hand, as well as the challenges

that were being faced by the team members. Prior experience in a different type of position was also used to define the way of work for the current team.

“I think being aware of what the job entails; keeping on top of that, I think is a very good one. Now it’s not that I want to blow my own trumpet. I think you need to know what the job entails and what can be done and what cannot be done. That helps a lot. So honesty, understanding what the guys are having to do, understanding the boundaries of what the clients are potentially requesting and what the individuals are capable of.” P47 (257)

5.5.2.2 Managing virtual workers: Changes and differences

The first aspect of managing virtual workers is to determine whether there has been a *change in management approach since starting to allow individuals to work virtually*. One of the managers indicated that he became less formal, and allowed individuals to follow their own methodologies, rather than trying to enforce rules that he would not be able to monitor. Another manager, however, felt that more structure and official check points were needed. In general, managers did agree that they changed from a rather micro-management approach to trusting more. They also had to learn to use and rely on technology for communication. One manager also felt that she had to become more creative to ensure that she could get the best out of her employees, with individuals trading flexibility for longer or different customer working hours.

Less structured...

“I would say, that probably the biggest change that I have made over the years as I have gotten more and more virtual people, I have become, let me say it "less structured" in terms of how I manage them. And I have placed a much, much bigger emphasis on the hiring than on the management. I am very, very picky and careful about hiring someone, much more so that I would be if they were co-located with me. So that’s probably the biggest thing I have done. I have realised just how critical, just getting the right person to begin with, is.” P35 (214)

More structured...

“So that means that a lot more time needs to be spent up front to make sure that people can go away for a while and that what you will get back will not be a waste of that time that they have been away. So you also need to set up more official checkpoints” P53 (260)

More trust, less micro-management...

“I would say it is back to the whole trust thing. I mean trust is sort of an underlying point here. Perhaps when I worked in the office before, I did more micromanagement than I needed to do.” P36 (233)

Using technology...

“When we became the new Tango with the merged company in, I think I had to rely more on electronic means of communication. The Lyncs of the world and the email overall, and lots of telephone calls. I think that so, I believe I work with telcos a lot of the times. We do a lot of telco discussions, when they guys are far away. Even when the guys are up here we have a telco discussion and talk about whatever we need to talk about. I think I rely a lot on

technology so to speak” P47 (221)

Being more creative...

“...I have to be more creative daily, with how I manage people, to get the best out of them. It's not about just getting the best out of them, it is their happiness as well.” P22 (185)

As a second element, the managers were also asked *what part of their management approach had proven to be most successful in their management of virtual workers*. Managers felt that communication was important, and needed to be transparent. Regular meetings, even if they were relatively short, assisted in keeping the relationship healthy. In addition, setting of goals and delivery dates also helped to focus the individual's effort. The managers also felt that once the targets and expectations were set, it was important to give the individuals autonomy and trust them to achieve the goals. One manager compared this with the Theory Y management style of McGregor (1957). The managers also felt that their technical experience helped them to better understand the challenges the individuals faced. Some managers also felt that the success was dependent on the individual's buy-in, skill level and maturity in the situation.

Regular meetings / contact

“So I think those regular meetings work well. Even if you don't really have something to discuss, it's better to have the meeting, and say well we have nothing to say, so let's talk nonsense for 5 minutes and then we will carry on with our work. Rather than, oh we will arrange a meeting when we have something to say, because then you end up never speaking.” P32 (323)

Transparency of communication:

“It's really just about communication, communication, communication. So, just because someone is remote it can't be out of sight, out of mind, for them and for me. And it's not just me communicating with them; it needs to be the team also communicating. So you need to get them to even if they are working remotely, there has to be touch points, there has to be getting together” P53 (277)

Tasks and delivery dates

“So I think having specific tasks to work on just lets people focus and they know what they are supposed to be doing, so that's why I think that's good. This is what you have to get done in the two weeks. So generally if there is a bit of a deadline people tend to work a bit faster (work towards that) Yes, yes, otherwise you think oh well I can take as long as I want, and you just sit and spin your wheels basically.” P32 (322)

Trust and autonomy

“I think that's probably the key thing is that it's the old productivity argument about Theory X and Theory Y, you know, if you brow beat someone and you know, stand over their shoulder you are going to get exactly what you ask for out of them, but if you enable them and empower them, and support them, you can get so much more. You know, you're not capping their potential.” P35 (220)

“I think from my perspective, and as I have evaluated it, I believe the communicated mandate back to the individuals and after the mandate is this communicated, not meddling to the extent where the trust of giving that mandate is questioned.” P13 (199)

Experience:

“I have all the knowledge of the people I am managing at the moment so I can relate to them on a technology or on a product level.” P19 (307)

Individuals contributing

“It’s not really a management approach. The people supporting me have accepted responsibility, and they know what their job is.” P46 (318)

Thirdly, in terms of their *approach between co-located and remote workers, as well as between different remote workers*, managers all agreed that they measured both co-located and remote individuals in the same way, since the deliverables and processes were still the same. Although the measurement and general approach to performance management remained the same, managers did individualise their style to suit the personality of the individual when working with an individual. Managers did, however, feel that sharing knowledge, involvement in issues and general communication with co-located team members still came more naturally, and an additional effort and formalised communication was always needed for remote individuals.

“So the end result is I treat them exactly the same, the approach is exactly the same, the bit in the middle is different. And it’s the bit in the middle that makes it personal, which makes me probably more of a personal manager, rather than someone that stands on top and looks down.” P22 (117)

“So I think, in my mind it is, have they delivered what was promised? Doesn’t matter where they sat or where they worked. So that’s why I say, I haven’t specified their IPA criteria differently, because I don’t see them. P4 (46)

“No, I certainly don’t consciously split them into two groups, but I certainly respond to the individual personality differently.” P6 (196)

“I think the measurement is the same but maybe just on the motivational side and building culture within the team the more virtual workers and the more widespread they are the more difficult that’s gonna become. But measuring them I think it should be the same, whether they work here or remotely or virtual. Ja. That’s my closing comment.” P19 (500)

Lastly, managers were also asked *how they would change their approach going forward*, in other words how they would manage differently in the future. One of the areas mentioned was to bring in more systems for measurement, tracking and reporting. One of the key advantages that managers see in additional integrated systems is to take away some of the administrative burden in creating objective reports to view the performance of their team members, and to have more measurements at their disposal. Managers would like to see additional or more accurate measurements around time, knowledge contributions made, financial information (utilisation and billable hours) and usage of systems.

"I think there's some fancy tools out there that could assist us a lot. Those tools, if you use them, they will make your management easier." P2 (360)

"But with this new system that we are building, we will have reports that will say, so-and-so had 12 issues this month, 6 of them were resolved within the same month, 6 of them are still outstanding, and have charts to come out of that. I just don't have the time to measure every single aspect I would like to. So my measure is: is the client happy; am I making money; is the consultant happy." P21 (175)

"I want to implement it online in like a SharePoint portal, where I can actually see visibility of the stuff, I want to be able to survey all the customers, I want to define the metrics, I want a common set of metrics that we use. And I want to see that stuff so that I can look and see where I need to focus my attention." P8 (97)

Individual confirmation from open-ended questions:

"Without micro-managing, expect to understand how days/weeks are spent in terms of productivity. Like an activity report of sorts." P40 (21)

Another item that ranked high on the managers' "to do" list for future improvements was more face-time and more regular meetings. Due to time and operational pressures, individual and team meetings were often postponed or cancelled, and managers felt that they were losing contact. Also additional site visits or more video conferencing were required, to see the individuals more regularly.

"It's something that we want to get to is to have monthly, just monthly sort of one-on-ones not from an IPA point of view, but just interactive - getting to understand what's been happening." P7 (9116)

"Ag I think you know, its perhaps to get closer to my managers, because I think in some cases, I do feel that I have been absent, and I did not give them the right or the kind of support that they were entitled to, perhaps that the other managers could have given their guys. So there is more on that level. It's not you know to specifically change the way I am managing, just to move closer to them, and to be a manager for them" P44 (443)

"As I said, I don't have that much experience, but I think to use more Skype and to just not Communicator. I think it is important to look the person in the eye. It doesn't need to be over a table it can be over a network. I would do more of that." P4 (388)

Obtaining more customer feedback via interviews or online surveys was mentioned by a few managers. This was confirmed by individuals who indicated in the open-ended questions that they would prefer their managers to obtain more feedback from the customer, since they were spending most of their time on the customer's site. As part of the project management methodology, there are questionnaires that the customers have to fill in to comment on the project manager and the success of the project.

Managers also wanted to make more opportunity for knowledge sharing, or even establishing a community of practice, making use of the online tools to establish better collaboration and sharing between individuals and teams. An important aspect of this is the communication in general. This was mentioned as one of the main challenges, and managers indicated that they would want to address this through creating a communication plan, or by using the online tools more effectively.

The managers and individuals from Foxtrot emphasised the importance of the collaboration that was needed for design and development. In this regard, even with their task-tracking, call-management central knowledge bases, they found that smaller co-located teams were invaluable.

“For future projects we are attempting to break larger teams of people into smaller co-located teams that function independently yet report on a regular basis to a core management team that serves to co-ordinate the full process. Despite advancement in communication technologies a great deal of implicit communication is lost when one attempts to communicate complex concepts such as software designs over electronic media. Often concepts have to be repeatedly communicated and long stretches of development may occur with a misunderstanding of a concept, thus requiring rework.” P43 (5)

Other elements of improvement included in some cases formalising the IPA or ensuring there was more value in the process, making sure that the rules of flexi-time were better known and applied across the board, trusting more, monitoring less, having smaller teams with more managers, focusing on the selection process to appoint the right individuals, and focusing more on the individual and their contribution through more regular one-on-one sessions.

5.5.2.3 Manager responsibilities

The “Manager Responsibilities” code was used as a code group in addition to “Manage: Performance”, to show activities and responsibilities of the manager that might not be related directly to the initiating, planning, executing, monitoring and controlling codes as used in the general management of performance, but would still contribute to the well-being of the individual and thereby facilitate good performance. The codes have been grouped into five higher-level categories. (Refer Figure 14-11 in Appendix E for the network diagram)

5.5.2.3.1 Communication and organisational change management

In the first group there are two activities that relate to *communication and organisational change management*. The manager needs to make sure that the messages from organisational level are relayed in an open and transparent way to the teams. The stakeholders participating in communication were the organisation, the manager, the team, the individual, other internal units, managers or teams, and the customer. By reviewing the communication instances between these stakeholders, a communication matrix was created for each company in the study. This was used to evaluate whether communication was happening sufficiently on all levels. An example of such a matrix is provided below in Table 5-24.

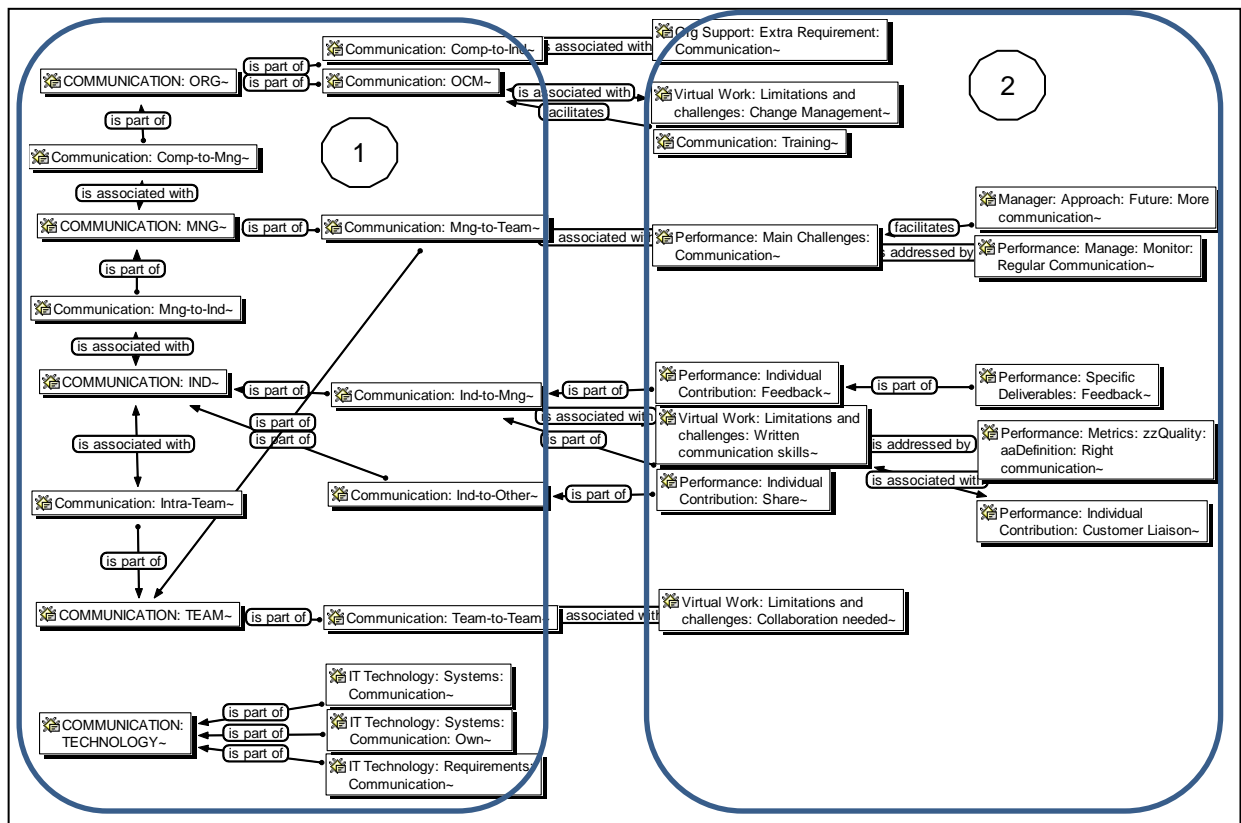
Table 5-24: Communication matrix (Example of one company)

FROM TO	Organisation	Manager	Team	Individual	Other - Internal	Customer
Organisation		L	X	X		
Manager	L		M (Team meetings)	H	X	L (Only exception)
Team	X	H	L (Other Teams)	H	X	M (Where on site)
Individual	L (Session with Exec)	H	M (Intra Team)	H (Intra Team)	X	H (Where on site)
Other – Internal		L (Teams isolated?)	L	L (Matrix mng)		
Customer	X	M	L (Projects)	H	M (AE's)	

Key X=None mentioned; L = Low; M = Medium; H = High

A code network representing the communication theme is now presented in Figure 5-29. Most of the elements of communication as found in the literature reviews were also present in the current study. The diagram shows the interrelationship between the organisation, manager, individual, team and other communication codes (Block “1”), as well as how the elements of communication address certain of the limitations and challenges of virtual work and management of virtual performance (Block “2”).

Figure 5-29: Theme – Communication



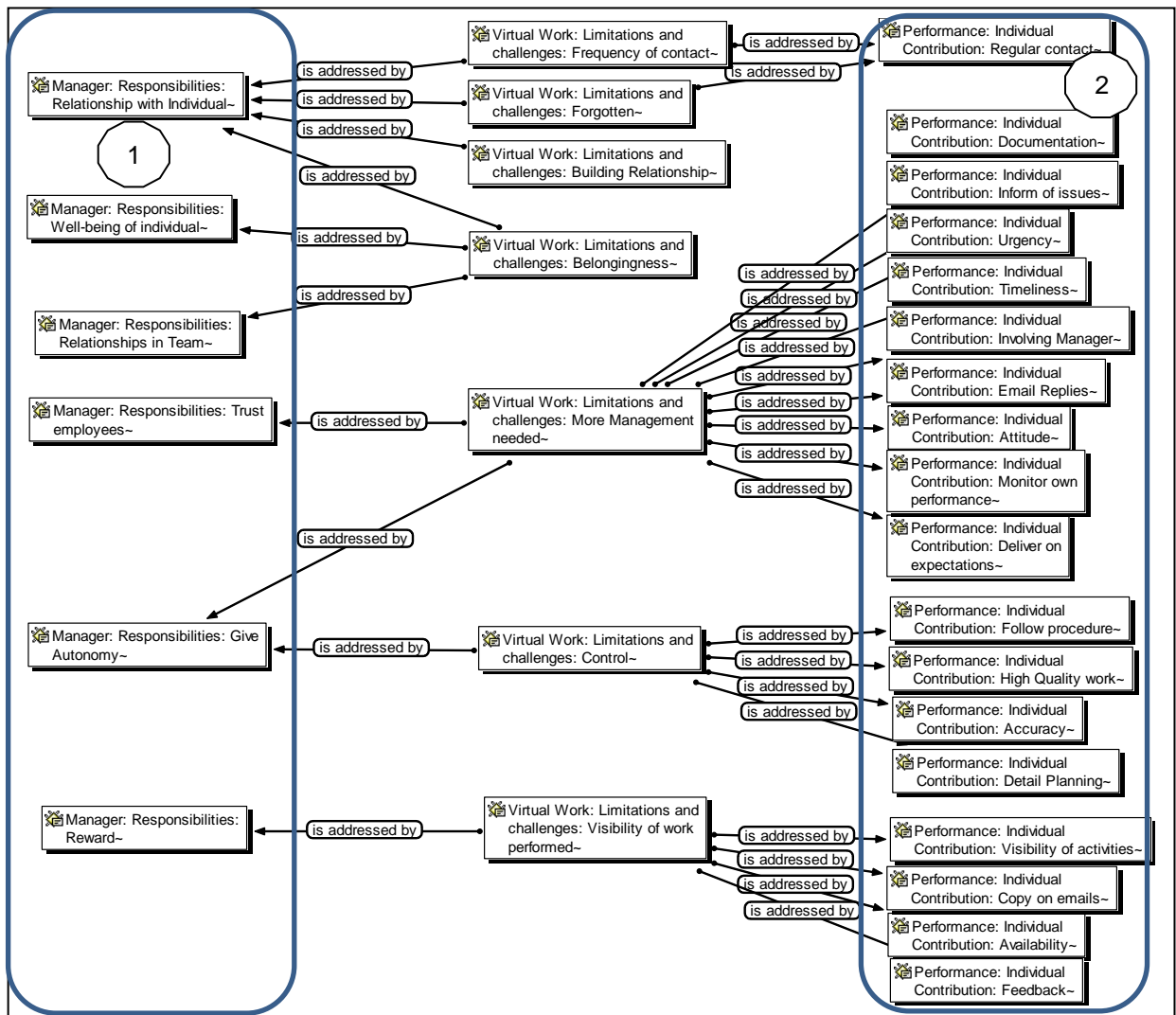
5.5.2.3.2 Focus on the individual

The second group places *focus on the individual*. The manager needs to trust the individuals, and build relationships both between the manager and the individual and within the team. The importance of this activity is shown by the fact that the groundedness of the relationship responsibility was 92 in total for the combination of individual and team relationships. This is in contrast to the next-highest figure for groundedness of 38 for both “Support and accessibility” and “Set specific measures”. In addition to the relationship, the manager needs to look out for the well-being of the individual. While relationships might lean more towards “sympathy”, well-being links to the concept of empathy. An example is where the individual might have wanted to work some more, and the manager, in order to make sure that the health of the individual is looked after, rather advises the individual to get some sleep. Well-being may also be expanded to giving the individual the right salary increase or the right level of job or allocating the right customer fit. The elements of “Reward” and

“Exposure” were also classified under the “EXECUTE” category of “Manage: Performance”.

The codes for “Manager: Responsibilities” that form part of the category of “Focus on the individual” are now also mapped to limitations and challenges of virtual work in Figure 5-30. The manager responsibilities address some of those issues (refer Block “1”). In keeping with the importance of the individual, the individual’s contribution to addressing some of the challenges is mapped as well (refer Block “2”). Relationships create a sense of belonging and ensure that the individual is not forgotten. Trusting and giving autonomy reduces the need for additional management. Rewarding individuals publicly gives visibility of their contributions to the senior levels of management in the business unit.

Figure 5-30: Focus on individual – addressing limitations and challenges



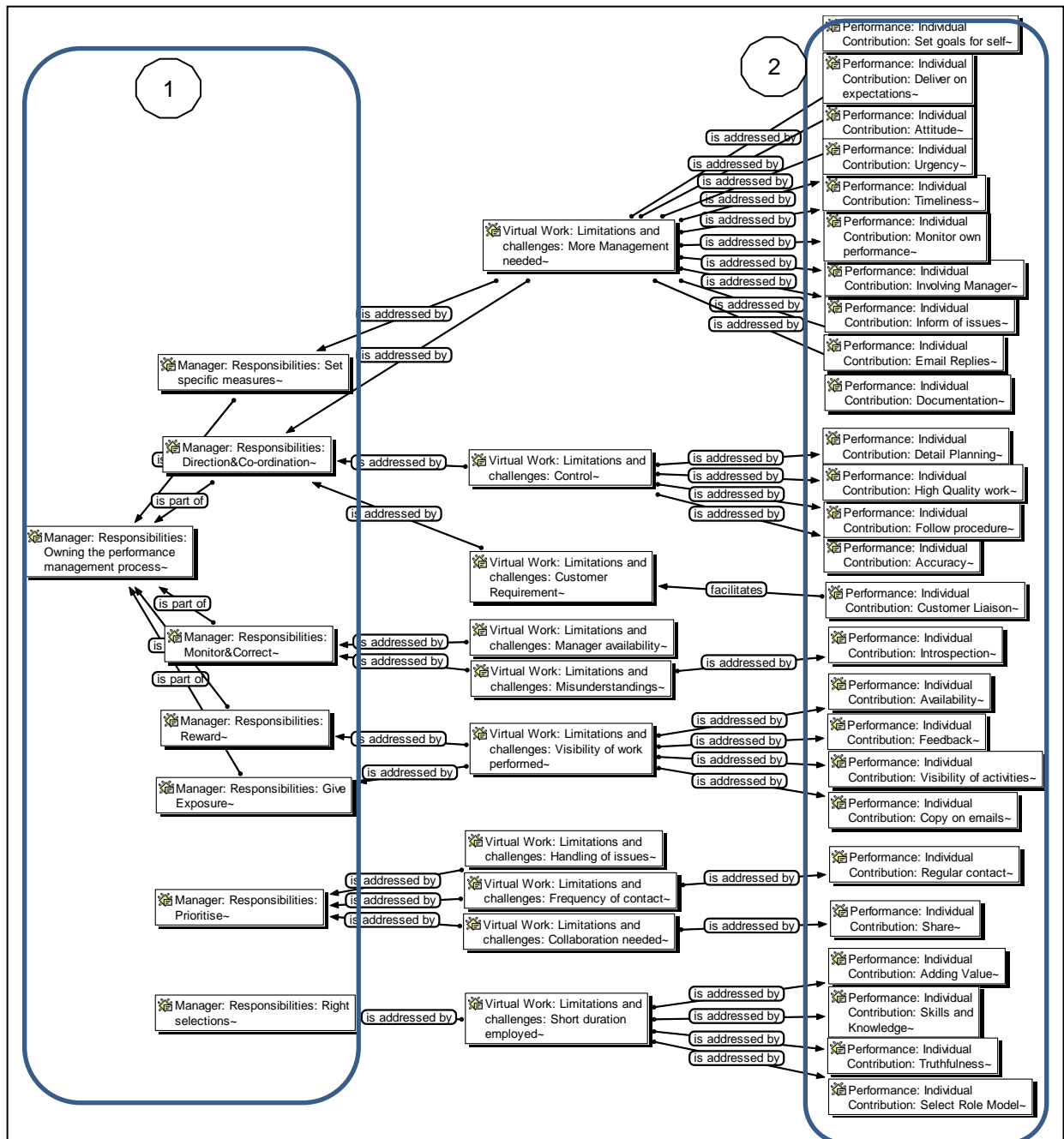
5.5.2.3.3 Management of performance

The third group relates more to *performance management*, and has therefore been linked to the different codes of “INITIATE”, “PLAN”, “MONITOR” and “CONTROL”. Setting of specific measures or making sure the goals are clear is quite important in this group. The manager also needs to make sure that everybody in the team is working in the same way.

How these elements address some of the limitations and challenges of virtual work is also shown in Figure 5-31, with the manager responsibilities shown in the left-hand (refer Block “1”) and the limitations and challenges shown in the centre of the diagram. The individual plays an important role in reducing the management that is required by setting own goals, delivering on expectations, being timely, monitoring own performance, involving the manager and notifying him or her in good time of issues, replying to emails and making sure documentation is up to date. If the individual does the detail planning for tasks, delivers high-quality work and follows procedures accurately, the need for control from the manager’s side will also be reduced. This is shown on the right-hand side of the diagram (Block “2”).

See overleaf for the network diagram.

Figure 5-31: Performance direction – addressing limitations and challenges



5.5.2.3.4 Manager involvement and support

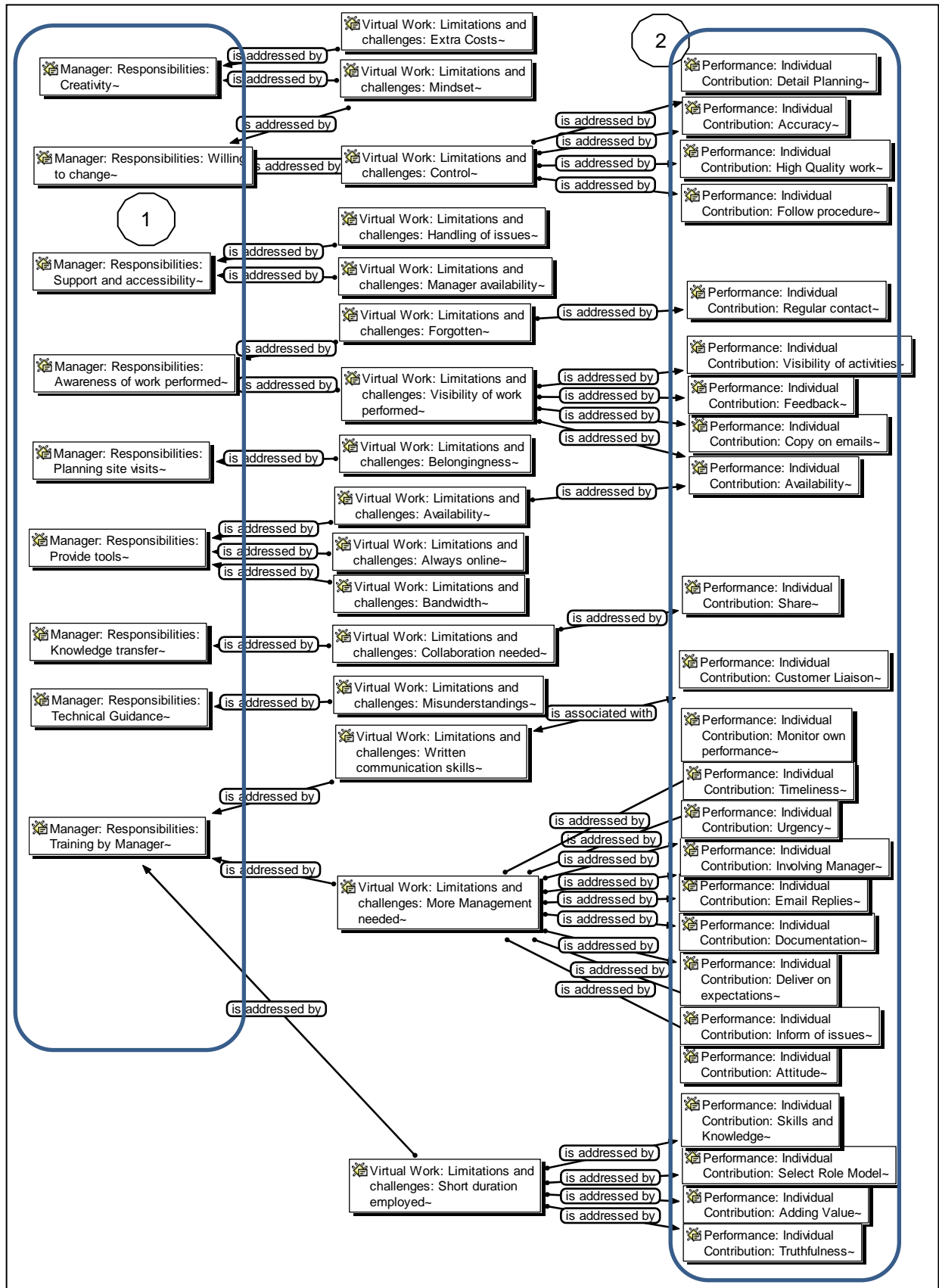
In the fourth group, the *focus moves to the manager in general being involved with the individuals and giving them support where required.* This may be through training, technical guidance, making sure that site visits take place, keeping up to date with what individuals are doing, providing the right tools and being willing to change the

processes if they are not conducive to performance. In this, the manager needs to be creative and explore new ways of supporting and motivating the individuals.

Figure 5-32 now shows how the sub-elements of involvement and support, as part of the manager's responsibilities (refer Block "1"), can be used to address the limitations and challenges of virtual work shown in the centre of the diagram. Once again, the individual's contribution is mapped on the right-hand side of the diagram (refer Block "2"). Creativity and willingness to change can overcome limitations created by old mindsets, and find opportunities to save costs; by being accessible, managers can resolve issues much more quickly; tools, knowledge transfer, technical guidance and training are all necessary to reduce management time required, and ensure that the individual is competent to deliver. Awareness of work performed and regular site visits foster a feeling of belonging.

See overleaf for the network diagram.

Figure 5-32: Involvement and support – Addressing limitations and challenges



5.5.2.3.5 Interface management

The last group pertains to “*interface management*” that is required: making sure that the individual is not distracted by work that is not important or politics, making sure the customer understands what the expectations are, and also facilitating contact with other teams and individuals who could assist the team in achieving their objectives. The codes and their descriptions are now listed in Table 5-25.

Table 5-25: Code list: “Manager: Responsibilities”

Description	Code	Category
Communication of organisational changes.	Change Management {9-4}	Communication
Sharing of information; being transparent about management-related items; Sharing team information.	Transparency and sharing {7-0}	
Giving accountability and responsibility.	Give Autonomy {22-3}	Individual Focus
Making remote individual’s contribution visible.	Give Exposure {12-2}	
Connecting with the individual; Personal relationship (Sympathy) - becoming personally involved; Socialising together; Individuals open to discuss "all" problems; visit at home.	Relationship with Individual {70-11}	
Importance of building teamness. Team relationships and team culture.	Relationships in Team {22-0}	
Rewarding individuals where applicable. Praise and constructive criticism.	Reward {6-2}	
Trusting employees to be working.	Trust employees {13-0}	
Well-being (empathy) – Keeping a line between work-related and personal involvement. Looking after health of individual. Looking out for opportunities for the individual. Best fit with customer and project.	Well-being of individual {15-0}	

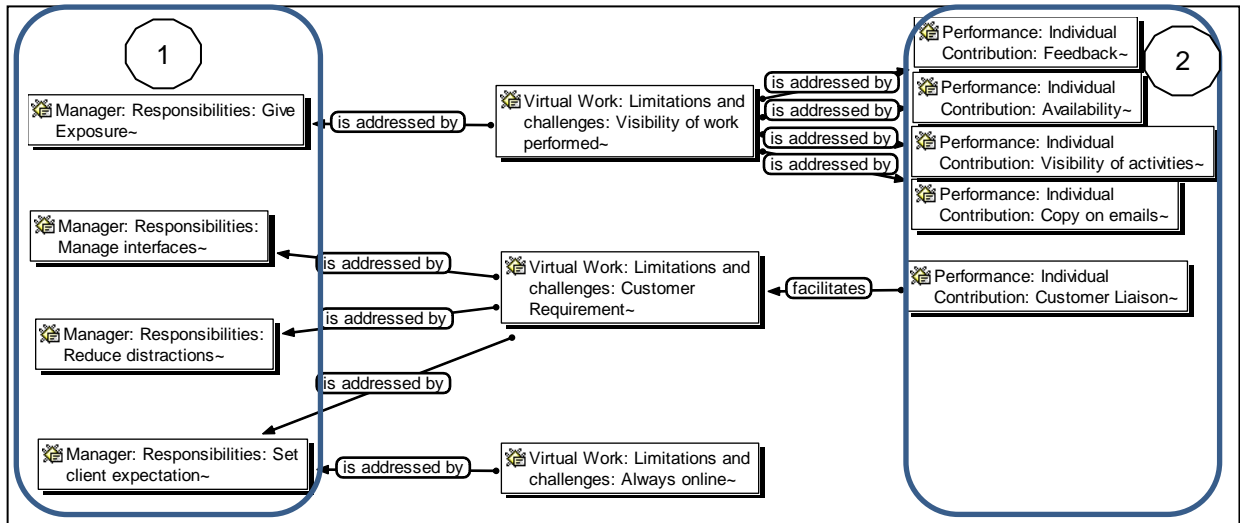
Table 5-24: Code list: “Manager: Responsibilities” (Continued)

Description	Code	Category
Giving direction. Making sure everybody works in the same way.	Direction & Co-ordination {18-3}	Manage performance
Being aware of and correcting issues when they occur; Mentorship role.	Monitor & Correct {13-1}	
Owning the performance management process. Accountable for the performance of staff.	Owning the performance management process {4-0}	
Assisting individuals in prioritising work.	Prioritise {7-0}	
Selecting the right individual - skill, job fit, manager fit.	Right selections {5-1}	
Defining deliverables and specific measures. Setting of clear expectations.	Set specific measures {38-3}	
Keeping track of good/bad so that this can be taken into consideration with KPI. Individualising, not punishing the group.	Awareness of work performed {4-0}	Involvement and support
Creativity in creating new management rules; Getting the employee to work more flexibly.	Creativity {3-0}	
Ensuring that knowledge is transferred between individuals in the team.	Knowledge transfer {13-0}	
Pre-planning site visit and making this a priority.	Planning site visits {2-0}	
Providing the tools for the individual to work remotely.	Provide tools {1-0}	
Available for direct reports; Encouraging, Praising; Listening and acting faster.	Support and accessibility {38-2}	
Having the technical experience to provide guidance.	Technical Guidance {3-1}	
Training in tools, working remote, requirements and on technical level.; Coaching of individual. ; Identifying training gaps of individual.	Training by Manager {33-3}	
Changing procedures if they are not working. Listen to needs of team members.	Willing to change {4-1}	Interface management
Managing interfaces external to the team.	Manage interfaces {15-5}	
Creating productive environment.	Reduce distractions {7-3}	
Managing client expectations of performance.	Set client expectation {10-3}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

By fulfilling the role of managing interfaces, the manager will ensure that there is visibility of work performed by remote team members and that the customer expectations are set, especially in terms of service scope and availability of individuals. Refer to the Block “1” in Figure 5-33. The contributions of the individual are also mapped (refer Block “2” on the right-hand side of the diagram) and they address making work more visible for the manager, as well as being the customer liaison to ensure that the customer’s requirements are addressed.

Figure 5-33: Interface management – addressing limitations and challenges



5.5.3 Individual Parameters (RO2c)

RO2c. To determine what **individual factors** play a major role in the performance of virtual knowledge workers.

Managers were asked what they expected of individuals in order for them to remain on task, both from a practical perspective (what individuals should do) and secondly from a characteristic that supports the kind of activities needed. The two lists are shown in the tables below.

From a *characteristics perspective*, many of these centre on *professionalism*, including the category of “dependability”. Individuals are also expected to be *self-managed and achievement* driven, since then the manager does not have to do so much monitoring. *Experience and skill* are important, since the manager (or colleagues) may not always be available for assistance. Managers also agreed that resilience is needed, since the remote world leads to social isolation, and the individuals may not always be aware of changes happening in the organisation, or other organisational politics. Maturity was also mentioned by many managers (Word count for “mature”/“maturity” = 117), in relation to professionalism, experience, emotional intelligence, seniority and resilience. Lastly, the managers also mentioned the personality of the individuals, but more in relation to the individuals’ preferences

in terms of location. There was not a general consensus that being an introvert was more suited to remote work than being an extrovert.

Responsibility and Achievement

A sense of responsibility, taking ownership, wanting to do well, wanting to have that sense of achievement, as well. So with the responsibility, goes hopefully and producing goods, goes a sense of achievement. P6 (190)

Self-driven

"I think first and foremost is that they actually have a drive to do what they are doing, they must enjoy their job. So anyone who is not 100% into what they are doing is going to find ways and means of not doing it. And I think that is the most important thing. They must actually enjoy what they do. And then they will be driven to do that, without having to be checked up on. I think you will have already gathered that we don't spend any time on checking up on people and seeing that they are at work when they are supposed to be at work. Everyone is sort of self-managed. So I think that in itself, even for someone who is not that responsible, just actually enjoying what they are doing is enough to keep them going. So I think that is the single most important thing for me, is having people who really have the passion for development and for software development." P32 (343)

Enthusiasm

So you need someone that just has a lot of energy and a lot of drive. And to me it's all of the other requisite skills can be taught, such as product knowledge, knowledge of the industry and sales techniques. But the drive and the energy and the motivation and competitiveness are the things that you cannot necessarily teach someone. P35 (52).

Maturity

"And the funny thing is that we have some people who are on site at the one client, but whenever there is an issue with another client, they just log in quickly and sort out that, and then they carry on with the work with the client. So it's virtual anyway. It makes no difference where you sit. So for me, it's the maturity to handle this freedom. Because it is, its freedom, and you have got to be accountable and responsible." P24 (253)

Flexibility

"So for me it's more somebody needs to be able to adapt to change, you know and then the basics, conflict management, the way how you deal with complexity how you deal with people and your experience as well. Because I believe that if you have experience, that you can deal with a lot of these things, because you have either been and seen the end of it, or you have dealt with situations like that." P44 (128)

Resilience

"So take whatever politics happen at the member firm level and times it by 25. So you need someone who is exceptionally resilient. Because decisions are made, and people's agendas are, my experience is that it is exceptionally political, but again, because you are not working directly with people, so whatever decision, so if you are my boss, you will make a decision based on politics, or whatever the case is, and there is no kind of out-of sight out of mind, so there is no consequences in terms of what you communicate and what you don't communicate. So resilience becomes very very important." P54 (195)

Table 5-26 now lists the codes and their descriptions, as well as the categories into which the codes were divided.

Table 5-26: Code list: “Performance: Individual characteristics”

Description	Code	Category
Professional (Using the word specifically) Reliable; Effective communication; Returning calls; Acknowledging queries; Way of addressing the customer; Being on time; Having integrity; Communicating; Positive attitude; Sophistication; Higher level of employee.	Professional {7-1}	Professional
Co-ordinating and facilitating ; Taking accountability for actions and making sure that performance can be sustained / delivered ; Seeing the bigger picture; Also accountable for own development.	Accountability {8-1}	
Responsible; Conscientious; Taking ownership; Sense of priority.	Responsible {28-1}	
Leadership and initiative.	Leadership {1-1}	
Honest and trustworthy; True to your word. Say what you do and do what you say - people with integrity are trusted.	Integrity {8-0}	Dependable
Commitment; Dedication; Loyalty; Stability (not jumping around in jobs).	Loyal {3-1}	
Client or customer focus of the individual.	Customer focussed {3-0}	
Wanting to achieve; Protecting reputation; Competitive.	Achievement {8-1}	Achievement driven and self-managed
Individuals who work in this way normally needing recognition.	Recognition (want) {3-1}	
Passionate about work; Enthusiastic; Reads up more. Showing interest in work; Energy / Drive	Enthusiasm {9-1}	
Self-managed and self-driven.	Self-management {14-1}	
Doing things for themselves; "Entrepreneurial".	Autonomous {2-0}	
Should not be a junior.	Not: Junior {1-1}	
Certification; Knowledge; Skill; Specialist.	Skilled {14-1}	Experience and Skill
Senior in terms of years and knowledge; Years of experience.	Experienced {12-1}	
Resilient; Adaptable; Flexible in terms of working hours; Willing to work outside of the defined "role".	Flexibility {7-1}	Resilient
Assertiveness specifically.	Assertiveness {1-1}	
Self-worth and Inner strength; Sense of self; Sales person handling rejection.	High Self-esteem {5-1}	
Working alone; Having inner strength; Being able to work independently.	Independent {6-1}	

Table 5-25: Code list: “Performance: Individual characteristics” (Continued)

Description	Code	Category
Maturity = Understanding what you have to do.	Maturity: General {9-1}	Maturity
Commitment to reach what they should deliver.	Maturity: Commitment {2-0}	
Understanding on a deeper level why things are the way they are; Can rationalise. Distinguishing different levels of decision making and impact a decision would have in different circumstances.	Maturity: Emotional Intelligence {10-1}	
Maybe this could be professionalism as well. Working wherever you are. Making sure all customers get their fair share.	Maturity: Handling freedom {1-0}	
Working without supervision - no micromanagement required; Work on their own, away from the manager. Self-starter.	Maturity: Independence {7-1}	
Planning and prioritising. Say what you do and do what you say. Understanding what they have to do. Self-management.	Maturity: Planning {8-1}	
Maturity referring to internal processes specifically and not the individual.	Maturity: Processes {1-1}	
Referring to the conduct or professionalism of the individual. (Contacting people; giving feedback; being available.)	Maturity: Professionalism {12-1}	
Maturity in that you can handle "no communication".	Maturity: Resilience {2-0}	
Reference to senior in terms of experience and age	Maturity: Seniority {13-1}	
Personal and personality differences. Different individuals bringing different ways of working to the table.	Personal differences {6-1}	Personality
Rather introvert - somebody that is not dependent on other inputs and social exchange the whole time.	Not: Extrovert {1-0}	
Not wanting somebody who is a total introvert.	Not: Total introvert {2-1}	
Stability as referring to the "S" in DISC profile.	Stability {1-1}	
Team Player.	Teamness {11-1}	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

The *contribution* most asked of individuals by managers was related to transparency and communication. This included giving feedback, informing the manager of issues, keeping documentation up to date, and keeping managers copied on emails.

Feedback (Transparency and Communication)

“Feedback. Feedback. I like to just get a phone call or an email or an SMS to say, ‘You know, I had a really great meeting’. I want to know what’s happening. I don’t want to know ‘I’m here today and not there tomorrow’. That doesn’t favour. There’s an important meeting

or there's a deadline that they're going to sign off. Things like that. Just feedback. Things like, you know, 'Customer's not happy with this. Maybe you should phone her' or 'That went really well'. Often if I can attend those kinds of meetings I would attend them anyway, just to - it's important just to show your face with the customer as well. But feedback, you know, that is for me is a big expectation." P20 (281)

Detail planning

"I say: This is the result and you need to get to. And they need to be able to construct out of that result, they need to almost backwards construct. "Well how do I need to get there?" So it speaks to a level of maturity and that is certainly critical in terms of having the structure where, you know, they don't have a lot of guidance and direction and face-to-face interactions with their direct manager on a daily basis. So they need to be mature, they need to be someone that can self-manage, someone that can almost discover work for themselves. Not sit and wait until they are told what to do." P8 (79)

Accuracy and Integrity

"So, and timesheets are an issue for them as well, but we have them, they're just not good with admin, so that's another area that I measure them on, because if they don't do their time-sheets, I can't bill; my finances are a mess, you know, that type of thing." P45 (185)

Individual confirmation on integrity:

"There is not that much that can be done to manage me more effectively. A lot rests on my own ethical approach which makes me responsible and accountable for my work".P41 (48)

Skills and Experience and sharing

"Ok, so what we have added in there is for example knowledge share. So we expect the senior members within the team to knowledge share on a regular basis. And its client information as well as technical information. So if he can give me a portfolio of evidence of session that he has helped with the team, where he has shared his knowledge of a client environment, or of a specific technology, then he gets rated accordingly." P13 (223)

The items related to transparency and communication have been marked with "T" and "C" respectively in Table 5-27. The other major categorisations were for planning and prioritisation (P), skills and experience (S), and integrity (I). Many individuals in the open-ended questions agreed that accuracy and timeliness of information could be a contribution that they could make to assist managers. The sort order in the table below has been used to keep these categories together, where possible. The five codes with the highest groundedness have been highlighted. Most of these are related to the category of transparency.

Table 5-27: Code list: “Performance: Individual contribution”

Code	Description	Transparency	Communication	Integrity	Planning	Skills
Attitude {15-2}	Reference to positive attitude that is needed.			I		
Introspection {1-0}	Constantly reflecting and introspecting to see how things can be improved, and if comments are relevant.			I		
Select Role Model {1-1}	Role model; mentor or coach type of discussion - this must come from the individual's side; not necessarily the manager talking about being a coach or mentor.			I		
Adding Value {7-1}	Extra mile ; Thought Leadership; Innovation			I		S
Accuracy {14-2}	Accurate in filling out timesheets or reports.			I		S
Skills and Knowledge {14-1}	Link to both technical skills and other knowledge that they need to build up in terms of their job. (Building of skills and knowledge vs "HAVE" skills and knowledge as characteristic) Also to take accountability for acquiring skills or asking for training.					S
Experiment {3-1}	Try something new (Leadership and innovation characteristic?) Initiative.					S
Documentation {20-2}	Use for updating knowledge bases; updating call information; updating technical documents and regular formal reports. ; Including the whole issue of "portfolio of evidence"; Making sure there is a "mail trail" ; Keeping an audit trail of what has been completed in a place that is accessible to the manager.	T				S
Deliver on expectations {15-2}	Linked to "specific deliverables", but this is in the context of what is expected to show on task - to the extent of the manager saying - "just give me what I asked you to do."	T		I		
Follow procedure {15-2}	Following process in terms of work to be done, or administrative procedures expected of the individual.	T		I		
Copy on emails {5-2}	Keep manager informed	T				
Visibility of activities {9-0}	Making activities visible on shared calendar	T				
Truthfulness {5-1}	Honesty	T	C	I		
Availability {19-2}	Individual must be contactable; available; answering emails; answering phone; C2: Show presence on Office Communicator or other tool.	T	C			

Table 5-26: Code list: “Performance: Individual contribution” (Continued)

Code	Description	Transparency	Communication	Integrity	Planning	Skills
Company Representative {2-1}	Individuals working remotely from their manager on a customer site, often become the representative of the company.	T	C			
Email Replies {4-2}	Answer when receive email.	T	C			
Feedback {47-2}	Feedback when something has been done or asked (Importance of the manager still keeping track of what's happening). Keeping manager up to date.	T	C			
Inform of issues {33-2}	Where the manager wants to know about issues; Also asking for help when getting stuck.	T	C			
Involving Manager {7-2}	Any specific agreement with the manager of what the manager should review or get involved in. (More specific than "regular contact"-code)	T	C			
Regular contact {28-2}	Need to keep in contact and inform not only of "issues" but also of good things; General communication requirements.	T	C			
Customer Liaison {13-2}	Company representative on site		C			
General Liaison {4-1}	Not necessarily with the customer, but internal or doing whatever is necessary to get an issue resolved.		C			
Share {14-1}	Ideas; Knowledge; (Specifically around "knowledge"); Links to "Feedback" and all items marked as "transparency".		C			S
Increase productive hours {2-0}	Increase time spent at home (which is seen as productive hours) - Training users to be more self-sufficient - Getting management to trust you.				P	S
Planning: Future view {1-0}	Being aware of future so that planning can be improved.				P	
Set goals for self {5-0}	Setting own goals.				P	
Urgency {7-2}	This code is about getting things done; not waiting till the last moment.				P	
Monitor own performance {8-0}	The individual becomes self-monitoring – identifies what is needed to achieve goals.			I	P	
Timeliness {7-2}	Delivering in a timely fashion. Notifying timeously when deadline will be missed.			I	P	
Detail Planning {12-2}	Giving objectives and expecting tasks to be "thought up"; Do their own planning; Converse of micromanagement. Do own prioritisation of activities.	T			P	

Note: {x-y} indicates the approximate groundedness (x) and density (y) of the code.

Although individuals were not always asked about their preferences and experience in virtual work during interviews, managers indicated the importance of the characteristics of individuals for the selection process. The characteristics of the job often coincided with characteristics needed to be an effective virtual worker, and in addition, the managers found it important to appoint individuals who would fit with their own management style, where possible.

“But I do start to deploy those type systems if I am concerned about someone. I have a very fervent belief that if you hire very good people and you hire correctly, and they are personally motivated and you are comfortable that the activity is there, I do not believe in micro managing or micro measuring someone, because I believe that everybody has their own way of doing things, and believe in a trusting relationship where results will either start coming or they won’t. P35 (82)

“The one is somebody that would sort of fit into my managerial style if you will. I’m a very sort of hands-off non-technical type of manager. I intensely dislike details. I suppose it’s a nice way to put it. And I also don’t like to manage; micro-manage people. So I look for a sort of profile of an individual that can work independently, that is self-motivated that can work by them-selves.” P20 (53)

The three codes used for the selection questions were “Selection: Manager Criteria”, “Selection: Individual Characteristics” and “Selection: Input criteria”. The code analysis related to these codes was done by generating the co-occurrence table for these codes with the “Performance Manage: Individual Characteristics” and “Performance Manage: Individual Contribution”. The results are given in Table 5-28: Co-occurrence: “Selection: Manager Criteria” with “Characteristics”/“Contribution” and Table 5-29: Co-occurrence: “Selection: Manager Criteria” with “Characteristics”/“Contribution”.

Table 5-28: Co-occurrence: “Selection: Manager Criteria” with “Characteristics”/“Contribution”

Category	Code	Selection: Manager Criteria
Characteristics	Assertiveness	0.02
	Customer focussed	0.02
	Experienced	0.03
	Maturity	0.02
	Maturity: Seniority	0.07
	Professional	0.02
	Responsible	0.01
	Self-management	0.03
	Skilled	0.05

Table 5-27: Co-occurrence: “Selection: Manager Criteria” with “Characteristics”/“Contribution” (Continued)

Category	Code	Selection: Manager Criteria
Contribution	Attitude	0.02
	Deliver on expectations	0.02
	Inform of issues	0.02
	Skills and Knowledge	0.02

Table 5-29: Co-occurrence: “Selection: Manager Criteria” with “Characteristics”/“Contribution”

Category	Codes which are co-occurring	Selection: Individual Characteristics
Characteristics	Accountability	0.02
	Achievement	0.02
	Enthusiasm	0.02
	Experienced	0.02
	Independent	0.05
	Maturity	0.04
	Maturity: Emotional Intelligence	0.02
	Maturity: Planning	0.02
	Maturity: Seniority	0.09
	Responsible	0.02
	Self-management	0.04
	Teamness	0.02
Contribution	Detail Planning	0.02

5.6 SUMMARY

This chapter has analysed and categorised the codes used for analysing the interview data across cases, and consolidated the analysis of the online questionnaires to obtain a view of how performance of virtual knowledge workers was being managed across the five companies, with the aim of answering the first two research objectives. This will now be summarised below for each sub-objective individually. The understanding of what constitutes virtual work provides the context in which the two research objectives are answered and will therefore will be addressed first.

5.6.1 Virtual Work (Context)

The types of the virtual work arrangements are summarised in Table 5-30 in a location and frequency matrix.

Table 5-30: Summary: Code “Virtual work: Arrangements”

Frequency Location	Occasional		Fixed (Part-time)		Fixed (Full time)
	Days	Hours	Days	Hours	Permanent
Home	Work project ^(a) Child / Self Sick ^(a)	Deliveries ^(a)	Work-from- home privilege	Operational Flexitime	Contractual arrangement
Client	Resolving problems	Meetings	Projects Outsource	Projects Outsource	Projects Outsource
Satellite Office	Meetings	Meetings	Alternative place of work	Alternative place of work	Regional employees
Various	Combination of all above				

Note (a): Implies that the individual needs to obtain permission per “instance”

All of the companies had examples of most of the states shown in the table above. The work from home on a permanent basis as part of a contractual arrangement had the lowest prevalence and was seen as an exception, while working from client site, and thereafter flexitime arrangements, had the highest prevalence. This is supported by Figure 5-12: Locations per company and Figure 5-13: Remote locations for individuals (detail).

Foxtrot and Delta also had examples of the manager working away from the individual on a more permanent basis. Because it has a virtual work guideline, Delta was the only company that allowed all the different permutations of virtual work as described above as a generally accepted practice. The only time that a contractual agreement needed to be made was when the salary was affected. All other agreements were done informally with the manager, via email, and only copied to HR.

In general, the manager decided whether an individual could work remotely or not, based on the individual, the job requirements and the customer. In some cases the

preference of the manager was still to see the individuals often through face-to-face meetings.

5.6.2 Managing the Performance of Virtual Knowledge Workers (RO1)

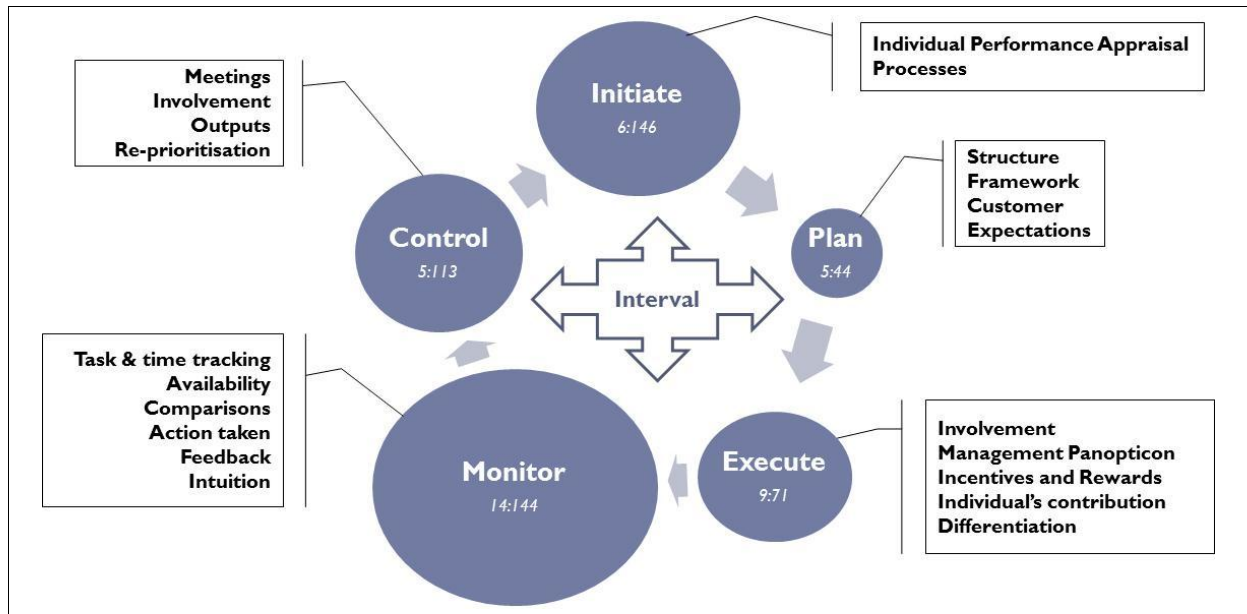
RO1: To critically review the current state of knowledge and understanding of **how the performance of virtual knowledge workers is managed.**

Three aspects were used to describe the management of performance, namely the way the manager managed in general, then specific deliverables and lastly associated metrics. An important finding, however, was that managers indicated that they did not distinguish between their management of the performance of co-located and remote individuals, nor that of two different individuals both working remotely. The same deliverables were expected, and the same measures were used. Even though managers indicated that there was not a difference when managing remote individuals, there did seem to be a greater focus on defining deliverables, having task lists and ensuring that there was regular communication and follow-up or transparency from the individual's side. For the fixed-days arrangement, certain tasks had to be completed, while for occasional arrangements, the individuals needed to show that they were available online, and the agreed outputs needed to be completed. In general, the work of the individuals was driven by the customer requirements, so the manager would know the status of delivery through a "customer happiness factor". Managers did, however, agree that a lot more trust was needed (as opposed to micromanagement) when individuals worked away from them, especially where regular site visits were not possible due to time zone differences and geographic remoteness. Most of the managers also indicated that it was still important to differentiate their management style between individuals, based on the individual's preference and personality, which linked to the fact that managers also preferred to select individuals that fitted more closely with their own management style.

All the elements relating to the way in which managers managed virtual knowledge workers were linked to the process groups of PMBOK (PMI, 2004:42), of initiate, plan, execute, monitor and control. The sizes of the circles in Figure 5-34 are used to

represent the relative magnitude of each process step related to number of codes and total number of quotations linked to that process step for the code grouping. The lists linked to each circle indicate the selective codes that were linked to the process step as per section 5.4.1.1 Code category: “Performance: Manage”.

Figure 5-34: Summary for managing performance



Key: (a:b) where **a** indicates the number of codes in the grouping and **b** the number of quotes linked to the codes.

The main finding from the initiation process was that there must be a starting point that can be used as the golden thread through the process of managing performance. Setting of objectives and how they can be achieved, as well as getting the buy-in of the individuals at this stage, is important. The best way of obtaining buy-in is by allowing individuals to participate in the process by selecting and committing to tasks. This is part of the planning stage. In addition, in the planning stage the manager uses his or her technical experience and skill to create frameworks and measurements for the individuals to follow, or to assess the plans that the individuals have created in terms of accuracy and quality.

Giving incentives and rewards forms part of the execution phase. In some companies, allowing individuals to work remotely was seen as an incentive or reward in its own right, especially when the managers were financially constrained. In other organisations virtual work was seen as allowing flexibility and thereby allowing the

individual to save costs. In some cases when managers allowed individuals to work flexibly, the individuals were in return expected to be flexible in terms of accommodating requirements for after-hours work, without necessarily receiving extra compensation.

As can be seen from the code analysis and represented visually in Figure 5-34, the combination of monitoring and controlling forms a large part of the manager's focus. This corresponds with the fact that 38% of the deliverables could be classified as *administrative type deliverables* (as per Figure 5-18), which are in essence used to monitor whether individuals have completed the work according to expectations, and adjust if outputs are not up to standard, especially in the virtual context. An example of this was that in the case of Alpha, for the "two-days-from home" arrangement there was a greater focus on predefined tasks that had to be completed for the period the individual was away, with these tasks being registered on a task management system. As can be seen from the code categories in Figure 5-34, the controlling process step also includes interaction in the form of meetings that can be used to keep contact with the individuals working remotely. Active monitoring becomes important in the remote situation in comparison with a face-to-face situation. In the latter situation, follow-up would happen more naturally by simply engaging with the individual when one sees them.

While the administrative deliverables mentioned in the previous paragraph contributed to the *perceived performance* in the remote situation, there were also *technical deliverables* (49% of deliverables mentioned) and *knowledge deliverables* (13% of deliverables mentioned), which contributed to *actual performance*. These deliverables were also mapped to specific metrics (Table 5-13: Co-occurrence of "Specific deliverable" and "Metric" and Table 5-14: Co-occurrence: "Knowledge Work" and "Performance: Metrics"). The metrics in turn were classified as *objective* and *subjective* metrics. Subjective metrics included quality measures, while objective metrics were based on specific counts or target dates achieved and were in some cases substantiated by *IT systems* which automatically captured statistics and then displayed in dashboards or reports produced. Some systems were also used to manually capture job metrics such as timesheet systems, which led to the perception by individuals that they were being micro-managed. What also did assist in the

measurement (setting metrics and measuring deliverables) was the *experience of the manager* in understanding what the deliverable should be, and how much time the individual should be spending on the task or deliverable. This could assist in determining if productivity was acceptable. The experience of the managers also assisted in having only a few key deliverables on which individuals were measured, rather than trying to measure all aspects of the work.

In terms of managing non-performance, managers always tried to do this as soon as possible after the issue had occurred, and preferably face to face. The main challenges that managers faced in managing remote team members were communication, relationships and gauging the individual's frame of mind when their facial expression and body language was not visible. To compensate for the fact that the manager could not always see the individual, the *management panopticon* (in other words the customer, other managers, the project managers or the account team) was often used to obtain feedback relating to the individual on either a formal or informal basis.

5.6.3 Parameters Affecting Performance and Outputs (RO2)

The achievement of research objects RO2a, RO2b and RO2c will now be described in turn.

RO2a: To analyse and describe how the organisational context affects the performance and outputs of virtual knowledge workers.

The categories relating to organisational impact were leadership, organisational culture, design and strategy. All of these create an environment within the organisation within which managers and the individual team members need to work. From the findings of this study, it seemed to be easier for the smaller companies to maintain the corporate culture in relation to the vision of the CEO and to maintain coherence in terms of the policies and procedures relating to virtual work and performance management in the organisation. From a design point of view, the smaller organisations seemed to have fewer levels of management, which reduced the possibility of message distortion, but did not reduce the need for organisational

change management and communication. They also had a smaller HR function, implying that the line managers needed to fulfil more of the HR functions.

However, managers in the larger organisations also perceived that they fulfilled many HR-related functions. Because managers often also have operational responsibilities and had to focus on delivery, it was not always possible to fulfil all the work related to HR governance and managing human resources. The expectation was that HR would assist with this. However, the HR representatives confirmed that the managers always remained accountable for the execution of the HR policies. In this study, HR normally assisted with talent management strategies, recruitment, termination and performance deviations. Managers defined their own performance criteria, performance appraisals and related documentation.

In addition, the analysis found that all the companies, except Foxtrot, had flexible work-hours policies, and only Foxtrot had a draft telecommuting policy for its offices in the US. In Alpha and Tango, working from home was seen as a privilege and accommodated occasionally or for fixed days per week. In Echo and Delta, it was a new way of work that had been established. For Foxtrot, the virtuality depended on the amount of collaboration needed in the teams but was very much driven by its geographic distribution of office and customers. Virtual work arrangements in all companies were dependent on the type of job, the customer requirements and the preference of the individual and his or her manager. The combination of all these factors could explain why only 66% of individuals believed that they were virtual workers. This is in contrast with the fact that for the total dataset, 86% of the respondents could be classified as virtual workers, in other words spending more than one day per week away from their manager.

There are various parameters on organisational level that affect the performance of virtual knowledge workers. In addition, the combination of certain parameters will affect it in different ways. The type of work of the five companies differs but is still in all cases related to client deliverables, facilitated by IT. Therefore, knowledge work does play a prominent role, although it cannot always be precisely measured. Although work is delivered as part of a team (i.e. project work), in most of the cases the individual delivers a separately measurable component. The reasons for remote

work, the performance measures, and the remoteness and frequency are driven by operational needs. The client always plays a prominent role in the measurement of performance.

The differences and similarities between the companies in terms of type of work, collaboration type, performance measures, reasons for remote work, client impact and remoteness frequency, are now summarised in Table 5-31.

Table 5-31: Similarities and differences between companies

Parameter	Alpha	Echo	Foxtrot	Tango	Delta
<i>Type of work</i>	Outsourcing & Projects	Projects & Support	Development & support	Outsourcing & Projects	Consulting
<i>Type of knowledge work</i>	Known error database Lessons learnt for Projects	Known error database Lessons learnt for Projects	Product manuals Software	Known error database Lessons learnt for Projects	Various knowledge artefacts
<i>Collaboration type</i>	Individual	Team	Team	Individual	Individual
<i>Performance measures</i>	Service levels Project measures	Service levels Project measures	Sales Development Procedures	Service levels Project measures	Project measures
<i>Main reason for remote work</i>	Privilege	Way of work	Organisational structure	Privilege	Way of work
<i>Client requirement / impact</i>	SLA Project sign-off	SLA Project sign-off	Customer value SLA	SLA Project sign-off	Customer value
<i>Remoteness and frequency</i>	Fixed days Occasional	Flexible work schedule	Occasional	Fixed days Occasional	Flexible work schedule

The contextual parameters include elements of geography such as time-zone and general context, absence of visual clues, situational factors, external elements such as customers, other teams, the individual's personal situation and impact of third-party interventions, metrics that were difficult to define, and lastly some technological limitations in terms of HR tools not being available.

RO2b: To analyse and describe how the **approach of managers** affects the performance and outputs of virtual knowledge workers.

In addition to the codes and categories created for managing performance, an additional set of codes also evolved which has been termed “*Manager Responsibilities*”. In general, the manager remains instrumental in translating the organisational context for the individual and keeping the team together and focused on their deliverables. The codes relating to this aspect were grouped into five categories: communication and organisational change management; focus on the individual; involvement and support; interface management; and some elements relating back to the principles of management of performance (refer Table 5-25). This forms the basis for the theme of “Manager as Enabler” and will be mapped to the relevant literature in Chapter 6.

Three additional aspects influence the manager’s approach to how virtual work is managed. Firstly, how the manager describes himself or herself in terms of “*I am*” *statements used*, influences the manager’s initial selection of individuals, the level of involvement of the manager in work being performed and the way that deliverables are defined. If the management style is not compatible with the needs of the individuals, the management style may hinder the performance of individuals in the team. Secondly, the *manager’s experience with remote work*, and resulting *assumptions about remote work* will also influence how the performance of virtual knowledge workers is managed. If the manager has extensive remote work experience, and the assumptions are related to positive aspects of virtual work, the manager will be more trusting and allow greater flexibility for individuals. Thirdly, the level and years of *technical experience* of the manager allow the manager to be more accurate in goal setting as well as evaluation of deliverables. The manager can also use this experience to adjust the performance expectations of the customer if these are not realistic.

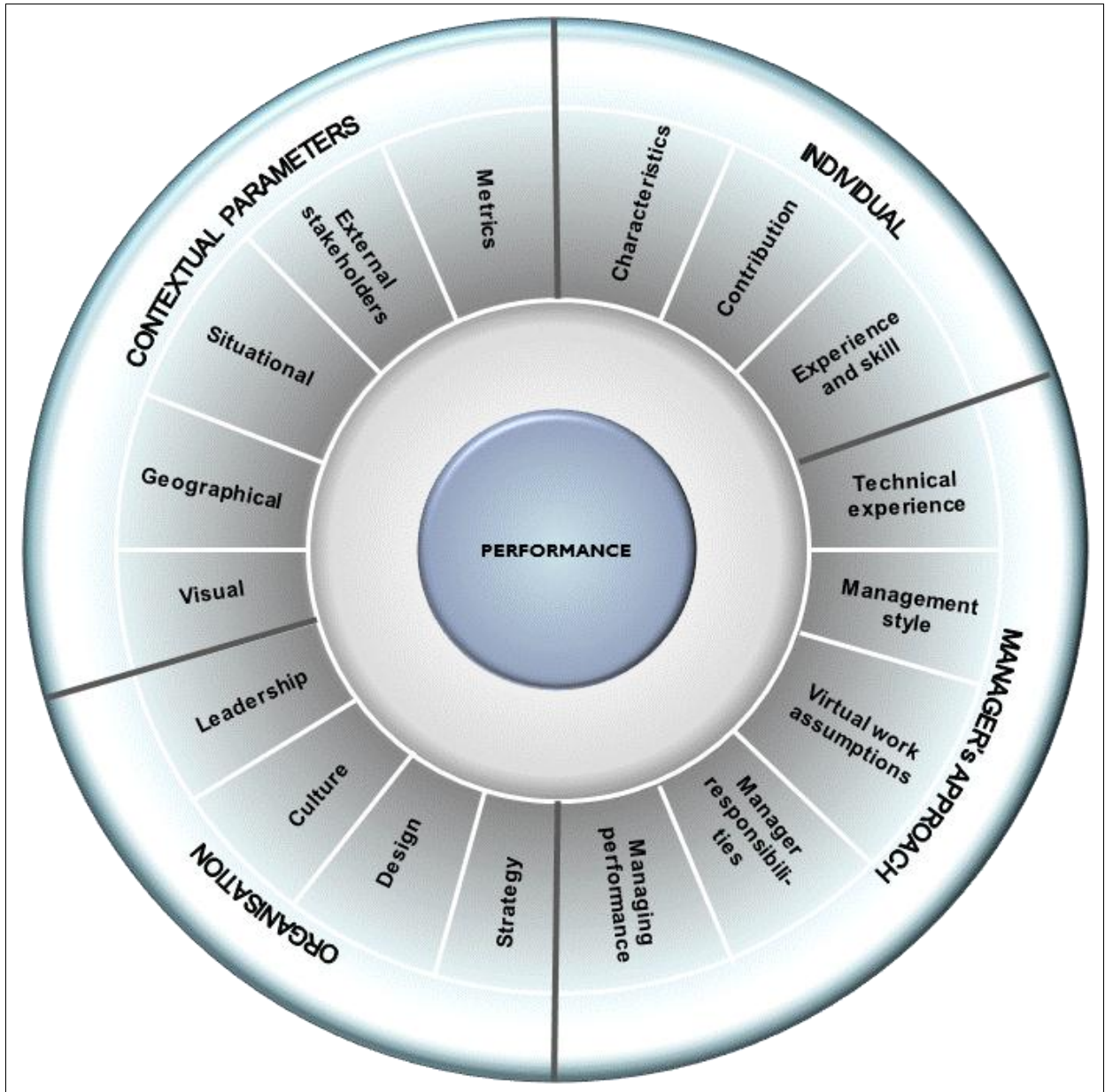
RO2c. To determine what **individual factors** play a major role in the performance of virtual knowledge workers.

The analysis reviewed both individual characteristics and individuals’ contributions that could be beneficial in a virtual work situation. Desirable *characteristics* included

professionalism, dependability, being achievement-driven and self-managed, having resilience and maturity, and the nature of the individuals relating to their personal preferences (Table 5-26). Desirable *contributions* were summarised as being transparent, communicating regularly, showing integrity, performing detail planning and building on existing skills (Table 5-27). The concept of *transparency* from an individual's contribution point of view includes aspects such as regular feedback, keeping the manager informed, copying on emails, following process, delivering on expectations and being contactable. It also includes online availability while working remotely, for which internet *connectivity* and connectivity to the remote systems is critical. Communication includes regular feedback and email replies; integrity includes truthfulness, timeliness and monitoring of own performance; planning includes being able to break down an objective into the tasks that will have to be performed to achieve the objective, and the individuals should constantly strive to increase their skill level, but also be prepared to share their knowledge with others.

The four levels of parameters that affect performance are consolidated in Figure 5-35. They include the organisational level parameters; contextual parameters such as the geographical context, situational, external and metrics parameters; the manager's approach and characteristics; and the contribution that the individual is making.

Figure 5-35: Summary of impact parameters (Impact Parameter Model)



5.6.4 Themes Identified

The themes contributing to the management and enablement of virtual knowledge workers which were identified as part of the individual case studies, have now been adjusted into four themes. They are listed in Table 5-32.

Table 5-32: Adjusted themes

Original Theme	Adjusted / Recombined	Comment
Understanding the “virtual” in virtual work	Theme 1: Understanding “virtual” in virtual work (As per Table 5-30)	No changes.
<None>	Theme 2: Perceived, actual and true performance (As per Figure 5-34)	Identifying “control” aspects vs trust Difference between management of performance and performance management.
Importance of communication	Theme 3: Parameters affecting performance (As per Figure 5-35)	One of the elements that the manager as enabler needs to look at.
Impact of the customer		Customer becomes one of the impact parameters.
Manager as enabler		Manager as enabler and mediator for the impact parameters.
<None>		Adding the parameters of organisation, individual and contextual into one model.
Importance of the visual	Theme 4: Importance of the visual, or face-to-face interaction (As per various code tables)	This theme has consistently surfaced as a category in various code tables.

The adjusted four themes will be used as the framework for interpretation of the data in Chapter 6.

CHAPTER 6

6 DATA INTERPRETATION

6.1 INTRODUCTION

The data analysis for the study, as described in Chapter 5, has led to the identification of four main themes. They are listed below:

- **Theme 1:** The concept of “virtual” in the term “virtual worker” is often misunderstood, and the definition should be applied on a continuum of virtuality, leading to the concept of perceived and true virtuality.
- **Theme 2:** The need to define how deliverables and metrics relate to perceived, actual and true performance, and to highlight the difference between management of performance and performance management in the virtual context.
- **Theme 3:** Understanding how the multitude of parameters affecting performance from the organisational, contextual, managerial and individual side link to the manager as an enabler.
- **Theme 4:** The continued importance of the visual, or face-to-face interaction in managing virtual performance.

The purpose of this chapter is to consolidate the data found in the current study regarding these themes into relevant theoretical models, and to compare the findings with the initial literature review. Additional and more recent literature will also be added and enfolded into the results, to determine how the theoretical models of the data are similar to, extend or add to the current body of knowledge regarding the management and enablement of the performance of virtual knowledge workers.

The above four themes will be used to structure this chapter.

6.2 THEME 1: UNDERSTANDING “VIRTUAL” IN VIRTUAL WORK

6.2.1 Theme Introduction

For the purpose of the study, a virtual knowledge worker was defined as a (knowledge) worker who works in a situation geographically remote from the traditional workplace (Ashford *et al.* 2007:69; Luyt, 2007:13), which results in their being "removed from the direct sphere of influence of management and co-workers." (Jackson *et al.*, 2006:219). Even though this definition was provided in both the manager's information pack and in the online questionnaire, there still seemed to be confusion as to when an individual would be seen as a virtual worker. This was evident from the difference in individuals' perception of their being a virtual worker (only 66% of the individual respondents answered “yes”) and the calculated value for being a virtual worker, which was 86%.

Individuals working on customer site (in other words away from their direct line manager) did not necessarily deem themselves to be virtual workers, since the customer was dictating where they worked. There were some managers who preferred face-to-face interaction. There were also cases where the work in the team required collaboration on a regular basis, yet where elements of virtuality were still inherent in where the work was taking place. In some cases interaction was needed with other remote teams. It therefore seemed that that individuals and managers understood the word “virtual” to mean “working from home” rather than “working away from the manager”.

This theme therefore shows the extent of virtuality that was actually present in the companies under investigation, in relation to the definition of the virtual worker, and shows how “virtual” should be understood. Although in the companies surveyed there were not many virtual workers working from home on a more permanent basis, flexibility of hours and location was more common. This flexibility is a form of virtual work, and organisations need to take cognisance of this fact, so that performance in these situations can be enabled in the right way

6.2.2 Virtual Work Perceptions

Three elements were extracted from Table 5-30 in Chapter 5, where the summary of virtual work arrangements was given, namely location, timing and independence. *Location* indicates the place where the individuals are working when working away from their manager. Another aspect is how much *time* per week is spent away from the manager, or the manager spending time away from the individuals. In other words the frequency of remote work, which could range from none to occasional or, ultimately, permanent. *Independence*, the third element, is associated with how much discretion individuals have in selecting their place of work: whether they may choose, or have to ask permission on a more regular basis.

From an *office location* point of view according to the examples found in the study, Table 6-1 shows how either the manager moves between the main office, home and customer sites, **or** the individual moves between the main office, home and customer sites, or both. In all of these cases the manager (line or project manager) and individual have limited contact or can be classified as working virtually, and performance needs to be managed over a geographical distance. Only where the manager and individual are working in the same main office location, or at the same customer site, would they be defined as co-located and not virtual.

Table 6-1: Virtual status matrix based on office location

Individual	Manager			
	Main Office	Customer	Home	Other Office
Main Office	Co-located	Virtual	Virtual	Virtual
Customer	Virtual	Co-located ⁽²⁾ Remote ⁽³⁾	Virtual	Virtual
Home	Virtual	Virtual	Virtual	Virtual
Other Office ⁽¹⁾	Virtual	Virtual	Virtual	Virtual

Note: (1) Other building in same office park, or other regional office, or even different country (2) Same customer. (3) Different customers.

Adding the *time and frequency* to the model, various arrangements of virtual work were established by the participants in the study. Six of the resulting scenarios are

given in Table 6-2. All of these scenarios can be regarded as individuals working truly virtual. Only the degree of virtuality differs.

Table 6-2: Virtual work scenarios (Timing added)

<p>Scenario 1: Remote site worker = Client site worker / Alternate site worker Manager works in main office Individuals work remotely (permanent basis) i.e. "offsite" location (regional office or client site)</p>
<p>Scenario 2: Flexi-hours Manager works in the office, but hours differ from those of the individuals reporting into him/her Individuals work mainly from the office, but timing not official office hours. Part of the flexi-hours may be done from home.</p>
<p>Scenario 3: Flexi home days Manager works in the office, and makes sure available on "local" days Individuals work from either office or home, based on "schedule" (e.g. two days from home per week)</p>
<p>Scenario 4: Home workers Manager works in office or mobile Individual works permanently from home.</p>
<p>Scenario 5: Mobile Manager Manager often works away from the individuals reporting to him/her, either on permanent or occasional basis Individuals work "at the office"</p>
<p>Scenario 6: Multi-location or Flexi-worker Manager works multiple locations Individuals work multiple locations (including home)</p>

In the case of the individual working on an alternative office site, or on the customer site, there is what can be called the "management panopticon" or "eyes-on-site" that can assist the manager in his/her task of monitoring. In Jackson *et al.* (2006:222), the professionalism of the individual becomes the internal "panopticon", while in this study the "other eyes on site" become the management panopticon. The management panopticon assists the manager by "being on site" when he or she cannot be on site. This is shown in Table 6-3. The management panopticon can also be a limiting factor if this becomes too multi-layered, as with matrix management, and the individuals have too many managers to report to.

Table 6-3: Virtual work scenarios, independence and panopticon

Scenario	Location		Frequency	Independence (Permission)	Panopticon
	Manager	Individual alternate			
1a: Client site worker	Main office or various	Client site	Permanent	No (Choice of customer)	Customer Other managers
1b: Alternative office worker	Main office or various	Regional office / Satellite office	Permanent	Partial	Other managers
2: Flexi-hours	Main office or various	Main office	Permanent/ Occasional	Once-off	Colleagues
3: Flexi-home days	Main office or Various	Home	Fixed schedule Occasional	Once-off	None
4: Home workers	Various	Home	Permanent	Once-off	None
5: Mobile Manager	Various	Main office	Permanent/ Occasional	NA	Colleagues
6: Multi-location	Various	Various	Flexi-schedule	Once-off	Combination of above

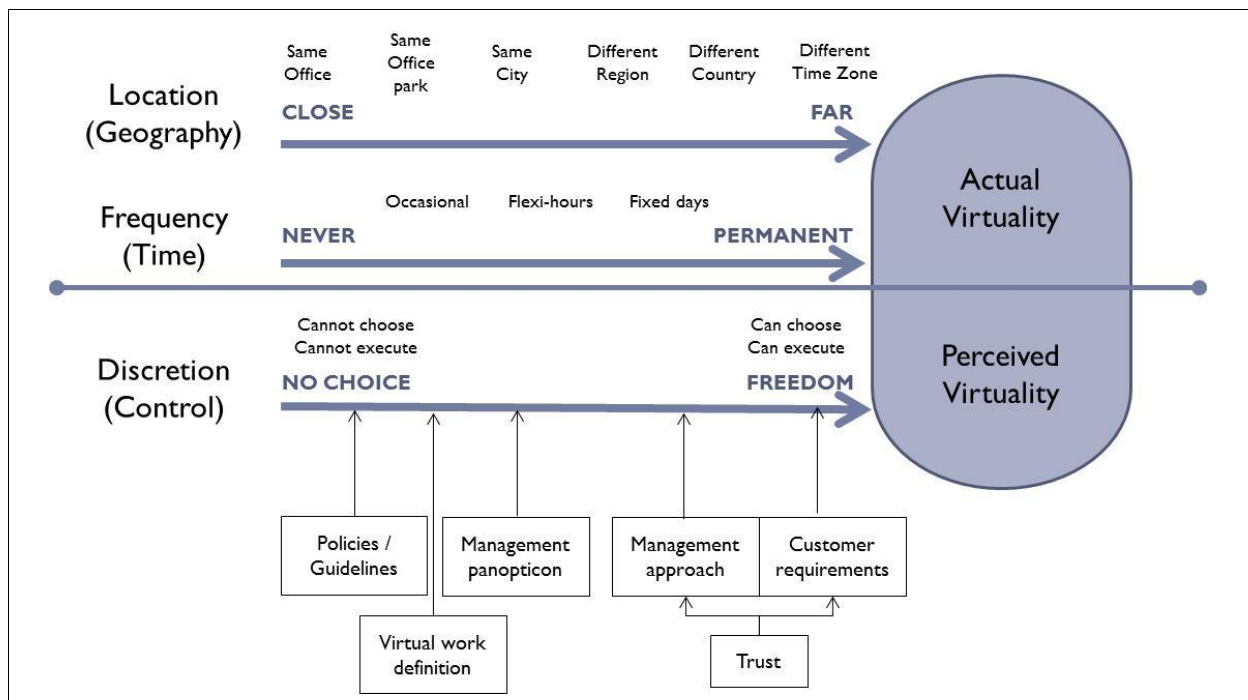
Table 6-3 also shows the amount of independence or discretion normally allowed in the different scenarios. The independence is normally influenced by how comfortable the manager feels with the remote and flexi-work scenario, as well as the customer requirements for physically seeing the individuals. These are both related to the amount of trust in the relationship. Other elements involved in the amount of independence are the perception of what policies are available in the organisation and the extent of the management panopticon when individuals are working remotely. These elements, as well as the known definition of virtual work, in turn drive the perceived virtuality of the individuals.

These elements of location, timing and discretion are shown next in one model in Figure 6-1, together with the potential range of values of these elements. The moderators for discretion or control, which have an effect on how the individual perceives their virtuality, have been added to the diagram, and are:

- to what extent the individual and/or manager believes that policies and guidelines exist allowing virtual work (“Policies and guidelines”);

- how individuals and managers understand the definition of virtual work (“Virtual work definition”);
- the number of other managers and the customer who will monitor the individual (“Management panopticon”);
- the manager’s self-concept, experience with virtual work and technical experience (“Manager’s approach”);
- the customer’s needs and service requirements (“Customer requirements”); and
- the trust that both the customer and manager have in the individual (“Trust”).

Figure 6-1: Actual vs. perceived virtuality



6.2.3 Additional Definitions of Virtuality

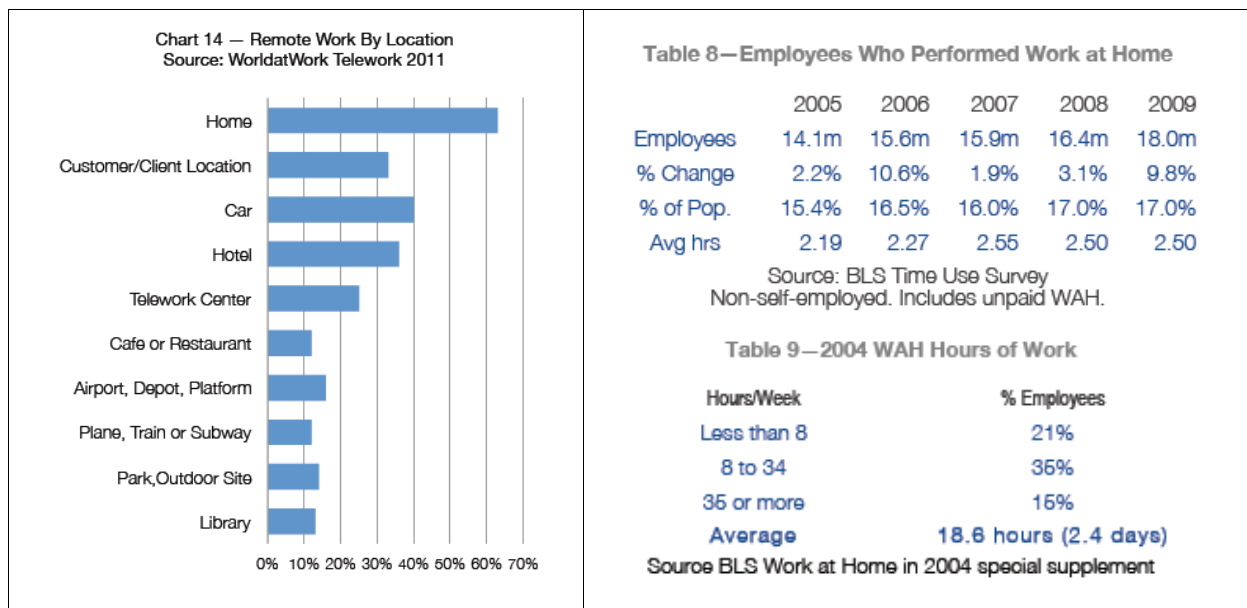
6.2.3.1 *International reports and statistics*

The definition of telework in *article 2 of the European Framework Agreement on Telework of 2002* defines telework as “a form of organising and/or performing work, using information technology, in the context of an employment contract/relationship, where work which could also be performed at the employer’s premises is carried out

away from those premises on a regular basis” (Welz & Wolf, 2010:3). In this definition, telework is not specifically seen as something done from home, but something done “away from the employer’s premises”. Raghuram *et al.* (2001:383) further mention all the remote places that individuals could work from as “working remotely from home, in cars, from hotels and satellite centres and other non-headquarters locations”; in subsequent research Raghuram *et al.* (2003:181) mention teleworkers as having “reduced proximity”. These definitions all add to the diversity that is inherent in the concept and definition of virtual work, and links to all the various flexible arrangements of which examples were found in the study, thereby further confirming the validity of the actual virtual status of individuals in this study.

The Telework Research Network on a regular basis collects and reviews data from existing sources to review trends in mobile work. The specific 2011 report relating to the United States (US) summarises findings relating to “non-self-employed people who principally work from home”, also abbreviated in the report as WAH or “work-at-home” (Lister & Harnish, 2011:4). The report consolidates data from various sources, including that from federal agencies such as the Census Bureau and the Bureau of Labor Statistics (BLS), as well as from the private sector such as the organisation WorldatWork. As a comparison with the data obtained in this study, the WorldatWork data for 2011 shows that most of remote work (by location) happens at home (63%), in the car (40%), then at a hotel (35%), and only then at the customer (32%) as shown on the left-hand side of Figure 6-2. This is in contrast to the current study, in which most of the work remote from the manager was reported to happen at the customer site (49%), and then home (30% in total of which 14% part-time and 16% full time). The percentage of use of satellite offices (13%) is similar to that of part-time work from home (14%).

Figure 6-2: Telework Research Network report statistics



Source: Lister and Harnish (2011:19;20)

Abbreviation: BLS = Bureau of Labor Statistics (US)

The other finding of the report, shown on the right-hand side of Figure 6-2, was that in terms of the BLS data, employees only spend an average of 2.5 hours per day at home, and that this has not changed dramatically since 2008. This is in contrast with the current study, in which those working from home do so on average for 2.9 days per week, and of the group of individuals having some form of remote work, 16% were classified as home workers. In other words working from home 4 or more days a week. This is closer to the 2004 report, in which the average paid time working from home was calculated at 2.4 days per week.

Another comparable statistic of the report is that according to the survey performed in 2001 by WorldatWork (in Lister & Harnish, 2011:4), which related to workplace flexibility, only 37% of companies in the US offered a full-time arrangement for work from home. There was, however, flexibility allowed for occasional work from home (83%) and also work from home for either one day a week (57%) or one day a month (58%). This seems quite low in comparison with the perceptions that many managers in this study had regarding the advanced virtual-work status in the US.

6.2.3.2 Virtual distance

Additional sources were also consulted in relation to how “virtual” should be defined. Chein (1954:115) had already intimated that environments where humans work are not controlled, clean environments, but highly complex. To this end, Koffka (in Chein, 1954:116) distinguishes between an actual environment (also called the “geographical environment”) and the environment as perceived by the individual (or the “behavioural environment”). Relating to this idea of an environment as perceived by the individual, more recent research has investigated the concept of virtual distance, and the fact that more than geographical distance should be considered when looking at what constitutes the concept of “virtual” in virtual work.

Napier and Ferris (1993:350) carried out an in-depth review of previous research addressing the constructs relating to virtual distance. They have grouped these as structural distance, functional distance and psychological distance in their Dyadic Distance model, which aims to explain certain aspects of the relationship between the manager and the individual team member. In a more recent practitioner’s interpretation, Lojeski and Reilly (2010) define the facets of virtual distance as physical distance, affinity distance and operational distance. In a similar practitioner’s guide, Fisher and Fisher (2001:42) also describe elements that could create distance, namely culture, space and time, and divide teams according to this.

6.2.3.2.1 Structural and physical distance

Structural or physical distance includes aspects of time and space, and relates to proximity, or how far away managers and their team members are from each other (Napier & Ferris, 1993:327; Lojeski & Reilly, 2010:142). The proximity of individuals can also create or reduce opportunities of interaction between the manager and team member (Napier & Ferris, 1993:327). Various examples of physical distance were manifested in the current study. In some of the cases the physical distance of teams remained within South Africa, while for others it extended to multiple countries and even beyond the local South African time zone. (In Foxtrot and Delta some individuals were working in multiple time zones, away from the manager on a regular or permanent basis.) Another example of extensive physical distance in the study

was the case where the individual was situated at the head office, but the manager was actually working in a different country or from home. An example of where the physical distance was the closest was when the individuals were situated in a different office block in the same office park, or where the manager and individuals were sitting in the same office block but still not seeing each other.

6.2.3.2.2 Operational distance

The next element of virtual distance is *operational distance* which, according to Lojeski and Reilly (2010:142), is the "psychological gaps that grow due to the many day-to-day problems that arise in the workplace". This definition includes elements of communication (misinterpretation of the context of an email or message), multitasking (when the number of tasks to perform is all-encompassing, and does not leave time to interact with others), lack of readiness (powerlessness to resolve technical issues that stand in the way of performing the required tasks) and distribution asymmetry (a team being split up unevenly between different locations).

For this study, an example in which the physical distance is actually close but the operational distance is great is when the individual is working in the same office block as the manager, but does not see the manager because the working times of the manager and individual differ due to flexitime arrangements, or the manager has many off-site meetings to attend with customers, or the manager has many individuals to manage. Napier and Ferris (1993:322) refer to the last component as the "increased span of management control", and include it as part of structural distance. They point out that as team sizes have increased, the manager has had to split his or her attention between more and more individuals, effectively making the time slice available per individual very small. This was also found in the current study where large teams, which were also dispersed, needed to be managed, meaning that the time for one-on-one performance discussions, as well as regular operational meetings, became limited. If the manager also needs to divide his or her time between a large set of geographically dispersed customers, this often results in low accessibility and visibility of the manager to the team members in general.

6.2.3.2.3 Functional, psychological and affinity distance

The third grouping looks at *functional, psychological and affinity distance*. Napier and Ferris (1993:327,324) refer to functional distance as the "quality and closeness of the relationship" and indicate that psychological distance is created by age, value systems, sex, race, and the value orientation of dyads or relating to two individuals linked as a pair. These two concepts compare more closely to the aspect of affinity distance as described by Lojeski and Reilly (2010:141) as "the emotional disconnects between virtual team members rooted in lack of fundamental relationship development." Cultural differences, differences in social standing, limited opportunities of sharing personal and organisational experiences and low anticipated collaboration requirements are included as part of this concept.

Relationship building was mentioned as a very important responsibility for managers in the current study. Managers felt that they needed to build relationships with individuals in the team, as well as between individuals, to ensure belonging and therefore reduce the impact of the physical distance. In terms of relationship building, in some cases the concept of the manager being regarded as "the mother" or "the friend" was also evident. This was an example of the increasing blurring of the lines between work and personal life because the work can be performed anywhere, any time. In addition, the way that the manager defined deliverables and measurables (i.e. as team or individual measurables) enhanced or diminished the need for individuals to work interdependently.

One of the elements of *functional distance* that has an impact on the virtual distance and relationship between managers and their team members is the decentralisation of authority when authority and work occur in two locations (Napier & Ferris, 1993:324). Napier and Ferris found that this had an impact on task autonomy, discretion and empowerment, in that remote individuals had an "increased latitude and influence in the decision making process". This links to the concept described by Weick and Sutcliffe (2007:15) as one of the principles of high-reliability organisations, namely that they allow operational individuals in the front line to make decisions. This is normally required when there is no time to wait for a decision to be vetted through a long chain of command, and non-action can lead to disaster. In the current study,

where individuals were working on customer site, they were often expected to act as the company representative on site, and would also be expected to make decisions on their own.

Reliability and taking of responsibility were stated as important characteristics for remote workers in the current study. One of the important manager responsibilities identified was that the managers needed to set specific measures and targets and then allow individuals to execute them autonomously. On the other hand, individuals were also expected to keep the manager informed and escalate issues as soon as possible, potentially reducing the perceived independence and latitude of the individual. Further to autonomy in work decisions, the amount of perceived independence in terms of choice to work from home, as well having the autonomy to execute the choice, also influenced the individuals' perceptions of whether they saw themselves as virtual workers or not. The concept of autonomy is used to extend the functional distance definition by adding a component of discretion in terms of choice of location and flexi-hours. The elements of work autonomy and discretion in decisions regarding virtual work are grouped under the "Discretion/Control" element of Figure 6-3.

6.2.3.2.4 Degrees of virtuality

As regards the concept of degrees of virtuality, Nauman, Khan and Ehsan (2010:638) in their study included the level of use of technology; the geography of locations; and length of time together or apart while collaborating; and the fact that individuals worked for different organisations, as parameters on the continuum of virtuality. They confirmed their theory that empowerment was higher in more virtual projects, and task-behaviour was similarly important in more and less virtual projects, while relationships were more important in virtual projects.

González-Navarro *et al.* (2010:1478) also concluded in their study that the degree of virtuality affected the group interaction style. González-Navarro *et al.* (2010) found that the degree of virtuality was higher in geographically dispersed teams with lower information richness in communication technology, while lower virtuality was created by co-located team members and information-rich communication technologies. The

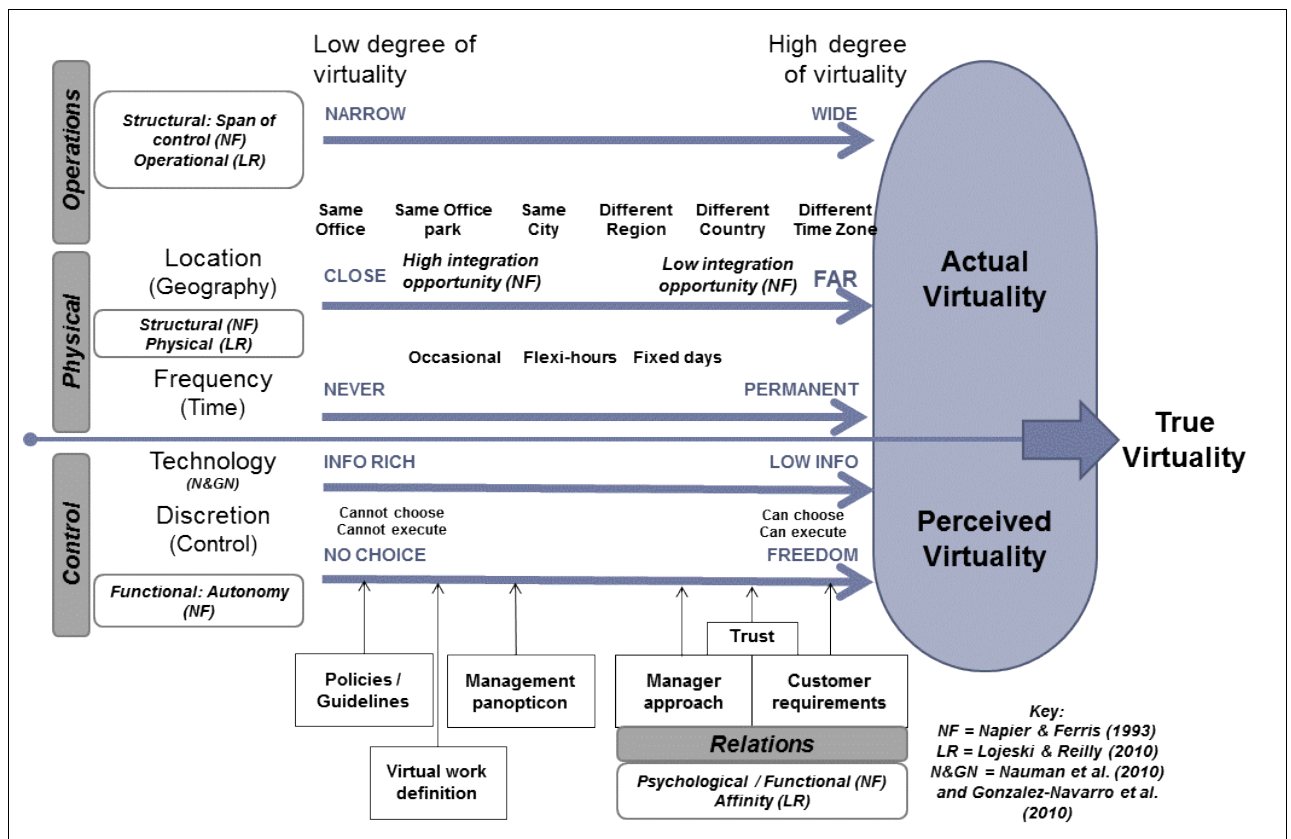
theory that they proved was that the group interaction style (i.e. being passive or constructive) was moderated by different levels of virtuality to produce different outcomes. The subjective outcomes were higher where information-rich communication technologies were used together with the constructive style.

These two studies add technology and the information richness of the medium as an additional parameter to define virtuality. In the context of the current study, technology as such is described as one of the parameters affecting performance under Theme 3, but will be added to the model of virtuality. The subjectivity of performance is discussed as part of Theme 2.

6.2.4 Consolidation of Theme 1 Concepts: Virtuality

As a summary, the current study contributes to the definition of virtual distance by defining four components: physical, operations, relations and discretionary distance. *Physical distance* combines the structural components of Napier and Ferris (1993) with the physical components of Lojeski and Reilly (2010), and retains the definition related to temporal and spatial aspects of distance. *Operations distance* is seen as a combination of the span of management control (Napier & Ferris, 1993), and operational aspects of Lojeski and Reilly (2010). It expands on the existing definition in that the actual operational work requirements, and not necessarily issues, drive the fact that team members do not see their managers or vice versa. The definition of “operational” has therefore been extended by the elements of span of management control and way of work, and been renamed “Operations”. Elements of functional, affinity and psychological distance have been combined in the definition of *relations distance*, represented by the manager’s approach and the customer relationship in the model. Lastly, this study has added *discretion* as a separate element to show the importance of this in terms of virtuality perceptions. The classifications in Figure 6-1 have been amended, and are shown in the combined Figure 6-3.

Figure 6-3: Actual vs. perceived virtuality – theory map (“True Virtuality”)



Note: Enlargement of this diagram available in Figure 15-1 in Appendix F.

6.3 THEME 2: PERCEIVED, ACTUAL AND TRUE PERFORMANCE

6.3.1 Theme Introduction

Section 5.3 “Virtual Work (Context)” reviewed the different formats of virtual work and arrangements made for measuring performance while working remotely, and Section 5.4 “Managing Virtual Performance (RO1)” reviewed how performance of virtual workers was being managed. These two sections contributed to answering Research Objective 1, namely “To critically review the current state of knowledge and understanding of how the performance of virtual knowledge workers is managed”. The high-level elements of how performance of virtual workers was managed were shown in Figure 5-14. This section now compares those findings with the initial literature review, as well as more recent literature. It looks at them from both a formal performance management and a “management of performance” perspective, especially in relation to how virtual performance is perceived.

6.3.2 Managing Performance

As indicated in the summary of Chapter 5, three aspects were used to describe the management of performance, namely the way the manager managed in general, specific deliverables and associated metrics. In principle, the managers did not manage co-located as opposed to remote individuals differently. This was achieved by focusing more on outputs and deliverables than *how* or *where* the individual achieved those outputs. Cascio (2000:86) also agrees that the key difference in managing in a virtual context is the move from managing time to managing projects, which is a form of an output.

The way in which managers managed virtual knowledge workers was also linked to the process groups of PMBOK (PMI, 2004:42), of “initiate, plan, execute, monitor and control”. The aspect of defining deliverables and setting specific expectations as part of the “initiate” phase in the current study corresponds with the views of sources in the initial literature review (Cascio, 2000:87; Locke *et al.*, 1988:23) and more recently Geldenhuys (2010:180), who agree that managers need to define measurables, set goals and be clear on deadlines. Cascio (2000:87) also affirms that once the measurables have been set, the manager should also monitor and give feedback. This is part of the monitoring activity performed by managers in the current study. To assist the manager during the monitoring stage, individuals also need to be transparent and communicate regularly with the manager.

In setting the deliverables and measurements, many administrative deliverables were defined (38%), leading to the perception of micro-management on the individuals’ side. In the current study, reasons for measurement included the fact that timesheet information was required for customer invoicing; the need to determine workload distribution or improvement in service delivery; the need to show the customer that service levels had been achieved; and to benchmark against the industry. Also, monitoring of work while individuals worked remotely for the fixed-days arrangement was important. There were also cases where additional information and task tracking were required because the manager’s manager needed to be convinced that the individuals were actually working, or where senior management did not believe that individuals were actually working if they were not in the office, even though the

results (financial and customer happiness) confirmed that the work was being completed. This is reminiscent of the fable of the Lion and the Ant, one of the online versions of which is reproduced below (Noone, 2010).

“Every day, a small Ant arrived at work early and started work immediately, she produced a lot and she was happy. The boss, a Lion, was surprised to see that the Ant was working without supervision. He thought if the Ant could produce so much without supervision, wouldn’t she produce more if she had a supervisor!

So the lion recruited a cockroach who had extensive experience as a supervisor and who was famous for writing excellent reports. The cockroach’s first decision was to set up a clocking-in attendance system. He also needed a secretary to help him write and type his reports. He recruited a spider, who managed the archives and monitored all phone calls.

The Lion was delighted with the cockroach’s reports and asked him to produce graphs to describe production rates and analyze trends so that he could use them for presentations at board meetings, so the cockroach had to buy a new computer and a laser printer and recruit a fly to manage the IT department. The Ant, who had been once so productive and relaxed, hated this new plethora of paperwork and meetings, which used up most of her time.

The lion came to the conclusion that it was high time to nominate a person in charge of the department where the Ant worked. The position was given to the Cicada, whose first decision was to buy a carpet and an ergonomic chair for his office. The new person in charge, the Cicada, also needed a computer and a personal assistant, whom he had brought from his previous department to help him prepare a work-and-budget-control strategic optimization plan.

The department where the Ant worked was now a sad place, where nobody laughed anymore and everybody had become upset. It was at this time that the Cicada convinced the boss, the Lion, to start a climatic study of the environment. Having reviewed the charges of running the Ant’s department, the Lion found out that the production was much less than it had been before, so he recruited the Owl, a prestigious and renowned consultant, to carry out an audit and suggest solutions. The Owl spent three months in the department and came out with an enormous report in several volumes, This concluded that “The Department is overstaffed.”

Guess who the lion fired first? The Ant, of course: “Because she showed lack of motivation and had a negative attitude.

Disclaimer:” The characters in the fable above are fictitious and resemblance to real people and facts and any coincidence with corporate world is purely coincidental”.

In this fable, the Lion (in other words the manager) cannot believe that the ant (or the worker) can be productive without supervision, so a complicated “framework” to measure the ant’s performance is instituted, which includes multiple layers of management (“management panopticon”). In the end, the ant is so busy proving that work is being done that no real work can actually be done, and ultimately the ant is fired because of low productivity. This links directly with the question of how much time is actually spent on measurement, as opposed to producing technical deliverables, in the virtual work situation. Also, the question should be asked as to

how many managers are used in the process of monitoring and measuring as part of the management panopticon?

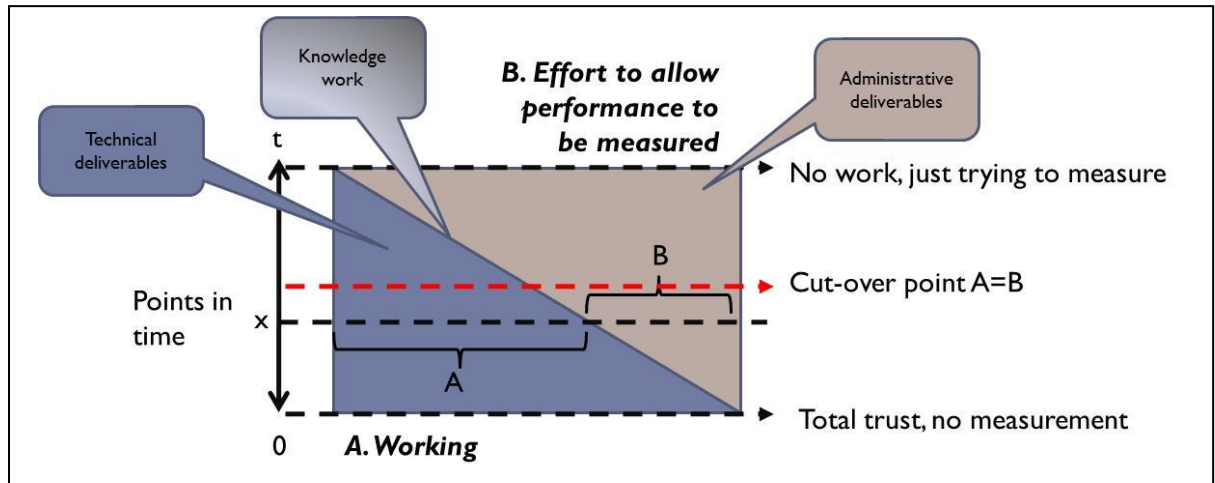
From the interpretation above, it seems that a balance needs to be reached between working and measuring. The questions that need to be answered are “What is it important to measure?”, “Why are we measuring?” and “What will the measurement facilitate?” Some of the managers in the current study have answered these questions and found that less is in some cases more. In other words, defining only the critical elements on which the individual will be measured gives individuals more time to focus on producing actual work.

Figure 6-4 shows a one-by-one grid which can be used to show the progression between two situations from one extreme to the other extreme over a period of time. It consists of a rectangle that has been divided diagonally. The two resulting triangles represent the two distinct situations. At any point in time, a certain percentage of both situations will be present; for example, at time x , there will be a portion of situation “A” and a portion of situation “B”. The only time (theoretically) that only one of the two situations will be present is at time 0, when only situation A occurs, and time “ t ” (at end of “transition”) when only situation B will be present. The grid has been used to show time spent “working” as situation A and time spent “measuring” (or “effort to allow performance to be measured”) as situation B. Based on the principle that organisations exist to deliver a product, it follows that the effort to allow performance to be measured (situation B) should always be less than the actual work that needs to be performed (situation A). Thus, mathematically stated, $A > B$. The ways in which B (effort to measure) can be reduced is firstly by more trust between managers and individuals; secondly, saving time by using more systems that can automatically gather the data, instead of manually capturing the data. Thirdly, if the measurement in itself is a deliverable, such as capturing time to invoice the customer, or using this data as a once-off exercise to create benchmarks, it makes more sense to spend the time to capture this information.

Three areas of deliverables and measurements, namely the actual or technical deliverable, the additional knowledge deliverable (likened to “metadata”) and then the

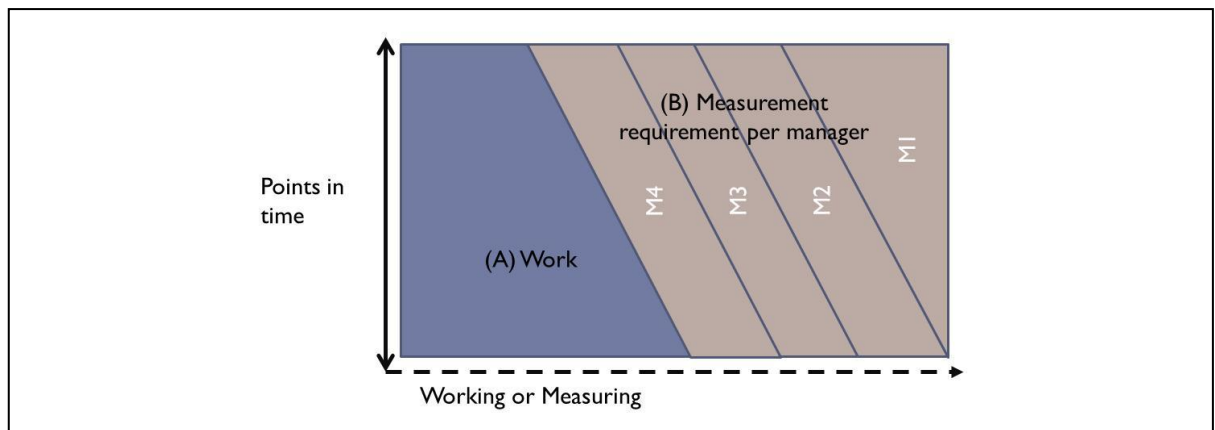
administrative deliverable, have been mapped to Figure 6-4. The “knowledge” deliverable has been mapped as a combination of technical and administrative deliverables, since in some cases it will be a deliverable in itself. In other cases it will be the meta-data to describe a situation, or be used as input to future work and processes.

Figure 6-4: Working time vs. Measurement time



Using the principle of the two-by-two matrix of working as opposed to measurement time, the measurement requirements of multiple managers can clearly be seen to reduce the individuals’ working time (Figure 6-5).

Figure 6-5: Impact of multiple managers on working time



Gordon (1997), in an attempt to summarise her experiences regarding telecommuter productivity, defines productivity for telecommuters simply as “effectiveness”.

Effectiveness is seen as the combined multiplicative function of quality, quantity, timeliness and the number of tasks that the individual can be involved in simultaneously (“multitaskability”). The definition of productivity in the current study was still very much about number of products in a specified time. However, in some cases (such as Foxtrot), the company found it futile to count the number of calls or number of lines of code, because this focus on quantity left out the element of quality.

$\text{Productivity} = \text{Effectiveness}(\text{Quality} \times \text{Quantity} \times \text{Timeliness} \times \text{Multitaskability}) \text{ (Gordon, 1997)}$
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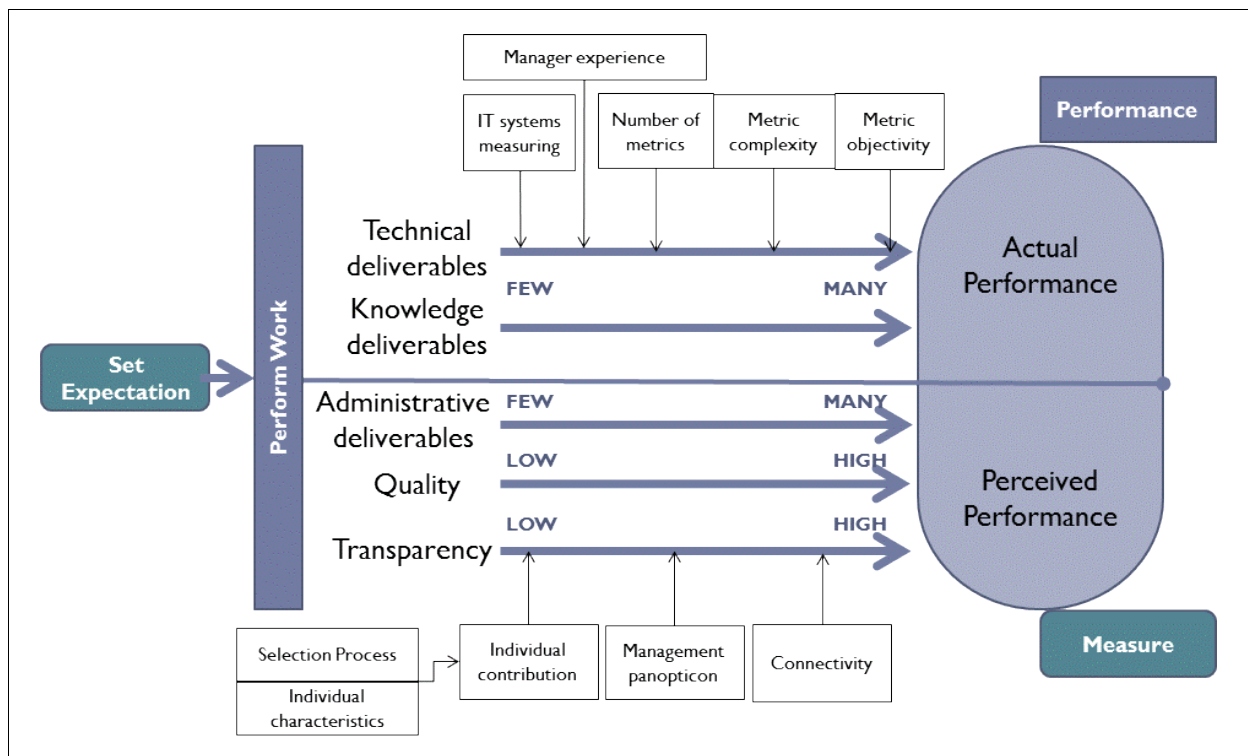
In relation to the question of “Why measure?”, Gordon (1997) also refers to the “politically correct need to measure”, and highlights the fact that there is often a difference between what managers ask for as measurements, and the actual reason for measuring, or what they really want. This is often based on mistrust. As explained above, the current study looks in depth at this issue as noted by Gordon (1997). If the underlying reason is mistrust, then the manager needs to decide if the working relationship is fruitful enough to maintain, or if so much time will be spent on measuring that no effective work will be achieved. The current study is in agreement with Gordon that identifying the underlying concerns for measurement is important, rather than just adding measures for the sake of measurement.

A study by González-Navarro *et al.* (2010:1478) showed that the group interaction style (i.e. being passive or constructive) was moderated by different levels of virtuality to produce different outcomes. The subjective outcomes (or perceived performance) were higher when information-rich communication technologies were used together with a constructive style. This can be related to the concept of transparency in the current study. In other words, using information-rich IT technologies will increase the level of transparency during communication and feedback.

The elements described above in terms of managing performance are now combined in Figure 6-6 to show how each of these contribute to the two concepts of actual performance and perceived performance. They are also mapped to the original elements in Figure 1-1 showing the gap for enabling virtual performance. The manager sets expectations, after which the work is performed. The work performed includes the technical, knowledge and administrative deliverables, as well as quality

and transparency. Technical and knowledge deliverables relate to actual or tangible performance. Administrative deliverables and quality associated with deliverables lead to perceived or subjective performance. This is normally where performance is measured. In addition, the degree of transparency of the individual will also positively affect the manager’s perception of the amount of work that is being performed. Additional moderators that will affect how accurately the technical deliverable can be measured include: having systems available that can assist in measurement (“IT systems measuring”); the manager’s technical experience relating to the deliverables (“Manager experience”); and, in terms of metrics, the number, complexity and objectivity of the measurements (“Number of metrics”, “Metric Complexity”, “Metric objectivity”). The moderators that will enhance or reduce the transparency of the work being completed include the way the individual works (“Individual contribution”, related to their personal characteristics), the extent to which other managers and individuals can give feedback to the manager or require feedback from the individual (“Management panopticon”), and the quality and information richness of connectivity provided through IT technology (“Connectivity”).

Figure 6-6: Actual performance vs. perceived performance model



6.3.3 Performance Management

In a recent contribution to the 2012 Conference of the Society for Industrial and Organizational Psychology in San Diego (Gorman, Ray, Nugent, Thibodeaux, List, Lonkar, Bradley, Mason, Pittington & Pokhrel-Willet, 2012), a survey of performance management practices in the US was conducted to determine the current state of performance management in organisations. It also evaluated the gaps between science and practice. As stated by Aguinis (in Gorman *et al.*, 2012:3), performance management is defined as “the continuous process of identifying, measuring, and developing the performance of individuals in organizations”.

The US study gave findings on various items relating the performance management practices, including design characteristics, rating formats, multi-source performance ratings (MSPRs), performance-management rater training, contextual factors, and fairness and effectiveness of performance management systems. *Evolving themes* were also discussed. These findings are now compared with the current study. In the paragraphs below, “US study” will refer to the one documented by Gorman *et al.* (2012) and “current study” to this study for the managerial framework when comparing data. Elements of the initial literature review relating to performance management will also be cited at the same time.

In the context of performance management, the first aspect that the initial literature review looked at was the process of *formal performance management*. From the perspective of this process, the individual performance appraisal (IPA) was still mentioned and used extensively by the managers interviewed, especially in the companies where the shared services HR model was being used. So as per Miner (1992:379) and as shown in Figure 3-1 of Chapter 3, the current study found that the organisational objectives were translated to dimensions of performance and the related human behaviour was expected from this. Some managers had more detailed spreadsheets that assisted them with the ratings and levels associated with the required performance. The objectives of the business unit were also used to understand why specific activities within the unit were important. According to the initial literature review, linking deliverables and measures to the organisational or

business unit goals ensures validity of performance appraisals (Allen, 2007:44; Brinkendorf & Dressler, 1990:63; Carney, 2007:51; Johnson, 2007:97–103).

In the aspect of *performance management design characteristics*, the US study found that 55% of performance appraisal systems were developed by the HR department and 19% by external consultants. In the current study it seemed that this was purely an HR function, especially in the context of the shared services model for HR and the corporate performance appraisal systems. In the US study, it was also found that 88% of the organisations used a single system company-wide. In the current study, this was the objective of the companies, but had not always been possible from a business unit integration perspective, especially when the company itself had an aggressive “mergers and acquisitions” drive. In the US study, most of the systems had been in place for three or more years. The question to ascertain this was not specifically asked in the current study. The US study also showed that the frequency of performance appraisals was once yearly for 64% of the organisations and twice a year in 24%. In the current study this took place mostly twice per year. In Foxtrot only did it take place once per year.

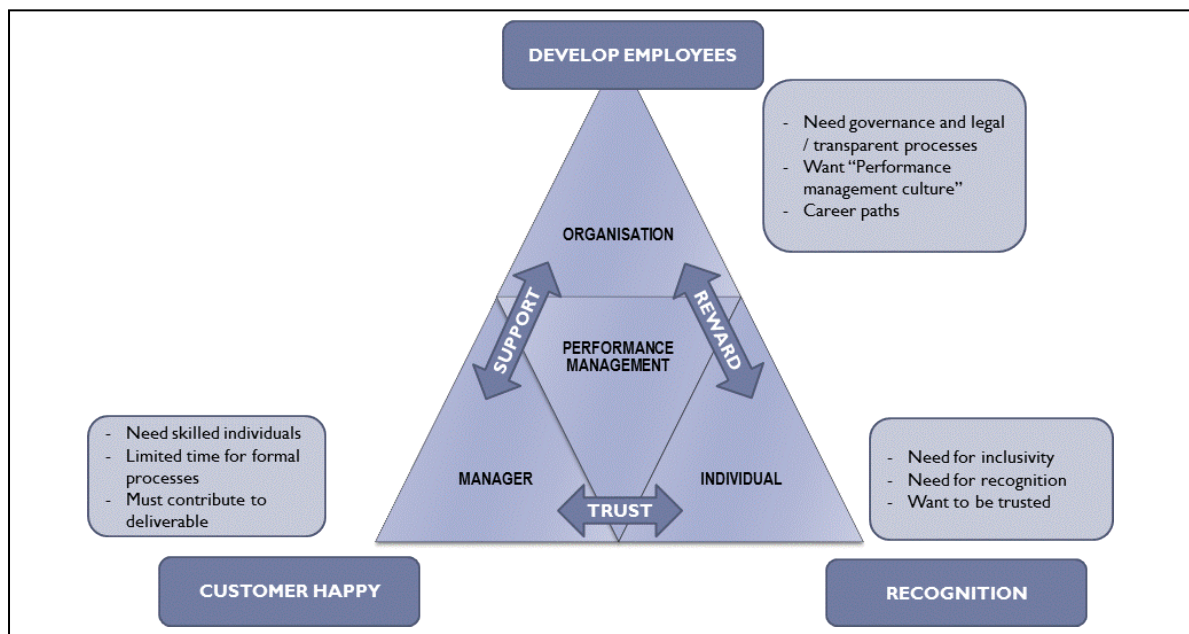
As part of the design characteristics, the *function of performance management* in the US study was found to be 22% administrative, 12% developmental, and 66% a mixture of the two. According to the policy objectives of the companies in the current study, the purpose of performance management was mostly developmental. This is also in line with the initial literature review completed for performance management in Chapter 3. The two most important objectives of the performance appraisal were given as motivation (counselling) and development (training for knowledge and skill) in order to improve productivity (Latham & Wexley, 1994:5).

From the manager’s perspective, however, it was found that formal annual or bi-annual performance discussions were often held in the context of the salary increase process. The day-to-day discussions of the managers were happening in the context of delivering what was expected, or in other words, managing performance. In addition, even though IPAs were referred to extensively in the current study, there seemed to be a disconnect between managers and the organisation in terms of the training and development objectives, since managers, as part of their selection

criteria, would prefer to appoint individuals who were already skilled and experienced. This is especially needed in a remote work situation, where the individual may not necessarily have face-to-face access to other skilled resources or the manager, and would be expected to perform most of the job autonomously.

Only in one company (Delta) was there a stronger focus on development and gaining experience through the performance management process, rather than for salary increases only or simply getting the job done. This also compares with improvements proposed by the initial literature review relating to the separation of performance and development discussions (Harvard Business School, 2007:19). Managers in the current study also seemed to associate HR's contribution in the performance management process rather with the facilitation of disciplinarys, in other words "non-performance". They found the procedures around formal performance management time-consuming and a distraction from operational activities. The most important measure of success for them was whether the customer was happy. From the individuals' perspective, they wanted to be recognised for work well done, and felt that performance should not be considered only when issues arose. They also wanted to be trusted; in other words they did not want all the documentation and administration that managers required of them in order for their performance to be measurable. The resulting triangular relationship is shown in Figure 6-7.

Figure 6-7: Performance management triangle



The next section in the US study related to *performance rating formats*. The US study found that 54% of organisations used an absolute rating based on the behaviour of the individual in terms of predetermined standards; 19% used a relative format whereby the employees' behaviour was compared with performance of others for the specific job; and 27% used both. Based on this definition, the ratings in the current study were absolute rather than comparative, either from the perspective of a job comparison or a comparison between individuals. The focus in the current study was also not very strongly on behaviour as such, but rather on technical deliverables. The behavioural interpretation in the current study was based more on qualitative measures, which the managers found very difficult to put into words. Rating types used in the US study included the use of graphics (27%), trait ratings (19%) and behaviourally anchored rating scales or BARS (14%). On performance appraisals, the current study used mainly 5-point rating scales (where 1 indicated non-performance and 5 indicated performance far above the average). A simple Yes-No scale was also used extensively ("Was the document sent or uploaded?"). In addition, in the US study, 85% of organisations reported goal-setting or management by objectives (MBO). MBO as such was not specifically mentioned in the current study by either the managers or the HR representatives, but in terms of managing individuals they could not see, all managers agreed that managing outputs was important, which also correlates with the literature on managing virtual knowledge workers (Reddin, 1988:33, Von Hoffman, 2007:153) as provided in the initial literature review. The qualitative measurement of knowledge deliverables was, however, not a priority for the managers in the study, and this was measured rather on a Yes-No metric.

The US study also reviewed the prevalence of *multisource performance ratings* (MSPRs), in other words collecting performance metrics formally from more than one source. This concept was also mentioned as an improvement to ensure more reliable performance measures in the initial literature review (Latham & Wexley, 1994:111; Grobler *et al.*, 2006:279). In the US study, only 26% of the organisations used MSPRs. This low percentage seems to correspond with the findings in the current study, where the use of peer reviews to ensure reliability of performance measures was not used extensively by the managers in the current study, except in Delta,

where a more comprehensive MSPR system was in place. Peer reviews were mainly used in the context of improving or ensuring the quality of deliverables. Informal feedback was used, linking to the management panopticon, and customer feedback was also very important in all the companies. In the question posed to the individuals as to who measured their performance, 53% of individuals selected their manager as evaluator, and across the whole group 84 (of the 163) individuals indicated that they were evaluated *only* by their manager. This is close to 52% of the respondents in total and only 1% less than the individuals who indicated their manager as the evaluator. Self-evaluation and customer as evaluator were also selected in 16% and 11% of the responses respectively. This could be due to: time constraints in getting more inputs from multiple parties; the fact that operational execution normally has priority; simply the mindset of who should evaluate performance; or the fact that performance evaluation happens only during formal performance appraisals.

The US study also investigated the occurrence of *performance-management rater training*, and found that 84% of organisations trained management on how to conduct performance reviews. In the current study, managers did not specifically mention receiving training in performance management, nor did HR officers specifically mention that they trained managers in this. The question of management training in the context of managing virtual workers was discussed. In this context, there seemed to be very little management induction in the first place, and none on how managers should handle the virtual work situations. Managers in general created their own measures and did not ask for assistance from HR.

In terms of *contextual factors* in the US study, 45% of organisations held raters accountable for their ratings. Contextual barriers included, among others, the organisational structure and rewards, rating inflation and errors, and the differences between rater and ratee expectations. In terms of next-level reviews, in which a committee would review the overall ratings, there was only one company in the current study which seemed to have such a next-level review in place. The biggest barrier in the current study related to performance management was finding sufficient time to complete the formal performance appraisal process and making sure there were standards that were agreed upon across related business units or teams. This view was not necessarily restricted only to companies that did not have an online

system. Ultimately, the achievement of customer satisfaction was very important to all managers.

Another element reviewed in the US study (Gorman *et al.*, 2012) was the *fairness and effectiveness of performance management systems*. There seemed to be a tendency towards “fairness”, since 68% of the organisations felt that the performance appraisal systems were somewhat or extremely fair, while 21% of the organisations felt that the performance appraisal systems were somewhat or extremely unfair. Only 7% of the organisations believed their systems were legally defensible. In the current study, just over half (53%) of the individuals across the cases did agree that HR procedures to evaluate their performance were fair. There was a large group (35%) that was uncertain and the rest disagreed. There seems to be an even smaller percentage in the current study than in the US study that agrees that procedures are fair.

Finally, in terms of *evolving themes* in the US study, there was mention of a concept of competency modelling that has been receiving recent research attention (Campion, Fink, Ruggerberg, Carr, Phillips, & Odman, 2011 in Gorman *et al.*, 2012:7), as well as team-based performance management, which seemed to be gaining in popularity in organisations (Aguinis in Gorman *et al.*, 2012:7). In terms of the current study, competency modelling was not mentioned. Only in one company (Foxtrot) were there specific measures for teams instead of for individuals, unless projects were being delivered.

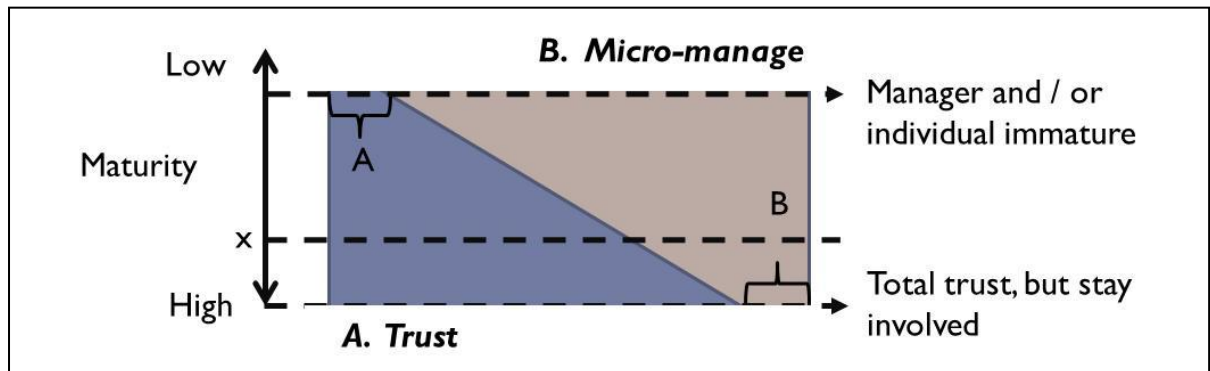
In terms of performance appraisals, the current study included an example of a case where the appraisal instrument was not measuring the right thing, as found in the initial literature review (Harvard Business School, 2007:35; Latham & Wexley, 1994:1). This was when goals were set on an individual level, so that the team could not be measured, and vice versa. Managers pointed out that care needed to be taken with setting goals on the right level and using the right metric to ensure that the right outcome was achieved.

6.3.4 Trust and Perceived Performance

Trust was one of the elements which was mentioned in the current study as important in managing virtual workers. The fact that trust is so important is not a unique finding of the current research, and has been reiterated in various studies relating to virtual work, the management of geographically dispersed teams and e-leadership (Malhotra et al., 2007:61, Matlala, 2011:73; Raghuram *et al.*, 2001:387). Geldenhuys (2010:176) also refers to trust as the “willingness to take a risk”. This is true for the current study in the sense that managers need to trust individuals to deliver according to agreement, even though they will not be seeing the individual on a day-to-day basis.

In the same way that different types of deliverables were shown in the two-by-two matrix of Figure 6-4, Figure 6-8 shows situation A as “trust” by the manager and situation B as “micro-management”. The amount of trust as opposed to micro-management will depend on the maturity of both the manager and the individual. However, there should always be some trust left in a situation. If this is not present, the relationship between the manager and individual is non-existent, and the individual will very probably resign, or the manager will re-position the individual to another team. On the other hand, even if there is full trust, the manager still needs to stay involved with the individual to ensure “belongingness” of the individual in the team and ultimately the organisation.

Figure 6-8: Trust vs Micro-management



Low trust situations which lead to micro-management are normally more prevalent where the individual (or the manager) is immature, or where the individual is still junior in the position. A certain degree of micro-management in these cases may not necessarily have a negative effect on performance, and activities related to low maturity and low skill level are represented in Table 6-4. This is in line with the model of Situational Leadership of Hersey and Blanchard (1981), in which the leadership style is adjusted according to the maturity of the follower.

Table 6-4: Maturity and skill vs Actions

Value		Parameter	Value	
LOW		Maturity of individual	HIGH	
		Maturity of manager		
		Skill level		
Low end action		Parameters	High end action	
Micro-manage	Specific outcomes based on standards in the environment	Deliverables	Individual defines the deliverable	Trust
	Expand to task level	Setting of Goals	High-level goals only	
	Specify behaviour required	Behaviour	Expect behaviour to happen	
	Higher towards output and deliverables	Type of deliverables	Higher towards behaviour and knowledge work	

The trust aspect can also be related to the psychological contract that was mentioned in the initial literature review. According to Rousseau and Tijoriwala (1998:681), this is "an individual's belief in reciprocal obligations arising out of the interpretation of promises", and therefore not necessarily a written or explicit agreement. Where the psychological contract seemed to be used most extensively was in Echo, where the manager referred to being creative in the management style in order to motivate individuals. This allowed individuals to have the flexibility to take some personal time during the day, but be available for additional customer queries and requests that were received outside of formal office hours (as customer expectations are that individuals will be available for extended hours). In general, the work and checkpoints needed to be much more formalised in a remote situation, since there would not be visual clues and informal discussions to support the general "flow of work".

Another item that could potentially be related to trust, especially in situations where difficult messages needed to be conveyed (such as during performance appraisals), was that a few managers preferred to hold difficult performance conversations telephonically or remotely so that they could focus on the message and not be distracted by the reaction of the individual. This could be a reason why managers are often seen as unfair judges in a situation when performance is being managed, as described in the initial literature review (Cascio, 1998:58; Culbert, 2008; Harvard Business School, 2007:2–3; Latham & Wexley, 1994:1). In addition to what is stated in the literature, this type of situation not only reduces trust, but may potentially exist because of a low trust situation to start off with. This becomes a perpetuating circle. This shows again the importance of trust in the relationship.

6.3.5 Consolidation of Theme 2 Concepts: Managing Performance

Comparing the model of actual and perceived performance with the literature reviewed in the previous paragraphs showed that the elements in the current study have a high relationship with individual aspects of the literature reviewed (Cascio, 2000; Locke *et al.*, 1988, González-Navarro *et al.*, 2010; Gordon, 1997;), and included generally the elements of initiation, planning, executing, measuring and controlling as prescribed by PMBOK (PMI, 2004). One of the studies which had a more comprehensive model was that of Geldenhuys (2010), who created a framework for management within the virtual workplace, incorporating people, processes and places. Even though aspects of Geldenhuys (2010) were also prevalent in the current study, namely management in general and limitations, advantages and disadvantages of virtual work, the current study has focused specifically on the management and enablement of *performance*, and how organisational and other factors affect this. The current study also extends the understanding of actual (objective) and perceived (subjective) performance (González-Navarro *et al.*, 2010:1478), by adding additional elements that affect these two concepts. In addition the current study adds the concept of “true performance” as a state of performance that is a combination of actual and perceived performance. The current study also shows that the degree of virtuality of the individual can act as moderator for perceived performance. It is therefore important for the manager to

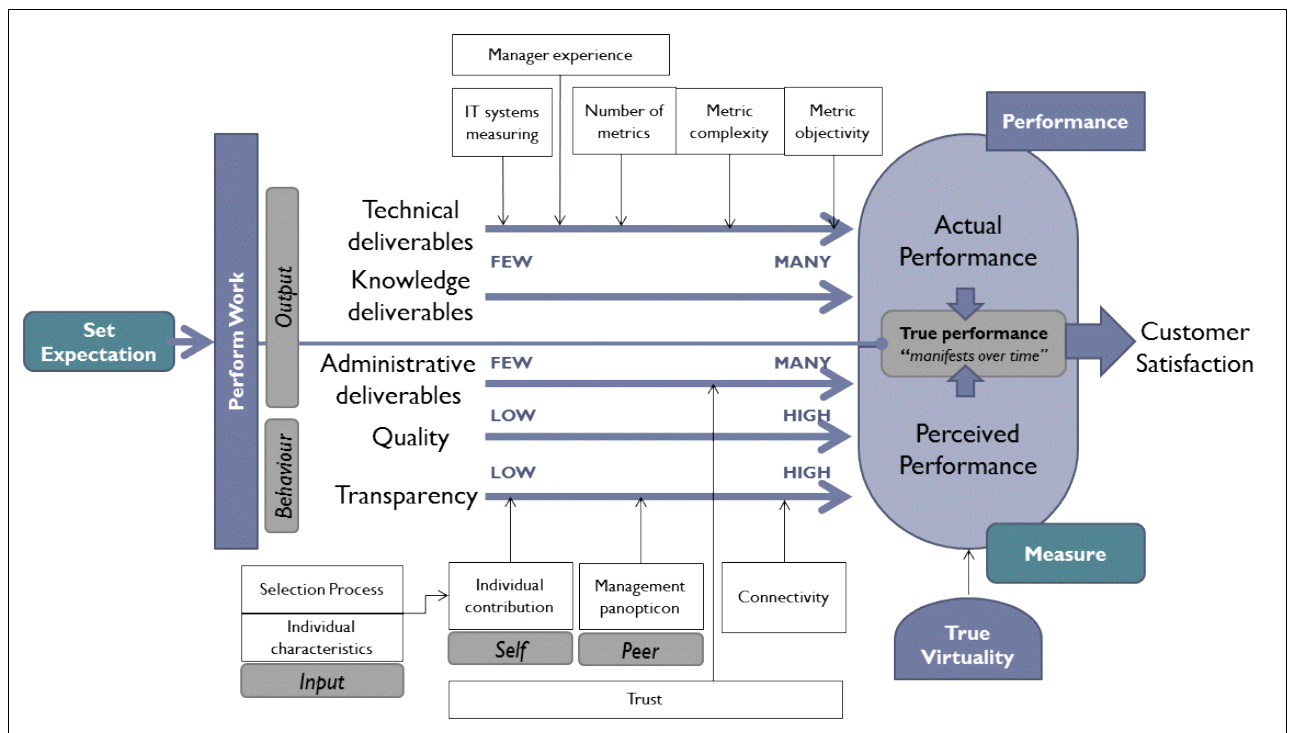
determine the true virtuality of an individual so that it does not unnecessarily affect the perceived, and ultimately the true performance.

The additional element of trust as moderator for the number of administrative deliverables has been added to the original model of “Actual vs. True Performance”. Moreover, the “True Virtuality” of an individual, as elaborated in Figure 6-3, will moderate the perceived performance. As was stated by the managers in the study, true performance ultimately manifests itself over time, and has been added as the combination of actual and perceived performance. If the time available for the true performance to manifest itself is very short, and there are only limited systems and metrics to ascertain actual performance, managers have to rely on perceived performance which, as can be seen from the model, requires many additional inputs from individuals and will also depend on the degree of transparency. Managers often know intuitively (have a “gut feeling”) what the true performance of an individual is, especially if they have been working very closely (not necessarily in distance but in terms of involvement) with the individual. Nevertheless, all the measures and deliverables remain important. Ultimately true performance results in “Positive Customer Satisfaction” or, in simple terms, customer happiness. This progression is shown in Figure 6-9.

As an additional classification of deliverables, and as already discussed in the initial literature review, the study conducted by Limburg and Jackson (2007:146) discussed control approaches in relation to how workflow management systems (WFMS) could be used for collection of performance management data. These control categories have been used as a link to the different types of deliverables. These categories are represented by the grey blocks with the words “Output”, “Behaviour”, “Input”, “Self” and “Peer”.

All of the deliverables, metrics and moderators, as well as their interrelationships, have been mapped in Figure 6-9 to represent a view of how true performance is made up of the combination of actual and perceived performance.

Figure 6-9: Actual vs. perceived performance model (“True Performance”)



Note: Enlargement of this diagram available in Figure 15-2, Appendix F.

6.4 THEME 3: PARAMETERS AFFECTING PERFORMANCE

6.4.1 Theme Introduction

The whole of Section 5.5 in Chapter 5 was devoted to defining parameters affecting the performance of virtual knowledge workers. These were broadly divided into organisational, contextual, manager and individual parameters (refer Figure 5-35, the summary of the Impact Parameter Model, in Chapter 5). Some additional relationships of these impact parameters have been shown in the “True Virtuality” model (Figure 6-3) as well as the “True performance” (Figure 6-9) model.

The paragraphs below explore how this initial Impact Parameter Model should be extended to accommodate parameters identified in additional literature, or highlight parameters of specific significance that were found in other parts of the study, which link to the model.

6.4.2 Organisational Impact

The categories relating to organisational impact were leadership, organisational culture, design and strategy. The creation and application of policies was seen as a sub-component of the strategy of an organisation when the coding was completed in Chapter 5. However, HR policies play an important role in terms of the perceived virtuality as shown in the model of True Virtuality (Figure 6-3). This model shows that the lack of a virtual work policy, or the lack of knowledge of such a policy, could lead to a lower perceived virtuality. When individuals were asked in the individual questionnaire if a “work from home” or a “flexible work hours” *policy* existed, there were similar numbers of respondents who indicated “Yes”, “No”, and some were “Uncertain” whether the policy in fact existed or did not exist. Uncertainty regarding the existence of the policies, especially the “work from home” policy, may have been due to the fact that in all of the companies individuals were allowed a more flexible work style, including working from home occasionally, at the discretion of their managers.

A possible further misunderstanding could also be based on the word “policy” itself. The Microsoft *Encarta dictionary* defines policy as relating to a “course of action” which is then described as “a programme of actions adopted by a person, group, or government, or the set of principles on which they are based”. In this definition, the word “policy” refers to a decision that has already been made and thereafter documented, or a way of work that needs to be adopted by all. Individuals who understood this more formal meaning of the word policy would have indicated “Uncertain” or “No”, because they understood that all flexible work arrangements were somewhat discretionary.

Even the managers in the larger organisations were not all sure about the existence of formal policies, illustrating the difficulty in larger organisations of ensuring that everybody is aware of all the rules. Furthermore, when the HR representatives were asked about the policy, there seemed to be a common notion that flexible work was allowed and could be decided on by the managers, but that creating a specific policy for “work from home” would “open floodgates” to individuals who would demand to be allowed to work in this way. Even Foxtrot, which as an organisation displayed a lot of

flexibility around virtual work, had a “cautious” approach to allowing individuals to work from home, and the draft telecommuting policy was only because of the governance requirements in the US.

A more formal definition relating to organisational policies is: “HR policies are guides to management’s thinking, and they help management achieve the organisation’s objectives. Policies also help define acceptable and unacceptable behaviour and establish the organisation’s position on an issue.” (Grobler *et al.*, 2006:12). This shows that policies represent the organisation’s view on the matter, especially where there may be legal implications. According to the same source, policies are also important in creating a common work framework against which operational decisions can be verified for consistency, especially when there is a difference of opinion.

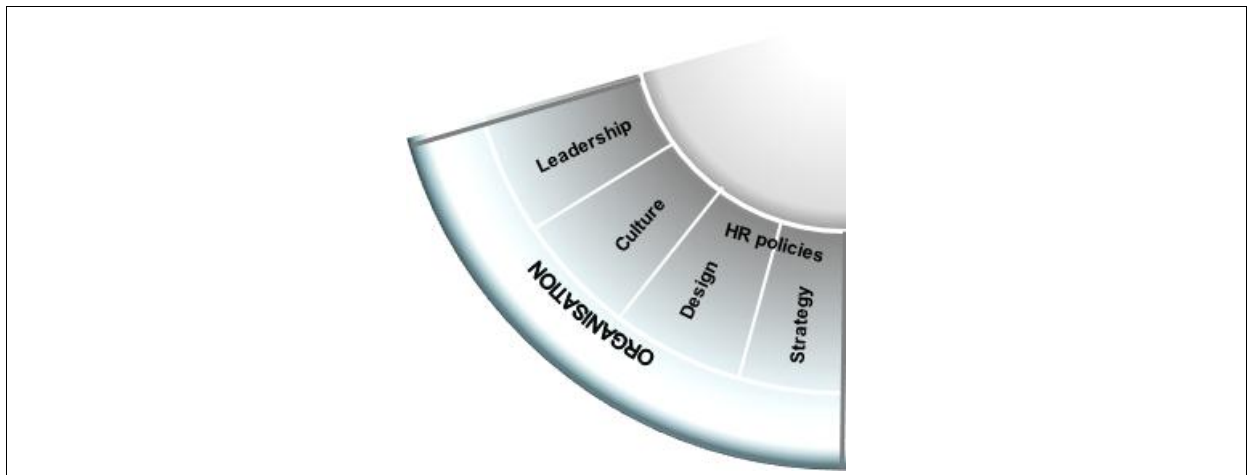
The way that Delta has approached the dilemma of a policy becoming the right of all employees was not to specifically have a policy for working from home, but to create extensive guidelines for flexible work styles. This is supported by policy statements on flexible work availability. This assists managers and individuals to build and evaluate a business case that will be appropriate for the type of job, the customer, the manager’s style and the individual’s requirements. Most of the managers did indicate that a guideline or framework would be beneficial for assisting with these kinds of decisions, and would allow rules to be applied fairly and equitably. Moreover, a framework or guideline would give the manager the option of declining a request, rather than being forced into a situation that was untenable under a formal policy. It would also help managers understand the parameters available to them for this type of work.

When looking at telework policies in the US, the *State of Telework in the US* report (Lister & Harnish, 2011:22) stated “In February of 2011, *Fortune Magazine* reported that 82% of companies that made its annual ‘100 Best Companies to Work For’ list allow employees to telecommute or work at home at least 20% of the time”. In the light of governance around virtual work in the US, one would assume that these companies all had policies to support this kind of work. As an example of policies on the highest level, Montalbano (2010) reported in *Information Week* that as part of the Telework Enhancement Act of 2010, Obama had officially allowed federal employees

to telework under protection of the law. Montalbano further reported, “The bill, which requires agencies to establish telework policies and designate a managing officer with direct access to a top agency official to oversee telework programs, has been up for consideration since March 2009.”

HR policies have therefore been added in this study as an impact parameter related to both the strategy category (as policies set out the position of the organisation) and the design category (as policies assist in tactical execution in the organisation, and this drives how optimal team configurations will be designed). The quadrant that has been affected is shown in Figure 6-10.

Figure 6-10: Impact Parameter Model: Organisation: HR policies



6.4.3 Contextual Parameters

The contextual parameters include elements of geography such as time-zone and regions, absence of visual clues (face-to-face interaction), situational factors, external stakeholders including customers, other teams, the individual’s personal situation and third parties. Metrics that were difficult to define are also listed under contextual parameters, and lastly some technological limitations in terms of HR tools not being available. In addition to this specific technological limitation, the issue of lack of bandwidth availability was mentioned in most of the manager interviews when additional IT requirements were discussed.

Technology has also been one of the fundamental enablers for the proliferation of remote work possibilities (Piccoli *et al.*, 2004:359; Raghuram *et al.*, 2003:181; Watson-Manheim & Belanger, 2002:61). Tasks that could originally be completed only in the main office location because systems were available only within the corporate network have now become accessible via wireless and fixed-line broadband connectivity. The fact that most of the employees (61%) in the current study worked away from their manager (and the main office location) more than four days a week attests to this. The importance of connectivity, and the resultant requirement for bandwidth, is therefore self-evident. This connectivity gives access to the systems that need to be checked as part of customer service delivery, company portals to access standard documents or knowledge artefacts, and in more general terms for communication, collaboration and socialisation, as categorised by Palmer (1998).

In the managerial framework created by Geldenhuys (2010:262), technology was linked to people (simplified and standardised use of technology for people), process (how technology can support improved business processes for remote workers) and place components (addressing aspects of infrastructure feasibility). As already shown in “Theme 1: Virtuality”, technology is the mediator through which managers need to manage and enable the individuals reporting to them. The current study therefore confirms the importance of technology in the virtual management situation.

Because bandwidth is such a scarce and expensive commodity, especially in South Africa, companies in the current study tended to limit certain functions while on the corporate network, and limited especially the use of social websites. Computing networks and environments have also become increasingly complex, as found in the current study, where individuals were struggling to obtain the right level of access and connectivity on both corporate and customer networks. The general bandwidth limitations in South Africa were found to be especially limiting around the requirements for more visual interaction via video conferences, and especially online video conferences through voice over internet protocol or VOIP-based applications.

These connectivity limitations have led to the need for individuals to visit the main office locations more often, or managers to visit remote sites on a more regular basis,

and have an impact on perceived virtuality (perceived virtuality is reduced if information technology is not information rich) and perceived performance (transparency is reduced if individuals cannot connect, which reduces perceived performance). The importance of technology needs to be shown more clearly in the Impact Parameter Model, and specifically the connectivity aspect of technology. This is now added as a separate parameter and the related quadrant is shown in Figure 6-11.

Figure 6-11: Impact Parameter Model: Contextual parameters: Technology



The absence of visual clues, or in other words the absence of face-to-face interaction, is explored in more detail in Theme 4.

6.4.4 Customer Impact

Throughout the study, it became apparent that the customer has a major impact on both the actual virtuality and the perceived virtuality of an individual, as well as on how performance is measured. Some of this impact has already been shown in Figure 6-3, where the model for true virtuality was built and “Customer requirement” was added as moderator for “Discretion”. In this regard, the customer defines the *service requirements*, which include deliverables, their measurement and the location at which they should be delivered. (Customer requirements were initially coded as a

limitation of virtual work, as well as a reason for virtual work because of geography and time zones).

Quality has also been defined as meeting customer expectations or adding value to the customer's service. Ultimately, if the customer is "happy", then it can be assumed that the individual team member (or the team) has performed, as shown in the model for true performance in Figure 6-9. In this regard, the customer becomes part of the *management panopticon* that can give feedback to the manager if things are not going according to agreement, or provide the manager with positive feedback when things are going well. Managers reported that monthly reports, surveys and informal feedback were used for this. When non-performance occurs that negatively affects the customer's business, the customer also often expects to see action taken towards the individual.

The manager's role is to set expectations at the beginning of a service engagement, protect the individual when things go wrong, and build trust with the customer so that the virtuality of the individual can be increased. The customer impact code that has been categorised as part of the external stakeholder category of "Contextual Parameters", as shown in Figure 5-35, was used for negative impacts from the customer (in other words when the customer was the cause of non-performance by changing service requirements, or causing issues which resulted in perceived non-performance). Negative impacts also include mistrust by the customers and their always wanting to see the individuals on site. This has been summarised as "Low maturity" of the customer. The part of the Impact Parameter Model that now more clearly shows this impact is shown in Figure 6-12.

Figure 6-12: Impact Parameter Model: Customer impact



6.4.5 Individual's Contribution

The interviews with the managers specifically requested inputs from the managers on what they expected of the individuals in terms of contributions that could make the management of virtual performance easier, and also the type of individuals that they deemed to be more suited for this type of working scenario. In this regard, the individuals have also been depicted as a quadrant on the Impact Parameter Model in terms of their characteristics, contribution, experience and skills. Desirable characteristics included professionalism, dependability, being achievement-driven and self-managed, having resilience and maturity, and personal preferences influenced by their inherent nature or personality. Desired contributions were classified as behaviour that exhibited transparency and integrity, communicating frequently, and performing detail planning. The skills component was listed under both characteristics and contribution, and was placed in its own high-level category. The characteristics and contributions for individuals found in the current study are the same as those found by Geldenhuys (2010:187)), which she compared with "Conscientiousness" from the "Big Five" personality traits. Geldenhuys (2010:184) also states that the manager has the responsibility of recruiting the right individual, to ensure success in working in the virtual situation. The same conclusion was found in the current study.

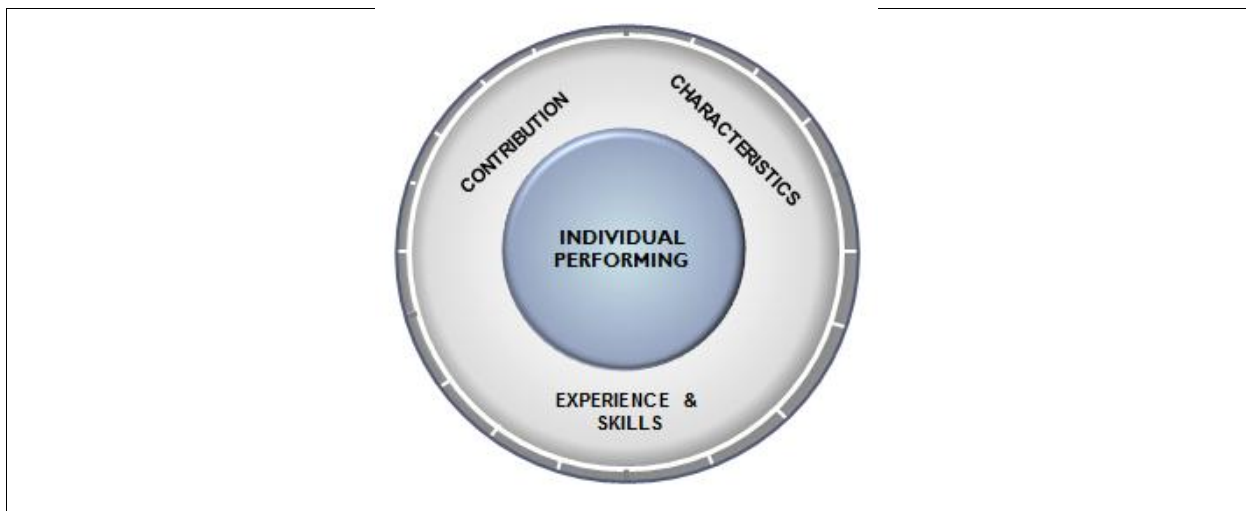
From the perspective of “managing performance”, it emerged from the current study that there was, however, always the danger of underestimating (or underplaying) the contribution that the individual was making, thereby placing emphasis on the micro-management component rather than the trust component, as explained under “Why Measure?”. This was clearly highlighted by one of the individuals who, after answering the questionnaire, took some additional time to point out this potential “flaw”.

I replied to your questionnaire and I just have a further note about it. The questionnaire is framed in a manager-centric way, implying that a management technique should be developed in order to solve the problems of distributed and remote workers. I am responsible for some of the project planning and task allocation in my company and have found that when a person is required to manage such distributed projects it becomes an all-encompassing task that can often not be performed successfully when the person has other responsibilities. We found on previous projects where we attempted a fully managed approach that the persons responsible have to turn into fully dedicated communications hubs due to the complexities of distributed software development, something that is not possible for an organisation and team of our size. P43 (3)

For these reasons we feel that it is better to divide our software into independent modules and have independent teams of co-located individuals working on such modules. The teams will regularly report to a core architectural team consisting of the technological lead(s) and the product owner to ensure that the entire process is moving in the technological and financial direction required. This approach requires individual developers to accept more responsibility, but seems to be a better fit for our company, since our developers have to become such in order to succeed in our environment anyway. P43 (7)

This one statement underscores the importance of the individual in this dyadic relationship and also the need to give the individual’s performance a more central role in the Impact Parameter Model.

Figure 6-13: Impact Parameter Model: Individual



In a recent study, Matlala (2011) investigated which factors were most important for virtual team success, and also evaluated the impact of trust, communication, conflict and knowledge in the virtual team situation. The research was completed in a South African power utility company, where virtual team members were involved globally in engineering work. Surveys of 74 individuals yielded 64 responses, with 47% of the individuals in South Africa and the rest in India, the UK and China. The study discussed the top four of each of task-related factors, general success factors and skills in more detail. Examples of all of these were also found in the current study, as shown in Table 6-5.

Table 6-5: Current study mapping to virtual team success factors

Factor	Top Four Ranked items	Example in current study
Task-related factor	(1) Feedback about how well I am doing my job primarily comes from information about how well the entire team is doing	More focus on individual, but some examples of measuring the team in Foxtrot.
	(2) Team member rather than manager decides who does what tasks in the team	Detail planning expected of individuals. Example of participative task allocation found in Foxtrot.
	(3) The work performed by the team is important to the customers in my area.	Customer impact on performance found throughout study.
	(4) Members of the team have great confidence that the team can perform effectively	Evidence found of interdependence in ability to perform.
Success Factor	(1) Establish interim deadlines and celebrate milestones when met	Setting of expectations and delivery dates important. Expect individuals to do detail planning to achieve the deadlines.
	(2) Selecting a team leader	Did not focus on team leads, but individual comment made about team leads interfering too much. Management panopticon.
	(3) Honesty in describing members' experience and abilities	Integrity listed for individuals' characteristics.
	(4) Team building exercises	Specific requirement for regular interaction, and face-to-face meetings identified including social interaction.

Table 6-5: Current study mapping to virtual team success factors (Continued)

Factor	Top Four Ranked items	Example in current study
Skill	(1) Make good decisions	Coding examples: <ul style="list-style-type: none"> • Accountability • Integrity • Customer liaison
	(2) Technical expert	Coding examples: <ul style="list-style-type: none"> • Right Skills • Willing to share • Adding value • Experience
	(3) Attention to detail	Coding examples: <ul style="list-style-type: none"> • Feedback • Visibility • Detail planning • Professionalism • Taking responsibility
	(4) Succeed when opposed	Coding examples: <ul style="list-style-type: none"> • Resilience • Introspection

Source: Adapted from Matlala (2011)

Relating to the success factor for team building, Mogale and Sutherland (2010:16) found that the need for purely social engagements among virtual team members, as a success factor in managing multi-national teams, was ranked as one of the six lowest-ranked factors. This is in contrast to what the current study showed, namely that the more remote individuals were, the more social time was planned together (e.g. going to shows together when visiting the remote country.) The current study found, however, that when managers were really very involved with the individuals, it sometimes became difficult to draw the line between personal involvement for performance improvement reasons (empathy) and personal involvement on a friendship level (sympathy). DasGupta (2011:1) also identifies social networking as one of the new skills for e-leaders.

6.4.6 Manager as Enabler

On a very broad level, and without diminishing the volumes of research that have been produced on the exact meaning of both management and leadership, the role of the manager is traditionally one of command and control (Ashford *et al.*,2006:91;

Jackson *et al.*, 2006:220;) whereas the role of the leader is one of setting a vision, and guiding by example (Bass, 1990:11; DasGupta, 2011:29), in other words, people *want to follow* leaders but *have to adhere* to managers. Bass (1990:11) states that leadership can be “conceived as a focus of group processes, as a matter of personality, as a matter of inducing compliance, as particular behaviours, as a form of persuasion, as an instrument to achieve goals, as an effect of interaction, as a differentiated role, as an initiation of structure, and as many combinations of these definitions”. In distilling the essential components from this definition, the leader must ensure that a goal is achieved, and this is normally done by exerting some form of influence or motivation. In this regard, a large portion of the current study has been dedicated to describing how the managers *manage* virtual performance, which has a large monitoring and control component, as could be seen from the coding.

In an article relating to the management of human capabilities, Brache (2003:65) proposes that the manager could be instrumental in evaluating barriers of a job that may be restrictive in terms of the physical, intellectual and psychological abilities of individuals. Re-evaluation of the job and determining if any restructuring of the job is possible could potentially remove barriers, especially if the ability of the individual is not necessarily a requirement for the job (e.g., the individual has a physical disability but physical ability not required for the job). An example in the virtual work context could be to allow a disabled individual to work from home, and provide additional connectivity and bandwidth so that the individual can collaborate from home, especially if the job entails knowledge work, and not physical ability. By contacting the individual regularly and making sure he or she is included in team meetings via teleconference, the manager would ensure a sense of belonging and teamness for the individual. In this way the manager becomes an enabler and no longer just a manager. Cascio (2000:88) refers to this helping behaviour as facilitation, where the manager removes obstacles such as poor connectivity.

Related to this theme of “enabler”, in the current study, and in addition to the codes and categories created for managing performance, an additional set of codes was also evolved which has been termed “Manager Responsibilities”. These codes were grouped into five categories: communication and organisational change management: focus on the individual: involvement and support: interface

management: and some elements relating back to the principle in management of performance (refer Table 5-25 in Chapter 5).

Previous studies relating to a similar concept of the manager as enabler were also explored, so that the findings could be mapped to the categories identified in the current study.

Malhotra *et al.* (2007:61) conducted a study of cross-functional, dispersed teams with highly interdependent tasks. Data was collected from 55 teams over 33 organisations through interviews and questionnaires with team leaders and their team members. These authors distilled six leadership practices that effective leaders of virtual teams conformed with.

Joshi, Lazarova and Liao (2009:249) completed a web survey of 700 service employees of a *Fortune 500* hardware and software company, based in the US, but with employees dispersed globally. There were 247 respondents giving a response rate of 35%. They found that the role of inspirational leaders was important in all contexts, but especially in dispersed teams, in building trust and commitment. These perceptions of trust and commitment that were built by the leader predicted team performance.

A study by Mogale and Sutherland (2010) for one multi-national company, with six interviews and 59 questionnaire respondents over four continents, analysed the enablers and inhibitors for managing virtual teams. They identified key leadership skills as well as enablers and inhibitors for managing virtual teams.

After holding surveys and interviews with 500 project teams, Lojeski and Reilly (2010:34) wrote a practical guide related to the concept of virtual leadership and virtual distance. In addition to the concepts relating to virtual distance already discussed under Theme 1 of this study relating to “True virtuality”, they identified three critical leadership skills for virtual leaders, namely “co-activating leaders, context building and cultivating community”. In a similar practitioners’ guide, Fisher and Fisher (2001:8) had emphasised the importance of the “distance” manager as a “boundary manager”. In other words focusing on the interfaces outside of the team

and additional resources that the team needed to have. They identified seven competencies of a boundary manager, which they termed being a leader, result catalyst, facilitator, barrier buster, business analyser, coach and living example.

There are also additional insights from more recent reviews of e-leadership studies. In their review of recent studies on leadership and future directions of research, Avolio *et al.* (2009:440) identified the topic of e-leadership, which they define as "leadership where individuals or groups are geographically dispersed and interactions are mediated by technology." DasGupta (2011:1) reviewed 77 journal articles which related to leadership at a distance, dispersed or virtual teams and communication technology. These three topics make up the components of e-leadership. From the reference list it seems that the topic of e-leadership started emerging in journal articles from about the year 2000.

The article looked at the advantages and opportunities that the technology provided for leaders and organisations: instant personalised communication, access to more skills, building more diverse teams, improved customer service hours, cost savings and setting the stage for better knowledge management. It also looked at challenges in trust, communication and motivation caused by the distance and the use of technology that decrease the effectiveness of the leadership style and looked at the new skill set that is being defined to overcome these challenges, which should include written communication skills, social networking, multi-cultural global mindset, awareness of individuals' emotional state and an "always-online" orientation (DasGupta, 2011:1). Both these literature reviews (Avolio *et al.*, 2009; DasGupta, 2011) also agree that technology and the information richness thereof is a key mediator for aspects associated with e-leadership outcomes such as quality of communication, level of trust, motivation and virtual performance, and that leadership style, distance, task complexity and team interaction styles moderate the effectiveness of these outcomes.

The challenges faced by managers in the current study were similar to the challenges faced by the team leaders in the study by Malhotra *et al.* (2007:68), which included co-ordination or synchronisation of work, impact of matrix management (i.e. commitment of resources who have additional "local" managers), multiple roles

associated with building relationships, belongingness and teamness, as well as the need for constant communication. In his literature review, DasGupta (2011:1) in addition to the elements of communication and motivation already mentioned, also identified the building of trust as a challenge caused by the distance and the use of technology. In this way, distance and the use of technology become moderators of the effectiveness of the leadership style.

The work of these studies and the study of Geldenhuys (2010) already mentioned in Theme 2, as well as the inputs from the initial literature review are now mapped to the categories of manager's responsibilities as identified in the current study. In addition, the mapping between the manager's responsibilities, and how they address some of the limitations and challenges of virtual work, as listed in Table 5-3, Code list: "Virtual work: Limitations and Challenges", will also be done.

6.4.6.1 Communication and organisational change management

The fact that communication is important, especially in the organisational context, is not new, especially not in the context of organising a group of people to fulfil the goals of the organisation. The following quote from Shockley-Zalabak (1994:2) exemplifies this.

"Organisations have been described as social units or groupings of people deliberately constructed and reconstructed to strive for specific goals. As such, they are characterized by divisions of labor for goal achievement. These efforts also are directed by relatively continuous patterns of authority and leadership. Interdependence exists both among organisational components and with the external environment. This complex interdependence requires coordination achieved through communication."

To achieve this same level of organising while not having individuals co-located is even more difficult. The importance of communication, and the challenges associated with it in the virtual context, has been mentioned on multiple levels of the current study. It was listed under limitations and challenges in the virtual environment, in that insufficient written communication skills mask the message; collaboration needs extra communication; and communication is needed in building of relationships. It was also mentioned as a key challenge for managing remote team members in the context of keeping everybody on the same page, thereby creating a shared level of

obviousness. But overall it has been mentioned as a management responsibility in relation to keeping the distributed team members informed in general and making sure that organisational messages are filtered down to the lowest level. In this context the manager is also playing the role of a “change agent” in the realm of organisational change management.

At the same time, it was pointed out that individuals needed to create a level of transparency about work status by giving feedback and relevant information, keeping the manager up to date and keeping task progress visible. In a practitioner’s guide for virtual managers, Sheridan (2012:143) also refers to practices to assist in overcoming communication challenges by being comprehensive, frequent, timely and thoughtful while communicating. Cascio (2000:87) states that communication challenges can be overcome by setting some ground rules for communication.

Some of the earlier attempts to define communication included definitions that centred on sharing of information in order to create a common understanding; definitions that leaned towards intentional influence or persuasion, and lastly a broader definition that tries to cover any type of influence or response, whether there is intent included or not (Severin & Tankard, 1979:5). Furthermore, communication is often explained in terms of sender, receiver, and the encoding and decoding of messages (Shockley-Zalabak, 1994:2).

Organisational communication specifically has received additional attention, and relates to how communication is practised within the organisational context, and how this organisational context adds to the body of knowledge regarding communications theory (Shockley-Zalabak, 1994:2; Jablin & Putnam, 2001:4). Two approaches mentioned by Shockley-Zalabak (1994:4) to create this shared reality that is necessary in the organisational context are the human relations approach and the systems-integration approach. In the current study, relationship building has been mentioned as important in the context of managing or enabling the performance of virtual workers, especially when difficult conversations need to be held. The relationship helps to build the trust that is necessary for sharing of performance issues.

The systems-integration approach brought in the impact of technology on communication. Related to this approach, Watson-Manheim and Bélanger (2002:66) did a multiple-case study, including two companies and 40 interviews, with the aim of proving a systemic relationship between distributed teams, communication-enabled work processes, communication modes and the impact of various contextual parameters in determining team effectiveness (which related to perceptions regarding assigning and completing tasks). Among their findings were that: there was a need for organisational norms in media choice; the urgency of the communication often dictated the mode; training affected technology choice (in other words, individuals tended to use only the technologies they were familiar with, often disregarding more effective modes of communication); and lastly they raised the concept of managing information overload created by the multiple modes of communication (Watson-Manheim & Belanger, 2002:80).

The impact of technology on communication was further investigated by Malhotra *et al.* (2007:61). In more recent studies has been given the name of “sociomateriality”, which is a new genre of research creating theories around the fusion of technology and work in organisation (Orlikowski & Scott, 2008:434). Overall, it is important for managers to select the communication mode that supports the work process most effectively. This is important especially where managers need to monitor, motivate and give performance feedback via communications technology. In the same context, the manager should understand that the audience might gain different insights from one single message (Severin & Tankard, 1979:7).

As regards the suggestions for change that were found in the initial literature review in the context of communication, managers in the current study definitely supported the principle of “ongoing, two-way exchanges” listed by Harvard Business School (2007:37). This seemed to be especially important where individuals were remote, and the two-way exchanges were also used to build the relationship and ensure that belongingness was established. DasGupta (2011:1) also confirmed that previous studies had found the importance of written communication skills as part of the new skill set for e-leaders to assist in overcoming communication challenges.

From an organisational change management perspective, in addition to the operational communication, managers in the current study also shared information and decisions made on organisational level, since organisational changes happening without reasons being given reduced trust and the loyalty of individuals. In this regard, Lojeski and Reilly (2010:110) talk about the importance of authenticity and transparency as related to “authentic leadership” (George in Lojeski & Reilly, 2010:110), and how this builds trust and subsequently team performance (Joshi *et al.*, 2009:240). Malhotra *et al.* (2007:61) add to this the fact that communication technology is used as a mediator, and therefore rules need to be set up to ensure that both managers and individuals use technology in the right way, to make their actions more explicit and build trust. This in turn links to the concept of transparency, which impacts on perceived performance, which was also identified in the current study (refer Figure 6-9 “True Performance”). Geldenhuys (2010:248) suggests the creation of an enabling culture through participative management, active change realisation and focus on output rather than people management.

In the context of communications theory and communication in virtual teams, the current study confirms the importance of communication and communications technology, and many of the challenges imposed by the virtuality of individuals, such as additional effort required by managers to keep communication open and transparent. The current study also confirmed the manager’s need for transparency from the individual’s side. In addition, communication was found to be only one element in the broader spectrum of elements that could potentially affect performance. Going forward, managers would need to relearn the art of communication, and think about what they want to achieve with a particular message, and what mechanism would be best to achieve it with, to ensure the greatest likelihood of all individuals actually receiving the same intended message (i.e. having a similar interpretation of the message.)

6.4.6.2 Focus on the individual and teamness

The second category in the manager’s responsibility was focus on the individual. The category included elements of relationship building with the individual and within the team (also referred to as teamness), trusting the individual, giving autonomy, looking

after the well-being of the individual, giving exposure and rewarding. These elements are now compared with the initial literature review, as well as the new literature identified at the beginning of the section.

Managers in the current study agreed that individuals needed to be given autonomy to perform the expected functions, which can be linked to the aspect of giving individuals accountability and responsibility for delivering, as mentioned in the initial literature review (Allen, 2007:44; Gary, 2007: 73; McGregor, 1957:135). In addition, one manager specifically quoted McGregor's Theory Y to the effect that by empowering individuals, the manager uncaps their potential. Many managers in the current study also mentioned the importance of individuals being self-managed, resilient and achievement driven, linking to the aspects of internal control and self-direction in McGregor's theory (1957:134). Nauman *et al.* (2010) also confirmed that empowerment was higher in the more virtual project teams, making the project manager more effective.

"I think that's probably the key thing is that it's the old productivity argument about Theory X and Theory Y, you know, if you brow beat someone and you know, stand over their shoulder you are going to get exactly what you ask for out of them, but if you enable them and empower them, and support them, you can get so much more. You know, you're not capping their potential." P35 (220)

Although team cohesion was important, the literature showed that team diversity should be embraced, and that managers needed to leverage off this diversity in order to improve team performance (Malhotra *et al.*, 2007:61). Lojeski and Reilly (2010:109) refer to this as "glocalisation" or living locally and producing globally. DasGupta (2011:1) included having a multicultural global mindset as a new skill for e-leaders, to overcome challenges in geographically dispersed teams. These concepts are comparable with the current study, in that the managers needed to create teamness between individuals with different personalities and in some cases from different countries, and also needed to ensure that teams could produce in relation to the worldwide mission where international parent companies existed. So it is not only the relationship within the team, but also the organisational context that becomes important.

Various studies have also referred to the importance of the relationship building component for virtual leaders (Joshi *et al.*, 2009:249; Lojeski & Reilly, 2010: 97; Malhotra *et al.*, 2007:61; Mogale & Sutherland, 2010:21). Relationships in the team allow individuals to benefit from the team and create a sense of belonging. Lojeski and Reilly (2010:97) specifically refer to “cultivating community”, while in the study by Mogale and Sutherland (2010:21), enabling relationships was one of the three highest-ranked soft skills identified for virtual leaders, and was related to the role of manager as “energiser”, which was found to overlap with transformational and symbolic leadership. Joshi *et al.* (2009:249) reviewed the role of inspirational leaders and found this role to be especially important in dispersed teams for building trust and commitment, since these perceptions of trust and commitment predicted team performance. The current study shows similar findings in terms of relationship building and underscores the importance of the manager’s creating a shared reality for the team. The current study also emphasised the role of the manager in building trust, not only with individuals but also between individuals within the team context.

The responsibility of the manager to look after the well-being of an individual is comparable to the new skill identified for e-leaders by DasGupta (2011:1), namely the awareness of an individual's emotional state. In addition, rewards are important and should be based on output, quality, deadlines met and value added for client, and should be according to the individual’s needs (Cascio 2000:88; Geldenhuys, 2010:182). Managers in the current study did not always feel that they had the authority to give monetary rewards. Therefore working virtually (or more flexibly) was often seen as a reward in itself.

6.4.6.3 Manager involvement and support

The category for involvement and support included elements of technical guidance, awareness of work being performed, support and accessibility, elements of training and coaching, making sure site visits were performed, creativity and willingness to change procedures if they were not optimal. The importance of most of these elements was confirmed in the additional literature review.

Various studies have pointed to the importance of managers' providing training for or coaching their individuals, and setting a personal example. Fisher and Fisher (2001:10) talk about the manager as coach, living example and facilitator. Lojeski and Reilly (2010:34) also describe co-activating leaders that share the leadership roles in the team and become influencers. This can also be linked to the concept of the individual becoming the liaison on site and the management panopticon, as found in the current study. Mogale and Sutherland (2010:21) classify this component under the interpersonal skills of the manager and link this to previously defined concepts of situational leadership and the HR leadership frame. Geldenhuys (2010:182) confirms the importance of the manager training the individual, while Cascio (2000:86) states that both the manager and the individual need to receive training in technologies and effective use of the virtual work place. The initial literature review further mentioned the concept of coaching (Carney, 2007:51; Williams, 2007:30), which was also mentioned by managers in the current study, especially in the context of correcting non-performance.

The importance of using the right technologies and providing training in their use was also found in the additional literature review. Mogale and Sutherland (2010:21) found that the second-highest ranked enabler for managing multi-national teams was having the right technologies and data systems in place, while Lojeski and Reilly (2010:103) refer to this as "techno-dexterity". As already mentioned under the category of communication, it is important for the manager to use the right technology for the right purpose. In the current study, it was found that too little emphasis was being placed on demonstrating the advantages of new technologies or explaining how they could assist in managing the performance of virtual knowledge workers. The lack of sufficient bandwidth in South Africa is also a very limiting factor. Individuals in this study did not always feel that all the right tools existed.

DasGupta (2011:1) also included an "always online" orientation as part of the new skill set for e-leaders. This came through very clearly in the current study in terms of managers always being available for the individuals to contact them, and customers expecting service over longer hours. Allowing individuals flexibility in terms of personal time during the day enabled the manager to expect additional hours worked

after hours, without the extra cost of overtime. Both managers and individuals needed to be flexible in this regard.

6.4.6.4 Interface management

The fourth category of manager responsibilities was interface management. This included aspects of setting client expectations, managing interfaces with other teams and suppliers inside and outside the organisation, as well as reducing distractions. So, as interface manager, the manager has to keep in mind both an internal and an external view.

Malhotra *et al.* (2007:61) agree that one role of the virtual leader is to "enhance visibility of virtual members within the team and outside the organization". Mogale and Sutherland (2010:21) refer to this competency as the "networker and alliance builder", where sharing of knowledge and information is important, and they link it to the original leadership theory of the Networker Frame (Beaty in Mogale & Sutherland, 2010:21). Lojeski and Reilly (2010:108) write about "traversing boundaries" which is defined as "crossing over disciplinary, organisational, geographic, and cultural divisions to bring people and groups together".

The concept of interface management also links to the competencies of "barrier buster" and "business analyser" that Fisher and Fisher (2001:10) mentioned as two of the seven competencies of a "boundary manager". The "barrier buster" needs to remove any obstacles to team performance, while as "business analyser" the manager needs to understand and communicate needs from the organisational level as well as needs from the customer, so that the team performance is aligned with these.

6.4.6.5 Management of performance: Direction and co-ordination

Although one of the categories for "Manager Responsibilities" is called "Management of performance", this category is tends towards elements of direction and co-ordination, rather than towards "command and control". Setting of specific measures, assisting with reprioritisation, and giving guidance where things are off track are all

part of this category. These elements all help to lead to effective performance or results; Fisher and Fisher (2001:10) call this competency the “result catalyst”. The elements of direction and co-ordination are also consistent with two of the six leadership practices distilled by Malhotra *et al.* (2007:61), namely to “effectively manage work life cycles” and to “monitor team progress using technology”. Managers in that study used meetings to consolidate information gained in one-on-one and off-line discussions. Managers in the current study also used individual and team meetings extensively, but did not make much use of team dashboards when individual performances were being compared. Incorrect behaviour can be encouraged if the dashboards show and measure the wrong performance indicators.

The direction and co-ordination is always given in the context of the objectives that the team needs to achieve, and the requirements of the customer. In the study of Mogale and Sutherland (201:15) the highest-ranked enabler for managing multi-national teams was to create a shared vision for the team and build a unique identity. This can be linked to the role of context building as identified by Lojeski and Reilly (2010:95), where the vision of the organisation, the goals set for the team and awareness of the individual’s frame of reference create the context in which messages are transferred in a virtual situation, and is similar to the “leader competency” of Fisher and Fisher (2001:10).

One can also link the "decisive" role as identified by Mogale and Sutherland (2010:21) to this category, especially in cases in the current study when assistance on re-prioritisation had to be given, or where multiple managers were requiring the time of the individual. The “decisive role” is defined as being a good decision maker in the face of conflict and was linked to that of the Structural Leader.

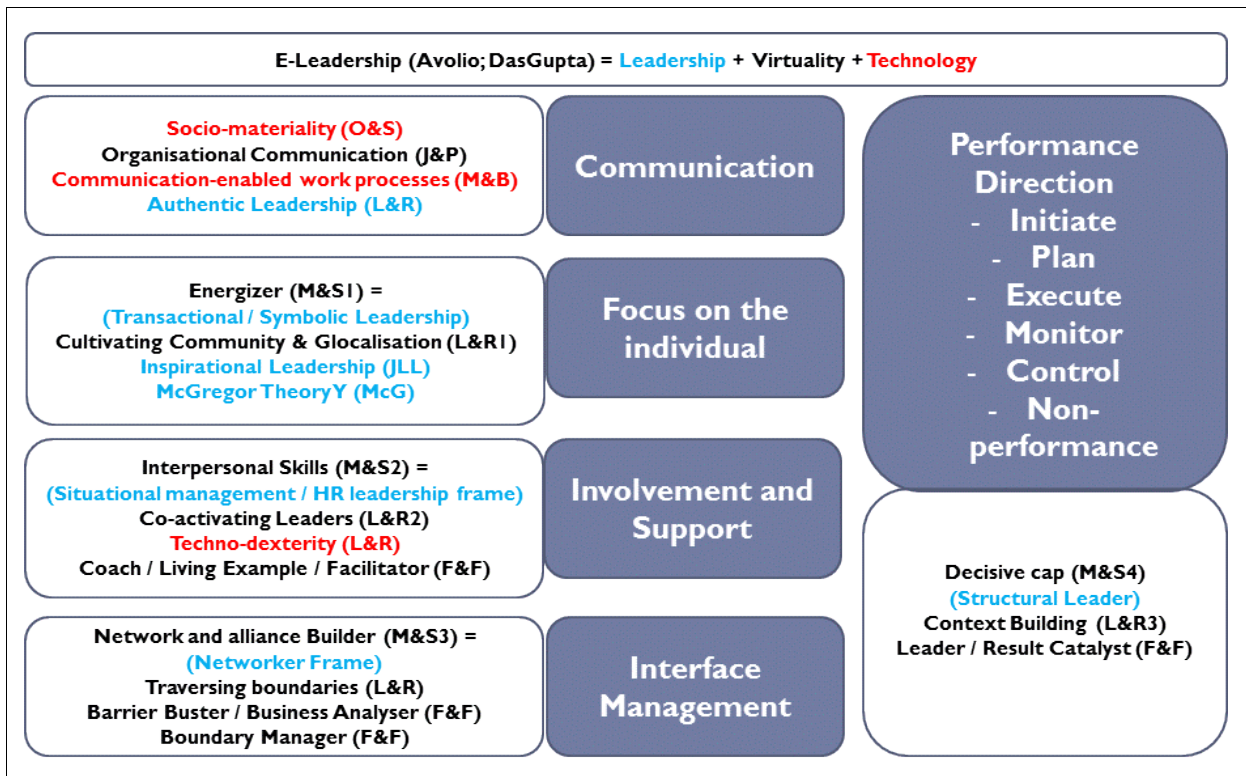
Overall, managers in the current study deemed it important, especially in the virtual context, to set expectations, clear objectives and measurements and show how these fit in with organisational and team strategy.

6.4.6.6 Updated impact parameter model: Manager

This section has shown the importance of the manager as enabler, as opposed to one focused on managing and controlling, and how the concepts found in the current study correspond to those in other studies on related topics. The current study has confirmed many of the manager's responsibilities as identified in these studies, but specifically in the context of managing performance, and has expanded the body of knowledge by mapping all of these elements together, as well as showing how the individual can contribute in each of these areas.

The codes for "Manager Responsibilities", namely communication and organisational change management, focus on the individual, involvement and support, interface management, and performance direction are now shown in Figure 6-14. The elements of the literature review are also mapped against each of these items. These responsibilities highlight how the manager can become an enabler. The current study has in this way combined the inputs from different pieces of research into a more comprehensive model, thereby extending existing theories, rather than creating a totally new theory.

Figure 6-14: Literature mapping: Manager as enabler



Sources: Avolio, Walumba & Weber (2009); DasGupta (2011); F&F (Fisher & Fisher, 2001); J&P (Jablin & Putnam, 2001); JLL (Joshi, Lazarova & Liao, 2009); L&R (Lojeski & Reilly, 2010); M&S (Mogale & Sutherland, 2010); M&B (Watson-Manheim & Belanger, 2002); O&S (Orlikowsky & Scott, 2008).

In the Impact Parameter Model, the “Manager Responsibilities” has now been removed from the “Manager’s Approach” element (refer Figure 6-15), and will be shown later in a consolidated diagram.

Figure 6-15: Impact Parameter Model: Manager’s Approach

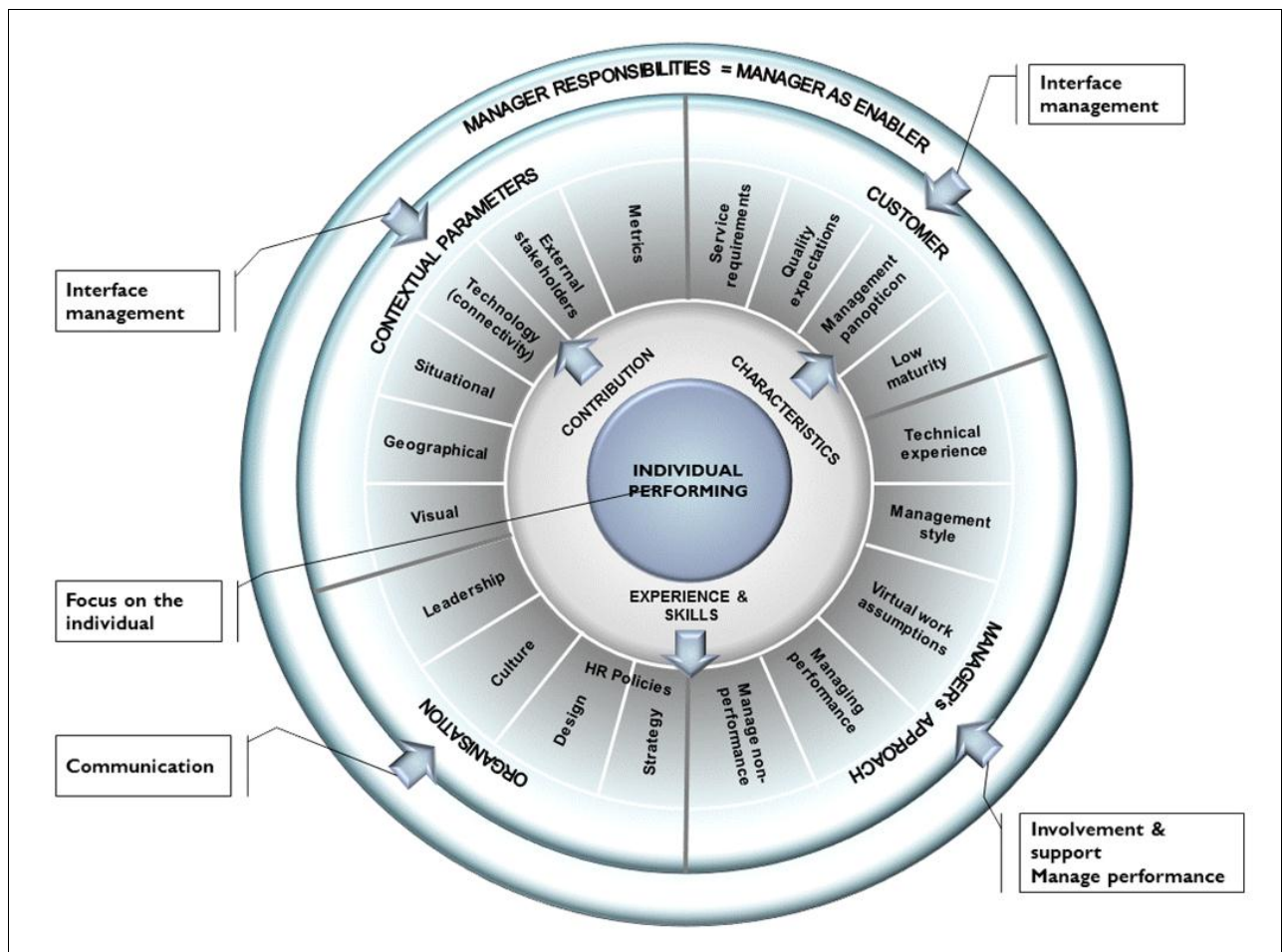


6.4.7 Consolidation of Theme 3 Concepts: Parameters impacting

All of the adjusted elements are now reconstituted in one consolidated Impact Parameter Model, as shown in Figure 6-16. The manager responsibilities are shown on the outside of the diagram, and are used to address the customer and contextual parameters through the interface management component, while the communication element addresses the organisational impact parameters, and the manager's approach becomes the basis for involvement and support. At the same time, the individual's performance has moved to the centre of the diagram, and shows the importance of the individual's characteristics, contribution and skills to ensure performance. Ultimately, the manager's responsibilities and the individual's contribution may lead to a greater measure of trust, which in itself facilitates performance and in turn facilitates customer happiness. And if the customer is happy, then the ultimate goal of performing the work has been achieved. In terms of all of the parameters impacting on performance, the findings of the current study confirm the findings of the studies referenced as additional literature, but expand the body of literature by creating a more comprehensive and integrated model, based on actual true-life situations, rather than laboratory experiments.

See overleaf for consolidated model (Figure 6-16).

Figure 6-16: Impact Parameter Model: Consolidated.



Note: Refer Figure 15-3 in Appendix F for the enlarged diagram

As with the model for manager as enabler, the current study has combined existing concepts in a more comprehensive and integrated model, showing the complexity of managing and enabling the performance of virtual knowledge workers, and thereby extending the current theoretical models.

6.5 THEME 4: FACE TO FACE INTERACTION – IMPORTANCE OF THE VISUAL

6.5.1 Theme Introduction

Even though the study has researched the management or enablement of *virtual* performance, in other words managing performance where the manager does *not* physically see the individual while the individual is performing the task, the importance of the visual was reiterated on various occasions during the current study.

The theme surfaced in relation to the discussion on challenges while managing the performance of remote employees, meetings and collaboration, requirements for additional visual technologies, and general human connectedness. Also, when the managers were asked what they would like to do differently in future, many of them indicated that they would like to visit or see individuals more frequently.

In a laboratory experiment involving 304 students, Fiedler (2008:1) found that the more information-rich the medium (such as using virtual worlds), the more co-operation is enhanced. However, if the individual has less experience in a particular medium, the communication will be less effective irrespective of how information-rich the medium is. Secondly, Fiedler found that when there is a good relationship and people are striving for the same goals, there is more co-operation. In the current study, relationship building by the manager was found to be important: it would affect the "collective orientation" and also decrease the social distance (Fiedler, 2008:1). The findings in the Fiedler study can also be linked to the fact that when face-to-face visits were not possible in the current study, managers wanted more video and web conferences (to see the individual).

6.5.2 Managing Performance: Absence of Visual Clues

Human interaction uses many non-verbal clues and visual feedback to determine mood, emotion and accessibility of a person. It is therefore not strange that one of the biggest challenges that managers in this study mentioned in terms of managing the performance of remote employees was the absence of visual clues. These visual clues would assist managers to see much more quickly when the individual was experiencing stress or what the emotional state of the individual was. Physical proximity allowed for much more informal sharing of information, giving advice and general communication. Managers also found that seeing individuals helped to motivate them, and aided the conversation, especially when non-performance issues needed to be handled with the individuals. By seeing somebody, you can evaluate the body language and change your approach if necessary. In the absence of visual clues, the managers needed to listen with more awareness, or interpret behaviour (or

the absence thereof) in order to understand the emotional state of the individual or to understand if the work was still on track.

There were, however, managers who felt that communication was aided by having a technology barrier – difficult messages could be conveyed much more easily. Without seeing the expression of the individual, it was possible to deliver the complete message without being interrupted or having to alter the message halfway through. In these cases the type of communication mode also resonated with the managers’ personal styles.

“For” face to face

“For me the strength in who I am and what I do lies in my ability to connect and read people and motivate them where they are at, and when I am removed through some barrier <referring to technology> I struggle to make those connections and read them.” P53 (357)

“Against” face to face

“To me people stress me out, and I always had this barrier I had email, and I had telephone and it suited my personality style 100%. “P54 (164)

The right-hand column in Table 6-6 shows the circumstances where managers preferred to have visual contact, while the left-hand column indicates where having the team members remote (geographically dispersed) was more acceptable.

Table 6-6: Parameters impacting on location and need for the visual

Geographically dispersed	Item	Co-located
SLOW	Changes in requirements / environment	FAST
FAR	Deadlines of projects	CLOSE
SLOW	Rate of implementation	FAST
FEW	Number of items to be communicated	MANY
LOW	Level of collaboration needed	HIGH
FEW	Number of issues that need to be addressed with the individual.	MANY

6.5.3 Meetings and Collaboration

The fact that most of the individual and team meetings were still being held face to face (64% of individuals indicated that feedback was taking place in face-to-face situations), also underscores the need for face-to-face interaction. Over and above

general meetings, there were other situations where face-to-face encounter was also the preferred mechanism. These included consulting projects, sales encounters and collaboration needed for problem solving or software development. In particular, face-to-face interactions with the customer were used to build a positive customer experience and enhance trust for other work to be done remotely. Overall, it seemed that co-location was still important when the delivery times were short, the environment was more changeable (affecting communication), and complex problems needed to be solved (high collaboration needed).

Managers often indicated that it was quicker and easier to share information with co-located team members by just “mentioning” something. Additional effort was always required to ensure that all remote individuals received the same message. This links to the importance of the manager’s responsibility for communication and focus on the individual. In addition, individuals would more easily approach managers they could see, which increased the perceived accessibility of managers to the individuals.

Even for individuals who were working from home on a permanent basis (i.e. home workers), there were normally still arrangements for the individual to come to the office at least once a month for a couple of days, for collaboration and building of teamness. One manager stated that face-to-face contact was very important, but would not be needed on a day-to-day basis, given the technologies that were available, and the trust that should exist in this working environment.

Geldenhuys (2010:91) brings in the concept of different virtual workplaces, including tethered or joint workers, home workers and fully mobile workers. She also mentions alternative places of work such as hoteling, telework centres and hot desking, which were previously described by Cascio (2000:85). “Telework centres” resemble miniature corporate environments, but are located in residential areas, with the aim of reducing travel time for individuals staying in that area. These workplace definitions are provided in Table 6-7.

Table 6-7: Work place definitions

Work Place	Description
Telecommuters	Occasionally work from home; still have fixed office location. (At least 1 day per week away from main office location)
Hoteling	Office with cubicles or workstations with general office facilities such as network and phone
Hot Desking	Similar to hoteling, multiple employees share same office
Telework Centres	Miniature corporate office environments
Tethered (joint) workers	Can move around in workplace, but report every day
Home workers	Working at home permanently. Office at home
Fully mobile workers	Using mobile technology, work from anywhere.

Source: Geldendhuys (2010) and Cascio (2000) (Adapted)

The implementation of telework centres would address both the limitations and challenges that managers in the current study have mentioned. By implementing telework centres, organisations would resolve the issue of connectivity at home, by creating a microcosm of the organisation. This would also resolve the issue of individuals losing the sense of belonging by not seeing their colleagues, and give more opportunity for collaboration, as long as the members of a project team could utilise the same location. The aim would be for project teams to perform work utilising the telework centre rather than having to travel in to the office.

6.5.4 Video Conferencing Technologies

The next best alternative for managers who could not physically visit their employees or have face-to-face meetings would have been having at least better or more video conferencing facilities available. This would be in addition to using the telephone, email, instant messaging and chat rooms. The fact that a large part of the non-verbal feedback is missing from most communication technologies should not be underestimated. The study of Fiedler (2008) also confirmed that the information-richness of the communication technology enhanced co-operation, especially where individuals were familiar with the particular medium. Watson-Manheim and Belanger (2002:80) confirm that the type of communication technology chosen also needs to support the type of work process, if the message is to be conveyed effectively.

The biggest challenge in this area is, however, the availability, quality and cost of bandwidth in South Africa. In cases where video was used, it was reported that the quality was so poor that facial expressions were often misinterpreted. In addition, when video and VOIP were used at the same time, the voice quality tended to drop, so therefore video was often not used.

6.5.5 Connectedness as Innate Human Attribute

In the current study, physical contact and face-to-face meetings were also seen to assist in building human relationships. In many cases, additional money would be spent to fly individuals to one global location, not only to participate in collaboration sessions but also to use the opportunity for social interaction and building relationships. Some managers felt that their responsibility was to connect individuals, create a sense of belonging and motivate them, that this was more easily done in face-to-face situations and that connectedness was lost if there was limited or no face time.

“Just that as much as I think it’s a good idea, and conceptually agree with it, I think in reality the risk of becoming so impersonal and so detached, is high. And the people are going to stop connecting. So for me going the virtual removed route, can work as long as the connectedness is not lost in the process. And whether that’s through technology or having some face-to-face forms of interaction. But to me our success as humans lies in our ability to connect, and I think technology and this virtual stuff is breaking down this connectedness for me personally - but maybe I am just getting old in this new world.” P53 (351)

Individuals, in their answers to open-ended questions, also indicated that they wanted to have some form of contact from time to time, even though they felt that they could deliver results independently. One of the individuals related to the study had even joined a group through MEETUP.COM, called “Indy Cowork”. This is a group of individuals who work independently from each other as free-lancers or small entrepreneurs, but who decided to rent office space together, since, among other things, they needed the social contact as human beings. This is exemplified in the answer of one of those individuals.

What is the biggest challenge you face working remotely or away from others?

“Certain subtleties of communication are lost digitally, as is much of the camaraderie of working in an office.”

This links closely with the sentiments of Rosenberg (2004:662) who, looking at the social impact of computers, believes that even though it seems that the mind can be completely detached from the body, the body is needed for a deeper sense of connection. This is illustrated in the quote from his book, included below.

"If nothing else, virtual worlds will force us to rethink many of the ideas that we have long held about the unity of self, the notion of presentation, honesty, playfulness, and relationships. It is ironic that this artificial medium, made possible only because of machinery - computers and telecommunications networks - has raised serious questions about what makes us human and how such social animals, as we are, form relationships and communities."

"What is most striking is how the body is ignored, as if it were an impediment in the way of really connecting."

"It is felt by some of the most vociferous virtual world or cyberspace proponents that freedom and perhaps even the next stage of evolution will free the mind, the true self, from the constraints of the body. How hundreds of thousands of years of evolution can be ignored, or swept aside, by virtue of a few years of a new, and in the long run rather primitive technology, is perhaps a tribute to the power of the human mind in projecting speculation into the fact and ignoring history and biology, if necessary."

However, as stated by Avolio *et al.* (2009) and DasGupta (2011), e-leadership is specifically about delivering leadership through technological means. The book *Prefiguring Cyberculture* (Tofts, Jonson & Cavallo, 2002:3) defines cyberculture as "becoming through technological means", and describes the concept of post-humanism in the sense of humans evolving as "informatics" beings, in other words "adapting to the flow and control of information". The authors state that technology has extended our ability to be in two places at the same time and in the process the "defining parameters of human nature" have been changed. This is, however, not seen as a once-off transformation but an "ongoing tendency to alteration, a re-configuration of what it means to be human in the context of technology".

In the context of these statements and in terms of our human attributes, the key may not be to understand how we can "be" through technology but to know *how* we are different when we are "being" through technology. The importance of the self-concept and self-understanding of the manager comes into play again.

6.5.6 Consolidation of Theme 4 Concepts: Face-to-Face Interaction

In general, regular face-to-face meetings remain important to keep contact, build relationships and belongingness, and build trust. For situations where remote work is the only option, listening differently to individuals over the online media, and being more aware of nuances in voice and level of participation becomes important. In this way, it is possible to discern some indication of the individual's mental and emotional state over the telephone. To compensate for not necessarily being able to see the individual, even not in the initial interview, one manager used a combination of elements to pick up additional clues regarding the personality and job-fit of the person. These include written and spoken communication, as well as "reading between the lines" (a) Email with questions (b) Skype interview (c) Personality test through HR (d) Written submission. (e) Actions, such as punctuality for the interview.

Technology is here to stay, and as humans and as managers, we will need to learn how to best make use of the medium. However, in practice, opportunity always needs to be made for the personal interaction where possible, and perhaps some in-between state of connectedness and remoteness can be achieved through office hubs, rather than having individuals each sit alone at home.

6.6 SUMMARY

This chapter looked at four key themes emerging from the data, namely the understanding of what constitutes "virtual" in virtual work; how performance management and management of performance impact on perceived performance in the virtual context; parameters impacting on virtual performance; and the importance of face-to-face interaction.

From the perspective of understanding virtuality, a model was built to indicate how actual virtuality and perceived virtuality need to be combined to identify the individual's true virtuality, and that the true virtuality of individuals in organisations is actually higher than generally believed. This has implications for how performance is managed and what managers and organisations put in place to enable performance

in these situations where individuals have a higher degree of true virtuality. The three virtual status matrices can be used as part of the managerial framework to check the location, frequency and independence of the individual to determine the actual virtuality of an individual.

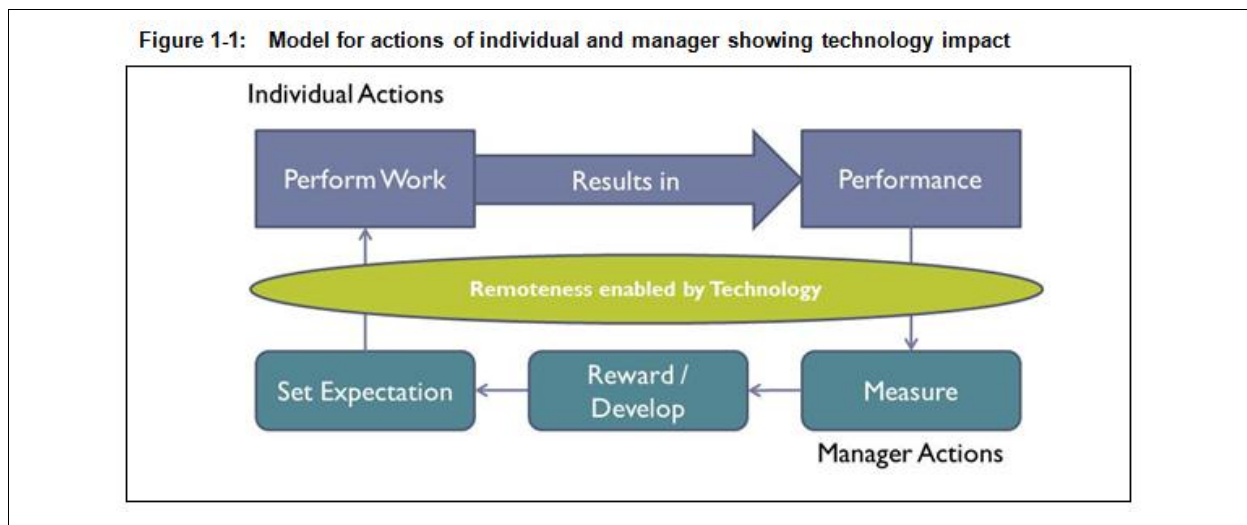
In the second theme, the concept of true performance was created as a combination of actual and perceived performance. The moderators for actual performance and perceived performance were also included in the model. The control categories of Limburg and Jackson (2007), namely “Output”, “Input”, “Self” and “Peer”, were used in addition to the classification of the deliverables as technical, knowledge and administrative deliverables. The dimensions of quality and transparency were classified as “behaviour” deliverables contributing towards perceived performance.

The third theme confirmed a set of parameters impacting on performance, including organisational (such as organisational culture and policies), other (situational and technical), customer and individual parameters, and the manager’s approach. The manager, as the enabler of the performance of the individual virtual worker, acts as moderator for all these parameters.

In the fourth and last theme, the importance of face-to-face interaction for managers, either by visiting the individuals on site, or by having additional video or web conferencing facilities, was explored. This has been linked to the concept of human connectedness as an innate human attribute. A possible solution is to create smaller, organisational telework centres in areas closer to where team members live, and this forms one of the recommendations of the study.

The aim of the study was to build some theory regarding the management and enablement of the performance of virtual knowledge workers. The original model for enabling performance, in terms of the actions of the individual and the manager and the impact of the technology on this, was presented in Chapter 1 and is copied in Figure 6-17.

Figure 6-17: Repeat of Figure 1-1

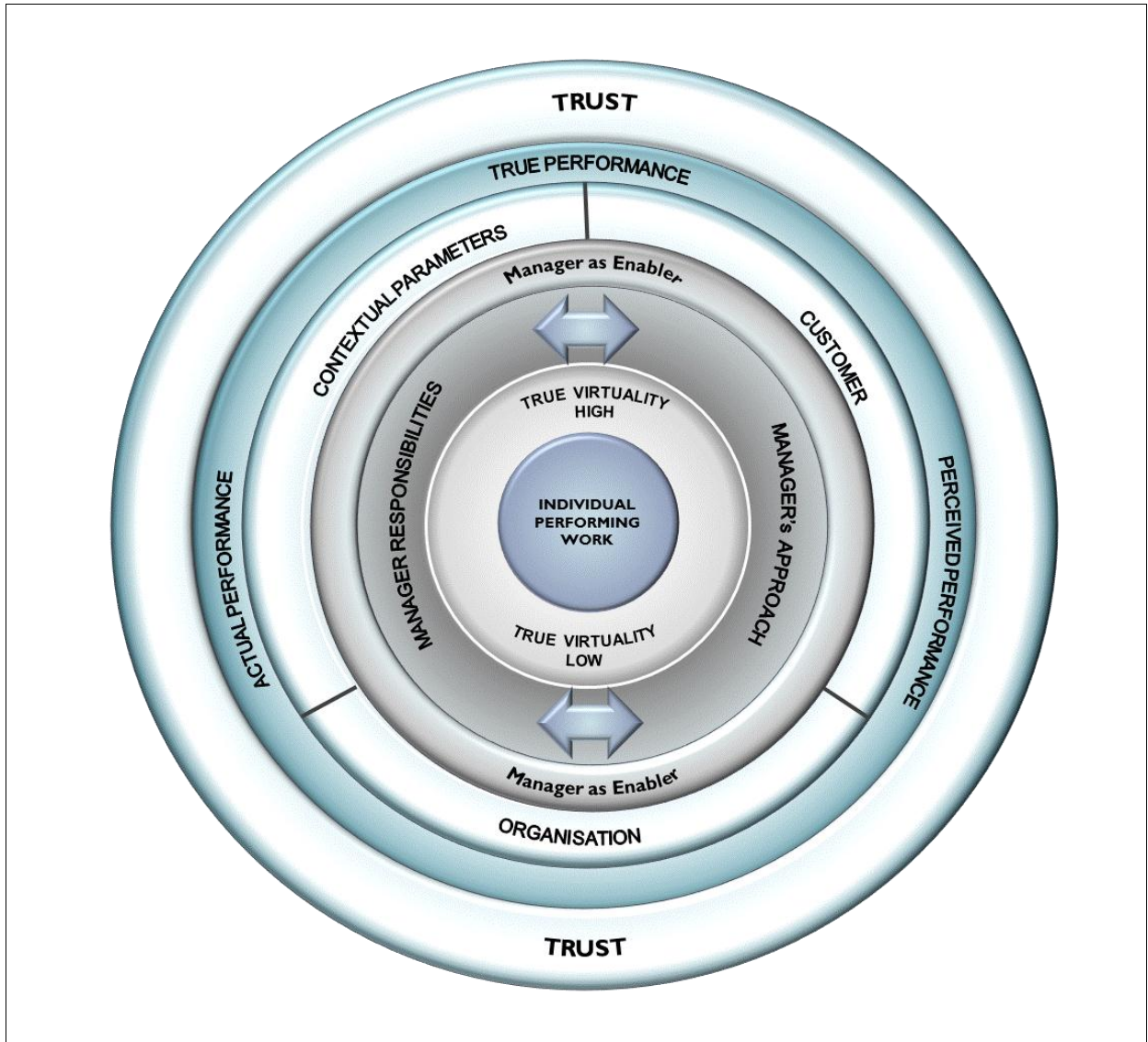


The study has made a significant contribution on a theoretical level by extending existing theoretical models regarding virtual distance and the management of dispersed teams into much more comprehensive models of actual virtuality and actual performance, and has shown how the manager acts as mediator for an extended set of impact parameters. These models have now been integrated with the original gap for enabling performance, into the *concentric performance enablement model for virtual knowledge workers*. This further extends the original theoretical model and is shown in Figure 6-18.

According to the original model depicted in Figure 6-17, the individual performs work. This is now shown in the centre of the new model depicted in Figure 6-18. Performing work ultimately results in performance, now represented in Figure 6-18 in the second-outermost circle as “True Performance”. This was defined as part of Theme 2. The new model now illustrates how the true performance is firstly moderated by the true virtuality of the individual, as was defined in Theme 1. In addition, it is moderated by the manager’s approach and the responsibilities of the manager. The contextual, customer and organisational parameters, as shown in the Impact Parameter Model of Theme 3, become further moderators of performance. These parameters are in turn mediated by the manager. The combination of the manager as both mediator and moderator transform the manager into an enabler of true performance. Trust, as originally shown in the triangle of trust between manager, individual and customer, is

the key element that is needed in all the relationships included in the model. It is therefore represented by the outer circle in Figure 6-18.

Figure 6-18: Concentric performance enablement model for virtual knowledge workers



Note: Enlargement of this diagram available in Figure 15-4, Appendix F.

The propositions relating to the concentric circles of this conceptual framework will now be formulated in Chapter 7.

CHAPTER 7

7 TOWARDS A CONCEPTUAL FRAMEWORK

7.1 INTRODUCTION

The main objective of this study was to create a new managerial framework for the enablement of the performance of virtual knowledge workers. This chapter presents the propositions relating to the new conceptual framework. The propositions are presented according to each concentric circle of the final model or “*Concentric performance enablement model for virtual knowledge workers*”, which was described in Chapter 6 and presented in Figure 6-18. There are propositions for the individual’s contribution, true virtuality, the manager as enabler, parameters affecting performance, true performance and trust. The aim of the propositions is to assist the manager in enabling the true performance of virtual knowledge workers.

7.2 PROPOSITIONS: THE INDIVIDUAL PERFORMING WORK

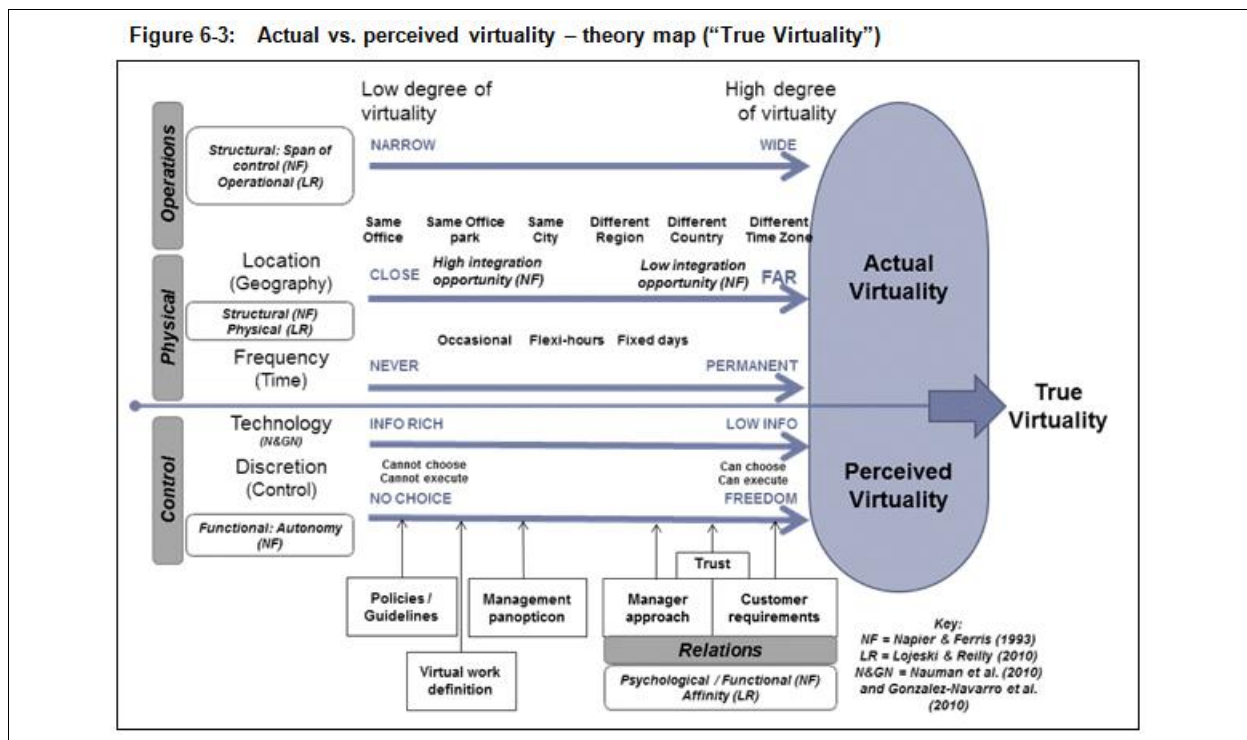
The contribution and influence of the individual is often underestimated. Focusing on the individuals, and allowing them to make a greater contribution to their performance, will mean they will take accountability and can show more self-control.

Proposition IC1: *The more individuals are made part of the detail planning, the more accountability they will assume.*

Proposition IC2: *The more the contribution and influence of individuals is appreciated, and the greater the contribution to their performance they are allowed to make, the more accountability they will show, and the more their self-control will become evident.*

7.3 PROPOSITIONS: TRUE VIRTUALITY

The first theme illustrated the difference between actual and perceived virtuality, and how this related to true virtuality (Figure 6-3, also copied below). It showed that the true virtuality could in fact be higher than the degree of perceived virtuality; in other words, the degree of perceived virtuality could be low, although the actual virtuality might be high. An example of perceived low virtuality is an individual who works on a customer site, away from the line manager but under constant surveillance of the customer, and therefore thinks that this is not working virtually. This is in fact an example of actual virtuality, since the individual is working away from the direct influence of the manager. The analysis of the data of all five of the cases showed that individuals were exposed to a high degree of actual virtuality, although the perceived virtuality was not always that high.



Note: Refer Figure 15-1 in Appendix F for the enlarged diagram.

The propositions are based on the true virtuality model.

Proposition TV1: *The true virtuality of individuals is often higher than the perceived virtuality.*

The manager needs to determine the true virtuality by evaluating actual and perceived virtuality. Elements found to contribute to actual virtuality were operations and physical distance, while control and relations distance contributed to perceived virtuality. From an operations distance perspective, the higher the manager's workload, the less time the manager has to spend with the individuals. This implies that there is less time to build relationships, with increased perceived virtuality, and as a result the true virtuality increases as well. Managers should be aware of the fact that under these conditions, individuals who have low maturity and/or experience will be more likely to show a decline in their performance. Therefore managers should be vigilant and try to provide sufficient support for those individuals.

Discretion distance is also important. Even though the individuals may be working remotely from their manager, their perceived virtuality may be low, based on the fact that the customer wants them to work on site, and they therefore do not have a choice of where and when they should work. The manager's approach and assumptions about virtual work will also determine how the individuals perceive the discretion that the manager allows them. In addition, the availability of policies, how virtual work is understood and the management panopticon will all play a role in reducing or enhancing the perceived virtuality.

The following propositions have been formulated for each of the types of virtual distance.

Proposition TV2 - Virtual distance:

- (a) **Physical Distance:** *Individuals working geographically close to their managers (even in the same office park or office block, i.e. having a low degree of location virtuality) may still have a high degree of time virtuality and operations virtuality, which increases their degree of true virtuality.*
- (b) **Operations Distance:** *The higher the operations distance, the more time the manager needs to spend on building relationships, to ensure that the true virtuality can be reduced and that the performance can be enabled.*

- (c) **Relations Distance:** *The less time the manager spends with the individuals, the higher the relations distance. A high degree of relations distance lessens trust.*
- (d) **Discretion Distance:** *The less choice the individuals feel they have in being able to select their time and location of work, the lower the perceived virtuality (and the lower the perceived trust).*

The true virtuality affects the activities that the manager should be carrying out. These activities need to be maintained to ensure that the individual is enabled to perform optimally in the virtual work environment.

Proposition TV3: *The higher the true virtuality:*

- (a) *the more communication is needed;*
- (b) *the more relationship building is needed;*
- (c) *the more clear the objectives, measurement criteria and end goals should be;*
and
- (d) *the more trust the manager needs to have in the individuals' ability to deliver without being monitored.*

7.4 PROPOSITIONS: MANAGER AS ENABLER

The manager's approach includes the impact that the manager could have on the individual's performance through the manager's experience in his or her field, the manager's assumptions about remote work, and who the manager is as a person ("I am" statements made). An important point is that irrespective of the manager's preferred management style, it is necessary for the manager to be flexible in order to accommodate the different styles of the individuals. In other words, individuals need to be handled differently, even though the deliverables or outputs may be the same.

Propositions ME1 - The manager's approach:

- (a) *The better managers understand themselves and their management style ("I am" descriptions), the easier it is for managers to select individuals that fit this desired style.*

- (b) The better managers understand their own management style and the more flexible they are prepared to be, the more easily managers will be able to work with a diverse range of styles of team members.*
- (c) The better managers understand their own underlying beliefs regarding remote work, the better they will understand why they are placing certain demands on individuals to enhance the perceived performance.*
- (d) The more experience managers have with remote work (working remotely themselves, or allowing teams to work remotely), the more understanding the managers will have with regard to the needs of their remote team members.*
- (e) The more technical experience managers have, the easier it will be to evaluate the validity of deliverables and the timing required, as well as manage customer expectations.*
- (f) The easier it is for managers to measure the team's work, the more readily they will allow the individual to work remotely.*

The manager as enabler acts as mediator for all of the Impact Parameter Model parameters. If managers understand the total impact that the organisation, customer, their own approach and contextual parameters have on the individual's performance, they will be able to influence and relay the effect of these parameters. This will assist in enabling the individual to perform better, leading to a higher degree of actual performance. The manager acts as communication hub, manages interfaces impacting on performance that fall outside the scope of control of the individual, enables the performance of the individual through involvement and support, and shows trust by giving the individual autonomy to perform the work that has been allocated.

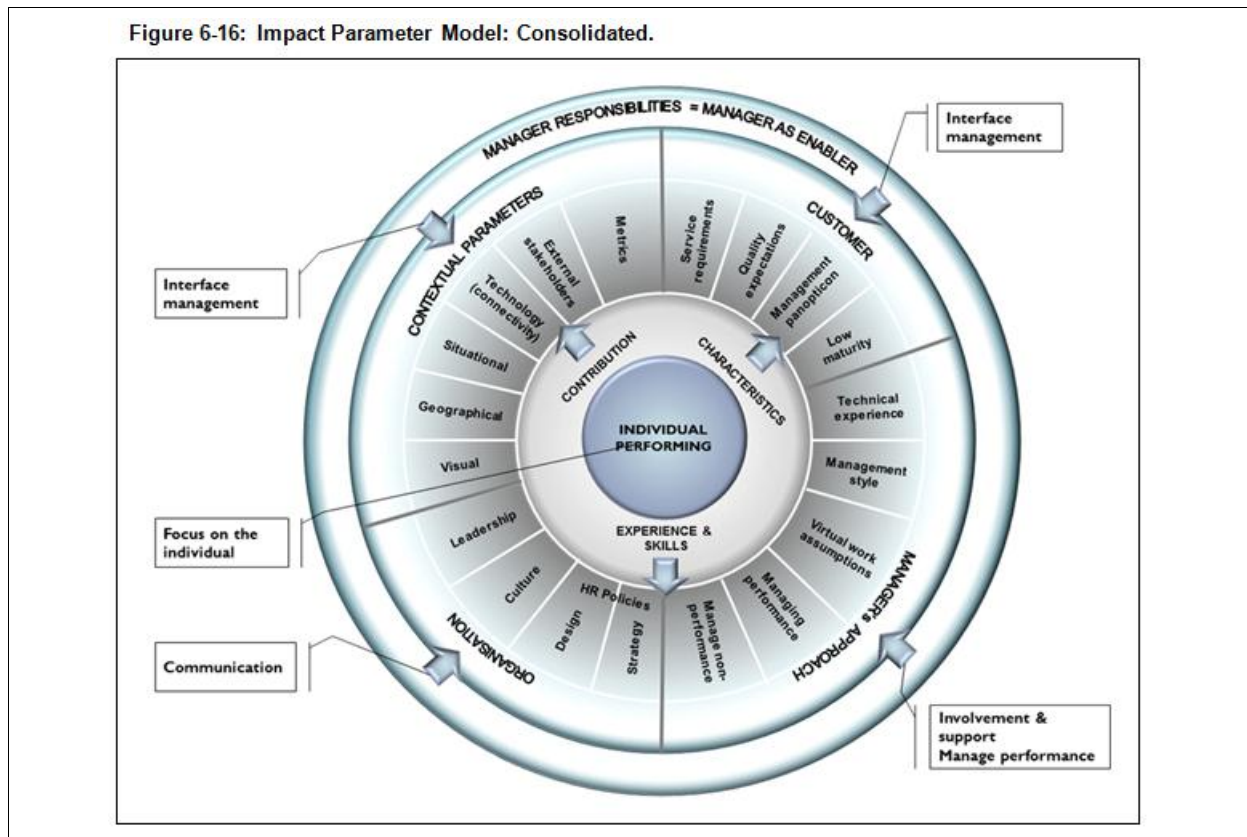
Proposition ME2 - The manager as enabler:

- (a) The more communication channels the manager has activated, the higher the positive impact of the communication will be. (Managers should aim to rather over-communicate than to under-communicate, especially where it comes to organisational messages.)*
- (b) The more the manager facilitates the interfaces for individuals, the more support individuals will have through the interfaces for their performance.*

(c) *The greater the availability of the manager in terms of support and involvement with the individual, the lower the perceived virtuality, even though the actual virtuality may be high. This also builds trust and belongingness.*

7.5 PROPOSITIONS: CONTEXTUAL, ORGANISATIONAL AND CUSTOMER PARAMETERS

The parameters identified in the study affecting performance covered a broad spectrum: from organisational settings to general contextual, from customer requirements to the manager's approach, and then in addition the manager's responsibilities and the individual's contribution as was shown in Figure 6-16 (also included below). Propositions have been created for each of these categories. The multiplicity of parameters also shows how complex a task it is to manage the performance of virtual knowledge workers, because there are always multiple inputs that need to be taken into consideration.



Note: Refer Figure 15-3 in Appendix F for the enlarged diagram

As seen in the Impact Parameter Model, the organisational setting includes the impact of the company's leadership, design and strategy, organisational culture and HR policies.

Proposition PARM1 - Organisational setting:

- (a) The smaller the organisation, the more positive the effect the vision of the CEO will have on day-to-day performance.*
- (b) The more support from a senior official in terms of the acceptance and implementation of virtual work within the organisation, the higher the discretion distance will be (i.e. individuals will perceive that they have more choice, and based on proposition TV3(d) their perceived trust will thus increase.)*
- (c) The higher the disconnect between the organisation (HR), the manager and the employee, in terms of the performance management triangle, the less time will be spent on performance management, and the more performance management will be seen as an obstacle, rather than a help.*
- (d) Having guidelines for virtual work available on organisational level will assist managers in decisions regarding virtual work requests, and save time in creating individualised frameworks.*
- (e) Making HR guidelines and policies relating to virtual work more visible will increase the understanding of the concept of virtual work.*

Contextual parameters are those relating to geography, the situation, technology, external and metrics.

Proposition PARM2 - Contextual parameters:

- (a) The better the connectivity, the more work can be done remotely.*
- (b) The situation will dictate whether virtual work is possible for a particular piece of work. This may imply that the same piece of work could be done remotely on one day, while having to be done co-located the next day.*
- (c) Until such time as South Africa can increase the bandwidth availability significantly, and ensure the actual availability thereof, performance of virtual workers will have to be managed using less information-rich media, and/or*

individuals will have to visit the main office location more regularly to satisfy the need for face-to-face interaction.

(d) The fewer key metrics that are defined for measuring, the easier it will be for individuals to fulfil the requirements for those metrics. (Also see propositions TP3 and TP4(e), which relate to metrics.)

As indicated in Chapter 6, in the virtual world of work, one of the key differentiators for managing the performance of virtual knowledge workers is that technology becomes the mediator for the manager to initiate, plan, execute, monitor and control (Avolio *et al.*, 2009:440; DasGupta, 2011:1), but also for the performance of the individual to become apparent or visible to the manager (i.e. creating the concept of perceived and true performance). In this regard, most of the studies reviewed as background to this research in Chapter 6 on virtual leadership and management of dispersed teams focused on a situation where the manager never sees the individual, and all activities have to take place remotely or via technology.

As managers in the current study indicated, one way to improve the management of the performance of remote teams and individuals was to create more opportunity for face-time in the form of visiting individuals on customer site or at regional offices, or else to have better video conference facilities, where the expressions of the individuals could be more clearly visible. There were also situations where the managers indicated that they preferred to have the teams together, especially when issues needed to be resolved, when the environment or solution was still fluid (i.e. collaboration needed) and deadlines were short. Face-to-face contact was also used often for the building of relationships. Ultimately there seems to be an inherent human need for people to see each other, and the recommendation is for managers to create as much opportunity as possible for this.

The propositions for the advantages for visual contact are listed below.

Proposition PARM3 – Contextual and face-to-face:

The more face-to-face contact,

(a) the better the relationship;

- (b) *the more trust;*
- (c) *the shorter the delivery time;*
- (d) *the easier the collaboration;*
- (e) *the higher the perceived performance.*

In the absence of face-to-face contact, there are additional activities the managers need to take into consideration. These are reflected in the two propositions below.

Proposition PARM4: *The less face time (including the use of less information-rich telecommunication media), the more explicit and the more regular the communication needs to be.*

Proposition PARM5: *The fewer the visual inputs (or face time), the more alternative inputs are needed (listening, perceptions, using multiple deliverables over a period of time) to establish the true performance of the individual.*

Throughout the research, it has become apparent that the customer plays an important role in terms of virtuality perceptions and related performance of individuals. Ultimately, if the customer is satisfied (“happy”), then it is deemed that the individual has performed, equating to “true performance”.

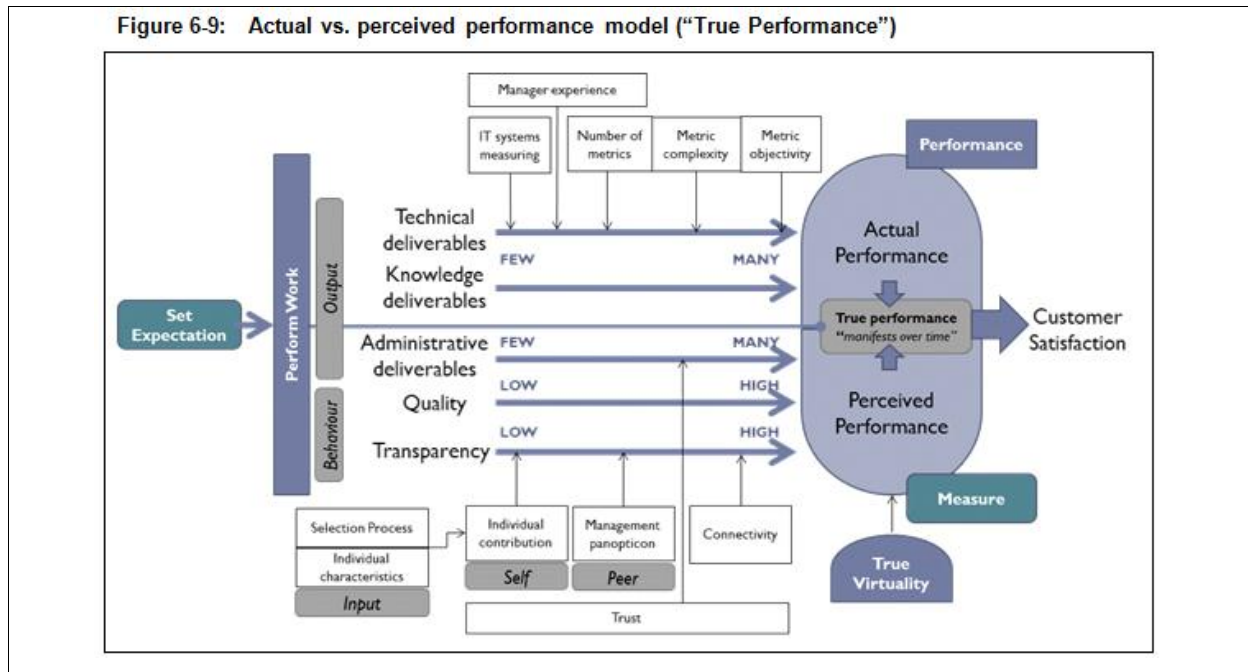
Proposition PARM6 - The customer:

- (a) *The more trust the manager builds with the customer, the more amenable the customer will be to allowing the individual team members to work remotely or from home.*
- (b) *The higher the customer happiness factor, the higher the actual performance of the individual.*

7.6 PROPOSITIONS: TRUE PERFORMANCE

The second theme indicated which factors contributed to actual performance and perceived performance, and how the combination of these two resulted in true performance. Where visibility of the actual performance was low, which is often the

case in virtual work situations, the manager depended on perceived performance to measure the performance of the virtual workers. For perceived performance to be positive, the quality of deliverables needs to be high. At the same time, managers tend to increase the number of administrative deliverables to ensure that work is actually happening, rather than trusting the individual. The propositions below relate to the model of “True Performance” as presented in Figure 6-9.



Note: Refer Figure 15-2 in Appendix F for the enlarged diagram

Although it has been established that the degree of virtuality does not change the scope of the technical deliverable, a key element is that actual performance is still closely related to real outputs and real measurements. Therefore, the more easily the deliverables can be measured, the more accurate the reflection of the actual performance will be. In terms of actual performance, the following propositions apply:

Proposition TP1: *The more IT-based measurement systems are available to measure actual deliverables, the more accurately the actual performance will be represented.*

Proposition TP2: *The more technical experience the manager has in the deliverables that are being managed, the better the manager will be able to set*

expectations, define deliverables sparingly, and accurately evaluate the actual performance.

Proposition TP3: *If the number of metrics, their complexity and their subjectivity are all high, the reflected actual performance will be seen as low, even though the true performance may be high (i.e. the customer is happy).*

The factors contributing to perceived performance often have the opposite effect to that anticipated. In other words, the more the administrative deliverables, the higher the performance perceived by the manager, but the lower the actual performance will be. The more managers there are in the matrix of management for the individual, the higher the perceived performance, but the lower the actual performance. Individuals could, however, increase the perceived performance by increasing visibility (or transparency) of their work. The manager should always ensure that the number of administrative deliverables does not exceed the number of technical deliverables and that the time required to provide the administrative deliverables does not exceed the time required to provide the actual deliverables. In this regard, it is important for managers to understand why they are measuring. Managers should only measure the relevant data, because there is effort and time involved in providing the supporting data for the measurements. In addition, as seen from the data provided in this study, the wrong measures will stimulate the wrong behaviour.

In terms of perceived performance, the following propositions apply:

Proposition TP4 – Perceived performance:

- (e) The lower the transparency the lower the perceived performance (i.e. low transparency leads to negative perceptions of performance).*
- (f) The greater the individual contribution, the higher the perceived performance.*
- (g) The more managers who are demanding (administrative) deliverables from the individual, the higher the perceived performance but the lower the actual (and true) performance.*
- (h) The higher the connectivity and the more information-rich the medium, the higher the perceived performance.*

- (i) *The better the manager understands what he or she really needs to measure, the easier it is to define the measures.*

Based on the maturity of both the manager and the individual, and depending on the skill level of the individual, the number of technical deliverables in relation to perceived deliverables can be adjusted, as well as the level of detail that the manager needs to give. This was shown in Table 6-4, and the additional propositions as related to the level of maturity are listed below.

Proposition TP5: *When the maturity of either the manager or the individual is low, then:*

- (a) *deliverables will be based on standards in the environment;*
- (b) *goals will be expanded to task level;*
- (c) *the behaviour required will be specified; and*
- (d) *deliverables will tend more towards “output” deliverables.*

Proposition TP6: *When the maturity of the manager and the individual are both high, then:*

- (a) *deliverables can be defined by the individual;*
- (b) *the manager needs to provide only high-level goals;*
- (c) *the behaviour required will be assumed; and*
- (d) *deliverables will tend more towards behaviour and knowledge work.*

Overall, for true performance, the following proposition applies:

Proposition TP7: *The greater the customer satisfaction, the higher the true performance.*

7.7 PROPOSITIONS: TRUST

Trust permeates the model and various propositions regarding trust have already been stated as part of the preceding concentric circles of the model. Trust also plays an important role in terms of perceived performance, and is associated directly with the number of administrative deliverables required in a particular situation. However,

even in high trust situations, the manager still needs to remain involved to ensure belongingness of the individual.

Proposition TRUST1: *The higher the trust, the fewer administrative deliverables will be needed. (For the individual: The more administrative deliverables, the lower the perceived trust.)*

Proposition TRUST2 - Manager as enabler and trust:

- (a) The more autonomy an individual is given, the higher the perceived trust by the individual and the better the chances of a successful outcome or output.
(Theory Y)*
- (b) The better the connection or relationship with the individual, the greater the mutual trust will be.*
- (c) The more trust between the individual and the manager, the easier it will be for the manager to convey difficult messages.*

7.8 SUMMARY

The chapter has listed propositions according to each concentric circle in the model that was established in Chapter 6. The combination of the propositions and the model form the conceptual framework which was the aim of research objective 3. The propositions could assist managers to manage and enable the performance of virtual knowledge workers by becoming action guidelines for their own individualised management frameworks. The conclusions and recommendations based on this new conceptual framework will now be discussed in Chapter 8.

CHAPTER 8

8 CONCLUSION AND RECOMMENDATIONS

8.1 INTRODUCTION

In modern organisations, where mobile technologies have enabled knowledge workers to work remotely from their managers and colleagues, performance management principles have not adapted sufficiently to enable and measure the performance of these virtual knowledge workers both effectively and efficiently.

The study set out to investigate, analyse and describe the ongoing management and measurement of performance of virtual knowledge workers from the perspective of the manager, with the aim of setting up a new conceptual framework to help managers to enable and manage the performance of these individuals. In addition, the study set out to suggest what organisational context and individual contribution would be required to support the framework. This was done by using the embedded, multiple-case study strategy of enquiry, and included five companies, 39 interviews, which were qualitatively analysed, and 163 questionnaires, which were analysed through descriptive statistical methods.

Chapter 8 is the culmination of the research, and summarises the findings in relation to the research objectives that guided the study. It also elaborates on the significance of the research on theoretical, methodological and practice levels and lists the limitations of the research. In addition, the chapter provides recommendations on organisational, managerial and individual levels, linked to the levels of the research. As part of the recommendations, areas of future research are also included.

8.2 SUMMARY OF FINDINGS

8.2.1 RO1: How is Performance Managed

RO1: To critically review the current state of knowledge and understanding of **how the performance of virtual knowledge workers is managed**.

The first important finding in terms of how performance is managed was the understanding of how “virtual” is defined, when individuals deem themselves to be virtual workers, and when managers see individuals as working virtually. This led to the *first theme* being identified, namely “understanding virtuality”. A model was built to show how actual virtuality and perceived virtuality lead to true virtuality. This has implications for how performance is managed and what managers and organisations put in place to enable performance in situations which have a higher degree of either perceived or true virtuality.

From *Theme 2*, which consolidated the aspects of managing performance, one of the key findings was that managers indicated that they did not differentiate the management of performance and deliverables based on whether the individual was working remotely or co-located, but rather based on the personality of the individual. However, when individuals worked remotely, additional tasks and checklists were often put in place to increase the perceived performance, in addition to the deliverables or outputs which contributed to actual performance. Linked to this was the finding that true performance always manifested itself over time, and that managers needed to take multiple inputs into consideration in order to establish true performance. In addition, the “customer happiness” factor was seen as a strong indicator of true performance.

Given the needs of managers regarding perceived performance, individuals still experienced the management of performance as micro-management, limiting the individual within the deliverable and metrics framework that the manager was setting, rather than acting as enabler by allowing the individual autonomy to expand on or change the parameters for delivery, with the proviso that the customer was happy (i.e. expectations had been met.) This finding was linked to the model of “Work vs.

Measure” (Figure 6-4), which indicated that time allowed to work should always be more than time required to measure. Intrinsic to this finding was also the finding that the more managers the individual needed to report to, the more time would be required to satisfy the needs of each manager in terms of “measurement”, rather than being able to deliver productive work (Figure 6-5).

Another finding related to *Theme 2* was that in general scientific literature investigating performance management as such seems to be linked more closely to the views and practices prescribed from an HR practitioner or HR researcher point of view, instead of from a line manager point of view. In this context, managers often see “performance management” as restrictive and a barrier to performance, rather than aiding the management of performance.

Lastly, as shown by *Theme 4*, in the context of virtual work and managing virtual performance, managers still found visual clues to be important, rather than just listening and observing behaviour via emails and telephone conversations. In most cases, when managers were asked what they would like to be doing differently, they indicated that they would aim to have more contact time with the remote individuals, either via improved video conferencing or through more regular site visits. Related to this theme is also the fact that human beings are inherently social in nature, and although there are some individuals who prefer to work alone or independently, belonging to a group and having that social interaction is still important. Connectedness is what makes us human.

8.2.2 RO2a: Organisational Context

RO2a: To analyse and describe how the organisational context affects the performance and outputs of virtual knowledge workers.

Theme 3 consolidated all the parameters that impacted on the performance of the individual in a remote situation. This went beyond the organisation and included the contextual factors, such as geographical, situational, technological and external factors, as well as the effect of the customer. This shows how this research which was performed in a real-life situation corresponded with the subjectivist-interpretivist

research paradigm, in that the situation and its specific set of parameters created different truths for the managerial framework. A single, definitive managerial framework would therefore not be possible.

In terms of organisational context, a key finding was that the smaller the organisation and the fewer the layers of management, the more managers were aware of policies and procedures available on organisational level, and the more influence the CEO would have on guiding performance and virtual work in the organisation. The lack of knowledge of virtual work policies also seemed to decrease the degree of perceived virtuality; because no policy existed (either real or perceived), individuals believed that they were not allowed to work virtually.

Technology was also listed as a contextual factor, and has a limiting effect on allowing visual interpretation of the individual's emotional state. In the South African context, using video conferencing effectively is constrained by bandwidth limitations.

Another key finding was that the situation would often dictate whether work could be performed remotely, or if remote performance was acceptable. Elements such there being many issues to resolve, the requirements still being fluid, or deadlines being and collaboration needed, would drive the preference of the manager for having the team co-located.

The customer had a strong influence on defining the requirements for service delivery as well as interpreting the ultimate performance. This could either lead to a positive customer experience (also referred to in this study as the "customer happiness factor") or a negative customer experience, even if the customer might have been the cause of the non-performance. In addition, the customer often dictated the location of the individual, and in this way had an impact on the perceived virtuality of the individual. In general, the customer plays a key role in determining the true performance of individuals.

8.2.3 RO2b: Manager's Approach

RO2b: To analyse and describe how the **approach of managers** affects the performance and outputs of virtual knowledge workers.

Within the Impact Parameter Model (Figure 6-16), two aspects of the manager were included as part of Theme 3. The first was the manager's approach and the second was the manager as enabler. These two aspects represent "enablement" of performance as opposed to the underlying control theme of "managing" (and inherently controlling) performance.

Three elements of the manager's approach influence how virtual work is managed. Firstly, how the manager describes himself or herself in terms of "*I am*" statements used influences the manager's initial selection of individuals, the level of involvement of the manager in work being performed and the way that deliverables are defined. Secondly, the *manager's experience with remote work*, and resulting *assumptions about remote work* influence how the performance of virtual knowledge workers is managed in relation to the amount of control, as opposed to trust, that is exercised. Thirdly, the level and years of *technical experience* of the manager allow the manager to be more accurate in goal setting as well as evaluation of deliverables. These three variables create part of the context in which individuals perform and managers manage. As part of the discussion relating to subjectivist-constructivist research paradigms, Saunders (2009:601) indicates that "... entities are created from the perceptions and consequent actions of those social actors responsible for their creation". Through these three variables, managers create their own framework of management and enablement based on who they are and the type of individuals included in their teams.

In addition to the manager's approach, the findings indicated that the main responsibilities of the manager that could enable the individual were communication and organisational change management; focus on the individual; involvement and support; interface management, and the direction elements relating back to the principles of management of performance.

8.2.4 RO2c: Individual Contribution

RO2c. To determine what **individual factors** play a major role in the performance of virtual knowledge workers.

In theme 3, the impact of the individual was also addressed. There are two components relating to this element. Firstly, there is the manager's view, which includes the selection component, in that managers try to select individuals that fit their management style. They also prefer individuals who are professional, self-driven and have sufficient experience to be able to work on their own. In addition to this, the manager would expect a certain amount of transparency (among other qualities) from the individual when working remotely.

Secondly, there is the individual's point of view – a person and not an automaton – making unique contributions. A managerial framework as such will not automatically ensure the performance of the individual. The manager therefore creates the positive environment and feeling of belonging, and the individuals contribute their own skills and passion for the specific area of work. So the one cannot function without the other; they are mutually dependent for ensuring the virtual performance. The manager should therefore always include the individual in the initiation and planning stages where deliverables are defined and goals are set to ensure that the shared level of obviousness is created from the start.

8.2.5 RO3: The Conceptual Framework

RO3a: To create a **new conceptual framework** or intellectual tool to help managers to manage and enable the performance of virtual knowledge workers.

The conceptual framework combines the themes into an integrated and holistic view of managing the performance of virtual knowledge workers effectively. It consists of the *Concentric performance enablement model for virtual knowledge workers* (illustrated in Figure 6-18) and the related propositions in Chapter 7. The manager can use the combination of these two elements as a guide in creating his or her own framework for managing performance in the team.

RO3b: To determine what **organisational context** would be required to support this new conceptual framework.

The organisational context is described as part of the parameters identified in Theme 3 and links to the elements identified in RO2a. Two organisational elements that would support the framework itself are firstly that a guideline, and not necessarily a policy, would assist with the definition of individual frameworks; and secondly that support from senior management for virtual work, would give official sanction to the framework. Also, although the management panopticon is important in the context of managing virtual performance, the smaller the matrix of management, the more individuals can focus on productive work, rather than on administrative deliverables to prove they are working.

RO3c. To determine how **individual factors** might influence the definition of the intellectual tool.

The contribution of the individual for Research Objective 3c filters through directly from the findings for RO2c. Among others, the individual plays a key role in alleviating some of the limitations and challenges of remote work and the challenges to management of virtual performance experienced by the manager, and in this way will influence the complexity and comprehensiveness that will be needed in the framework.

8.3 SIGNIFICANCE OF THE RESEARCH

The study makes a contribution to the body of knowledge on e-leadership, as stated by DasGupta (2011:30), “Finally, some newer technological innovations are in progress to support the e-leadership movement. There does not appear to be any serious disagreement amongst scholars on e-leadership; there are only working variations in research focus. There is agreement that this is a new field and that more research needs to be conducted.” As such, the study confirmed the definition of a virtual worker and the existence of virtual work in the South African context, and showed that there is a whole continuum of virtuality and how this affects the perception of virtual performance. In answering the third research objective, the study

has made a contribution on theoretical and methodological levels and on the level of practice.

8.3.1 Theoretical

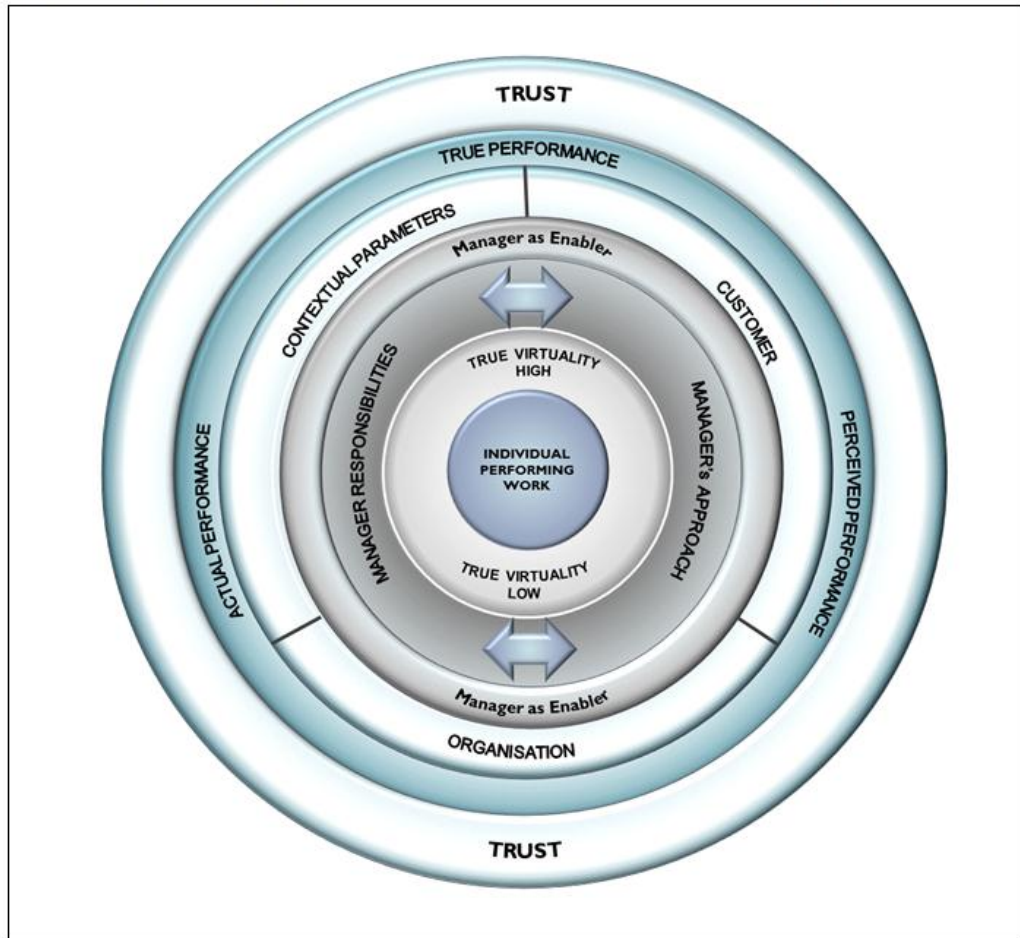
The current study makes a significant contribution on a theoretical level by extending existing theory and models, thereby creating a much more comprehensive model for the management of performance of virtual knowledge workers. This applies firstly to the *definition of virtuality* where the virtual distance model has been extended, and virtual work is shown on a continuum of virtuality, ultimately indicating the true virtuality of the individual. It also applies to *virtual performance*, by extending the theories regarding e-leadership and the management of dispersed teams, and in doing so, defining perceived, actual and true performance. The current study also showed that the degree of virtuality of the individual can act as a moderator for perceived performance. It is therefore important for the manager to determine the true virtuality of an individual so that it does not unnecessarily affect the perceived, and ultimately the true performance.

An *Impact Parameter Model* (Figure 6-16) has also been created which consolidates a comprehensive set of parameters that moderate the performance of virtual knowledge workers, and shows how the *manager as enabler* will become the mediator of these parameters. In terms of this model, existing research referred to the policies (Lister & Harnish, 2011; Montalbano, 2010), and extensively to technology as mediator (Avolio *et al*, 2009; DasGupta, 2011; Geldenhuys, 2010; Piccoli *et al.*, 2004:359; Raghuram *et al*, 2003:181; Watson-Manheim & Belanger, 2002:61), also referred to as the new field of sociomateriality (Orlikowsky & Scott, 2008). However, the literature did not refer extensively to the customer or the organisation and its strategy and design and how these affect virtual performance. The Impact Parameter Model also includes elements relating to the manager, which had extensive literature mapping as well; these are incorporated in the “Manager as Enabler”.

In terms of the *manager acting as enabler for virtual performance*, five categories of enablement were identified, namely communication and organisational change management; focus on the individual; involvement and support; interface management, and some elements relating back to the principles of management of performance. These were linked to the three elements of leadership, virtuality and technology, which form the components of e-leadership (Avolio *et al.*, 2009; DasGupta, 2011). The literature mapping of the manager as enabler in Figure 6-14 shows how the current study also combined inputs from other research (Fisher & Fisher, 2001; Jablin & Putnam, 2001; Joshi *et al.*, 2009; Lojeski & Reilly, 2010; Mogale & Sutherland, 2010; Orlikowsky & Scott, 2008; Watson-Manheim & Belanger, 2002) into this model, thereby extending existing theories, and creating a more comprehensive theoretical model for the manager as enabler for virtual performance.

In addition, these three models (true virtuality, true performance and the Impact Parameter Model) were then integrated into an extended theory, namely the *concentric performance enablement model for virtual knowledge workers* (Figure 6-18, also provided below), giving a much more comprehensive view of the complex phenomenon of enabling the performance of virtual knowledge workers. In addition propositions were created that can form the basis of future empirical work. In this work the propositions can be tested in order to develop a predictive theory of enabling the performance of virtual knowledge workers.

Figure 6-18: Concentric performance enablement model for virtual knowledge workers



Note: Enlargement of this diagram available in Figure 15-4, Appendix F.

8.3.2 Methodological

On a methodological level, the research demonstrates how an embedded, multiple-case study, executed on three levels of analysis, and based on a grounded theory approach, can be executed to develop theoretical insights into the complex phenomenon of enabling the performance of virtual knowledge workers;

The multiple-case study included five organisations from the Information and Communication Technology (ICT) and related sectors, in other words companies either delivering IT or ICT-type services, or using these ICT services, or providing consulting regarding these services. Seven different embedded units of analysis were included. The data collection and analysis took place on three levels, namely

organisational, managerial and individual levels. For the data collection and analysis, both qualitative and quantitative methods were used.

To execute this combined approach, methodological inputs were obtained from various authors. The case study process described by Yin (2009) and extended by Eisenhardt (1989) was used to create the framework for the research (Figure 1-2). The protocol described by Yin (2009) was implemented in the form of templates for emails, letters, schedules and documents to ensure reliability in execution (Appendix D – Case Study Protocol). Guidance was taken from Eisenhardt (1989) and Pratt (2009) for building of theory, and method of showing the progression of codes from open to selective coding. The code networks of ATLAS.ti were used to represent this. The code networks were also supported by code tables. Stake (2006) gives an extensive description of documenting findings for multiple-case studies, using worksheets per case and showing the relevance of the case per theme. The memos of ATLAS.ti were used to support this concept.

The study also contributes by giving a detailed description of how the multiple-case study and the use of mixed methods were implemented, by documenting all the steps, including the protocol. To this end, each case was first documented in full, with the aim of using this document as an appendix only. The body of the document was used only for the cross-case analysis and data synthesis, as supported by direction of Yin (2009). In this regard, the structure of the individual case studies, provided as supplementary documents, and the structure of Chapter 5 correspond.

The final themes were documented in Chapter 6, as interpretation of the data analysis. Although both qualitative and quantitative data collection took place in parallel, the data sets for each company were analysed independently (using Excel), and the interview transcripts of each organisation were analysed separately, using the document family provided by ATLAS.ti, so a document family per company was created. These elements also relate to the concepts of *timing*, *weighting*, and *mixing* of the qualitative and quantitative methods for mixed-methods studies (Creswell, 2009:206; Denscombe, 2010:135, Teddlie & Tashakkori, 2009:31). The findings were, however, “mixed” to show correspondence or difference between the data sets per organisation, applying the principle of triangulation. For the final review, as

documented in Chapter 5, all of the interviews were placed in one data set (facilitated by using one hermeneutic unit in ATLAS.ti), and all of the questionnaires were combined in one spreadsheet, with individual rows of data marked per company.

Another contribution on methodological level was that this study included actual cases, whereas some of the previous research reviewed was done under laboratory circumstances (Fiedler, 2008; González-Navarro *et al.*, 2010).

8.3.3 Practice Level

The study makes a contribution to the practice of management or e-leadership, in that it has provided a conceptual framework for the management of performance of virtual knowledge workers as provided in Chapter 6, which was extended to propositions in Chapter 7. The propositions can be used as action guidelines by managers. In addition, Chapter 5 includes various tables that managers can use in comparing their situation with what was found in the study. An example in Chapter 5 is the co-occurrence table, where metrics and deliverables are mapped against each other (Table 5-13). In the same chapter, the communication matrix is described as part of the manager as enabler (Table 5-24).

Further contributions to practice will be discussed under the recommendations.

8.4 LIMITATIONS

The limitations on theoretical level are that detailed literature review was not done on all the foundational theories that could potentially be linked in the True Virtuality, True Performance and the Impact Parameter Models. These theories include systems theory, communications theory, team and workforce theories, information theory, shared mental models and detail on leadership theories. No theories regarding the importance of body language or the impact of the visual were researched.

Also from a theoretical perspective, the propositions were not re-tested in an additional case or company. In stating the propositions, it is possible that other

researchers could have a different interpretation, but it is the belief of the researcher that the study offers propositions that can be empirically tested in future studies.

The limitations on a methodological level include the fact that the quantitative data of the questionnaires was analysed using only descriptive statistics, and that regression or any other statistical testing was not employed. The reason for this was firstly the small sample and inter-group sizes, and secondly the fact that it was easier to compare and mix descriptive statistics with the qualitative data analysis completed. The qualitative data analysis also received a heavier weighting overall in the study. As an exploratory study, however, the study did achieve the integration of research on virtual working. Based on this integration, testable propositions have been created.

It might also have been preferable to include larger sample sizes within each company, so that each company as a whole would have been better represented. However, data saturation in terms of the themes identified did occur, which contributes to the generalisability of the research. Furthermore, culture and gender were not taken into account, and no questions were included in the questionnaires to determine this. From the interviews, it was apparent that the majority of the managers were white, with a 60/50 split between females and males.

The limitation on practice level was that the study did not look at the improvement of performance per se, but was rather an exploratory study for managing the performance of virtual knowledge workers. The study also does not necessarily set up a detailed guide or policy, but provides a conceptual framework that managers could use to interpret for their own situations.

Using a qualitative research design has also been seen as a limitation by certain “research communities” (Teddlie & Tashakkori, 2009:4). This study therefore had the aim of utilising a rigorous qualitative research design. As stated in Chapter 2, where the study design was described, “rigour” in qualitative research centres on the term of trustworthiness (Morse *et al.*, 2002:5; Golafshani, 2003:602). Guba and Lincoln (in Guba & Lincoln, 1982:246-7) expanded this to *credibility*, *transferability*,

dependability, and confirmability. The research execution used for this study was evaluated according to these concepts, and is summarised in Table 8-1.

Table 8-1: Rigour in research execution

Qualitative term	Quantitative term	Technique / Tool	Description for research execution
Credibility	Internal validity	Triangulation	Comparing answers of managers, individuals and organisational level. Member checking.
Transferability	Generalisability (External validity)	Cross-case pattern matching Data comparable	Using the same code set between cases. Defining virtuality of individuals.
Dependability	Reliability	Case study protocol ATLAS.ti	Execution for each case similar. Analysis for each case similar.
Confirmability	Objectivity	Researcher reflections ATLAS.ti coding	Using field notes after the interviews and review of the research journey. Coding all transcripts in the same hermeneutic unit. Managing own subjectivity.

Credibility or truth value relates to whether the findings of the study actually represent reality (Guba & Lincoln, 1982:246), also known in quantitative studies as internal validity (Kotzé, 2010c:8). This was achieved through firstly doing a case study design and not a laboratory design, so the gathering of data was done in a real-life situation. Secondly, it was done by doing data collection on three levels (organisational, manager and individual levels), and then reviewing the case study as a whole with the company representative as part of member checking. Triangulation of data was thus done, and has ensured the internal validity of the data. Thirdly, credibility was accomplished by allowing the individual company representatives to review the documented cases respectively, thereby applying the principle of member checking.

The term *transferability* refers to how generalisable the results are (Guba & Lincoln, 1982:246; Kidder & Judd in Yin, 2009:40), and is known as the external validity of the data. Even though 39 interviews were completed and 163 questionnaires were used in the statistical analysis, this represents a very small portion of each company, and an even smaller portion of the total working community in South Africa. However,

data saturation between the companies was achieved, with only small variations or additions of codes from company to company. This implies that similar trends and themes were manifested in the different companies, and shows the potential for transferability to other companies or cases.

Thirdly, *dependability* (or reliability) implies that the study can be reproduced or replicated under similar circumstances and in a similar context but at a different time (Guba & Lincoln, 1982:247; Kotzé, 2010c:8). Applying the recommendation by Yin (2009) and creating a detailed case study protocol meant that it would be possible to replicate the study for more companies.

Confirmability is the last term to contribute to the concept of trustworthiness in qualitative studies. This relates to how objective the research is (Guba & Lincoln, 1982:248; Kotzé, 2010c:8). From a qualitative point of view, the researcher was closely involved in the research, by personally conducting all the interviews and also by being a manager in similar circumstances. (The researcher aimed to remain objective, however, by writing reflections after each interview.) Furthermore, by using a tool such as ATLAS.ti, it is possible to quickly compare all the quotes that are linked to the same code, and determine if there is integrity between the selections. The code comment field in ATLAS.ti was also used to explain the use of the code. ATLAS.ti as a tool thereby greatly assisted in ensuring the research was objective.

Individuals also often mentioned that the questions had prompted them to think more deeply or differently about how they manage virtual workers, showing that the research is already changing the status quo.

8.5 RECOMMENDATIONS

The recommendations of the study have been grouped under the different levels that were included in the research, namely the organisational, managerial and individual levels. The one recommendation that applies to all levels is to make sure that the degree of virtuality of all individuals is understood, so that the relevant supporting and enabling activities can be put in place.

8.5.1 Recommendations for the Organisational Level

8.5.1.1 *Policies and guidelines regarding virtual work*

Firstly, organisations should ensure that there are general guidelines available for virtual work that can be used by all managers. These guidelines should assist the manager as regards legal and labour-law requirements, and also provide a set of questions that the manager and individual could work through in order to determine the optimal level of virtuality for the situation. Organisations should also be more explicit in making known their views on virtual work, since virtual work as such has become more prevalent with technological advances made.

8.5.1.2 *Manager and individual training*

Additional training should also be provided from organisational level. This training should be part of the induction of each individual, as well as when a manager is appointed, or when an individual is promoted as manager. Two types of training should be included: firstly, soft-skill training, including listening, verbal communication and written communication skills. The training regarding communication should focus on what needs to be achieved with the message, and how to convey the intended message so that the likelihood of all individuals receiving the same intended message is improved. Secondly, additional technology training should be included. This training should highlight tips and tricks in getting the most from the communication tools available.

If one extends the organisational context to management and leadership training at higher education institutions, it would be prudent to include more aspects of e-leadership in current curricula, to better prepare managers for work situations where they do not see the individuals reporting to them. Group projects could be allocated to geographically dispersed teams, and part of the submission could be reflections on how the virtual situation was experienced.

8.5.1.3 Organisational hubs to overcome technology (and socialisation) limitations of home work

A recommendation that is closely related to Theme 4, in which the importance of the visual was reiterated, and also linked to the concept of Telework Centres (Cascio, 2000; Geldenhuys, 2010), is that of creating organisational hubs closer to the residential areas where individuals live. This would address issues of limited technology available at the individual's house, as well as the need that most individuals have for social contact with others. It would also allow individuals flexibility by working close to the office, and give the manager fewer "points of contact" to visit (by not having each individual sitting at a different location). These hubs should be interlinked with high-speed communication and video links, so that it would be easy to have online discussions using information-rich media. The hubs could also be used to co-locate team members who need to collaborate on specific activities.

In this regard, organisations also need to consider the question "What are the expectations of individuals from organisations today?" Do they need a place to socialise, for additional resources (such as printing and internet access), a place for collaboration?

8.5.1.4 Recommendations for the HR and IT departments

Both the IT and HR departments need to take cognisance of the urgency of requests coming from the line managers regarding the management of virtual workers. This could relate to HR requirements such as appointments and disciplinaries, or it could relate to additional connectivity requirements, or tools required. IT departments also need to understand that there is a greater need for desktop sharing and video conferencing in a remote situation, which requires additional bandwidth.

8.5.2 Recommendations for the Manager

A conceptual framework consisting of various elements has been created that could assist managers in defining an individualised framework for managing the performance of their specific team of virtual workers.

8.5.2.1 *Starting the virtual work arrangement*

When starting a virtual work arrangement, managers need to firstly understand who they themselves are as a person, their assumptions on remote work, and preferred management style. Then managers need to understand why the remote work is needed. Also, where possible, the manager should select individuals who have the necessary skill and appetite for virtual work. Furthermore, the manager needs to evaluate the specific context for the virtual work, and what the actual virtuality of the individual will be, so that the relevant activities to optimally enable individuals can be put in place. Managers need to accept that frameworks may differ between teams or even between individuals.

8.5.2.2 *Managing performance and performance management*

Managers should aim to enable their employees, rather than manage and control them. This is especially true for employees who are already performing. Trusting the individual to deliver autonomously plays an important part in this.

Managers should have regular sessions or contact with the individuals to relay individual feedback, and not only wait till there are problematic issues. Some managers found that management by exception worked, especially where there were too many and too large teams to be able to have personal contact on a regular basis.

Managers need to have a formal performance discussion with the individual at least once a year (especially if the performance is linked to increases), to share concerns, set guidelines for, and especially praise the individual. Ensuring that the relationship with the individual is solid will make it easier to share difficult messages, because they can be shared in an atmosphere of mutual trust – the individual can trust the

manager to give feedback to improve the individual, and the manager can trust the individual to reflect on the message, and ask additional questions if there are uncertainties or if the individual disagrees.

8.5.2.3 *Why measure?*

Managers always need to ask themselves: What are the underlying reasons for measuring? In doing so, the manager needs to ensure that only a few key measures are identified, and that the effort needed for measuring is always much less than the effort needed to perform productive work. If the manager has specific concerns about virtual work in general, or an individual in particular, the manager should rather address these concerns than try to measure the individual through unreasonable administrative deliverables.

8.5.3 Recommendations for the Individual

Individuals need to make sure that their work and activities are transparent to their manager. This will allow the manager to quickly act when issues occur, and also to have answers ready when other managers (or the customer) ask about what the team is busy with. This could equate to a daily call, copying on emails, updating timesheets or central task lists, regular calls, and many more. The important thing is to be parsimonious, to prevent information overload.

A second important aspect is that individuals need to be able to reflect on their own performance, especially when they feel that managers have been unfair. They need to realise that managers do not always find it easy to convey difficult messages, and that some context will be lost when working via electronic communication media.

Individuals should get their peers involved in evaluating their performance – especially if the specific deliverable is difficult to measure. They could learn from their peers by asking them to review documents or reports that are meant for the manager, especially if they are still unsure as to what the manager requires.

8.5.4 Future Research

First and foremost, future research could be used to test the propositions of Chapter 7 in order to arrive at a predictive performance theory of virtual knowledge workers. In addition, the study has not investigated the improvement of performance per se, and future studies could investigate the extent to which each proposition has a positive effect on performance improvement.

In terms of the *organisational parameters*, more information could be obtained to link the organisational structures and design components that support the enablement of the performance of virtual knowledge workers. This could include the investigation of how the design of the organisation could improve the performance of virtual knowledge workers.

Another aspect that has not been considered directly is *stages of team development* (team theory) in relation to work that needs closer co-operation, as opposed to other stages where individuals could work on their own. A mapping could be done between the theories relating to stages of team work that could more easily be done remotely as opposed to co-located, and compared with the findings in this study.

Further investigation regarding *generational theory* may also be necessary in the context of the need for the visual that was so pertinent in the current study. The question arises: Will the next generation of managers, who have perhaps grown up with gaming in virtual worlds, be better adjusted to not seeing their team members at all, and will the need of the team members for socialisation also be reduced because of their online experiences? Or will there always be a human element remaining – the need to see in order to connect, and the need for organising and belonging? Also, what are the expectations of individuals from organisations today?

Lastly, although the study was completed as a *cross-sectional and not a longitudinal timeframe study*, it has the potential for following up on recommendations made by the managers of how they would have liked to change their management style, and to determine if the situation of virtual work policies, guidelines or occurrence had changed since the initial data collection.

8.6 CLOSING REMARK

A quote that was apparently chalked up on a blackboard in Einstein's office in Princeton), read as follows: "Not everything that counts can be counted, and not everything that can be counted counts" (Harrison, 1995).

This statement highlights the fact that managing the performance of both virtual and co-located workers is an art that constantly has to be learnt and re-learnt. An important finding of this study, however, was that managers indicated that they did not distinguish between their management of the performance of these two groups of workers. The same deliverables were expected and the same measures were used. However, more trust was needed, since technology had become the mediator of both the manager's and the individual's activities.

The assumptions and parameters contributing to the field of organisational behaviour are ever-changing. As indicated by the research of Weick (1998:545; 2001:1), organisations have to continually make sense of cues in the environment, and improvise (i.e. continually change) by applying previous lessons they have learnt in a new way. This is in stark contrast to the organisation as "a structure" and "a design" – terms which seems to indicate that there is only one right way, and that once the "right" structure has been achieved, it should be kept that way. Managers in this study have demonstrated that when managing the performance of virtual knowledge workers, there is not one right way to do so. As stated by Weick (2001:1) in his discourse on events that do not make sense initially, "Part of leading is to accept what has happened so that it is possible to take a small next step in the direction of recovery. And part of acceptance is the realization that people often go through at least three stages when they deal with the inexplicable: superficial simplicity, confused complexity and profound simplicity."

This research forms part of the ever-continuing search for profound simplicity in organisational behaviour and, specifically, the enablement of the performance of virtual knowledge workers in the constantly expanding virtual workplace.

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APPENDIX A

10 APPENDIX A –TERMINOLOGY

10.1 TERMINOLOGY

Table 10-1 contains the list of abbreviations and acronyms used in this document.

Table 10-1: Abbreviations and acronyms

Abbreviation	Meaning
BARS	Behaviourally Anchored Rating Scales
BOS	Behavioural Observation Scales
CEO	Chief Executive Officer
CIO	Chief Information Officer
CIT	Critical Incident Technique
DC	Data Centre
ERP	Enterprise Resource Planning
HR	Human Resource (as in Human Resource Management)
HRIMS	Human resource information management systems
ICT	Information and Communication Technology
IF / INFRA	Infrastructure
IPA	Individual Performance Agreement
IT	Information Technology (normally in the context of the IT representative or IT department)
ITIL	Information Technology Infrastructure Library
KPI	Key Performance Indicator
MBO	Management By Objectives
MSS	Mixed standard scales
PAQ	Position-Analysis Questionnaire
PM	Project Management Services
PMBOK	Project Management Body of Knowledge
PRINCE2™	PR ojects IN Controlled E nvironments
ROx e.g. RO2	Research Objective
SA	South Africa
SLA	Service Level Agreement
SS	Software Unit
US	United States of America
VOIP	Voice Over Internet Protocol
WFMS	Workflow management systems

Table 10-2 contains formal referenced definitions and explanations for terminology relating to the services provided by the companies included in this study, as well as explanations for terminology specific to this thesis.

Table 10-2: Formal definitions and terms used

Term	Definition	Reference
Human capability	"...people's unique sets of skills, knowledge, and personal values and beliefs."	Brache (2003:61)
Individual abilities	Physical (for example, strength, dexterity, and stamina) (Barrier: Physical disability) Intellectual (for example, analytical ability, creativity, and memory) (Barrier: Cannot multitask; Cannot remember if not written – impact on specific job environment) Psychological (for example, personality traits, emotional makeup, and motivators) (Barrier: Avoiding social settings; Changing priorities; Pressure of interruptions; Attitude)	Brache (2003:65)
Knowledge	"Knowledge is an intangible privately produced public good, and is today the key determinant of economic and social progress."	Chichilnisky (1998:51)
Knowledge worker	"An employee whose major contribution depends on his employing his knowledge rather than his muscle power and coordination, frequently contrasted with production workers who employ muscle power and coordination to operate machines."	Drucker (1974:564)
Knowledge worker	"Knowledge workers own the means of production. It is the knowledge between their ears. And it is a totally portable and enormous capital asset. Because knowledge workers own their means of production, they are mobile."	Drucker (1999:149)
Knowledge worker	"...employees who carry knowledge as a powerful resource which they, rather than the organisation, own."	Drucker (In Sutherland, 2004:14)
Knowledge worker	"...the term knowledge worker will refer to any white-collar professional who works with, or uses, knowledge in order to complete his or her job efficiently and effectively and who attends to the importance of continuously upgrading their knowledge base."	Sutherland (2004:15)
Knowledge worker	"Knowledge workers have high degrees of expertise, education, or experience, and the primary purpose of their jobs involves the creation, distribution, or application of knowledge." "Knowledge workers think for a living."	Davenport (2005:10)
Nonstandard worker	"...the definition of nonstandard work as a combination of the nature of work arrangement long the three continua specified by Pfeffer and Baron (1988) and the fact of how work in that occupation has been traditionally arranged..."	Ashford, George and Blatt (2007:74)

Term	Definition	Reference
Outsource / Outsourcing	The process whereby one organisation gives the accountability and responsibility for certain non-core business processes to another external organisation.	Used in thesis
Performance	Performance is "...the results or outcomes of work", thereby opposing it to behaviour. They state that "... performance is the end result and behaviour is the means to that end" therefore performance is an accomplishment or output.	Dunnette and Fleishman (1982:xx)
Performance	"The desired results of behaviour"	Ivancevich and Matteson (2002:678)
Performance appraisal	"After these expectations have been established, it is possible to measure and evaluate behaviour, assessing how well it meets the expectations. This is the process of performance appraisal."	Miner (1992:379)
Performance appraisal	"A performance appraisal is any personnel decision that affects an employee's retention, termination, promotion, demotion, transfer, salary increase or decrease, or admission into a training program."	Latham and Wexley (1994:4)
Performance appraisal	"Performance appraisal, the systematic description of job-relevant strengths and weaknesses within and between employees or groups..."	Cascio (1998:58).
Performance Appraisal	"Performance appraisal (PA) is the ongoing process of evaluating and managing both the behaviour and outcomes in the workplace."	Grobler, Warnich, Carrell, Elbert and Hatfield (2006, 262)
Performance Appraisal (Performance evaluation)	"Performance evaluation....provides important feedback about how well the individual is getting along in the organization." (In the context of socialisation)	Ivancevich and Matteson (2002:79)
Performance Appraisal (Performance review)	"In observing, evaluating, and documenting on-the-job behaviour, we are essentially evaluating the degree of success attained by the individual jobholder in reaching organizational objectives."	Cascio (1998:40)
Performance appraisal importance	"Staffing, performance appraisal, training, and motivation principles are four key systems necessary for ensuring the proper management of an organization's human resources. Of these four systems, performance appraisal is perhaps the most important because it is a prerequisite for establishing the other three."	Latham and Wexley (1994:3)
Performance appraisal process	"The core of the performance appraisal process is the definition of effective employee behaviour."	Latham and Wexley (1994:3)
Performance appraisal purpose	"The primary purpose of performance appraisal is to counsel and develop employees on ways to increase their productivity."	Latham and Wexley (1994:45)
Performance Management	"Performance management, a broader term than performance appraisal, became popular in the 1980s as total quality management (TQM) programmes emphasised using all the management tools, including performance appraisal, to ensure achievement of performance goals."	Grobler, Warnich, Carrell, Elbert and Hatfield (2006:262)

Term	Definition	Reference
Persuasion	“Persuasion is trying to influence other people to our point of view or to take some action.”	Severin and Tankard (1979:4)
Shared Service Model (HR)	“We have a shared services model and it is centralised. We basically have it in 3 compartments. We have the shared services part of it, then we have the competency centre which is HR development, your assessments, your performance management, talent management and then you have the HR BP model. So your HR BP is the Strategic Business Partner, which provides most of the strategic business delivery to business. You have the shared services that do the administration, leave, payroll, recruitment, all the shared services. And then the competency centre which basically includes Jane’s whole environment. That provides from a competence and development perspective, the support for that. It is called the Dave Ulrich model.” – P49(48)	Used in the thesis
Standby	Standby is a term used in outsourcing when technical support staff need to be available after hours should an incident occur that needs immediate attention.	Used in the thesis
Teamness	This implies a sense of teamwork and relates to the cohesion and interdependence amongst team members which is created through the communication of feelings, sensory information, as well as roles and identities in written or verbal communication.	Knoll and Jarvenpaa (1998:10)
Telework	“an alternative work arrangement whereby employees regularly spend at least part of their work hours away from the traditional office location.”	Duxbury and Higgins (2002) as quoted by Schweitzer and Duxbury (2006:105)
Virtual knowledge worker	“...workers who are removed from the direct sphere of influence of management and co-workers.” Synonymous with the term “Teleworker”	Jackson, Gharavi and Klobas (2006:219)
Virtual performance	Performance where the individual is working remotely from the manager. The act of performing takes place remote from the manager who is directly accountable for the outcomes or performance.	Used in the thesis
Virtuality	Virtual status of the individual	Used in the thesis



APPENDIX B

11 APPENDIX B – SEMI-STRUCTURED QUESTIONNAIRES

11.1 MANAGER SEMI-STRUCTURED INTERVIEW

Table 11-1 contains the questions that were asked during the semi-structured interviews with the managers in the form of an interview guide. The columns represent firstly the number of the related research objective (RO), then the sequence (Seq) in which the questions were asked, followed by the questionnaire component as defined in the initial framework, an additional category of question and the actual question. The next column shows if the question was deemed to be compulsory or optional. The compulsory question is structured in a more open-ended way, while the optional question is more probing, should the manager not understand or not answer the question satisfactorily. The next two columns assist with the timing of the interview, showing firstly how much time should be spent on the question, and secondly the time elapsed for the interview. This was used to assist with the timekeeping in the interview. The last column was used for notes during the interview. Only the columns for the sequence, questions timing and notes were printed as part of the interview schedule.

Table 11-1: Manager semi-structured interview guide

RO	Seq.	Questionnaire Component	Category	Question	Incl?	Time (Min)	Time Total	Notes
RO1	1.00	(1) Demographics	Team Composition	Tell me about your team, how they work and what the main deliverables are?	Yes	15	15	
RO1	1.10	(1) Demographics	Team Composition	Team size; do they all work remote; do they work as individuals or in team; What is the basic deliverable; Is this line manager or project manager responsibility?	Opt	0	15	

RO	Seq.	Questionnaire Component	Category	Question	Incl?	Time (Min)	Time Total	Notes
RO1	1.20	(1) Demographics	Team Composition	How often do you see the individuals? Do not go into performance measurement necessarily. (This will give indication of who are virtual knowledge workers.)	Opt	0	15	
RO1	1.30	(1) Demographics	Reason for Virtual Work	Why do you let them work in this way?	Opt	0	15	
RO4	3.00	(3) Individual Participation	Selection	How do you select individuals to work as virtual knowledge workers? Why? (When you recruit, do you take this requirement into consideration?)	Yes	5	20	
RO1	4.00	(2) Management of Performance	Performance	Describe for me how you manage the performance of the virtual knowledge workers? (What metrics do you use? What technologies do you use? How do you define performance? How often do you meet with them to check performance.)	Yes	10	30	
RO1	4.10	(2) Management of Performance	Performance	Are there specific metrics that you have (or would like to) define that would apply to the measurement of performance of virtual knowledge workers?	Opt	0	30	
RO1	4.20	(2) Management of Performance	Technology	What technologies (information systems) do you use to support performance measurement of your team members? Is it working for you?	Opt	0	30	
RO1	4.30	(2) Management of Performance	Performance	How do you ensure productivity for the virtual knowledge workers in your team? How do you ensure they have delivered what was required?	Opt	0	30	
RO1	4.40	(2) Management of Performance	Performance	How do you measure or define <u>quality</u> ? How do you compare the outputs for the individual team members?	Yes	5	35	

RO	Seq.	Questionnaire Component	Category	Question	Incl?	Time (Min)	Time Total	Notes
RO2b	5.00	(7) Own perceptions of success	Performance	How does your management of performance differ between onsite (co-located) and virtual knowledge workers? Why? What is different? What is missing	Yes	5	40	
RO4	6.00	(3) Individual Participation	Performance	How does your management of performance differ between different remote workers? Why?	Yes	5	45	
RO3a	7.00	(2) Management of Performance	Mindset	How has your management approach changed since team members have started working virtually?	Yes	5	45	
RO3a	6.00	(2) Management of Performance	Mindset	What are the main challenges you face, working with or managing the performance of people you cannot see?	Yes	5	50	
RO2b	7.00	(7) Own perceptions of success	Management Approach	What part of your management approach is most successful in ensuring performance of virtual knowledge workers?	Yes	5	55	
RO2b	7.10	(7) Own perceptions of success	Performance	How does the way you manage (performance) enhance the performance of virtual knowledge workers?	Opt	0	55	
RO3a	7.20	(7) Own perceptions of success	Management Approach	How successful do you think you are with managing the performance of the virtual knowledge workers?	Opt	0	55	
RO4	8.00	(3) Individual Participation	Selection	What do you expect of the individual to show that he/she is remaining on task?	Yes	5	60	
RO4	8.10	(3) Individual Participation	Performance	What characteristics do individuals have that perform well in remotely managed scenarios?	Opt	0	60	
RO2a	10.00	(6a) Organisational Support - HR	Policies	How do you understand the organisation's view on flexi or remote work? (Aware of policies?)	Yes	5	65	
RO2a	10.10	(6a) Organisational Support - HR	Policies	What organisational support for virtual knowledge workers (and specifically the management of their performance) from an HR perspective do you get?	Yes	5	70	

RO	Seq.	Questionnaire Component	Category	Question	Incl?	Time (Min)	Time Total	Notes
RO2a	11.00	(6a) Organisational Support - IT	Technology	How do you perceive the organisational support for virtual knowledge workers (and specifically the management of their performance) from an IT perspective. (Technology, Training, Policies) ?	Yes	5	75	
RO2a	11.10	(6b) Organisational Support - IT	Technology	What technologies are supported from an organisational perspective?	Opt	0	75	
RO3b	12.00	(6c) Organisational Support - General	General	What else is needed from organisational perspective to improve the management of performance of virtual knowledge workers? What is missing? Why?	Yes	10	85	
RO3a	13.00	(7) Own perceptions of success	Performance	Do you think that you could do anything differently to improve your management of the performance of the individuals working remotely (virtual knowledge workers) ?	Yes	5	90	
RO3a	14.00	(8) Other Impacts	General	Is there anything else that you would like to share or that you deem relevant to the management of performance of virtual knowledge workers?	Yes	10	100	

11.2 HR REPRESENTATIVE SEMI-STRUCTURED INTERVIEW

The questions that were asked during the semi-structured interviews with the HR representatives are listed in Table 11-2 in the form of an interview guide. The columns represent firstly the number of the related research objective (RO), then the sequence (Seq) in which the questions were asked, followed by the questionnaire component as defined in the initial framework, an additional category of question and the actual question. The next two columns assist with the timing of the interview, showing firstly how much time should be spent on the question and secondly the time elapsed for the interview. This was used to assist with the timekeeping in the interview. The last column was used for notes during the interview. Only the columns for the sequence, questions timing and notes were printed as part of the interview schedule.

Table 11-2: HR Representative semi-structured interview guide

Obj	Seq.	Questionnaire Component	Category	Question	Time (Min)	Time (Total)	Notes
RO2a	1.00	(1) Demographics	Context	To start with, I would just like to get a general view of the approach to HR in the company? How is the HR department structured? (Centralised or decentralised models; Title of HR Group Manager? "Head of HR" or "Talent Director / Chief Talent officer")	7.5	7.5	
RO2a	1.10	(1) Demographics	Context	How would you describe the organisation's view towards virtual/flexi work from an HR perspective? (Link to Flexi work policies)	7.5	15	
RO2b	2.00	(4) Management Participation	Performance	How much flexibility do managers have in deciding over the virtual work arrangements of their resources?	5	20	
RO1	3.00	(1) Demographics	Context	Who in the company is currently making use of the virtual work / flexi work policy (if they exist)?	5	25	

Obj	Seq.	Questionnaire Component	Category	Question	Time (Min)	Time (Total)	Notes
RO1	4.10	(2) Management of Performance	Performance	How is performance in general managed in the organisation? (Refer to Performance management policy)	5	30	
RO1	4.20	(2) Management of Performance	Performance	Does the organisational prescriptions for management of performance of virtual knowledge workers differ? (Why?)	5	35	
RO3a	5.00	(2) Management of Performance	Performance Metrics	Are there specific metrics that HR has (or would like to) define that would apply to the measurement of performance of virtual knowledge workers?	5	40	
RO2b	6.00	(4) Management Participation	Performance	How well do you think managers are managing performance of their virtual knowledge workers? Why (is there a particular reason for your answer?)	5	45	
RO4	7.00	(3) Individual Participation	Performance	How would HR like to see individual employees contributing to managing performance when working virtually? Why?	5	50	
RO3b	8.10	(7) Own perceptions of success	Performance	Do you think that organisational support from HR side is sufficient / effective in supporting management of performance of virtual knowledge workers? Why?	5	55	
RO3b	8.20	(8) Other Impacts	General	Is there anything that you think could be added from an organisational level to assist with the management of performance of virtual knowledge workers?			
RO1	9.00	(8) Other Impacts	General	What is your personal experience around virtual work and management of performance in this context?	10	65	
RO3b	10.00	(8) Other Impacts	General	And in closing this interview, is there anything else that you would like to share which you deem relevant to the management of performance of virtual knowledge workers from an HR perspective, in your organisation?	5	70	

11.3 IT REPRESENTATIVE SEMI-STRUCTURED INTERVIEW

The questions that were asked during the semi-structured interviews with the IT representatives are listed in Table 11-3 in the form of an interview guide. The columns represent firstly the number of the related research objective (RO), then the sequence (Seq) in which the questions were asked, followed by the questionnaire component as defined in the initial framework, an additional category of question and the actual question. The next two columns assist with the timing of the interview, showing firstly how much time should be spent on the question and secondly the time elapsed for the interview. This was used to assist with the timekeeping in the interview. The last column was used for notes during the interview. Only the columns for the sequence, questions timing and notes were printed as part of the interview schedule.

Table 11-3: IT representative semi-structured interview guide

RO	Seq	Questionnaire Component	Category	Question	Time (Min)	Time (Total)	Notes
RO1	1.00	(1) Demographics	Context	Please give me an overview of the IT department (Size, services, products supported) and how it services the organisation?	7.5	7.5	
RO2a	2.00	(6b) Organisational Support - IT	Technology	What technologies exist to support the work of virtual knowledge workers?	7.5	15	
RO2a	3.00	(6b) Organisational Support - IT	Technology	How does training for these tools take place?	5	20	
RO2a	4.00	(1) Demographics	Policies	In terms of the IT policies of your organisation, how do they link to the technologies provided for virtual knowledge workers?	5	25	
RO2b	5.00	(4) Management Participation	General	What is the biggest requirement managers have presented to IT in terms of virtual workers?	5	30	

RO	Seq	Questionnaire Component	Category	Question	Time (Min)	Time (Total)	Notes
RO4	6.00	(3) Individual Participation	General	What is the biggest requirement individuals have presented to IT in terms of virtual work?	5	35	
RO4	7.00	(3) Individual Participation	Technology	What is the take-up of the technologies (that support virtual work) under individual team members? How do you know this? Why this kind of take-up?	5	40	
RO3b	8.00	(7) Own perceptions of success	Technology	Do you think that the technologies provided from an organisational level are effective / efficient for managing performance (and metrics) of virtual knowledge workers? Why?	5	45	
RO2b	9.00	(4) Management Participation	Technology	Do managers use the technologies when managing the performance of their individual team members (especially virtual knowledge workers)? (WHY?)	5	50	
RO1	10.00	(7) Own perceptions of success	General	What is your personal experience around virtual work and management of performance in this context?	10	60	
RO3b	11.00	(8) Other Impacts	General	Is there anything else that you would like to share which you deem relevant to the management of performance of virtual knowledge workers from an IT perspective?	5	65	



APPENDIX C

12 APPENDIX C – ONLINE QUESTIONNAIRES

12.1 INDIVIDUAL QUESTIONNAIRE

12.1.1 Email Notification

Dear Peter,

I have interviewed your manager, Johnson, and in this context you are being invited to participate in the following survey. The survey relates to an academic research study conducted by myself, Karen Luyt, as Doctoral student from the Department Human Resource Management at the University of Pretoria.

The survey is titled: "Individual VKW Questionnaire: Questionnaire for Individual Virtual Knowledge Workers".

The purpose of the study is to investigate, analyse and describe the ongoing or continual measurement and management of the performance of individuals who often work away from the direct control and influence of their managers and colleagues, with the aim of constructing a managerial framework for the management of performance of virtual knowledge workers.

Please note the following:

- 1) Your participation in this study is very important, and each completed questionnaire contributes to a higher degree of validity. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- 2) Should you wish to continue, please answer the questions in the online questionnaire as completely and honestly as possible. This should take less than 20 minutes of your time.
- 3) The results of the study may be used for academic purposes as well as for lay articles and conference proceedings. A summary of the results of the study will be made available on request.

4) Academic support:

* Supervisor: Prof K. Stanz (012 420 3074; karel.stanz@up.ac.za)

* Co-supervisor: Prof S.M. Nkomo (012 420 4664; stella.nkomo@up.ac.za)

By clicking on the URL below, you will indicate that you have read and understand the information provided above and that you give your consent to participate in the study on a voluntary basis.

Do not hesitate to contact me if you have further questions or suggestions.

Sincerely,

Karen Luyt

Student Number: 86423623

Registered for: PhD (Organisational Behaviour)

University of Pretoria

Tel: 082-895-2289

Fax: 086-606-0405

Email: karenluyt@tuks.co.za

Click here to do the survey:

<http://www.up.ac.za/hrresearch/index.php?lang=en&sid=69523&token=TEST>

12.1.2 Questionnaire Introduction

Dear Team Member

Thank you for agreeing to participate in the academic research study conducted by Karen Luyt, a Doctoral student from the Department Human Resource Management at the University of Pretoria. The research study seeks to investigate, analyse and describe the management of the performance of individuals who often work away from the direct control and influence of their managers and colleagues, with the aim of constructing a managerial framework for the management of performance of virtual knowledge workers.

The questions pertain to how your performance is managed by your direct manager (who was mentioned in the email), and the survey consists of the following sections:

- 1) **Demographics:** General information regarding yourself and the way you work.
- 2) **Management of Performance:** How your performance is managed in your current position.
- 3) **Managerial Support:** The support your manager provides in terms of achieving performance in your work situation.
- 4) **Organisational Support:** The support provided to you on organisational level from a Human Resources (HR) and Information Technology (IT) perspective.
- 5) **Other items:** This section pertains to your own perceptions of how successful you are in achieving work performance. Some final open questions are also added.

Any further questions or suggestions can be directed at:

- * Karen Luyt (082 895 2289; karenluyt@tuks.co.za)
- * Supervisor: Prof K. Stanz (012 420 3074; karel.stanz@up.ac.za)
- * Co-supervisor: Prof S.M. Nkomo (012 420 4664; stella.nkomo@up.ac.za)

By clicking on "**Next**" below, you will start the survey.

12.1.3 Questionnaire Start

Questionnaire for Individual Virtual Knowledge Workers

There are 32 questions in this survey

Section 1: Demographics

General information regarding the way of work.

1 What is your employment status in your current organisation? *

Please choose **only one** of the following:

- Permanent Employee - Full time
- Permanent Employee - Part time
- Contractor - hourly paid
- Contractor - fixed term
- Third Party representative or consultant
- Temporary Worker
- Other

2 Does your current role include line management responsibilities? *

Please choose **only one** of the following:

- Yes
- No
- Uncertain

A line manager would be responsible for managing and controlling resources from an organisational structure perspective, and may amongst others, give work direction, do performance appraisals and approve leave.

3 How long have you been employed in /or contracting at the current organisation? *

Please write your answer(s) here:

Years: _____

Months _____

Please enter the number of years (and/or months if applicable) in the space next to each item respectively. Please enter 0 if the item does not apply.



4 What is your current age in years? *

Please choose **only one** of the following:

- 21 or younger
- 22-26
- 27-31
- 32-36
- 37-41
- 42-46
- 47-51
- 52-61
- 62 and older

5 What is your normal start time for a working day? *

Please choose **only one** of the following:

- 05:00 am
- 05:30 am
- 06:00 am
- 06:30 am
- 07:00 am
- 07:30 am
- 08:00 am
- 08:30 am
- 09:00 am
- 09:30 am
- 10:00 am
- 10:30 am
- 11:00 am
- 11:30 am
- 12:00 am
- Other _____

6 What is your normal end time for a working day? *

Please choose **only one** of the following:

- 05:00 am
- 05:30 am
- 06:00 am
- 06:30 am
- 07:00 am
- 07:30 am
- 08:00 am
- 08:30 am
- 09:00 am
- 09:30 am

- 10:00 am
- 10:30 am
- 11:00 am
- 11:30 am
- 12:00 am
- Other _____

7 Of the total time worked per week, how many days do you work away from your manager?

Please write your answer here:

Enter a value greater than 0 if you do work away from your manager. A blank answer will be deemed to be 0. (Only Monday to Friday). You can enter a portion of a day as well.

8 For the time worked away from your manager, where is MOST of this work performed? *

Please choose **only one** of the following:

- Satellite Office
- Client Site
- Home
- Internet Cafe
- Coffee Shop
- Other

Pick the most used location

9 Would you classify yourself as a knowledge worker? *

Please choose **only one** of the following:

- Yes
- No
- Uncertain

Knowledge Worker Definitions

*"...expert workers in jobs whose primary purpose is to create, distribute, or apply knowledge."
(Davenport, 2005:24).*

These individuals are expected to provide "insights, expertise, designs and know-how" (Houger, 2006:26).

10 Would you classify yourself as a virtual worker? *

Please choose **only one** of the following:

- Yes
 No
 Uncertain

Virtual Worker Definition

(Knowledge) workers who work geographically remote from the traditional work place (Ashford et al. 2007:69; Luyt, 2007:13), which results in them being "...removed from the direct sphere of influence of management and co-workers." (Jackson et al., 2006:219).

11. How long have you been working as virtual knowledge worker (i.e. remote from manager)? *

[Only answer this question if you answered 'Yes' to question 'D10 - Logic built into online questionnaire.]

Please write your answer(s) here:

Years : _____
 Months : _____

Please enter the number of years (and/or months if applicable) in the space next to each item respectively. Please enter 0 if the item does not apply.

Section 2: Management of Performance

This section pertains to how your performance is managed in your current position. (You need to answer these questions in relation to the manager who directly controls your performance - this could be the project manager if you are working on projects, or else this would be your line manager.)

12 Please select the most appropriate answer for each statement. *

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
There are objective criteria whereby my performance can be measured.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to measure and quantify my performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The measures of my job performance are clear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
My manager communicates goals and sets priorities with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My manager assesses my performance based on the results I achieve rather than how I spend my time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a lot to say about how to do my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Only one answer can be given per statement. All statements must be answered.

13 How satisfied are you with the amount of control you have in your work? *

Please choose **only one** of the following:

- Extremely Satisfied
- Satisfied
- Somewhat Satisfied
- Somewhat Dissatisfied
- Dissatisfied
- Extremely Dissatisfied

Select the most appropriate answer.

14 How is your performance measured? *

Please choose **all** that apply:

- Time spent working
- Number of products produced/delivered in given time
- Quality of work produced
- Level of customer satisfaction
- Management perceptions only
- Meeting financial targets
- Meeting objective criteria
- Progress on allocated tasks
- Novelty of solutions produced
- Complexity of solution produced

Other: _____

15 How would you like your performance to be measured? *

Please choose **all** that apply:

- Time spent working
- Number of products produced/delivered in given time
- Quality of work produced
- Level of customer satisfaction
- Management perceptions only
- Meeting financial targets
- Meeting objective criteria
- Progress on allocated tasks
- Novelty of solutions produced
- Complexity of solution produced

Other: _____

16 How is your attendance measured or checked? *

Please choose **all** that apply:

- Agreed start and end times
- Agreed total number of hours per day
- Presence Tool
- Shared Calendar
- Workflow in emails
- Online availability
- Not measured or checked explicitly (based on trust)

Other: _____

17 How would you like your attendance to be measured or checked? *

Please choose **all** that apply:

- Agreed start and end times
- Agreed total number of hours per day
- Presence Tool
- Shared Calendar
- Workflow in emails
- Online availability
- Not measured or checked explicitly (based on trust)

Other: _____

19 How often should your performance be measured? *

Please choose **only one** of the following:

- Daily
- Weekly
- Monthly
- Bi-Annually
- Per job or objective
- Combination of frequencies stated above
- Only during formal Performance Appraisal
- Other

Select the most appropriate frequency.

20 How do you receive feedback from your manager on your performance? *

Please choose **all** that apply:

- Face-to-Face (Informal)
- Face-to-Face (Formal appointment)
- Online Meeting (Formal)
- Online chat or email (Informal)
- Via IT system (automated)

Other: _____

21 Indicate who all evaluates your performance: *

Please choose **all** that apply:

- Peer review (Same level)
- Subordinate level (Lower level)
- Self-evaluation or rating (Self)
- Manager (Higher Level)
- Team or Group
- External Customer

Other: _____

22 How long have you been working as subordinate for your immediate manager?*

Please choose **only one** of the following:

- 6 months or less
- 6+ months to 1 year
- 1+ to 2 years
- 2+ to 3 years
- 3+ to 5 years
- More than 5 years

23 Please select the most appropriate answer for each statement regarding your manager. *

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
I trust my manager.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My manager trusts me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My manager allows me to work flexible hours.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My manager allows me to select my location of work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The amount of control my manager exerts over my day-to-day activities is acceptable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been trained by my manager to work remotely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My manager uses available information technology tools effectively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My manager supports my information technology needs with equipment, financial support, and training.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select the most applicable answer. Please review and provide answer for each statement.

Section 3: Organisational Support

This section pertains to the support provided to you on organisational level from a Human Resources (HR) and Information Technology (IT) perspective.

24 Does your company have a formal "work from home" policy? *

Please choose **only one** of the following:

- Yes
 No
 Uncertain

May also be referred to as a telecommuting policy

25 Does your company have a flexible work hours policy? *

Please choose **only one** of the following:

- Yes
 No
 Uncertain

Flexible work hours normally allows you to make arrangement to work outside of normal office hours.

26 Please select the most appropriate answer for each statement. *

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
The organisational culture supports virtual knowledge workers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The HR procedure to evaluate my performance is fair.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have had some training from organisational level on how to use technologies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organisational IT systems provided are sufficient to support virtual knowledge workers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select the most applicable answer. Please review and provide answer for each statement.

27 What Information Technologies or systems does your company provide to enable your performance while working remotely?

Please choose **all** that apply:

- SMS / MMS
- Document Libraries
- Communicator type tools (e.g. MSN, Skype)
- Company portals
- Desktop sharing and collaboration tools
- Virtual meeting tools
- Video Conferencing
- Team Blogs
- Social networking forums
- Emails

Other: _____

28 What Information Technologies or systems do you use to enable your performance while working remotely? *

Please choose **all** that apply:

- SMS / MMS
- Document Libraries
- Communicator type tools (e.g. MSN, Skype)
- Company portals
- Desktop sharing and collaboration tools
- Virtual meeting tools
- Video Conferencing
- Team Blogs
- Social networking forums
- Emails

Other: _____

These systems do not necessarily have to be provided by the organisation you work for.

Section 4: Other Items

This section pertains to your own perceptions of how successful you are in achieving work performance. Some final open questions are also added.

29 Please review the statements below and select the most appropriate answer.

*
–

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
My manager does not have to monitor me in order for me to perform up to standard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am frequently interrupted by requests for information from others in my team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my job, I am frequently called on to provide information and advice to others in my team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The way I perform my job has a significant impact on others in my team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My performance does not depend on working with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To perform my best, I need to work independently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that I can achieve the goals I set for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe my own performance and deliverables are according to standard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe my manager thinks that my performance and deliverables are according to standard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe my colleagues and team members think that my performance and deliverables are according to standard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select the most applicable answer. Please review and provide an answer for each statement.

30 What could be done to measure and manage your performance in terms of day-to-day output in a more effective and efficient way (or are there items that should not be measured)?

Please write your answer here

Your opinion will be highly appreciated.

31 What could you do more of, or differently, to ensure that your performance can be managed effectively? *

Please write your answer here

Your opinion will be highly appreciated.

32 How could changes on organisational level help you to enhance your performance as virtual knowledge worker? *

Please write your answer here

Your opinion will be highly appreciated.

----- Thank you for completing this survey. -----

12.1.4 Email Reminder

Dear Peter,

You were recently invited to participate in a survey, related to an interview with your manager, Johnson.

If you have not completed the survey yet, I would like to remind you that the survey is still available should you wish to take part. Your contribution is valuable and your participation would be appreciated. The completion of the survey should take less than 20 minutes of your time.

The survey is titled:

"Questionnaire for Individual Virtual Knowledge Workers"

For more information and to participate, please click on the link below.

Sincerely,

Karen Luyt

Student Number: 86423623

Registered for: PhD (Organisational Behaviour)

University of Pretoria

Tel: 082-895-2289

Fax: 086-606-0405

Email: karenluyt@tuks.co.za

Click here to do the survey:

<http://www.up.ac.za/hrresearch/index.php?lang=en&sid=69523&token=TEST>

12.2 MANAGER ONLINE QUESTIONNAIRE

12.2.1 Email Invitation

Dear Joan,

This is the survey referred to during the recent interview held with you, regarding the PhD research for "A managerial framework for the management of performance of virtual knowledge workers".

The survey is titled:

"Virtual Knowledge Worker Questionnaire for Managers"

To participate, please click on the link below.

Sincerely,

Karen Luyt

Student Number: 86423623

Registered for: PhD (Organisational Behaviour)

University of Pretoria

Tel: 082-895-2289

Fax: 086-606-0405

Email: karenluyt@tuks.co.za

Click here to do the survey:

<http://www.up.ac.za/hrresearch/index.php?lang=en&sid=78987&token=MngTest>

12.2.2 Questionnaire Introduction

Dear Manager

You are invited to continue your participation in the academic research study conducted by Karen Luyt, a Doctoral student from the Department Human Resource Management at the University of Pretoria. This questionnaire is in addition to the semi-structured interview already held with you.

Any further questions or suggestions can be directed at:

Karen Luyt (082 895 2289 or email at karenluyt@tuks.co.za)

Supervisor: Prof K. Stanz (012 420 3074; karel.stanz@up.ac.za)

Co-supervisor: Prof S.M. Nkomo (012 420 4664; stella.nkomo@up.ac.za)

By clicking on "**Next**" below, you will indicate that you give your consent to continue participating in the study on a voluntary basis.

12.2.3 Questionnaire start

Performance of Virtual Knowledge Workers - Manager Questionnaire

There are 13 questions in this survey

Section 1 – Demographics

This section contains some background questions

1 Please confirm your name and surname. *

Please write your answer here:

This is important to be able to link your survey answers back to the interview, as well as the individual team member questions

2 How long have you been the manager for your current team? *

Please write your answer(s) here:

Years : _____

Months : _____

Please enter the number of years (and/or months if applicable) in the space next to each item respectively. Please enter 0 if the item does not apply.

3 What is your current age in years? *

Please choose **only one** of the following:

- 21 or younger
- 22-26
- 27-31
- 32-36
- 37-41
- 42-46
- 47-51
- 52-61
- 62 and older

4 How long have you been allowing individuals to work as virtual workers (i.e. remote from you as manager and/or their colleagues)? *

Please write your answer(s) here:

Years _____

Months _____

Please enter the number of years (and/or months if applicable) in the space next to each item respectively. Please enter 0 if the item does not apply.

4 How long have you been allowing individuals to work as virtual workers (i.e. remote from you as manager and/or their colleagues)? *

Please write your answer(s) here:

Years _____

Months _____

Please enter the number of years (and/or months if applicable) in the space next to each item respectively. Please enter 0 if the item does not apply.



5 What is your normal start time for a working day? *

Please choose **only one** of the following:

- 05:00 am
- 05:30 am
- 06:00 am
- 06:30 am
- 07:00 am
- 07:30 am
- 08:00 am
- 08:30 am
- 09:00 am
- 09:30 am
- 10:00 am
- 10:30 am
- 11:00 am
- 11:30 am
- 12:00 am
- Other _____

6 What is your normal end time for a working day? *

Please choose **only one** of the following:

- 05:00 am
- 05:30 am
- 06:00 am
- 06:30 am
- 07:00 am
- 07:30 am
- 08:00 am
- 08:30 am
- 09:00 am
- 09:30 am
- 10:00 am
- 10:30 am
- 11:00 am
- 11:30 am
- 12:00 am
- Other _____

Section 2 - Management of Performance

This section pertains to how you manage the performance of your current team members. You need to answer these questions in relation to the individual team members discussed in the interview.

7 Please select the most appropriate answer for each statement. *

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
There are objective criteria whereby the performance of my team members can be measured.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to measure and quantify the performance of my team members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I communicate goals and set priorities with my team members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I assess the performance of team members based on the results they achieve rather than how they spend their time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My team members have a lot to say about how they do their job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Only one answer can be given per statement. All statements must be answered.

8 In your opinion, how satisfied are your team members about the amount of control they have in their work? *

Please choose **only one** of the following:

- Extremely Satisfied
- Satisfied
- Somewhat Satisfied
- Somewhat Dissatisfied
- Dissatisfied
- Extremely Dissatisfied

Select the most appropriate answer.

9 How do you measure the performance of your team members? *

Please choose **all** that apply:

- Time spent working
- Number of products produced/delivered in given time
- Quality of work produced
- Level of customer satisfaction
- Management perceptions only
- Meeting financial targets
- Meeting objective criteria
- Progress on allocated tasks
- Novelty of solutions produced
- Complexity of solution produced

Other: _____

10 How do you measure or check the attendance of your team members? *

Please choose **all** that apply:

- Agreed start and end times
- Agreed total number of hours per day
- Presence Tool
- Shared Calendar
- Workflow in emails
- Online availability
- Not measured or checked explicitly (based on trust)

Other: _____

Section 3 - Managerial Support

This section pertains to the support you provide your individual team members in terms of achieving performance in their work. *(You need to answer these questions in relation to the individual team members who were discussed during the interview.)*

11 Please select the most appropriate answer for each statement regarding your team members. *

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
I trust my team members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My team members trust me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I allow my team members to work flexible hours.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I allow my team members to select their location of work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The amount of control I exert over my team members' day-to-day activities is acceptable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have trained my team members to work remotely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use available information technology tools effectively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I support team members' information technology needs with equipment, financial support, and training.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select the most applicable answer. Please review and provide answer for each statement.

Section 4 - Other Items

This section pertains to general questions. Final comments are allowed.

12 Please review the statements below and select the most appropriate answer*

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
I do not have to monitor my team members in order for them to perform up to standard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, the performance and deliverables of my team members are according to standard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Select the most applicable answer. Please review and provide an answer for each statement.

13 Is there anything else that you would like to add that has not been shared before?

Please write your answer here:

Any additional contribution will be highly appreciated.

----- Thank you for completing this survey. -----

12.2.4 Email Reminder (Example)

Hi Rita

I hope you are keeping well. I am just trying to finalise all the necessary data before starting on the analysis of the questionnaire data, and I saw that your answers on the manager questionnaire were still missing. I would really appreciate it if you could complete this it will really not take more than 10 minutes of your time, and will assist me in my data analysis of your team.

The link is given below again for easy access.

Thanking you in advance,

Karen Luyt

Student Number: 86423623

Registered for: PhD (Organisational Behaviour)

University of Pretoria

Tel: 082-895-2289

Fax: 086-606-0405

Email: karenluyt@tuks.co.za

Click here to do the survey:

{SURVEYURL}



APPENDIX D

13 APPENDIX D – CASE STUDY PROTOCOL

13.1 ORGANISATIONAL LETTER OF APPROVAL

A template letter was created for the companies, and signed by the respective organisational representatives.

Figure 13-1: Letter for organisational approval (template – page 1)




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Departement Menslikehulpbronnbestuur
Nagraadse programme
www.up.ac.za/mhb

Department of Human Resource Management
Postgraduate programmes
www.up.ac.za/hrm

+27(0) 12-420-3108
+27(0)12-420-3574

<Date>
<Representative Title, Name and Surname>
<Company Name>

Permission for your organisation to participate in an academic research study

Topic: A Managerial Framework for the Management of Performance of Virtual Knowledge Workers

Dear <Name of representative>

Your company is invited to participate in an academic research study conducted by Karen Luyt (Student number 86423623; contact number 082 895 2289), a Doctoral student from the Department Human Resource Management at the University of Pretoria.

The purpose of the study is to investigate, analyse and describe the ongoing or continual measurement and management of the performance of individuals who often work away from the direct control and influence of their managers and colleagues. This is a case study of the phenomenon in your organisation and will include interviews on management level, surveys on team member level, and review of organisational level support structures on human resource and information technology level.

Please note the following:

- All components of the study will be treated as strictly confidential. Any results will be of such a nature that it will not be possible to identify your organisation or any individuals in the organisation.
- Your participation in this study is very important to us. Your organisation may, however, choose not to participate and you may also stop the participation of your organisation at any time without any negative consequences.
- The individual participants in the study will be selected in collaboration with yourself and will also be given the option to participate on a voluntary basis.

Figure 13-2: Letter for organisational approval (template – page 2)

- The results of the study will be used for academic purposes and may be published in an academic journal or other lay articles. We will discuss interim results of the specific case study with you, and provide you with a summary of our findings on request.
- Please contact my supervisor, Prof K. Stanz (012 420 3074; karel.stanz@up.ac.za) or my co-supervisor, Prof S. Nkomo (012 420 4664; stella.nkomo@up.ac.za) if you have any questions or comments regarding the study.
- The study has started and the aim is to submit the thesis by August 2012.

Please sign the form to indicate that:

- You have read and understand the information provided above.
- You give your consent for your organisation to participate in the study on a voluntary basis.

Initials and Surname

Position in the organisation

Division of Organisation for which the study will apply

Signature

Date

13.2 INTERVIEW PROTOCOL COMPONENTS

Examples of the protocol elements as discussed in Chapter 4 are included below. For the interview component, they include:

- an email for the company representative to assist in selection of managers and teams;
- online folder structure for each case;
- interview file contents;
- template letter (manager example included);
- informed consent form (manager example included);
- the interview schedules for the managers, as well as HR and IT representatives;
- an example page of the interview guide for the semi-structured interviews; and
- table of contents for the field notes template in MS Word that was created for each case.

Table 13-1: Email to company representative

<p>Hi Janet</p> <p>Herewith some more information regarding the meeting I have requested for <Date> and how your company can be involved in the research. The individuals to cover the following will have to be identified:</p> <ol style="list-style-type: none"> 1) Interview with <u>one</u> IT Representative. This should be somebody who can speak about IT systems and support from an organisational perspective, especially pertaining to the teams selected. The requirement from an IT perspective includes the following: <ul style="list-style-type: none"> • A semi-structured interview regarding the topic (planned 1.5 hours) • Providing of IT policy documents relating to the use of mobile technologies or other related policy documents. • Being available for follow up questions (telephonic / email) while the data is being analysed. 2) Interview with <u>one</u> HR Representative. This should be an individual who can speak about performance management in the organisation as a whole, as it would pertain to the teams selected. The requirements from an HR perspective include the following: <ul style="list-style-type: none"> • A semi-structured interview regarding the topic (planned 1.5 hours) • Providing of policy documents relating to work from home or other alternative working arrangements. • Providing policy documents regarding performance management. • Providing example performance appraisal templates. • Being available for follow up questions (telephonic / email) once the data is being analysed.
--

- 3) Interview with three to five Managers of Teams – we can start with 3 managers, and if the storyline varies distinctly, then I would have to interview more managers/teams.
- The managers should have individuals in their teams that work remote from them and/or their colleagues, i.e. virtual knowledge workers.
 - The manager could be the line manager or the project manager, but should be the individual directly responsible for the performance of the individual team members.
 - The individuals reporting to the manager may also be managers, but preferably team members should be individuals who do not have a line management responsibility.
 - Team sizes should be at least 5 or more members
 - The requirements for the Manager include the following:
 - A semi-structured interview regarding the topic (planned 1.5 hours), which will relate to how the manager manages the performance of the team/individuals in the team.
 - Additional online questionnaire which will take not more than 10 minutes.
 - Providing the names and email addresses of the individuals in the team, since they will receive a separate online questionnaire to fill in (+-20 minutes).
 - Providing an example performance appraisal document that you use to measure your team members on.
 - Being available for follow up questions (telephonic / email) while the data is being analysed.

I also include the sample letters for the different type of individuals that contain the requirements above. We can discuss this in more detail on the <Date>.

Regards

Karen Luyt
Student Number: 86423623
Registered for: PhD (Organisational Behaviour)
University of Pretoria

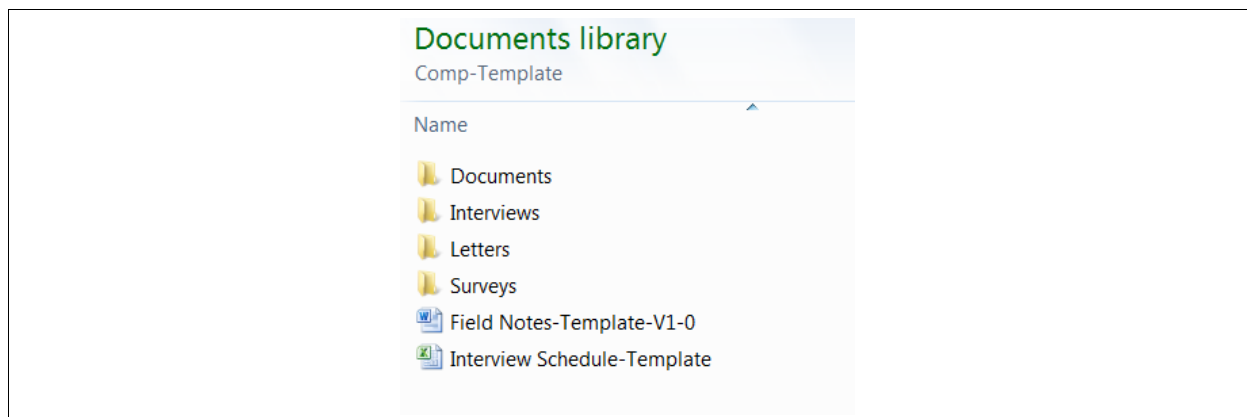
T +27 (0) 11 266 6792

F +27 (0) 86 606 0405

C +27 (0) 82 895 2289

Once the interviews had been set up, a directory was created on the computer under the research folder where all the company documents per case were stored.

Figure 13-3: Online folder structure per company



A hard-copy interview file was also created, in which the spreadsheet with contact details, manager letters, informed consent forms (either the signed copy or some extra forms), interview schedule and semi-structured questions were placed in sequence in the interview file. The high-level information pertaining to the research study was also printed and added to the file for reference. The file layout is provided in Table 13-2. This table also indicates the figure numbers relating to examples of the relevant documents.

Table 13-2: Interview file contents

<ol style="list-style-type: none"> 1. Research information (Figure 13-4) <ol style="list-style-type: none"> a. Research objectives b. Diagram for levels of analysis c. Diagram for design elements 2. Company interviewee details 3. HR Manager documents <ol style="list-style-type: none"> a. HR Manager letter (refer manager example) b. Informed consent (refer manager example) c. Interview schedule (Figure 13-7) d. Interview guide / questions (refer manager example) 4. IT Manager documents <ol style="list-style-type: none"> a. IT Manager letter (refer manager example) b. Informed consent (refer manager example) c. Interview schedule (Figure 13-8) d. Interview guide / questions (refer manager example) 5. Manager documents (printed per manager) <ol style="list-style-type: none"> a. Manager letter (Figure 13-5) b. Informed consent (Figure 13-6) c. Interview schedule (Figure 13-9) d. Interview guide / questions (Figure 13-10)
--

Figure 13-4: Research information

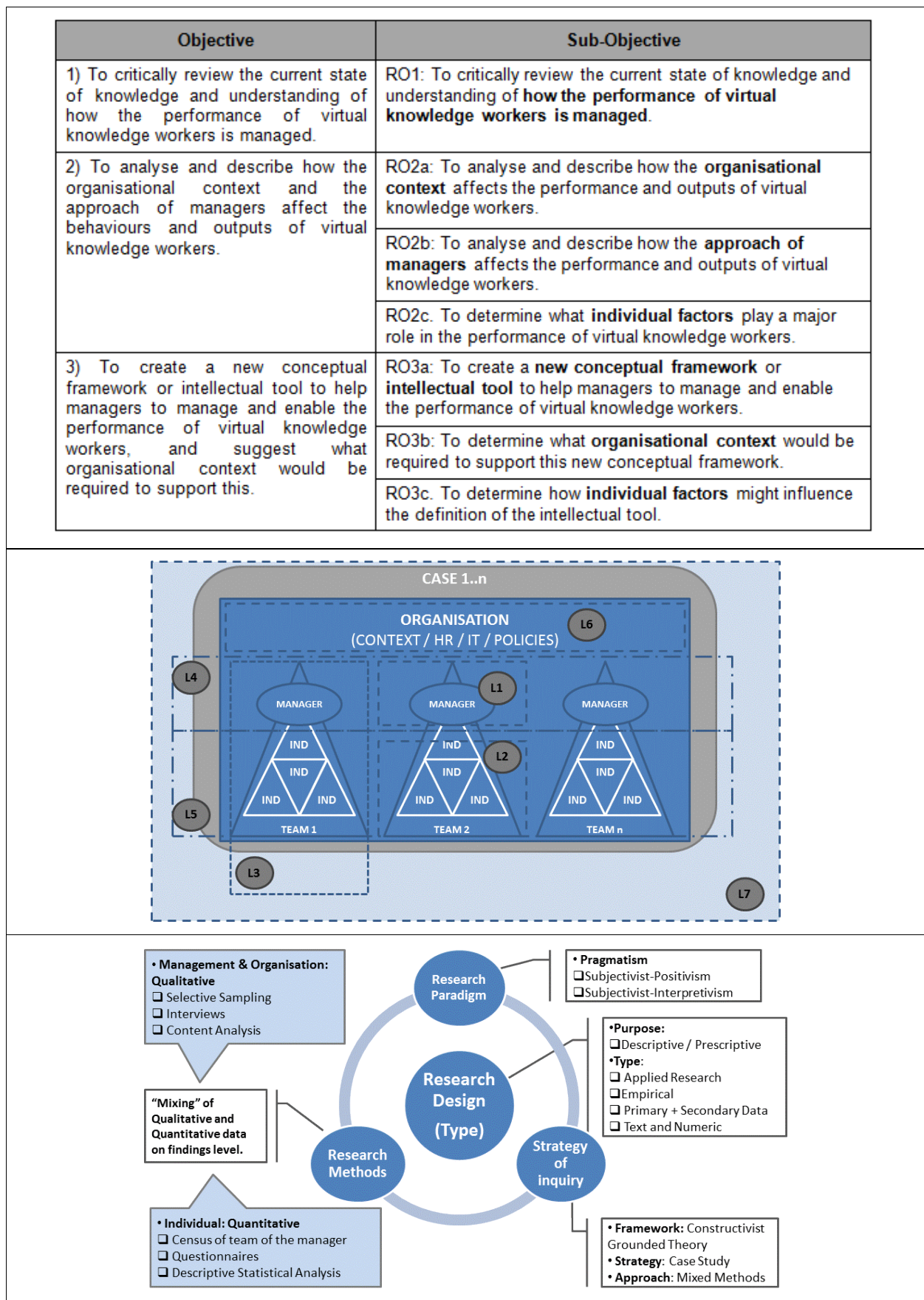


Figure 13-5: Letter for manager page 1 and 2 (example)



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Department of Human Resource Management
Postgraduate programmes
www.up.ac.za/hrm

Research conducted by:
Mrs. K. Luyt (86423623)
Cell: 082 895 2289
<Date>

<NAME SURNAME>
Manager of Team
<THE COMPANY>

Introduction to Study: A Managerial Framework for the Management of Performance of Virtual Knowledge Workers

Dear <NAME>

You are invited to participate in an academic research study conducted by Karen Luyt, a Doctoral student from the Department Human Resource Management at the University of Pretoria. Written approval to perform the study in <THE COMPANY> has been obtained from <COMPANY APPROVAL NAME>.

Performance management principles and measures in modern organisations have not adapted sufficiently to measure the performance of knowledge workers both effectively and efficiently. With the advent of mobile technologies, management now face a double dilemma of not only having to manage the performance of knowledge workers that work within their direct sphere of influence, but they also need to manage the performance of virtual knowledge workers whom they cannot see on a day-to-day basis. This often leads to management's perceptions of low productivity, especially where trust is low. It can also lead to reduced productivity on the side of the virtual knowledge workers where tasks and deliverables are not defined or agreed sufficiently, or when too many controls are instituted. In short, the problem that this study addresses is that managers in general have great difficulty with managing the performance of virtual knowledge workers.

The purpose of the study is therefore to investigate, analyse and describe the ongoing or continual measurement and management of the performance of individuals who often work away from the direct control and influence of their managers and colleagues. The detailed research objectives of the study are listed below.

- To critically review the current state of knowledge and understanding of how the performance of virtual knowledge workers is managed.
- To analyse and describe how the organisational context as well as the approach of managers impact the behaviours and outputs of virtual knowledge workers.
- To create a new conceptual framework or intellectual tool of how managers should manage the performance of virtual knowledge workers, and what organisational context would be required to support this new conceptual framework
- To determine what individual factors play a major role in the performance of VKW, and how this might influence the definition of the intellectual tool.

The research takes place in the form of a multiple case study, where the phenomenon will be studied through interviews on management level, surveys on team member level, and review of organisational level support structures from both an HR and IT perspective. <THE COMPANY> will be used as one of the cases for this research.

1 of 3 | Page



The requirements from you as Manager include the following:

- 1) Participating in a semi-structured interview regarding the topic (planned 1.5 hours), which will relate to how you manage the performance of your team.
- 2) Answering an additional online questionnaire which will take not more than 10 minutes of your time. (This will be a named questionnaire and linked to your interview.)
- 3) Providing the names and email addresses of the individuals in your team, since they will receive a separate online questionnaire to fill out. This will be anonymous, but group them as a team.
- 4) Providing an example performance appraisal document that you use to measure your team members on.
- 5) Being available for follow up questions (telephonic / email) while the data is being analysed.

Please note the following:

- Your participation in this study is very important. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Your name will not appear in any quotes used from the interview and the answers you give will be treated as strictly confidential. Any results will be of such a nature that it will not be possible to identify you in person.
- Questions will be used to guide the interview, and you are urged to answer the questions of the interview as honestly and complete as possible. You may also volunteer additional information as you see applicable.
- All documents provided will be treated as confidential. Your answers will not be discussed with the team members, and the answers of team members will not be discussed with you directly.
- The results of the study may be used for academic purposes as well as for lay articles and conference proceedings; however, identities of individuals will be kept confidential. A summary of the findings will be provided on request.

If you agree to participate, and in the interest of time, I would appreciate it if you could sign the attached informed consent form, and have the information as requested above, ready at the interview.

Looking forward to your participation.

Kind Regards

Karen Luyt

Further questions can also be directed to:

- Supervisor: Prof Karel Stanz (012 420 3074; karel.stanz@up.ac.za)
- Co-supervisor: Prof Stella Nkomo (012 420 4664; stella.nkomo@up.ac.za)


SOME DEFINITIONS

Performance: Based on the dimensions of performance as identified by Neely, Adams and Kapperley (2002:30), performance is how efficient ("economy of utilisation") and effective ("achieving the set goals") an activity is performed.

Knowledge Worker: "...expert workers in jobs whose primary purpose is to create, distribute, or apply knowledge." (Davenport, 2005:24). These individuals are expected to provide "insights, expertise, designs and know-how" (Kouzes, 2000:26).

Virtual Knowledge Worker: Knowledge workers who work geographically remote from the traditional work place (Ashford, George & Blatt, 2007:69; Luyt, 2007:13), which results in them being "...removed from the direct sphere of influence of management and co-workers." (Jackson, Garau, & Kobas, 2000:210).

Figure 13-6: Manager informed consent form (example)



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**Informed consent for participation in an academic
research study**

Dept. of Human Resource Management

**A MANAGERIAL FRAMEWORK FOR THE MANAGEMENT OF PERFORMANCE OF
VIRTUAL KNOWLEDGE WORKERS**

Research conducted by:
Mrs. K. Luyt (86423623)
Cell: 082 895 2289

I _____ herewith agree to participate in the study to research a managerial framework for the management of performance of virtual knowledge workers. I have read the description of the goals of the research and understand its purpose. Participation in the Research Study will require me to provide information about how I manage the performance of my team members through an interview and filling in a short online questionnaire. The contact details of my team members are required for distribution of an online questionnaire. Additional information may be collected via secondary sources such as documents.

The researcher and any assistants agree to be bound by the research ethics of the University of Pretoria to protect the interest of research subjects including allowing me to review the case study (prior to publication) of my organisation resulting from the Research Study. The identity of me and my organisation will remain anonymous in any journal articles or other academic publications. I understand my organisation will be provided with a feedback report on its initiatives as well as the results of the overall project once they become available.

_____ Authorised Signature and Title	_____ Date
_____ Karen Luyt, Investigator	_____ Date

3 of 3 | Page

Figure 13-7: HR interview schedule

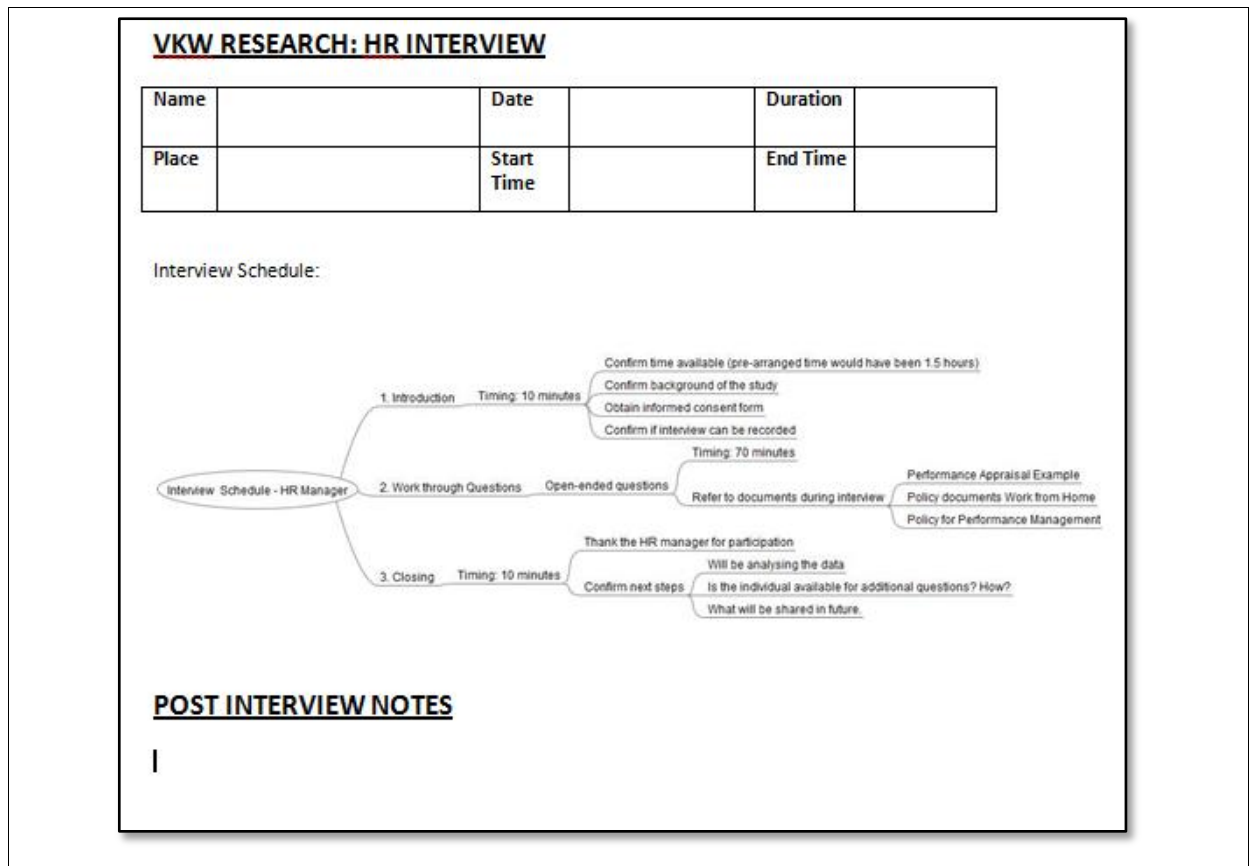


Figure 13-8: IT interview schedule

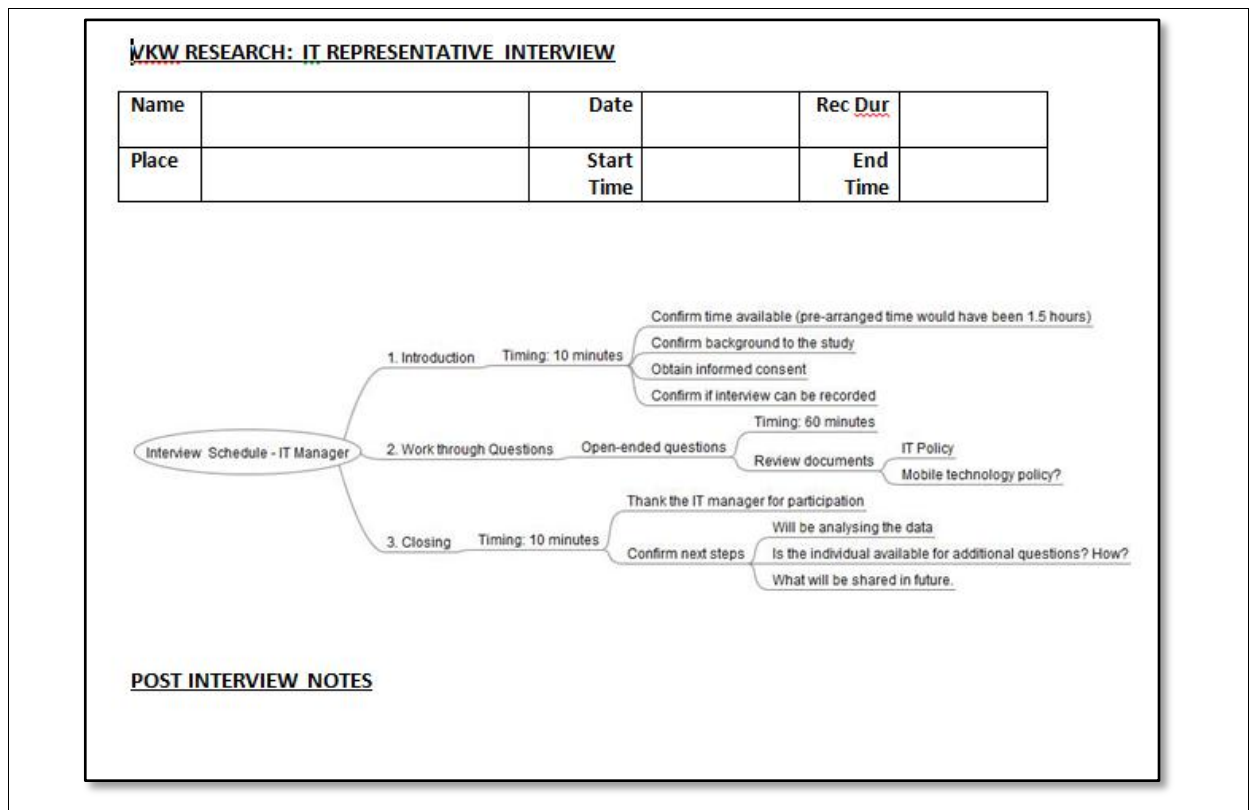


Figure 13-9: Manager interview schedule

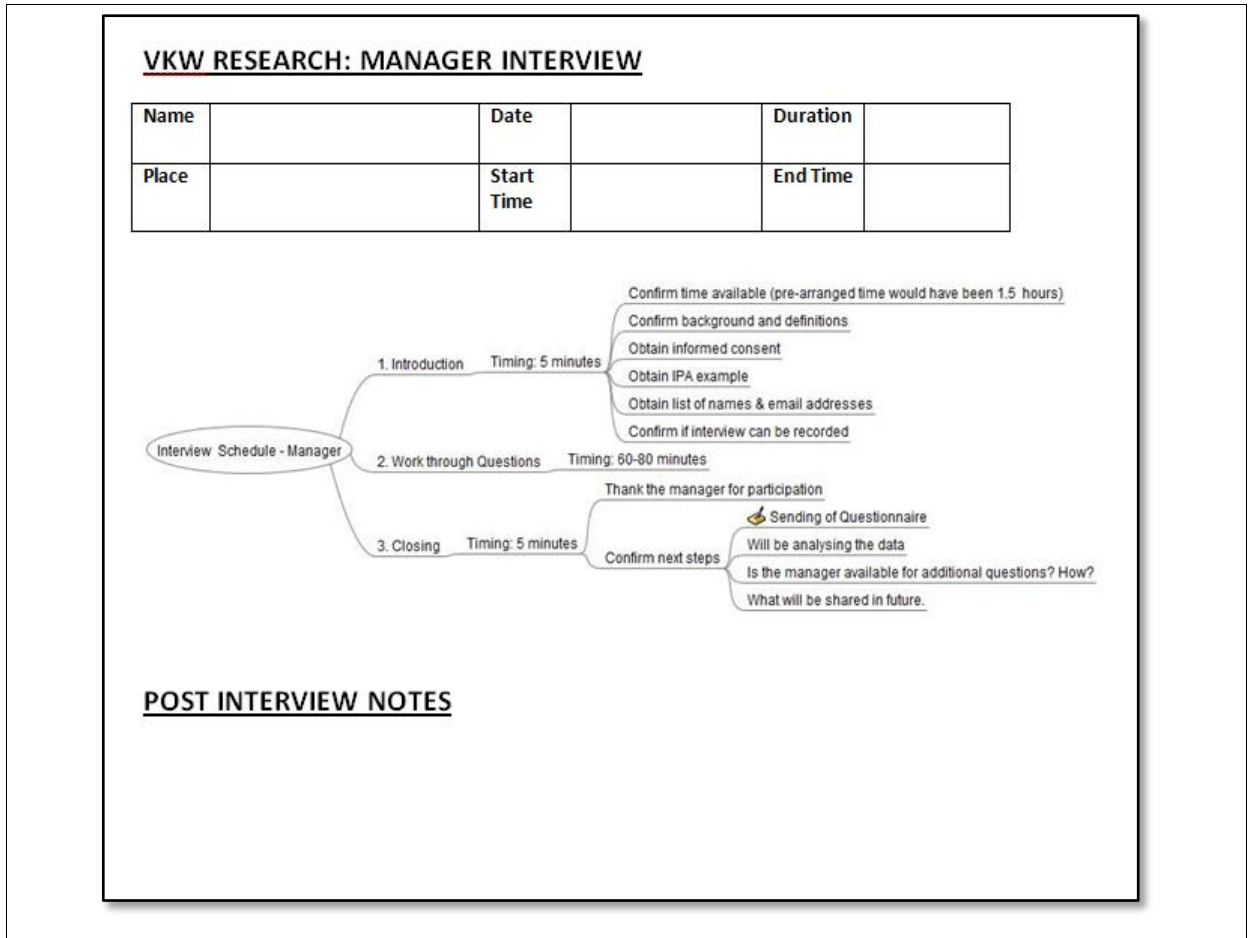


Figure 13-10: Example page of the interview guide

Seq.	Question	Ind?	Time (Min)	Time (Total)	Notes	More Notes
1.00	Tell me about your team, how they work and what the main deliverables are?	Yes	15	15		
1.10	Team size; do they all work remote; do they work as individuals or in team; What is the basic deliverable; is this line manager or project manager responsibility?	Opt	0	15		
1.20	How often do you see the individual? Do not go into performance measurement necessarily; (This will give indication of who are virtual knowledge workers)	Opt	0	15		
1.30	Why do you let them work in this way?	Opt	0	15		
3.00	How do you select individuals to work as virtual knowledge workers? Why? (When you recruit, do you take this requirement into consideration?)	Yes	5	20		

333 VKW-QuestionnairePlanning-V2-0-SemiStructuredMANAGER INTERVIEW 1 of 6

Figure 13-10 contains only an example page of the questionnaires, since the full questionnaires are provided in Appendix B – Semi-Structured Questionnaires.

Once the interview was completed and post-interview notes made, the handwritten notes and initial ideas were conveyed to the field-notes document for the company in MS Word.

Table 13-3: Document TOC for case field notes

1. IT Interview: IT Manager (Date)
a. Notes on content
b. Notes on questions
c. General Notes
d. Documents received
2. HR Interview: Name (Date)
a. Notes on content
b. Notes on questions
c. General Notes
d. Documents received
3. Business Units: Business Unit 1
a. Manager1 Interview: Name (Date)
i. Notes on content
ii. Notes on questions
iii. General Notes
iv. Documents received
b. Manager2 Interview: Name (Date)
i. <Repeat of Manager 1>
c. Notes: Business Unit 1
4. Organisational Level
a. Notes from Interviews
b. Company Background
c. Company Structure
5. Managerial Framework based on Company
6. Recommendations for Company

13.3 DATA ANALYSIS – TEXTUAL DATA PROTOCOL

13.3.1 File Management

The recorded interviews on both manager and organisational level were transcribed in full using MS Word. After the initial transcription, and before uploading into ATLAS.ti for open coding, each interview transcription was checked again for accuracy in relation to the recorded version. This also gave an overview of the full interview, which assisted with the coding process. The process given below has been used for versioning of the transcription files for each case, in preparation for uploading of documents for ATLAS.ti.

Versions and meanings

V0-1: Busy Transcribing (Use this to get timing for own work; Save & close the document when taking a break) (Some of these files are in DropBox as well.)

V0-x: Different versions during transcriptions

V1-0: First version after transcription (Raw transcription) (Copy back to DropBox, so that offsite version is kept)

V1-1: Modifications after checking of transcription file for correctness; May add some notes (using comments) and codes in the word document

V1-2: Additional notes and codes added in the form of underline; colours; etc. (Only did this in the earliest versions, before working on ATLAS.ti)

V2-0: Completed spelling and grammar. (This copy is best to print)

Confirmed with Supervisor that it is OK to change the spelling and grammar as long as the meaning is not changed. (Copy in note from Stella)

V2-0A.docx: Prepared for Atlas.ti (See below)

V2-0A.rtf: Resaved the last version as Rich Text Format

Copy the file to the RTF folder under

C:\VKW-Performance\CaseX\RTF Documents

Now the document should be imported into ATLAS.ti

Use the demographic info to link the document to the same

(1) Document Families

(2) Demographic Codes

Specific preparation was done to ensure that the format of the file was optimal for ATLAS.ti. These steps were based on some of the recommendations by Archer (2012) and are provided on the next page.

Preparation for ATLAS.ti in V2-0A

- 1) Remove names of individuals / Companies / Departments (See memo on anonymity)
 - 1a) Keep data dictionary in the Schedule list of the case.
- 2) General
 - 2a) Remove all notes and colours.
 - 2b) Add in the following demographical at the top of the document:
DEMOGRAPHICS
CASE: COMPANY 1 to 4
BUSINESS UNIT: Name of the Business Unit, if multiple areas in the organisation included
MANAGER: Coding name of the manager
INTERVIEW DATE: DD Month YYYY
DURATION: In minutes
INTERVIEW TYPE: Face-to-Face/Teleconference
HOME LANGUAGE: Afrikaans/English
- 3) Reformatting the tables
 - 3a) Do not remove the timing of column 1, but make sure that there is not a timing in the middle of the column
 - 3b) Convert the table to text (paragraphs)
 - 3c) Justify the text (or left-justify)
- 4) Spacing and font
 - 4a) Select the whole document and change font to Calibri (Body) 12 (Some font ARIAL which is similar)
 - 4b) Select whole document and set to double spacing.
- 5) Save this version as V2-0A.docx

13.3.2 Anonymity

One of the issues that needed to be addressed in this study was the anonymity of the companies and the individuals. In addition, certain information needed to be kept confidential. Anonymity refers to ensuring that the company or individual cannot be recognised, while confidentiality refers to information that should not be disclosed (Saunders, 2009:188).

Confidentiality was discussed as part of the elements of research ethics in Chapter 2. Further to this, agreement was reached with the company representative in terms of what documents, quotes and case descriptions could be disclosed as part of the study, during member checking. Further to the aspect of confidentiality, when individuals asked "Is this confidential?" or indicated that the information could be sensitive, that part was removed from the transcript. This included specific measurement percentages, names of customers and specific phrases that the organisational representative could identify individuals by.

In terms of anonymity, the company firstly had to be kept anonymous. To this end, the companies were given pseudonyms, and names of senior personnel in these companies were changed, or role descriptions were used. The descriptions of the companies were also kept on a high level, in order not to reveal the specific identity of the organisation. Where the company was owned by an overseas company, reference was made to “an international parent”, and the specific country was not given. On the second level, the identity of the managers participating in the interviews needed to be protected. What made this particularly challenging was the fact that team information needed to be disclosed, and in particular the information relating to specific deliverables. In the greater context of the study, this is not a problem, since there are many Project Management units, and Software Support Units (as an example), but when presenting the case for member checking, it could have been easier to identify or guess at the name of the individual. Printed quotes were adjusted to disguise the identity of individuals as far as possible, and confidential information that was shared was removed.

A data dictionary was used for each case for the replacement of elements that could identify the individual or the company. Some of the rules used for the data dictionary are presented below.

Aspects taken into consideration when creating the data dictionary:

- Replace company name with the pseudonym
- Using roles instead of names (even if names have been changed)
- Substituting more rather than less (i.e. list of customer names just become "various customers" instead of trying to translate to the industries. (As long as the meaning does not change)
- Where the individual seems uncomfortable with what is being shared, rather remove if it could compromise the individual.
- Where specific numbers/percentages/figures are shared, change the numbers.

13.3.3 Coding steps and issues

Once a file was imported as a primary document (PD) into ATLAS.ti, the same steps were followed for each transcript. These are explained below.

The following steps were followed for each transcript:

- 1) Code the demographics first.
- 2) Code words normally used often: Communication, Trust, Maturity, Control/Rules (This was changed after Alpha, since the codes were split into sub-codes)
- 3) Code by keeping the codes window open and use drag-and-drop, working through document start to finish.
- 4) In the first company, quote comments were used, but they are difficult to get in a report later, so reverted to memos with particular comments per quote. This facilitated the identification of themes, where quotes were similar between individuals.
- 5) Populate the case memos as the coding of each transcript progresses. (Organisational, Manager, Team, Per Theme – see templates below.) (In the first company, the memos were created last, but from Company 2, the memos were populated as the coding of the transcript progressed.)
- 6) Create “Code Comments” describing the use of the code as soon as a new code is created.

The detail of the case memo templates is given below, and formed a worksheet for linking of quotes, and populating of case-relevant data, as proposed by Stake (2006).

The Organisation (Organisational parameters)

Industry ~ Number of employees ~ HR Function ~ IT Function ~ Presence ~ Mother Company ~ Performance Management ~	The company structure is xxx In terms of virtual work, xxx In terms of performance management, xxx In terms of the IT function, xxx
---	--

Per manager consolidate quotes and descriptions

- 1) Definitive "I am" statement
- 2) Definitive statement on Remote Work Assumption
- 3) Experience the manager has on remote work (Changes since virtual)
- 4) Does the manager work from home him/herself (Also link to venues the manager uses - Location of manager)
- 5) Technical experience the manager has in his/her field ("Manager: Experience")
- 6) How much of the team's work can be measured precisely? Also ask why it is important to measure. (I.e. Customer SLA reports; monitor and track; invoice the customer)
- 7) Reason for Virtual work - reason why virtual work required in the team.

Team comparison memos included quotes and descriptions for:

- a) Type of work
- b) Collaboration type
- c) Performance measures
- d) Main reason for remote work
- e) Client requirement / impact
- f) Naming convention
- g) Remoteness and frequency (Arrangements)
- h) Meetings / interaction
- i) Manager view on virtual work
- j) Type of knowledge work

Memos for themes per company

- a) Redefining Virtual Work
- b) Communication
- c) Manager as enabler / trust
- d) Visual Theme
- e) Importance of the customer

When initially using the ATLAS.ti tool, it was difficult to decide how much of a paragraph to include in a quotation. There were two issues at hand, namely coding for specific words or fragments or coding for a concept.

A question that needed to be answered that needed analysis on single-word level, included "What are all the tools used in managing performance?" The methods listed below were considered.

- 1) The word-count tool in ATLAS.ti
 - Advantage - do not have to code;
 - Disadvantage - need to know what you are looking for afterwards)
- 2) Selecting the word only, and coding it with e.g. "Performance: Tool" , then creating a report with all the quotes for this code, would give a list of systems, which could be further manipulated in Excel
 - Advantage - quick report on all tools only and minimising on codes;
 - Disadvantage - no context of the tool or how used.
- 3) Selecting the paragraph, and coding with a specific code "Performance: Tool: Excel", then using the "Codes->Output->Quotation-Primary-Documents-Table->Quotation Count (Excel); a quick count per document can be obtained for the different tools.
 - Advantage - Have context of quotes and codes give the names of the tools already;
 - Disadvantage - many additional codes created.

In the execution of the study, method 3 was used. Although there were many additional codes used, it facilitated the analysis process. It was also found that when coding a concept, it was important to select as much as possible of the paragraph to ensure that the context of the quote could be interpreted without looking at the document again. The quote was trimmed in the final document, once the context had been used as part of the description.

Certain checks were done at the end of a transcript coding session. They are described below.

Ending a coding session for a company:

- Make sure that the quote memos are also used when documenting the case (Create "Memo" rtf per individual - all linked into one family of memos for the manager!!!)
- At the end of each document coding session, review all the "case" memos - have they been populated sufficiently for the case; have all best quotes been identified. (Also, has everything been coded for the manager? Are the quotes coded correctly? Often do this last step while writing up the case.)
- Save documents / reports for:
 - a) Memo family per manager
 - b) Code list for this company only
 - c) Codes with quotes (Quotes filtered on family of Case; Codes not filtered)
 - d) Quotes per code matrix for the whole company - use this to check what codes not used. Has everything been coded for the manager?

13.3.4 Coding for Open-ended Questions

The open-ended questions of the online questionnaires were uploaded into ATLAS.ti per team, or if there was more than one team per business unit, then per business unit. The rules listed below were mainly used to allocate codes.

Question 1: What could be done to measure and manage your performance in terms of day-to-day output in a more effective and efficient way (or are there items that should not be measured)? Please motivate your answer.

(MANAGER Level)

Manager: Responsibilities: *

Manager: Approach: Manage differently in future: * (Since this had to do with the changes required)

Performance: Manage: * (Reviewed the codes allocated to these documents.)

Performance: Metrics: *

Question 2: What could you do more of, or differently, to ensure that your performance can be managed effectively?

(INDIVIDUAL Level)

Performance: Individual Contribution: *

Question 3: How could changes on organisational level help you to enhance your performance as virtual knowledge worker?

(ORGANISATIONAL Level)

Org Level: Help VKW Perform: *

IT Technology: Requirements: *

There were however cases where individuals did not stay within the boundaries of a specific code for the question, and in those cases the codes were used interchangeably. Also, it was important that these primary documents (in other words the codes that were re-used on individual level) were excluded when reviewing how managers managed their teams. Filtering on primary documents was facilitated by using the document families. .



APPENDIX E

14 APPENDIX E – INITIAL CODE LISTS AND NETWORK DIAGRAMS

14.1 LIST OF INITIAL CODES CREATED

Code-Filter: All

HU: VKW-Performance
File: [C:\VKW-Performance\VKW-Performance.hpr6]
Edited by: Super
Date/Time: 2011-12-27 14:44:35

aaalIndex: Case
aaalIndex: Duration
aaalIndex: Interview Date
aaalIndex: Manager
aaalIndex: Business Unit
General Statements:<Define>
General Statements: Manager remote work
General Statements: Review processes and communication
HR Assistance: Received
HR Assistance: Requirements
HR Policies: Manager View
HR Policies: Types
IT Policies: Manager View
IT Policies: Types
IT Technology: Requirements
IT Technology: Systems
IT Technology: Training
Management Approach: Changes since virtual
Management Approach: Co-located vs remote
Management Approach: I am
Management Approach: Manage differently
Management Approach: Remote vs Remote
Management Approach: Successes for virtual performance
Organisational Support: Extra Requirements
Organisational Support: Manager View
Performance: Handling Non-performance
Performance: Individual Characteristics
Performance: Individual Contribution
Performance: IPA relationship
Performance: Main Challenges
Performance: Managing performance
Performance: Metrics
Performance: Metrics:Future
Performance: Productivity Measure
Performance: Quality:Comparisons
Performance: Quality:Definition
Performance: Rewards given
Performance: Specific Deliverables
Performance: Specific Deliverables:Managers
Performance: Technology:Organisation
Performance: Technology:Own
Performance: Timing
Performance: Training by Manager
Selection: Individual Characteristics
Selection: Manager Criteria
Team Composition: Collaboration Type
Team Composition: Deliverables:General
Team Composition: Management Relationship



Team Composition: Meetings
Team Composition: Office Location Individual
Team Composition: Office Location Manager
Team Composition: Reason for virtual work
Team Composition: Team Size
Team Composition: Virtual Work arrangements

NEW: Actual performance becomes apparent over time
NEW: Communication with all
NEW: Impact of context
NEW: Impact of Overall Strategy
NEW: Impact Owing Company
NEW: Impact Senior Manager
NEW: Importance of the Visual
NEW: Inherent social aspect of people
NEW: Knowledge Work Contribution
NEW: Limitations and challenges for virtual work
NEW: Org Impact:Cost Cutting
NEW: Parameters impacting performance
NEW: Team vs Org level differences
NEW: Words often used: Control
NEW: Words often used: Maturity
NEW: Words often used: Trust

14.2 NETWORK DIAGRAMS

14.2.1 Code: Virtual Work

Figure 14-1: Code network: “Virtual work: Arrangements”

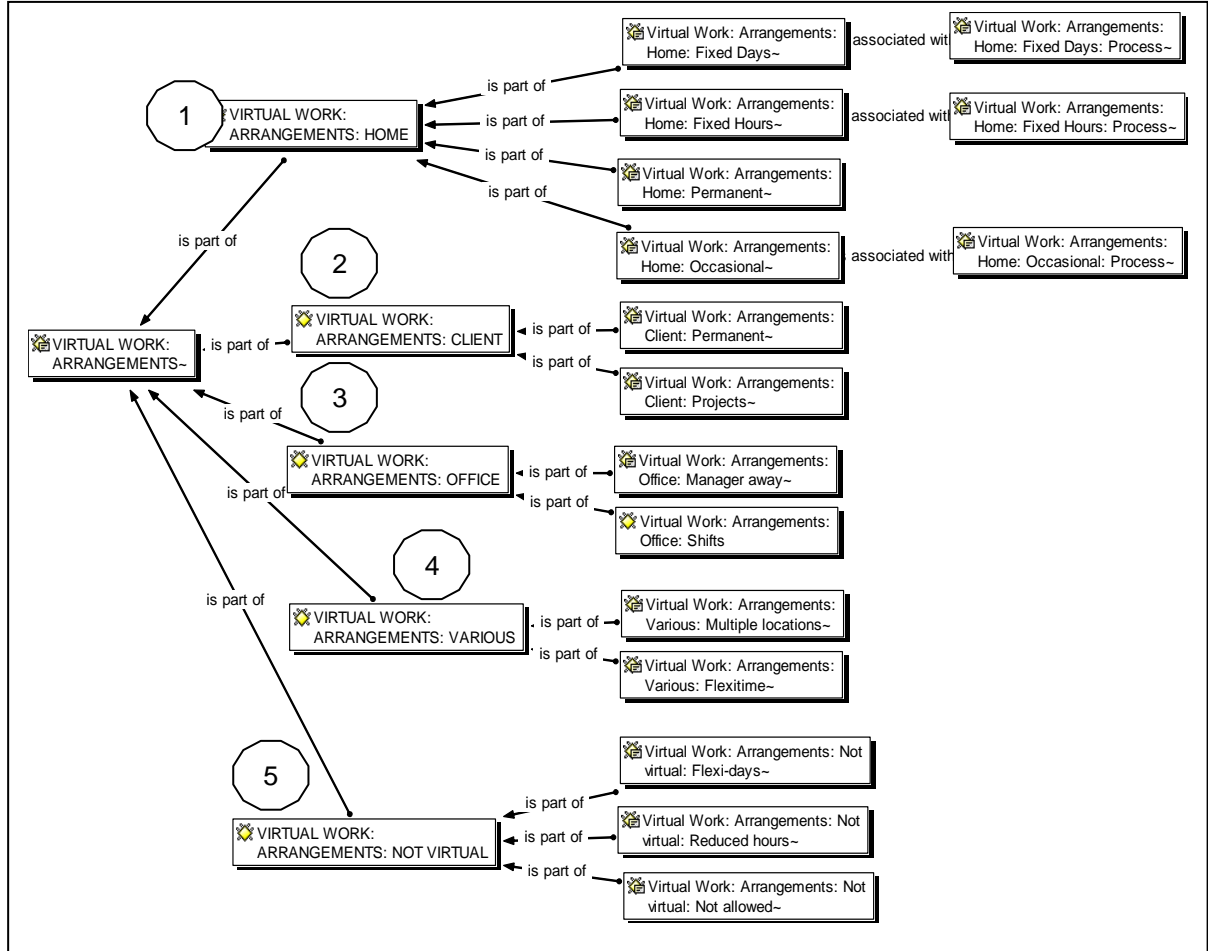


Figure 14-2: Code network: “Limitations and Challenges” - Impossible

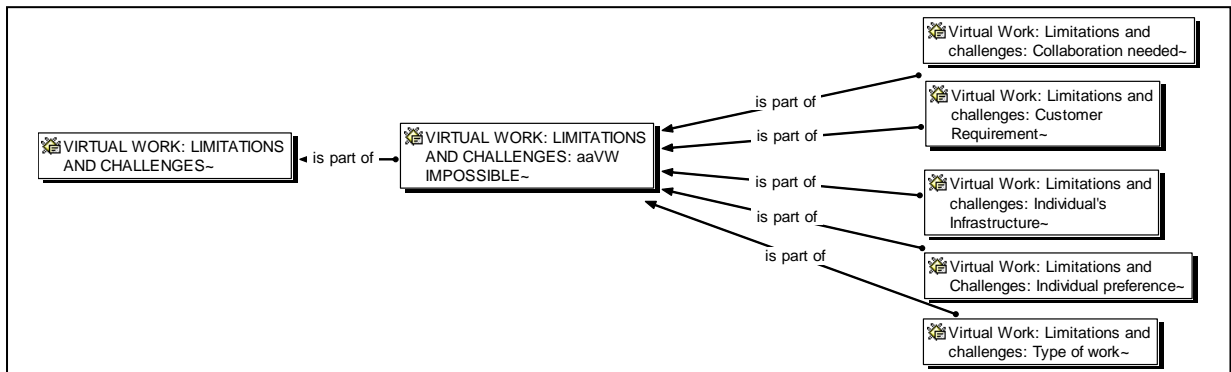
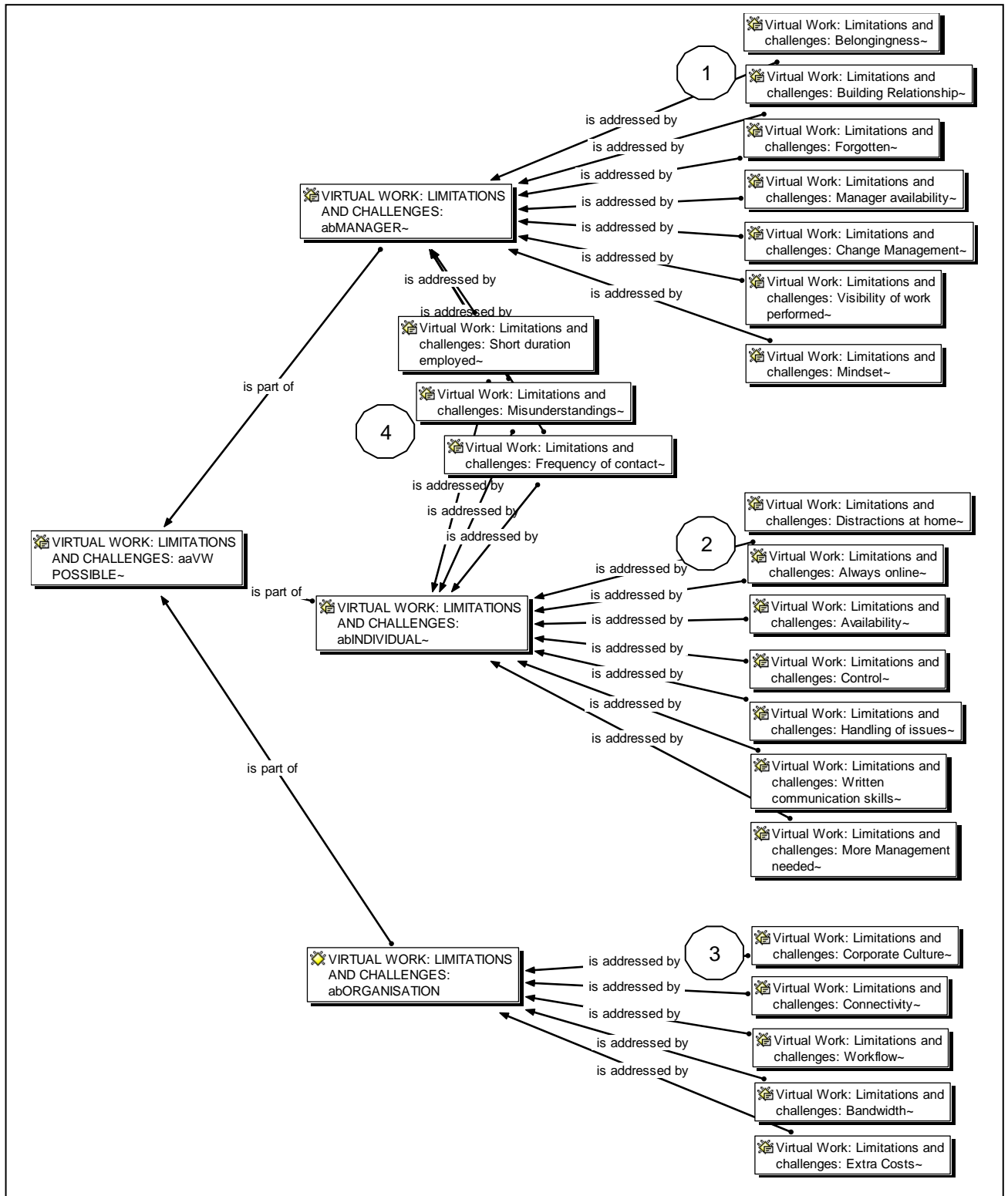


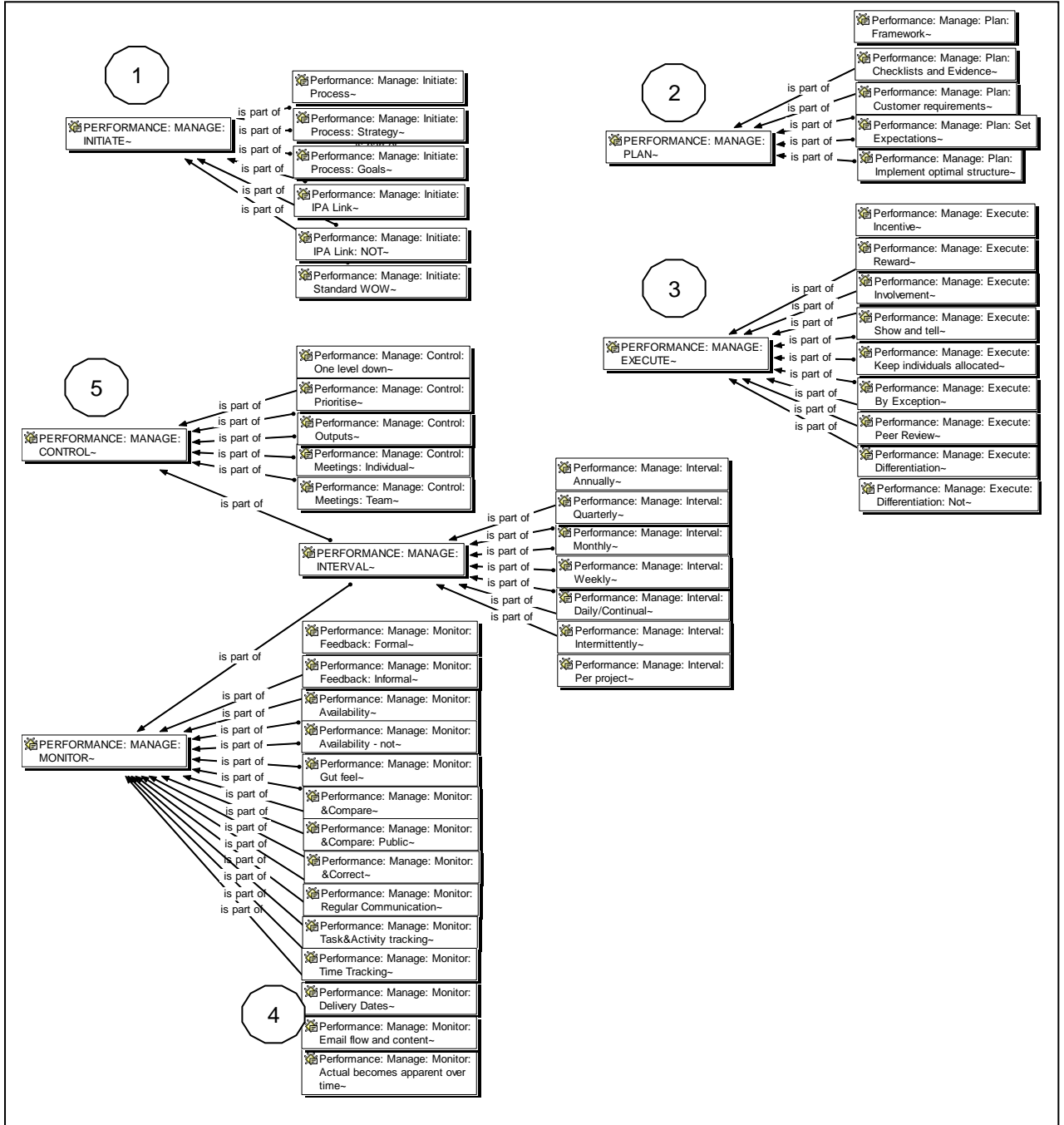
Figure 14-3: Code network: “Limitations and Challenges” – Possible



Note: The numbers indicate challenges to be addressed by (1) The manager (2) Individual (3) Organisation (4) Manager & Individual combined

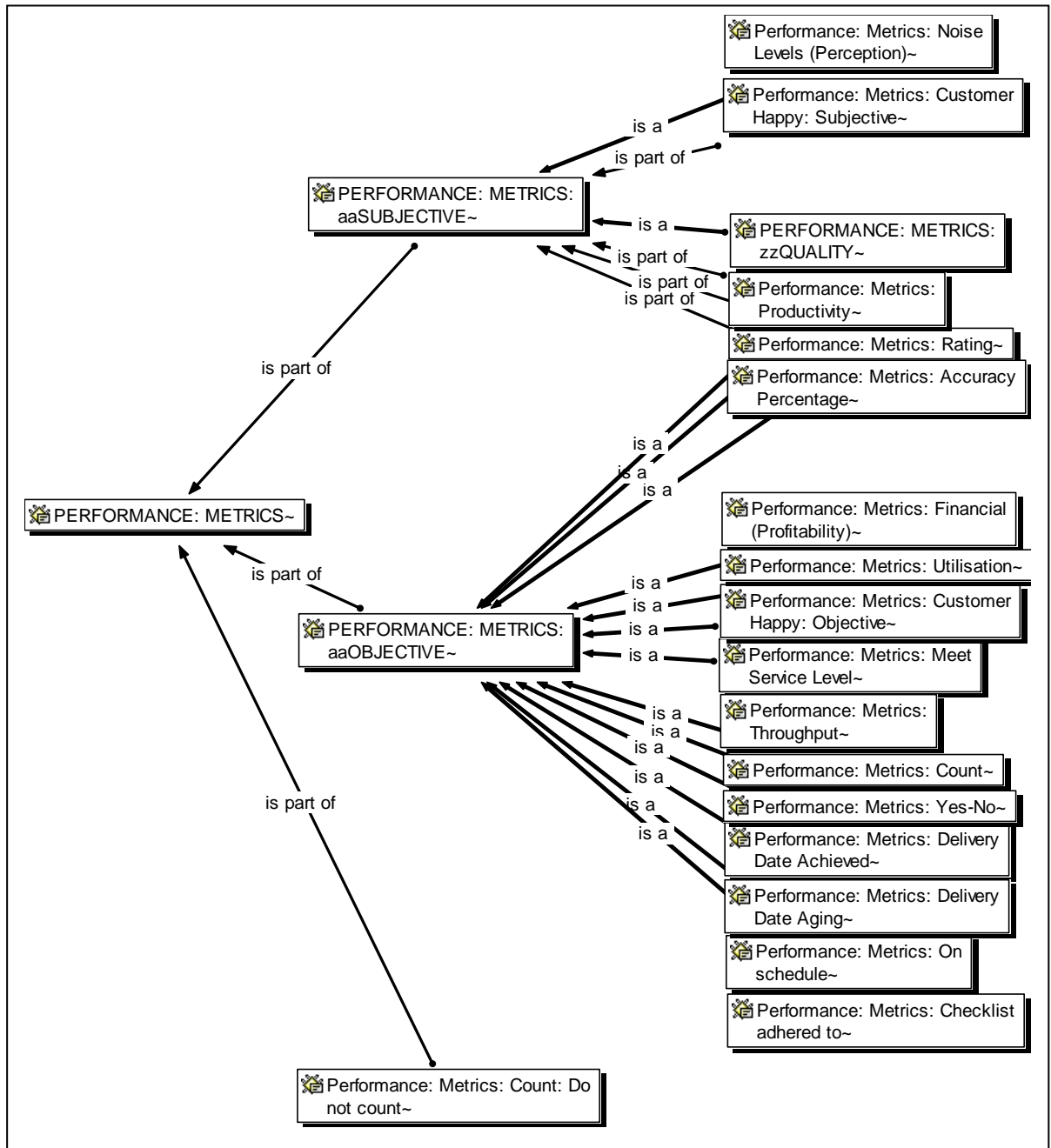
14.2.2 Code: Manage Performance

Figure 14-4: Code Network: “Manage performance” – Detail



Note: the numbers indicate (1) Initiating; (2) Planning; (3) Executing (4) Monitoring and (5) Controlling

Figure 14-5: Code network: “Manage performance: Metrics”



14.2.3 Code: Specific Deliverables

Figure 14-6: Code network: “Specific deliverables” (Timing)

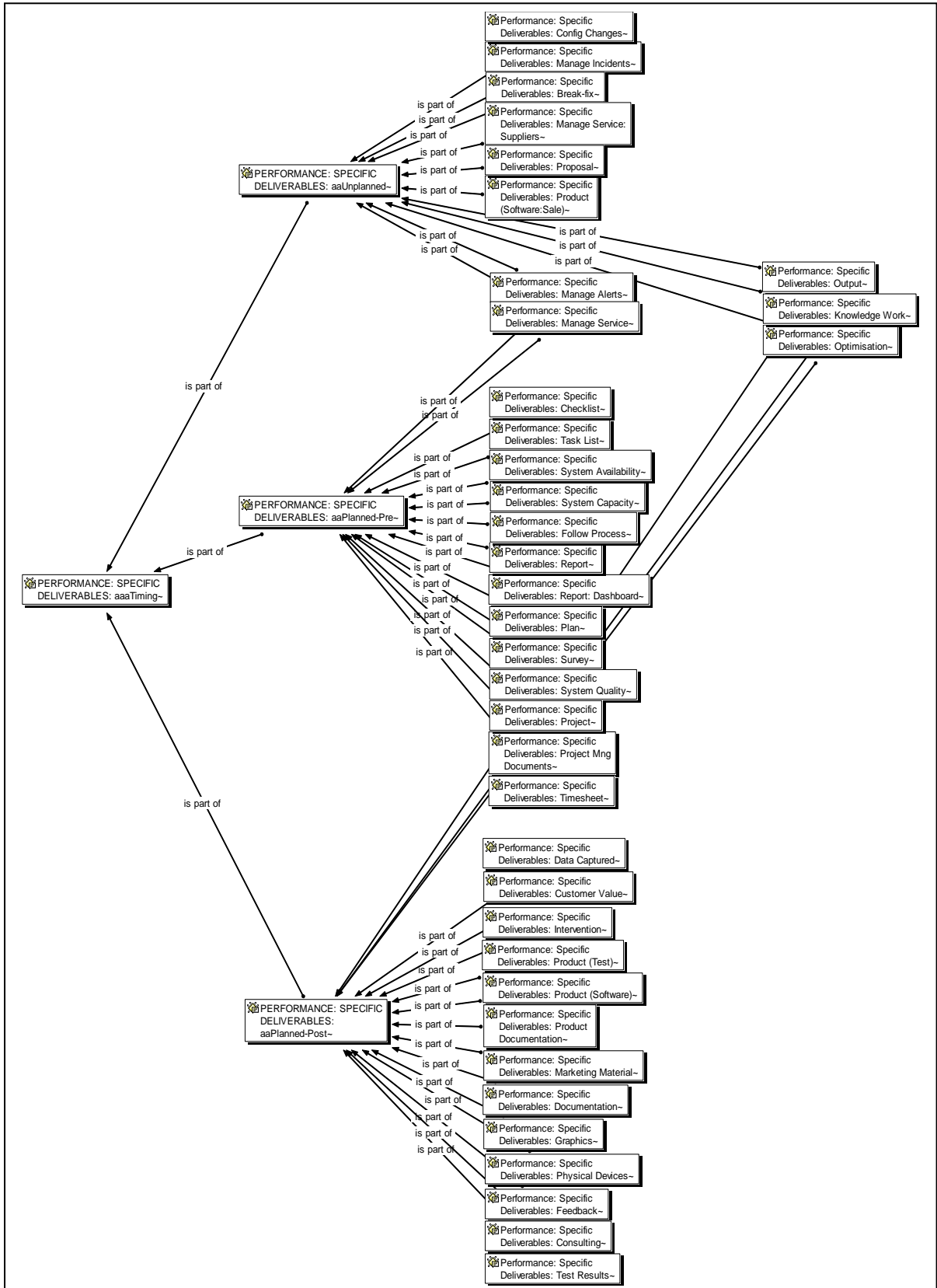


Figure 14-7: Code network: “Specific deliverables” (Location)

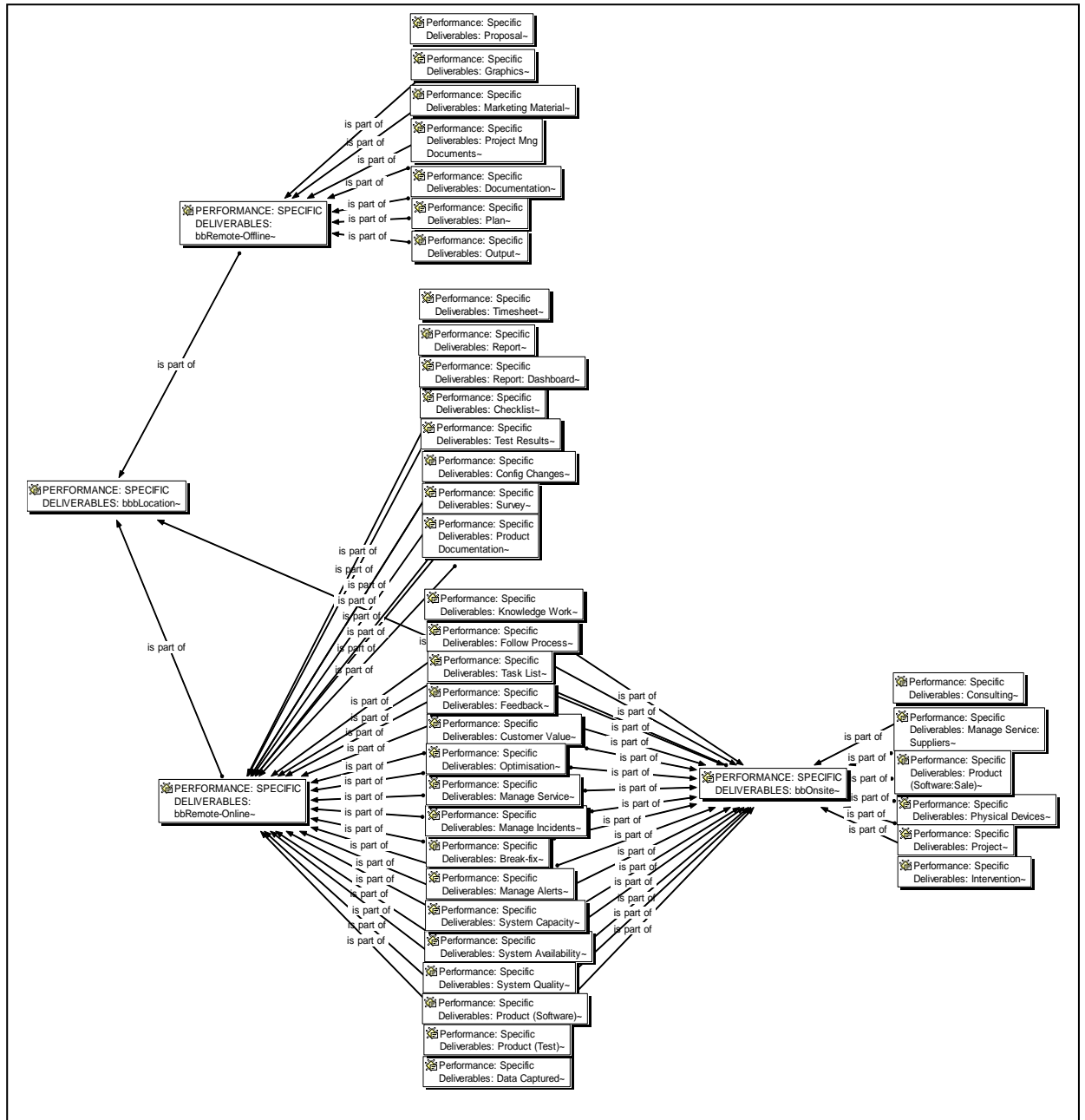
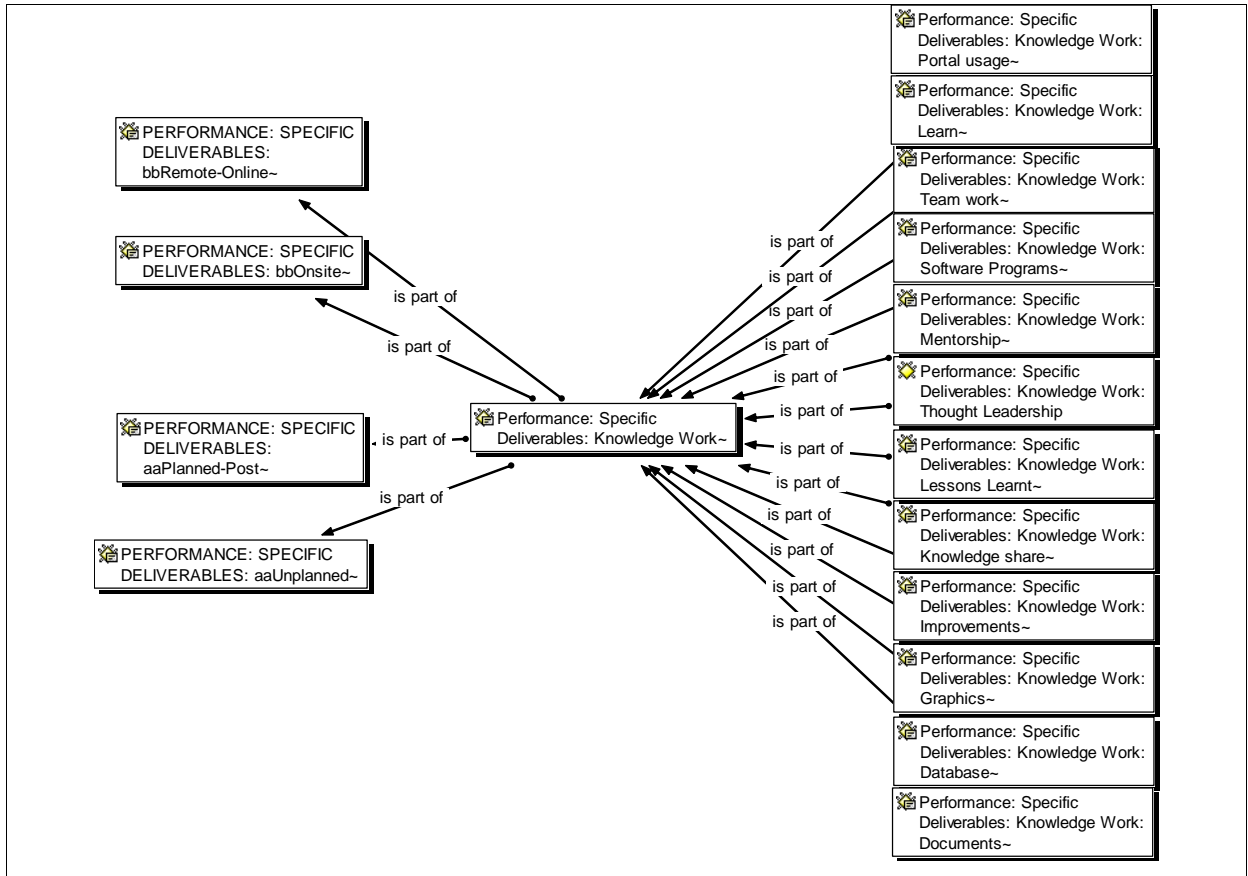
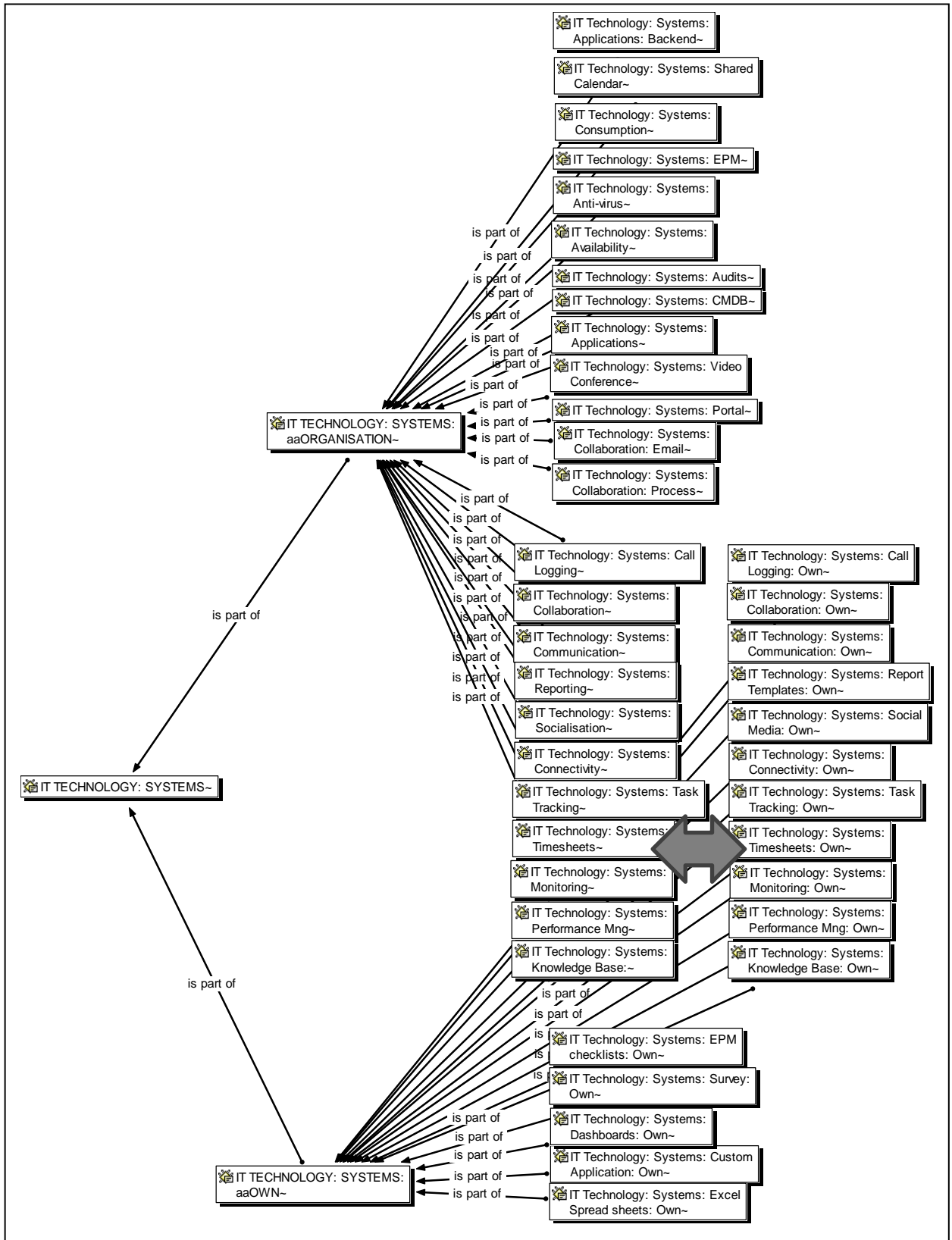


Figure 14-8: Code network: “Specific Deliverables: Knowledge Work”



14.2.4 Code: IT Technology

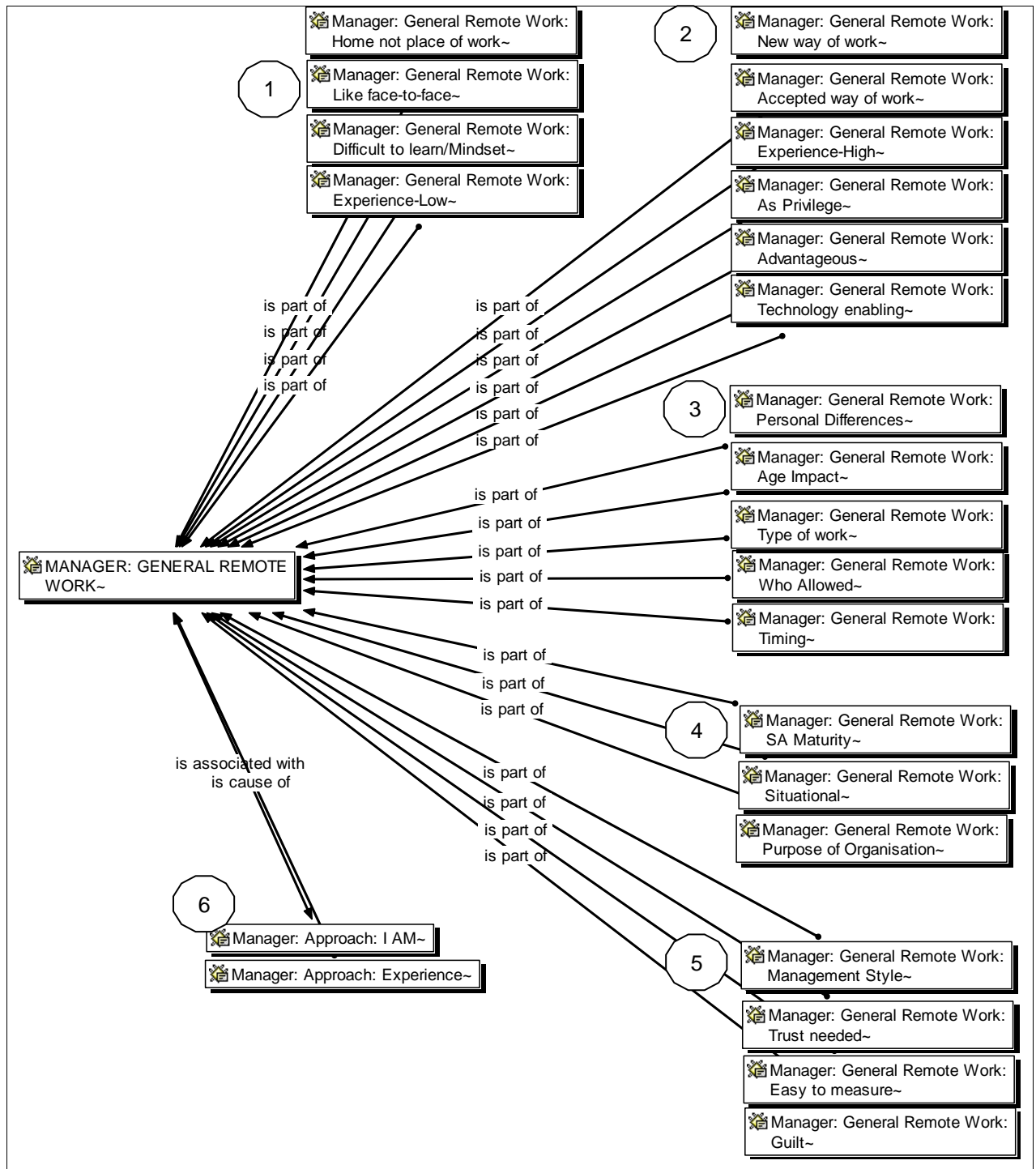
Figure 14-9: Code network: "IT Technology: Systems"



Note: The arrow indicates technologies provided by the organisation and enhanced by the manager or individual.

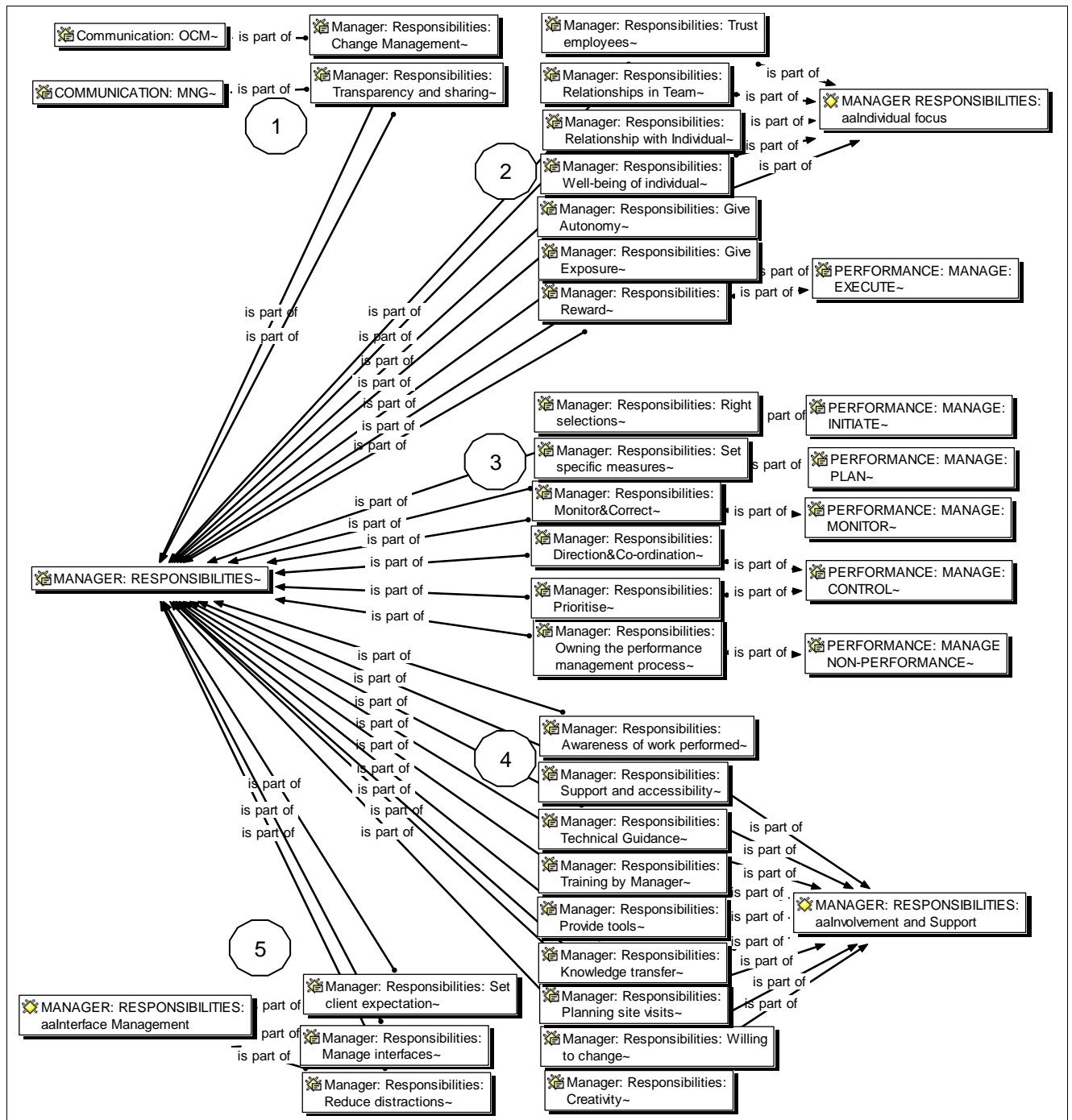
14.2.5 Code: Manager

Figure 14-10: Code network: Manager: General remote work”



Note: The numbers indicate the selective codes, namely (1) Reasons why not remote; (2) New way of work; (3) Remote work parameters; (4) Contextual; (5) Management style; and (6) Manager's approach

Figure 14-11: Code network: “Manager: Responsibilities”



Note: The numbers indicate the selective codes, namely (1) Communication and organisational change management; (2) Focus on the individual and teamness; (3) Direction and co-ordination; (4) Manager involvement and support; and (5) Interface management.

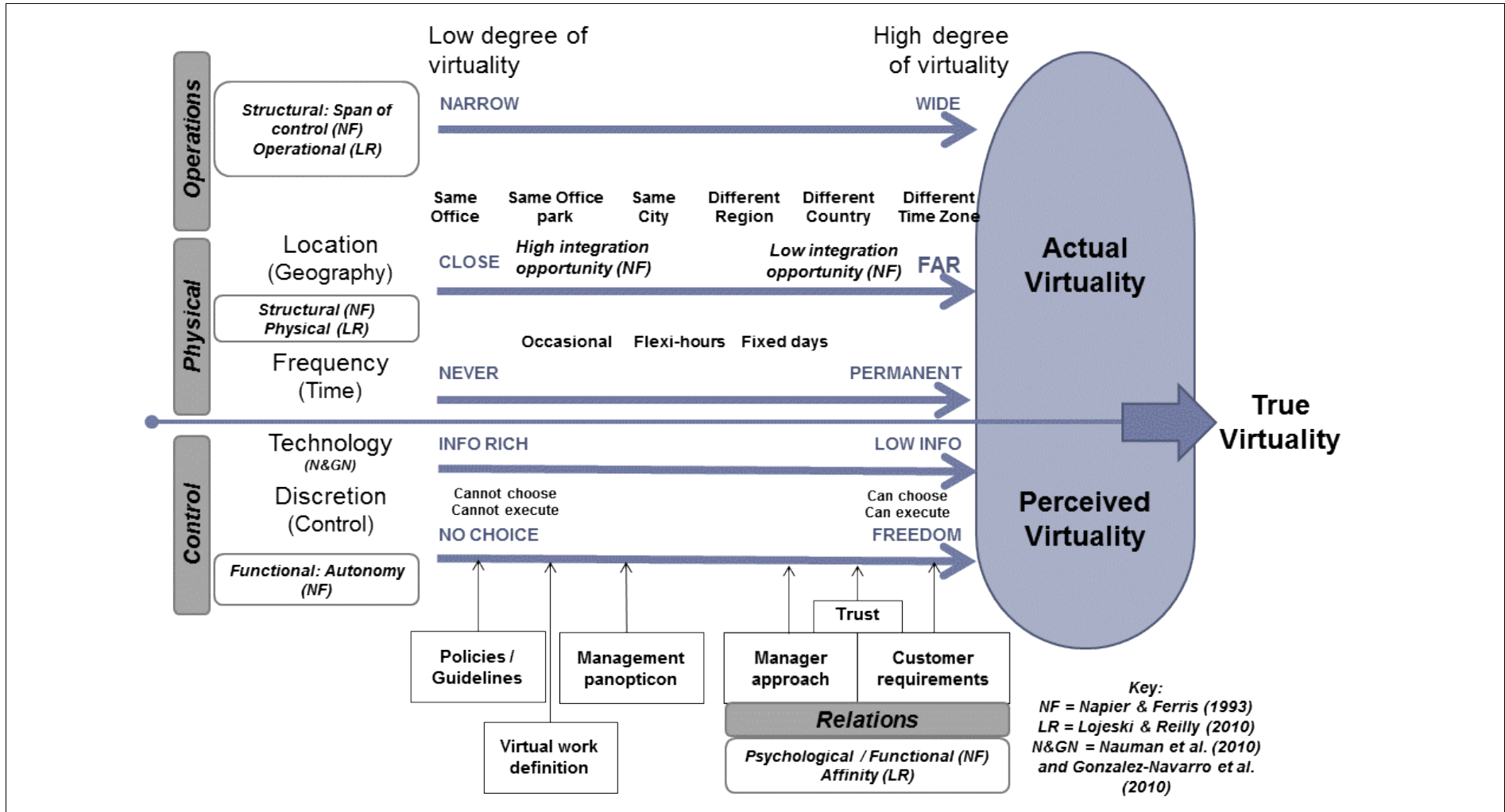


APPENDIX F

15 APPENDIX F – ENLARGED THEORETICAL MODELS

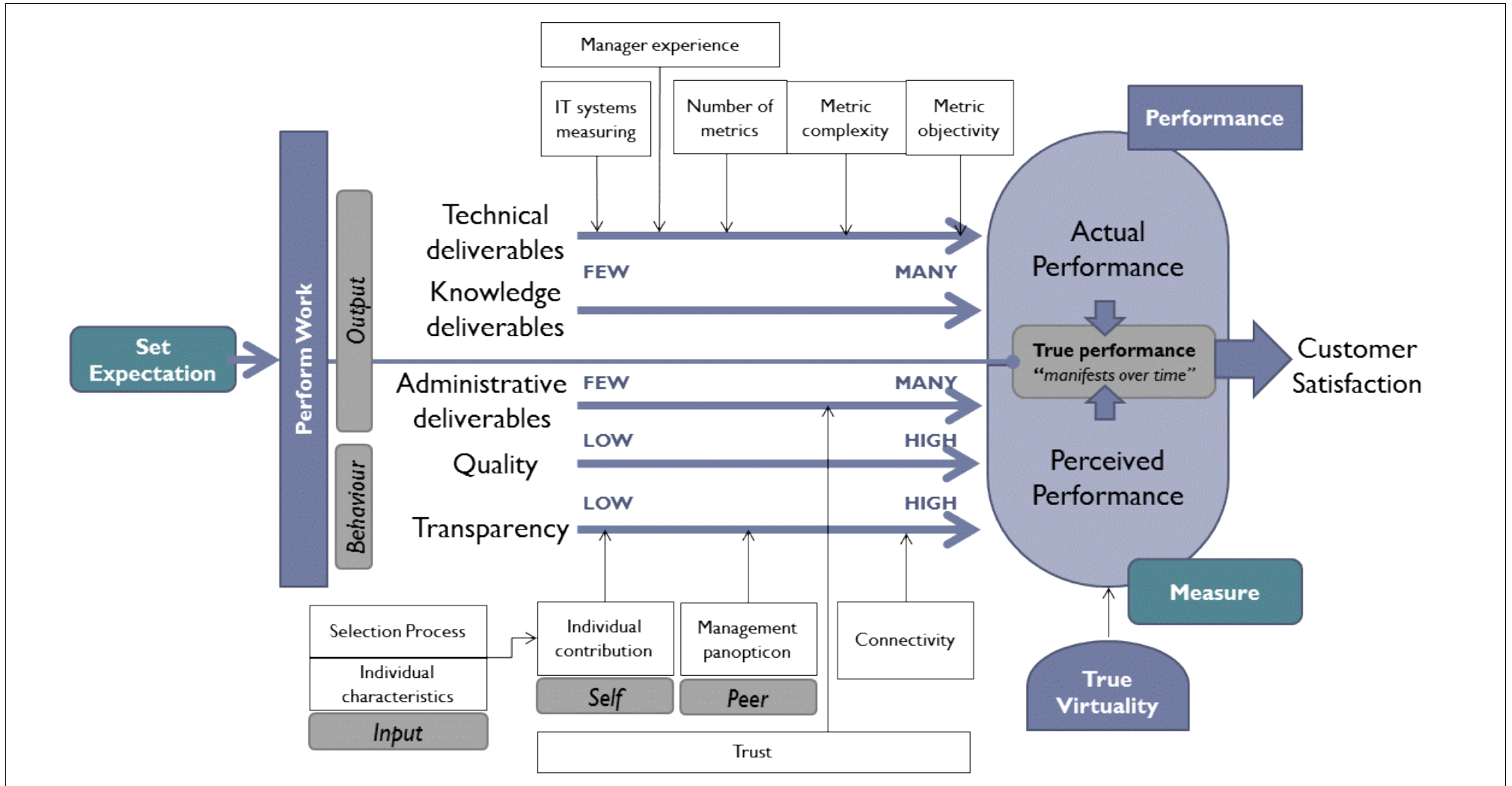
15.1 THEME 1: TRUE VIRTUALITY

Figure 15-1: Actual vs. perceived virtuality – theory map (“True Virtuality”)



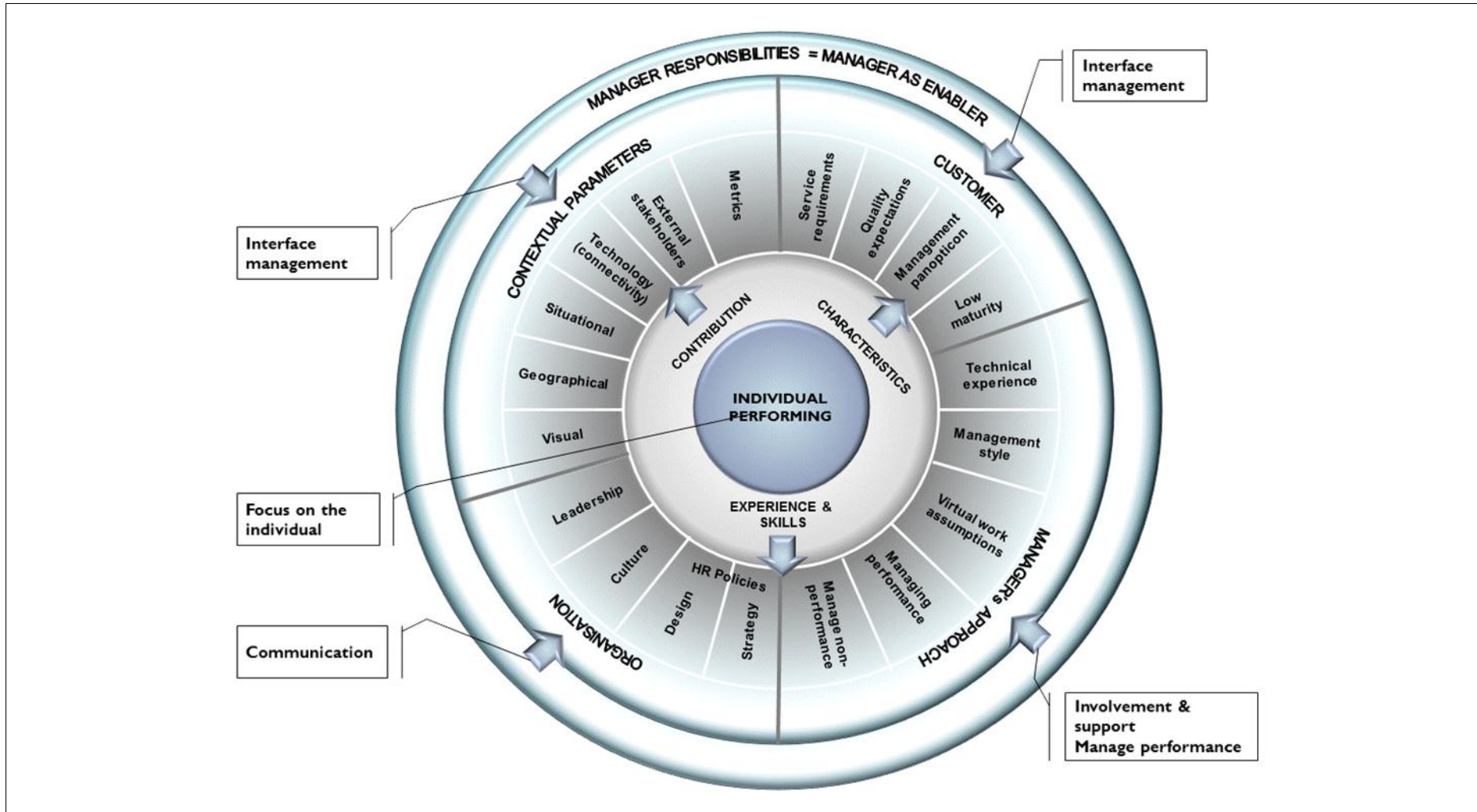
15.2 THEME 2: TRUE PERFORMANCE

Figure 15-2: Actual vs. perceived performance model (“True Performance”)



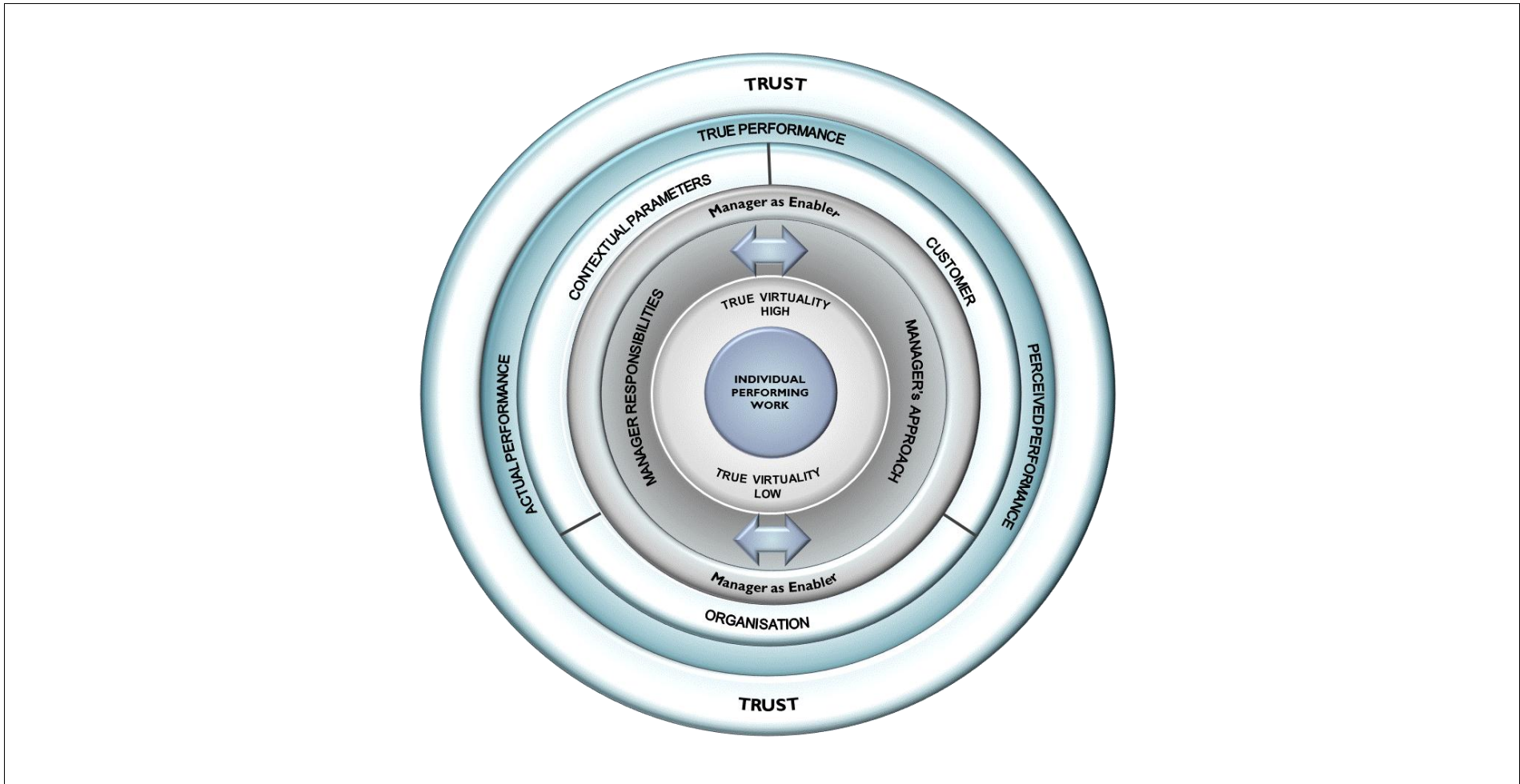
15.3 THEME 3: IMPACT PARAMETER MODEL

Figure 15-3: Impact Parameter Model: Consolidated



15.4 COMBINED MODEL

Figure 15-4: Concentric performance enablement model for virtual knowledge workers





APPENDIX G

16 APPENDIX G – SUPPLEMENTARY DOCUMENTATION

16.1 SUPPLEMENTARY DOCUMENTATION

The additional documentation, as referred to in this thesis, has been supplied on a CD and contains the following information:

- 1) The PDF version of this thesis document.
- 2) The PDF versions of all the case documents:
 - a. Case 1: Alpha
 - b. Case 2: Echo
 - c. Case 3: Foxtrot
 - d. Case 4: Tango
 - e. Case 5: Delta
- 3) The information populated from ATLAS.ti:
 - a. General (Date Hermeneutic unit created)
 - b. Statistics (Statistics for the Hermeneutic unit)
 - c. Primary Documents (List of the transcriptions with list of codes per document)
 - d. Codes Summary (List of codes; Sorted alphabetically; Sorted on groundedness; Sorted on density)
 - e. Commented Codes (All codes that have comments loaded)
 - f. Memos (All memos created in ATLAS.ti)
 - g. Primary Document Families (Used for filtering of documents)
 - h. Code Families (Some code families generated from the network diagrams)
 - i. Memo Families (Used to group memos)
 - j. Network Views (Link to EMF file provided)
 - k. Code Neighbor List (Thesaurus)
 - l. Code Hierarchy

Additional spreadsheets/documents generated from ATLAS.ti:

- a. Quotes per Code (List of all quotes per code)
- b. Co-occurrence Table (Deliverables vs Metrics)
- c. Word Count Table (“Word cruncher” results)

- d. Codes Primary Documents Table (Counts of quotes per code per primary document)
- Sheet “VKW-Performance_CPD_Matrix-2012”: Quote count per code per primary document
 - Sheet “SUM-1”: Quote count per organisation and Manager, Organisational and Individual level
 - Sheet “SUM-2”: Quote count total per organisation with conditional formatting using colour scales

The “How to use me” file on the CD explains how to access the information.

HOW TO USE ME

The CD represents the supplementary documentation and audit trail for the data analysis of:

“A managerial framework for the enablement of the performance of virtual knowledge workers”

as completed by Karen Luyt (86423623) for the PhD (Organisational Behaviour) in the Faculty of Economic and Management Sciences.

It is presented in the format of a web page. It can easily be navigated through the use of the navigation bar of the browser. In order to access the program follow these steps:

1. Insert the disk in the CD/DVD drive
2. Navigate to “..\VKW-Framework\Extra.html”
3. Double-Click on the file “Extra.html” to open the web page
4. Use the index with hyperlinks under the “Table of Contents” at the top of the page to navigate to the different sections on the page and to the linked files

You can also run this from your computer’s hard disk by copying the whole folder “VKW-Framework” directly to the C: drive.

Kind Regards
Karen Luyt
(kluyt01@gmail.com / 082-895-2289)

Further questions can also be directed to:

Supervisor: Prof K. Stanz (012 420 3074; karel.stanz@up.ac.za)

Co-supervisor: Prof S.M. Nkomo (012 420 4664; stella.nkomo@up.ac.za)

(The web page has been prepared for Microsoft Internet Explorer 6 and higher.)